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Nagtahan, Sampaloc Manila

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TECHNOLOGY INNOVATION AND SUPPORT OFFICE

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Creating Innovative Solutions Towards Modern Life

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 XVII, No. 21, January - June 2017 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 School Year 2016-2017. This volume highlighted thirteen (13) 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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ADOPTION OF OUTCOMES-BASED EDUCATION IN INTERIOR DESIGN IN THE PHILIPPPINES

Esmeralda W. Ayag

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RATIONALE

Implementation of Outcomes-Based Education (OBE) is the main concerned of most higher education institutions in the Philippines today (Davis, 2003; Caguitla, et. al 2013). In the Philippines during 2007 and 2008, the Commission on Higher Education, through the efforts and recommendation of the Technical Committee for Interior Design (TCID), has conducted series of workshop seminars to formulate a new policies, standards and guidelines or Interior Design that is OBE in nature. The CHED Memorandum Order (CMO) mandated HEI's offering the program to follow a new set of policies, standards and guidelines for all baccalaureate Interior Design program that defined the needed competencies for the practice of the field.

OBJECTIVES OF THE STUDY

The aim of the study is to determine the readiness or to ready the HEI's in the implementation of the OBE Curriculum in School Year 2018. The aim is to specifically standardize the Learning Outcomes HEI's offering Interior Design Program.

SIGNIFICANCE OF THE STUDY

To the Institute, to serve as a guide in program development and facilities needed.
To the faculty, to equip themselves through continuous educational development.
To the Student, to have a standard learning in preparation t board exam , to coup up with the international standards in the practice of Interior Design and to be align in the ASEAN Integration.

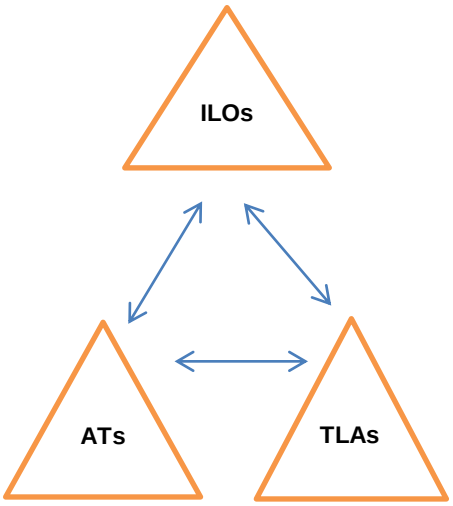
CONCEPTUAL FRAMEWORK

a) Paradigm shift

Traditional Education → Outcomes-Based Education

INPUTS TO OUTCOMES and TEACHING TO LEARNING

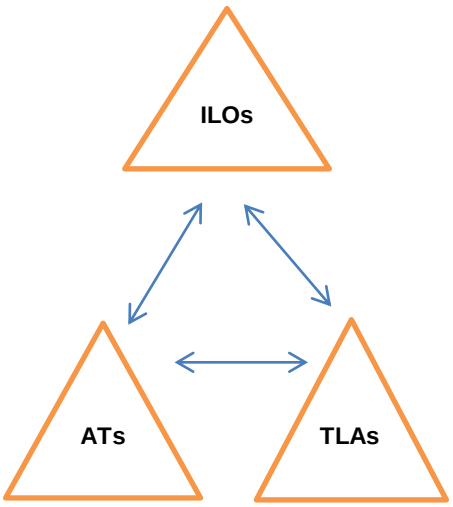
- Intended Learning Outcomes (ILOs)
- Teaching and Learning Activities (TLAs)
- Assessment Tasks (ATs)



**City University of Hong Kong*

b) ILOs describe what the learners will be able to do when they have completed their course or program.

- Intended Learning Outcomes (ILOs)
- Teaching and Learning Activities (TLAs)
- Assessment Tasks (ATs)



METHODOLOGY

ACTIONS TAKEN FOR THE ADOPTION OF OBE IN INTERIOR DESIGN PROGRAM IN THE PHILIPPINES

1. Seminar/ Workshop under CHED

WORKSHOPS

a. Orientation/Workshop on Outcomes-Based Education (OBE) or Architecture and Interior Design Programs
May 24-26, 2013 Tagaytay City

b. Introduction to Outcomes- Based Education (OBE) for Interior Design Program
June 20-21, 2013 Tagaytay City

c. Workshop on the Development of Policies and Standards or Interior Design Program through an Outcomes- Based Education (OBE)
October 6-7, 2013 Tagaytay City

d. National Conference on the Presentation of Sampler or Suggested Curricula for BS Architecture, BS Interior Design, Bachelor Of Fine Arts and Bachelor Landscape Architecture Programs Aligned to Outcomes –Based Education conducted by the Office of Programs and Standards Development through the Technical Panel or Architecture, Fine Arts and other related programs.
October 20,2014 CHED auditorium UP Diliman

e. Workshop on the Development of Policies and Standards or Interior Design Program through an Outcomes- Based Education (OBE)
December 17-18, 2014 Bayview hotel Manila

f. Workshop on the Development of Policies and Standards or Interior Design Program through an Outcomes- Based Education (OBE)
August 18-19, 2016 Ramada Hotel Binondo Manila City

CHECKLIST OF FACULTY MEMBERS AND THEIR RESPECTIVE SCHOOLS

1.	Lilia De Jesus	Pres. CIDE	University of Sto. Tomas
2.	Adelaida Mayo	Secretariat CIDE	University of the Philippines
3.	Raquel Florendo	CHED	University of the Philippines
4.	Brigid Sarmiento	Area Chair	University of the East
5.	Hannah Faustino	Area Chair	University of the Philippines
6.	Tess Quevedo	Faculty	University of the Philippines
7.	Adrian Del Monte	Faculty	Univ. of San Carlos Cebu
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9.	Cynthia Leyson	Faculty	University of the East
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13.	Mayeni Oca	Faculty	College of Holy Spirit
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15.	Arlene Magpayo	Faculty	Polytechnic University of the Phil.
16.	Billie Jean Dela Cruz	Faculty	Polytechnic University of the Phil.
17.	Myrna Onoza	Faculty	EARIST
18.	**Esmeralda Ayag**	**Area Chair**	**EARIST**

Instruments Used for the Direct Assessments of Student Outcomes

a. Rubric for SO Problem Analysis
b. Rubric for SO Multiple Constraints
c. Rubric for SO Modern Tool Usage
d. Rubric for SO Contemporary Issues
e. Rubric for SO Environment and Sustainability
f. Rubric for SO Ethics
g. Rubric for SO Individual and Team Work
h. Rubric for SO Effective Communication
i. Rubric for SO Lifelong Learning

Essentials for Effective OBE Implementation:

a. A detailed plan for outcomes-based education
b. Commitment and full support from the top management
c. Capacity building should be given top priority
d. Continuous effort for dissemination
e. Continuous quality improvement in all aspects of the implementation.

CONCLUSION AND RECOMMENDATION

As the Technical Committee in Interior Design and School Members wanted to standardize the program in all HEI's offering the Interior Design, there are factors to be consider when it comes to the nature of the organization structure, Mission, Vision and Goal. Facilities and stakeholders are also to be considered.

It is therefore recommended to let the HEI choose the line of expertise they wanted as long as they conform to the minimum standards set by the CHED PSG on OBE in INTERIOR DESIGN PROGRAM. CHED MEMO?

I. ACRONYMS

ABET	Accreditation Board for Engineering and Technology
ASEAN	Association of Southeast Asian Nations
CHED	Commission on Higher Education
CMO CHED	Memorandum Order
COD	Center of Development
COE	Center of Excellence
CQI	Continuous Quality Improvement
CSO CHED	Special Order
EHEA	European Higher Education Area
EUR-ACE	EURopean ACcredited Engineer
HEI	Higher Education Institution
HOTS	Higher Order Thinking Skills
ICT	Information and Communications Technology
IQuAME	Institutional Quality Assurance Monitoring and Evaluation
ISA	Institutional Sustainability Assessment
IT	Information Technology

LLL	Lifelong Learning
KP	I Key Performance Indicator
KSA	Knowledge, Skills, and Attitudes
MRA	Mutual Recognition Agreements
OBE	Outcomes-based Education
OBTL	Outcomes Based Teaching and Learning
OJT	On-the-Job Training
PEO	Program Educational Objectives
PQA	Philippine Quality Award
PQF	Philippine Qualification Framework
PTC	Philippine Technological Council
PSG	Policies, Standards, and Guidelines
QA	Quality Assurance
SED	Self-Evaluation Document
SMART	Specific, Measurable, Attainable, Realistic, and Time-bound
STCW	Seaman's Training Certification Watchkeeping
SWOT	Strengths, Weaknesses, Opportunities and Targets
TFQA	Task Force on Quality Assurance
TP	Technical Panel
VMG	Vision, Mission and Goals

DEFINITION OF TERMS

Terms	**Definition**
Accreditation	The process of assessment and review that enables a higher education program or institution to be recognized or certified as meeting appropriate standards [UNESCO Draft Toolkit for the Recognition of Foreign Qualifications, 2012).
Accreditation bodies	Agencies that assess the quality of educational institutions based on a set of criteria, measured through surveys and onsite reviews by experienced accreditors. The following accreditation bodies are recognized by CHED: Under the umbrella of the Federation of Accrediting Agency of the Philippines (FAAP) – □ Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU) □ Philippine Association of Colleges and Universities Commission on Accreditation (PACU-COA) □ Association of Christian Schools, Colleges and Universities – Accrediting Agencies Inc. (ACSCU-AAI) Under the National Network of Quality Assurance Agencies, Inc. (NNQAA) – □ Accrediting Agency of Chartered Colleges and Universities in the Philippines, Inc. (AACCUP) □ Association of Local Colleges and Universities Commission on Accreditation, Inc. (ALCU-COA)

Achieved learning outcomes	Learning outcomes that are actually attained by the students as opposed to intended learning outcomes.
ASEAN 2015	A roadmap to achieve better regional integration of the socio-cultural, economic, and political security pillars of the Association of Southeast Asian Nations (ASEAN) member-states by 2015. ASEAN 2015, also known as ASEAN Community 2009-2015 will be marked by labor mobility within the region, among others.
Assessment	A process used to improve future performance by involving both the assesse and assessor in a thorough analysis of current performance, with the assessor providing quality feedback (Parker et al., 2001). *Applied to individuals*: The process of evaluating the knowledge, skills or competencies of individual learners. *Applied to programs and institutions:* The process of evaluating the educational quality of a higher education institution or program. [UNESCO Draft Toolkit for the Recognition of Foreign Qualifications, 2012]

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CHED Memorandum Order No. 37 s. 2012. Policies, standards and guidelines in the establishment of an outcomes-based education(OBE) system in higher education institutions offering engineering programs

CHED Memorandum Order No. 46 s. 2012. Policy-standard to enhance quality assurance (QA) in Philippine higher education through an outcomes-based and typology-based QA

MAXIMIZING THE POTENTIAL OF SOLID-STATE DRIVE (SSDs) AS SECONDARY LEVEL RANDOM ACCESS MEMORY (RAM)

Ador G. Utulo
Bernard C. Fabro

INTRODUCTION

Flash memory, especially NAND flash memory, has been steadily invading into new markets as the density has increased and the cost per gigabyte has decreased. In a NAND SSD the data is stored in a virtual memory map on the NAND flash. Accessing any part of that is as simple as changing the address and executing the next read or write. Since most workloads are random in nature, as industries move toward multi-core compute engines, multithreaded operating systems, and virtual machines, random disk performance will only increase in importance. Today most storage includes RAM-based I/O cache to accelerate writes on data ingest and to provide egress acceleration of reads through I/O cache read-ahead and hits to frequently accessed data. Non-volatile memory is a general term for all forms of solid state memory that do not need to have their memory contents periodically refreshed. This includes all forms of read-only memory (ROM) such as programmable read-only memory (PROM), erasable programmable read-only memory (EPROM), electrically erasable programmable read-only memory (EEPROM), and flash memory. It also includes random access memory that is powered with a battery. Random Access Memory (RAM) generally is a volatile memory where all data are erased during power-off. RAM is slower than a processor's own smaller-instruction level-1, level-2 or level-3 cache memory but much faster to read from and write to than any of the other kinds of storage in a computer. Sufficient RAM is important to computer performance because as RAM fills up, the processor needs to continually go to the disk to store old data in a page file from the RAM, while contesting with the new information and previously stored page file info needed for programs currently in use. To maximize the potential of solid-state drives to be used as secondary level random access memory is the purpose of this study.

DESCRIPTION OF THE PROBLEM

Running several processes concurrently requires the need for more physical memory (RAM). When a computer runs a program, the microprocessor loads the executable file from the program into the computer's RAM. Some programs contain a large amount of data that needs to be loaded onto the RAM in order to properly function. If there is not enough space in the memory, this can cause the computer to run slowly. Traditionally making use of a virtual memory would address the issue on the lack of physical memory through paging/swapping technique. The purpose of swapping, or paging, is to access data being stored in hard disk and to bring it into the RAM so that it can be used by the application program. Excessive use of swapping causes thrashing and is undesirable because it lowers overall system performance, mainly because hard drives are far slower than RAM. The development of solid state drives has increasingly changed. With different form factors and interface, from the storage capacity to transfer rate, SSDs are slowly achieving the speed of RAM making them viable as secondary level storage.

DESCRIPTION OF THE PROPOSED IMPROVEMENT

A solid-state drive is nonvolatile storage device that stores data on solid-state flash memory. It is consist of an array of semiconductor memory organized as a disk drive. Bits are stored into cells, which exist in three types: 1 bit per cell (single level cell, SLC), 2 bits per cell (multiple level cell, MLC), and 3 bits per cell (triple-level cell, TLC). Development and adoption of SSDs has been driven by a rapidly expanding need for higher input/output (I/O) performance. An important factor for performance is the host interface. The most common interfaces for newly released SSDs are SATA 3.0, PCI Express 3.0. On a SATA 3.0 interface, data can be transferred up to 6 Gbit/s, which in practice gives around 550 MB/s, and on a PCIe 3.0 interface, data can be transferred up to 8 GT/s per lane, which in practice is roughly 1 GB/s (GT/s stands for Gigatransfers per second). SSDs on the PCIe 3.0 interface are more than a single lane. With four lanes, PCIe 3.0 can offer a maximum bandwidth of 4 GB/s, which is eight times faster than SATA 3.0. Some enterprise SSDs offer a Serial Attached SCSI interface (SAS) which can offer up to 12 GBit/s.

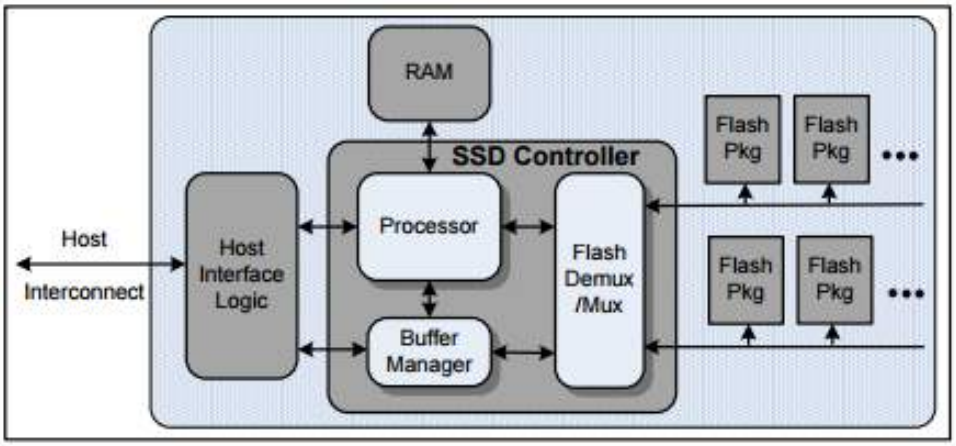

Figure 1. Architecture of SSD

The two most common interfaces for SSDs are Serial ATA (SATA), PCI Express (PCIe). The processor in the SSD controller takes the commands and passes them to the flash controller. SSDs also have embedded RAM memory, generally for caching purposes and to store mapping information. The dynamic RAM contains the addressing, data bus, and control for managing one or more DRAM components. A typical SSD controller can manage up to 256MB of DRAM. The DRAM is used mainly as a buffer memory to match the dataflow from the Flash array to the I/O interface. This memory can also be utilized as a data cache to improve overall performance. Using the latest interface for SSDs, Non-Volatile Memory Express Interface (NVMe), it allows the CPU to map binding of the SSD directly into its memory space and use it like RAM instead of issuing IO requests to transfer between RAM and the SSD. This has the potential significantly speed up access to the SSD while using less RAM as it is no longer required to cache the data while the CPU accesses it. With this type of interface on SSDs, applying page file system maximizes the potential of SSD to be used both as physical and virtual memory. By maximizing parallelism and eliminating complexity of legacy storage architectures, NVMe supports future memory developments that will drive latency overhead below one microsecond and SSD IOPS to over one million.

Virtual memory is a process whereby data can be rapidly exchanged between physical memory storage locations and RAM memory. The use of virtual memory allows the use of larger programs and enables those programs to run faster. The use of virtual memory allows an entire block of data or programming (e.g., an application process) to reside in virtual memory, while only the part of the code being executed is in physical memory. Accordingly, the use of virtual memory allows operating systems to run many programs and thus, increase the degree of multiprogramming within an operating system.

DISCUSSION OF RESULTS

System memory today is virtually always dynamic random-access memory (DRAM) which is a type of RAM. Static random-access memory (SRAM) is the other form of RAM. However, DRAM won the battle as the primary RAM due to its design simplicity allowing it to scale better and end up being vastly lower cost. The DRAM in SSD may be fully utilized to substitute as secondary level random access memory to supplement the need for memory.

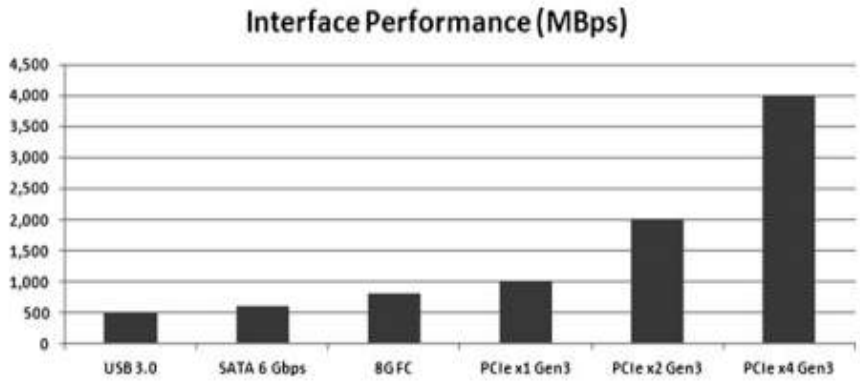

Figure 2. Interface Performance for SSDs

Figure 2 shows that the PCIe improves overall system performance by reducing latency and increasing throughput. Most systems today are migrating to third-generation SATA and SAS that support 600 Mbytes/s throughput, and drives based on those interfaces. The SSD performance bottleneck has shifted from the flash devices to the host interface. Therefore, many applications need faster host interconnect to take full advantage of flash storage.

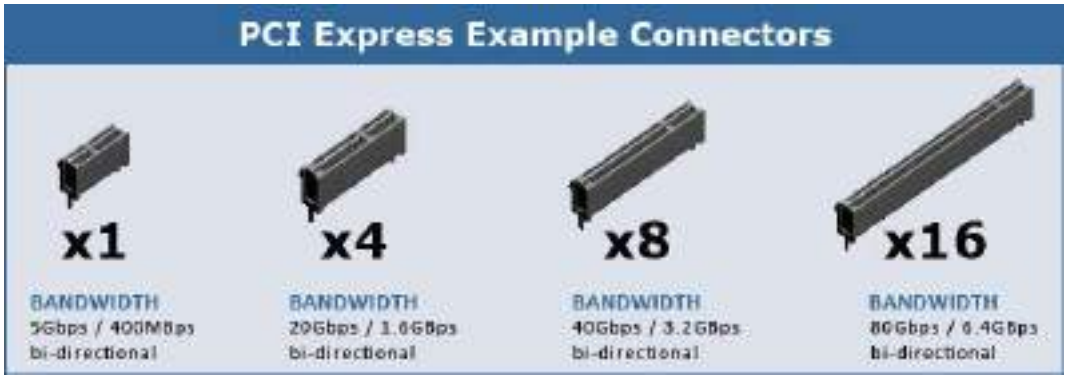

Figure 3. PCIe Connectors Bandwidth

NVMe or Non-Volatile Memory Host Controller Interface Specification (NVMHCI) is a new and backward-compatible interface specification for solid state drives specifically for PCIe SSDs. NVMe has the ability to take more advantage of lower latency and parallelism of CPUs, platforms and applications to improve performance. That lower latency is the direct result of the ability of a flash SSD to read data directly and immediately from a specific flash cell location. High-performance servers, laptops, desktops or applications that deliver information in real-time or near real-time could benefit from solid-state drive technology.

	SLC	MLC	TLC	HDD	RAM
P/E cycles	100k	10k	5k	*	*
Bits per cell	1	2	3	*	*
Seek latency (µs)	*	*	*	9000	*
Read latency (µs)	25	50	100	2000-7000	0.04-0.1
Write latency (µs)	250	900	1500	2000-7000	0.04-0.1
Erase latency (µs)	1500	3000	5000	*	*

Figure 4. Comparison between Memory Storage Modules

A combination of hardware, firmware, and software approaches are used for each of these drive management functions, with trade-offs being made by the system designer to establish the ideal mix for each flash-based drive. The primary trade-offs in performance includes access latency, sustained read/write rate and reformatting time.

SSD controllers already use DRAM - that's what makes them fast at all. The underlying Flash memory is not fast. The primary purpose of an SSD controller is to avoid writing to flash (because of endurance and speed limits) and to write data to DRAM cache whenever possible. SSDs as swap in any operating system supporting virtual memory may be used as RAM, it will be used to store unused parts of your memory.

SUMMARY AND CONCLUSION

RAM is essentially the core of the computer system. It can be considered just as important as the processor, or hard drive. With the right amount of RAM on the computer the performance and the ability to support various types of software is optimized. Furthermore, to replace RAM with SSD will require massive changes on how the computer hardware and software interact. Instead, by applying virtual memory management techniques such as paging and swapping on a PCIe or NVMe SSD will give an additional secondary level random access memory to the system.

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ACTIVATED CHARCOAL AND SUGAR AS EXFOLIATING AGENT IN FOOT SCRUB: ITS DEVELOPMENT AND CHARACTERISTICS

Evelyn A. Gabas
Ariel E. Tobias

INTRODUCTION

Millions of people worldwide are becoming more conscious with regards to their skin. Studies shows 53% of women and 11% of men spent money to buy products and or undergone treatments for a healthy glowing fair skin. Studies also show that 23% of SPAs and Body Saloon most profited or best services requested is Foot scrubbing. This is a popular treatment that is like a facial for the feet. It exfoliates and hydrates the skin, leaving it smooth and soft.

An **exfoliator** is the abrasive material like salt, sugar, rice bran, jojoba beads, apricot kernels, coffee grounds, etc. that rubs away the dead skin cells on the surface, revealing the softer, younger cells**. Sugar** is believed to be most effective among mentioned because it exfoliates and hydrate, compare to salt, that dried up the skin.

Activated charcoal is a potent natural treatment used to trap toxins and chemicals in the body, allowing them to be flushed out so the body doesn't reabsorb them. It's made from a variety of sources, but when used for natural healing. One of the trendiest uses of activated charcoal is as detoxifying agent.

STATEMENT OF THE PROBLEM

This study is conducted to develop and determine the effectiveness of activated charcoal and sugar as exfoliating agent and identify its characteristics in a foot scrub cream formulation.

Specifically, the researcher sought to answer the following questions:

1. What formulation conceives the most acceptable sensory characteristics of a foot scrub cream in terms of Appearance, Viscosity and Scent as evaluated by trained volunteer?

2. How effective is activated charcoal and sugar foot scrub in terms of Exfoliate, Soften and Smoothen skin as assessed by the group of respondents?

3. What is the Microbial Analyses of formulated Activated charcoal and Sugar Foot Scrub Cream?

CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework discussed the flow of the study. The study used IPO model which is composed of input which went through the process and emerged as the output.

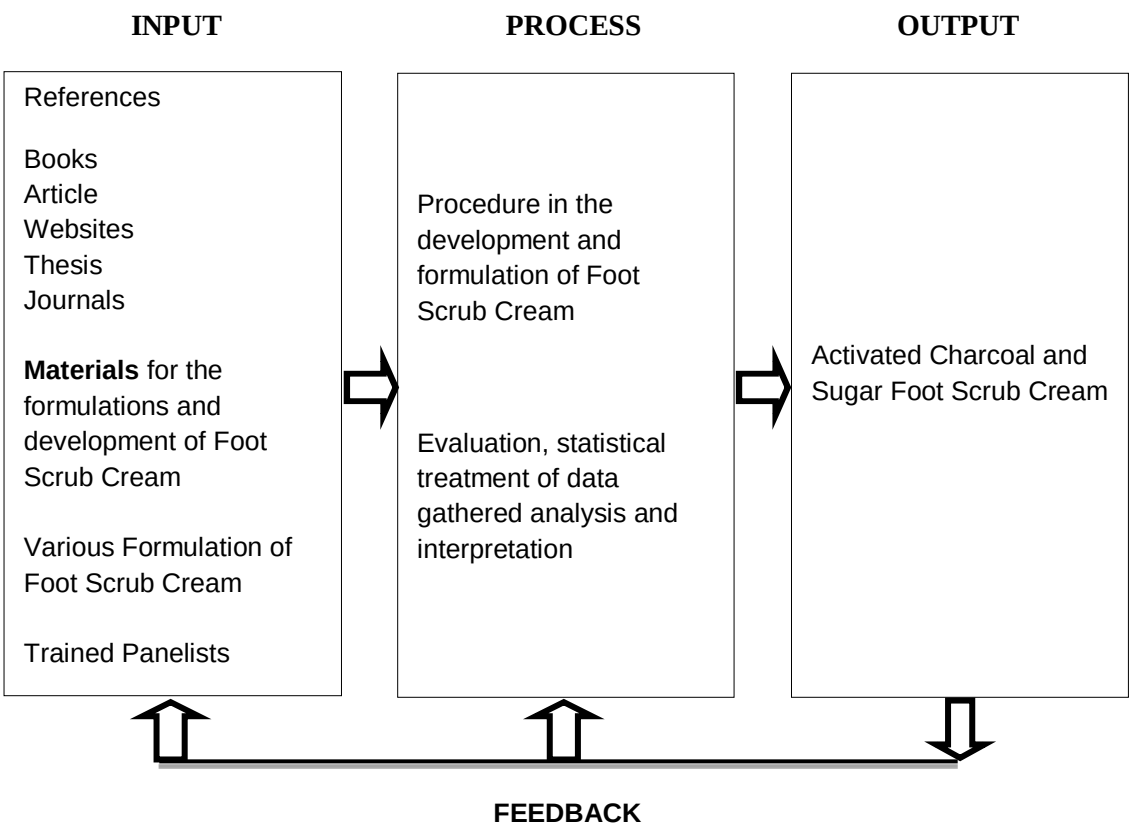

Figure 1. Research Paradigm

OBJECTIVE OF THE STUDY

The general objective of the study is to develop a foot scrub cream using activated charcoal and sugar as exfoliating agents.

Specifically this research aim to:

1. To develop another variant of foot scrub
2. To determine the descriptive characteristics of the product.
3. To determine the effectiveness of activated charcoal and sugar as exfoliator.
4. To reduce the expenses for foot scrub services/treatments.
5. To develop a product that has potential market value.

SIGNIFICANCE OF THE STUDY

This study is conducted to determine the effectiveness of activated charcoal and sugar as exfoliator in a foot scrub formulation. This is significant to the researcher because another variant can be purchase and somewhat can contribute to the economy for it can replace to expensive products and treatment from the market, SPA and beauty Salon. The consumers and beauty enthusiast will be most benefited when this study found possible.

RELATED LITERATURE

Foot scrubs can be used to rejuvenate the feet, enhance their look and feel, and even relieve pressure and pain. They can relieve tired, achy feet and help to remove dead skin and eliminate bacteria that swarm on the surface of the skin which cause foul odor while also nourishing the skin with natural ingredients. The most important part of a good exfoliating foot scrub is the exfoliating ingredient. Some types include salt, pumice, coffee and sugar. . [2].

Sugar foot scrubs are particularly scrumptious. While salt scrubs are commonly used in the beauty industry, sugar scrubs tend to be less sharp and generally easier on the skin. Where salt scrubs have a tendency to extract moisture from the skin, sugar foot scrubs nourish and relieve parched skin. [3].

Activated Carbon is broadly defined to include a wide range of amorphous carbon based materials prepared in such a way that exhibit a high degree of porosity and an extended surface area. For many centuries the activated carbon was used in the form of carbonized wood.

The specific adsorptive capacity of charcoal was recognized by Scheele at 1773 AD who measured the volumes of gases that could be reviewed the abilities of charcoals to adsorb odors and vapors from a range of organic chemicals. [4,5]. The toxin absorption abilities of activated charcoal have long been recognized by the medical world. Health professionals use the substance to treat conditions such as poisonings, GI tract infections, and nausea. [6]. Have your teeth become stained from coffee, tea, wine or berries? Activated charcoal helps whiten teeth while promoting good oral health by changing the pH balance in the mouth, helping prevent cavities, bad breath and gum disease. It works to whiten teeth by adsorbing plaque and microscopic tidbits that stain teeth. This activated charcoal use is cost-effective and an all-natural solution for a bright smile [7]. Activated charcoal uses extend beyond internal applications. For external treatments, it's effective at treating body odor and acne and relieving discomfort from insect bites, rashes from poison ivy or poison oak, and snake bites. The activated charcoal binds with environmental toxins and dirt that contribute to acne. It's also good for spot treatments

SYNTHESIS OF THE STUDY

The literatures in this study were relevant to the present study because it encouraged and give concrete framework. The researchers' idea of combining the activated charcoal and sugar in a foot scrub formula adopt a positive result because of activated charcoal binds toxins and dirt and flushed out when rinse, leaving a soft and glowing skin because of the moisturizing and hydrating property of sugar [7,8]..

The combination of two exfoliators will be very effective in removing dead skin cells and replacing a nourished and smooth and soft foot skin. [3].

METHOD OF RESEARCH

Research Design

The experimental method of research was used in this study utilizing laboratory techniques and procedure. The development of Foot scrub varies from the formulation of activated charcoal and sugar . The researcher determined the most suitable formulation based on sensory evaluation in descriptive testing as to appearance, viscosity, and scent by trained experts and the effectiveness like exfoliate, soften and smoothen skin by 10 faculty and 20 students from the ESRIST College of Industrial Technology.

Experimental Procedure

The researcher used the basic recipe of foot scrub formulated from Swiss Fragrance Inc omitting the scrub abrasive (apricot kernel) instead made use of activated charcoal and sugar.

Samples were pack in 100g plastic tube container. The following are the treatment formulations:

FS 1	10g activated charcoal and 10g sugar
FS2	10g activated charcoal and 15g sugar
FS3	15g activated charcoal and 10g sugar

Sample and Procedure

The prepared foot scrubs in varying formulations were pack and send to 5 Quality Assurance Inspector (QAI) from two (2) manufacturing company; three (3) volunteers from Swiss Fragrance Inc. and two (2) from Atkimson Inc, for evaluation of the most acceptable formula in terms of appearance, scent and viscosity. The preferred formulation of activated charcoal and sugar foot scrub were used for the assessment on its effectiveness in terms of exfoliates, soften and smoothen skin by the selected group of respondents and for microbial analysis.

Procedure:

1. Assemble all materials to be use in the preparation of Activated charcoal and Sugar Foot Scrub Soap.

2. Using an Electric Mixer, disperse Xanthan Gum in water. When the Xanthan Gum was fully disperse, add the TEDTA. Set the Hot plate in 80degree c. and put the mixture. Continuously stir. Set aside

3. In a separate vessel, melt Cetearyl Alcohol, Cetyl Alcohol, Stearyl Alcohol and Ceteareth then mix in the xanthan gum mixture,

4. In separate vessel prepare Phenoxyethanol, TEA, Purasal Moist, Aloe Vera Extract, Purac, Vanille Coco scent, mix in with the previous mixture . Mix thoroughly using electric mixer.

5. When homogeneous mixture is reached, add the activated charcoal and sugar.

6. Pack in a cosmetic plastic container

STATISTICAL TREATMENT OF DATA

The data gathered were tallied, categorized and subjected to descriptive analysis. The descriptive measures used were frequency distribution, percentage and weighted mean and arbitrary values. Frequency distribution was used to show the responses of the respondents under the different categories.

The responses for the different categories were presented in relative frequency distribution or percentage using the following formula:

P=fFx 100%

Where: P = Percentage

F = Frequency

F = Total frequency of all categories

The study also made use of the T-Test. T-test was used to compare the means of the two samples (students and Faculty). In simple terms, the T-Test compared the actual difference between the two means in relation to the variation in the data (expressed as the standard deviation of the difference between the means.

The T-Test formula was utilized wherein:

$$t = |\bar{x}_1 - \bar{x}_2| \div \sqrt{A \times B}$$

Where,

$$A = (n_1 + n_2) \div n_1 n_2 ,$$

and

$$B = [(n_1 - 1)s_1^{\,2} + (n_2 - 1)s_2^{\,2}] \div [n_1 + n_2 - 2]$$

Likert Scale. To interpret the perception of the respondents as to the descriptive characteristics and effectiveness of Foot Scrubs, the five-point Rating Scale was used with the following equivalent points.

Table 1

Index of Verbal Interpretation as to descriptive Characteristics

Range	Interpretation
4.20 – 5.00	Highly Acceptable
3.40 – 4.19	Acceptable
2.60 – 3.39	Moderately Acceptable
1.80 – 2.59	Least Acceptable
1.00 – 1.79	Not Acceptable

Legend:

E- Excellent
VG- Very Good
G- Good
F- Fair
P- Poor

X - Weighted Mean
VI – Verbal Interpretation

Table 2

Index of Verbal Interpretation as to Effectiveness

Range	Interpretation
4.20 – 5.00	Highly Acceptable
3.40 – 4.19	Acceptable
2.60 – 3.39	Moderately Acceptable
1.80 – 2.59	Least Acceptable
1.00 – 1.79	Not Acceptable

Legend:

HA – Highly Acceptable
A – Acceptable
MA – Moderately Acceptable
LA – Least Acceptable
NA – Not Acceptable

X - Weighted Mean
VI – Verbal Interpretation

RESULT AND ANALYSIS

Preference Test

The test requires the respondents to evaluate the descriptive characteristics of Activated charcoal and Sugar Foot Scrub as to appearance, scent and viscosity using the five point scale.

Table 3

Evaluation of various formulations of Activated Charcoal and Sugar Foot Scrub

	Appearance		Scent		Viscosity		Overall		R
Formulation	**X**	**VI**	**X**	**VI**	**X**	**VI**	**X**	**VI**	
FS1	3.4	VG	4.0.	VG	3.0	G	3.46	VG	2
FS2	3.6	VG	4.0	VG	3.4	VG	3.66	VG	1
FS3	3.2	G	3.6	G	2.8	G	3.20	G	3
Composite Mean	**3.4**	**VG**	**3.86**	**VG**	**3.06**	**G**	**3.44**	**VG**	

As revealed by the data as to appearance, scent and viscosity the formulation FS2 with 10g of activated charcoal and 15g sugar obtain an overall weighted mean of 3.66 in rank 1, FS1 with 10g activated charcoal and 10g sugar obtain a weighted mean of 3.46 in rank 2, both were verbally interpreted as very good while FS3 with 15g activated charcoal and 10g sugar obtain a weighted mean of 3.20 in rank 3verbally interpreted as good.

Summarily the FS2 got the most preferred formulation as to appearance, scent and viscosity of foot scrub as evaluated by selected quality assurance inspector of different cosmetic manufacturing company.

Descriptive Test Result

The preferred formulation of researchers foot scrub was used in this test to determine the effectiveness of the product. The test describes the efficacy as to exfoliate, soften and smoothen skin after using the product were studied. The descriptive test result as evaluated by 30 oriented respondents using the 5 point Likert Scale.

Table 4

Summary of Assessment on the Descriptive Characteristics of Activated Charcoal and Sugar Foot Scrub

CRITERIA	Faculty		Students		Overall		Rank
	X	VI	X	VI	X	VI	
1. Exfoliate	4.40	HA	4.46	HA	4.43	HA	1
2. Soften	4.29	HA	4.26	A	4.28	HA	3
3. Smoothen	4.19	A	4.34	HA	4.27	HA	2
Composite Weighted Mean	**4.29**	**HA**	**4.35**	**HA**	**4.33**	**HA**	

As revealed by the data in Table 4, the oriented faculty and students assessed exfoliates with obtained grand mean of 4.38 in rank 1; smoothen assessed with obtained grand mean of 4.37 in rank 2; soften assessed with obtained grand mean of 4.23 in rank3;. all the criteria were assessed as a **highly acceptable**.

Generally, a **highly acceptable** assessment on, exfoliate, soften and smoothen, of activated charcoal and sugar foot scrub as shown by the obtained weighted mean value of 4.29.

Table 5

Significant Difference on the Effectiveness of Activated Charcoal and Sugar Foot Scrub

	Mean	Standard Deviation	t-ratio		
			Computed t value	Decision	VI
Faculty	4.29	0.27	0.5455	Accept H_o	Not Significant
Students	4.35	0.30			

Critical t value = 2.048
Degree of freedom = 28

It could be deduced from the data in Table 5, that the computed t value of 0.5455 is less than the critical value of 2.048 with 28 degree of freedom at five percent level of significance. The statistical decision is to accept the null hypothesis and verbally interpreted as not significant.

Since we accept the null hypothesis, there is a strong evidence that there is no significant difference on the assessment of the faculty and students effectiveness of Activated Charcoal and sugar foot scrub in terms of exfoliates, soften and smoothen skin.

Microbial Analysis

The sample “Activated Charcoal and Sugar Foot Scrub” produced complete inhibitory activity (+++) with the reactivity rating 4(severe) against the test organism Staphylococcus aureus. The sample free-disc which served as control had negative inhibitory activity (-) and no reactivity (0) against the said organism.

The result showed that Activated Charcoal and Sugar Foot Scrub has a rate of (+++) which means, it formed a complete reaction to the organism staphylococcus aureus. Its efficacy to inhibit and eliminate the growth and multiplication of bacteria is very sufficient.

CONCLUSION AND RECOMMENDATION

Conclusion

Activated charcoal can be utilized as exfoliating agent in a foot scrub formulation. The addition of sugar in the recipe hastens the smoothness and softness of the skin. The experimental formulations determine the percentage of activated charcoal and sugar appropriate for the amount of foot scrub to be evaluated.

Recommendation

Based on the result, only 10g of activated charcoal and 15g of sugar is recommended to mix with the formula of foot scrub from Swiss Fragrance. Activated Charcoal and Sugar Foot Scrub has potential market value and therefor recommend for further study.

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CROP HEALTH DEVICE WITH MOBILE MONITORING SYSTEM

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INTRODUCTION

The basic technology of agricultural machines had changed little throughout the last century. Though modern harvesters and planters could do a better job than their predecessors. The combination of current cuts, threshes, and separates grain was essentially the same with earlier versions that had been done. However, technology had changing the way humans operate the machines, as computer monitoring systems, GPS locators, and self-steer programs allowed the most advanced tractors and implements to be more precise and less wasteful in the use of fuel, seed, or fertilizer. In the foreseeable future, some agricultural machines could be made capable of driving themselves using GPS maps and electronic sensors. Even more esoteric are the new areas of nanotechnology and genetic engineering, where submicroscopic devices and biological processes, respectively, may be used to perform agricultural tasks in unusual new ways.

Engineers had developed plans for sanitary irrigation and drainage particularly in rural areas that rely upon the irrigation. Although effective irrigation technology was available, there was this thing called precision farming. It was a new technique that boosted crop yields and reduced waste by using satellite maps and computers to match seed, fertilizer, and crop protection applications to local soil conditions. Equipment like rice transplant and mini combine harvesters can also help farmers to lessen the manual work.

The world started to build more buildings and infrastructure. But on the other hand, nature gradually declined. Also, pollution was one of the problem that many countries face nowadays because of the rapid growth of the cars and machines that produced polluted air. On the other hand, farmers in the world also faced loss of their crop because of the crop disease or environmental problems like the nature of soil (pH), poor quality of air, and excessive or very low moisture in soil. The world seemed to become like people without air, a machine without a battery, or an island without people. People need to restore nature like trees and plants or at least prevent the decline of the resources of nature. People need to be more knowledgeable. Not only the farmers, but also all of the people should know how to prevent harm for the crops.

STATEMENT OF THE PROBLEM

This study is focused on developing a “Crop Health Device with Mobile Monitoring System”.

Specifically, it will answer the following questions:

1. What are the materials needed in the development of the “Crop Health Device with Mobile Monitoring System”?

   A. Physical Structure,
   B. Control Unit, and
   C. Power Supply?

2. How will the "Crop Health Device with Mobile Monitoring System" developed in terms of:

   A. Physical Structure; and
   B. Device Capability?

3. What are the features to be considered in the development of Mobile Monitoring System for Crop Health Device in terms of:

   A. Screen Layout; and
   B. System Capability?

4. How do the respondents assess the "Crop Health Device with Mobile Monitoring System" in terms of:

   A. Screen Layout;
   B. Effectiveness of the System; and
   C. Functionality of the System.

SIGNIFICANCE OF THE STUDY

This study will help the crop owners, farmers and future researchers to develop a system that will be beneficial to the society.

To the Crop Owners. Crop health device with monitoring system could help crop owners because it could minimize labor cost since it could not require farmer to check every minute the condition of the crops for it could easily update the crop owner if any problem would occur. Through this crop owners can be able to easily understand the state of the crop, also to locate the cause of problems for the health of the crop. Also it could help anyone including beginners in terms of crop to manufacture their own food for a healthier life and greener ecosystem.

To the Farmers. Crop health device with monitoring system could lessen the exhaustion of the farmers. Farmers wouldn't need to check the condition of the crops manually leading to reduced time of working under the sun. Also it could minimize the cost in planting the crop as it would update the farmers regarding the problems of the crop and avoid a bigger problems like spoilage of the crops.

To the Future Researchers. Any student that would have the same study would benefit from this study as a help, guide, or references wherein they could also broaden this study, thus creating more advance devices.

LITERATURE AND STUDIES

According to Hermann J. (2013) on the book Precision in Crop Farming, it is stated that high yields and environmental control in crop farming call for precise adaptations to local growing conditions. Treating large fields in a uniform way by high capacity machinery cannot be regarded as a sustainable method for many situations. Because differences existing within single fields must be considered. The transition from former field work carried out manually or by small implements to present-day high-capacity machinery caused that the farmers lost the immediate and close contact with soils and crops. However, modern sensing and controlling technology can make up for this deficit. High tech methods that include proximal sensing and

signals from satellites can provide for controls that allow adjusting farming operations to small fractions of one ha and sometimes even down to some m2, hence in a site-specific mode. This applies to operations for soil cultivation, sowing, and fertilizing and plant protection.

Teixeira et.al, (2014) on the book Application of Soil Physics in Environmental Analyses it is stated that the importance to preserve soil and water have is increasingly recognized thus, agricultural practices and ecological trends both affect and are affected by soil physical properties. The more frequency of natural disasters, such as landslides and thunderstorms addresses the importance to integrate soil characteristics in predictive models. Soil physics research has grown considerably specially in the use of innovative sensors, soil databases, and modeling techniques have been introduced into soil water relationship and environmental monitoring. Those advances are thoroughly dispersed in articles and conference proceedings.

Carating et.al, (2014) on the book The Soil of the Philippines discussed soils and soil mapping units and up-to-date international techniques and technologies. As the country leaps from an agricultural economy towards modernization and a more diversified economic base, some of the soil series in the Philippines, for example the Guadalupe series underlying the skyscrapers of Makati City, are becoming extinct as a result of urban development. Therefore, the book serves as the repository for the soils that we possess, the soils that have been lost through decades of urbanization while, at the same time, it creates a soil classification system for the soils we are yet to discover. As soil survey moves from a reductionist agricultural-development planning tool to a more holistic and integrated approach, to enable us to understand our dynamic and complex environment, The Soils of the Philippines will be the only source of authoritative and updated data on soil resources for macro-level resource management planning for decades to come.

According to an article by Sustainable Agriculture Research and Education (2012), it is written that among the important chemical determinants of a soil's health are its pH, salt content and levels of available nutrients. Low quantities of nutrients, high levels of such toxic elements as aluminium and high concentrations of salts can adversely affect the growth of your crops. Healthy soils have adequate — but not excessive — nutrients.

METHODOLOGY

The study entitled "Crop Health Device with Mobile Monitoring System" will utilize the quasi-experimental method for hardware development and descriptive method of research for software development.

The quasi-experimental method of research deals with the use of controlled observations and measurements to test hypotheses.

The descriptive survey method deals with a situation that demanded the technique of observation as the main way/principle means of collecting data. It also used to compile information that will help the researchers in making the system.

The way of gathering data by the researchers is through survey questionnaire. The data in descriptive method may particularly be the influence of bias. Although the descriptive survey method relies upon observation for the acquisition of its data, those data must be organize and presented systematically so that valid and accurate conclusions may be drawn from them.

To interpret the perceptions of the respondents, the following quantitative description was adapted to quantify the responses of the respondents in every item.

Table 1

The Three-Point Likert Scale

Scale	Range	Descriptive Interpretation
3	2.50 - 3.00	Necessary
2	1.50 – 2.49	Slightly Necessary
1	1.00 – 1.49	Not Necessary

RESULTS AND DISCUSSION

The following are the significant findings of the study.

Problem No. 1. What are the materials needed in the development of the "Crop Health Device with Mobile Monitoring System"?

A. Physical Structure.

Based on the experiments using different materials to be needed, in terms of physical structure, the researchers used acrylic glass because it's lightweight and shatter resistant.

B. Control Unit.

Based on the experiments using different materials to be needed, in terms of control unit, the researchers used gizDuino X can effectively control the sensors, GSM can easily send notifications, Bluetooth shield can connect via Bluetooth pairing, Grove Based Shield has designated pins, Temperature and Humidity, Dust and UV have their own pins and designated connections, and soil moisture can detect the lowness and highness of the soil, Soil Ph and Soil Fertility sensor have its own automatic switching.

C. Power Supply.

Based on the experiments using different materials to be needed, in terms of power supply, 5 volts is the power needed by gizDuino X microcontroller that will hold the programs to command all programmable materials, Solar panel back up for lithium ion battery, and Control unit to reduce the excess voltage from the power supply.

Problem No. 2. How will the "Crop Health Device with Mobile Monitoring System" developed in terms of:

A. Physical Structure.

Based on the experiments, the researchers found out that in order to develop a Crop Health Device with Mobile Monitoring System in terms of physical structure, the researchers can use five (5) sensors to get the data regarding the Temperature and Humidity Sensor, UV sensor, Dust sensor, Soil Moisture, Soil Ph and Soil fertility to get all the nutrients that are needed for crop health.

B. Device Capability.

In order to develop Crop Health Device with Monitoring System in terms of Monitoring the crop's health, they must program the gizDuino X so that it would be able to give commands to pins that are connected to sensors and also for other microcontroller to give command for other soil sensors. Then, the temperature and humidity sensor, UV sensor, Dust sensor, Soil Moisture, Soil Ph, Soil Moisture and Soil Fertility have their designated pins to give commands and condition for other shield sensors to get and monitor the crop's health. For the device to sends notification regarding the crop's health, the researchers can use Bluetooth in order to connect the device to the mobile app, GSM shield to send data regarding the crop's health and notify the crop owners to if something happens to their crop.

Problem No. 3. What are the features to be considered in the development of Mobile Monitoring System for Crop Health Device in terms of:

A. Screen Layout.

On the features to be considered in the development of the Mobile Monitoring System according to the respondents, the top three features were "It displays the Bluetooth connection if the device is connected or not." ranked 1st, followed by "There is about button that contains developer's information." Next is "The help button contains video." ranked 3rd.

B. Systems Capability.

The top three features considered by the respondents in the features of the Mobile Monitoring System in terms of Systems Capability are, "The user can receive a text message after scanning." ranked 1st, followed by "The mobile application can send a message." ranked 2nd, and "The mobile application can analyze and notify the crop owners when the soil is fertile." ranked 3rd.

Problem No. 4. How do the respondents assess the "Crop Health Device with Mobile Monitoring System" in terms of:

A. Screen Layout.

In the assessment in the study entitled "Crop Health Device with Mobile Monitoring System" in terms of "Screen Layout", the top three features were "The data regarding the crop is easily generated" ranked 1st, "The Bluetooth connection is visible" ranked 2nd. Last was "The video is short but informative" ranked 3rd.

B. Effectiveness of the System.

In the assessment in the study entitled "Crop Health Device with Mobile Monitoring System" in terms of "Effectiveness", the top three features were "The user can receive the exact fertility of the soil through pH level" ranked 1st, followed by "The user can receive the exact moisture level of the soil" ranked 2nd, then "The user can receive the exact pH level regarding the soil" ranked 3rd.

C. Functionality of the system.

In the assessment in the study entitled "Crop Health Device with Mobile Monitoring System" in terms of "Functionality", the top three features were "The mobile application is easy to operate" ranked 1st, followed by "The user can easily connect to the device" ranked 2nd, then "The user can access the information about the crop without difficulty." ranked 3rd.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings, the following conclusions were drawn:

1. For the materials needed in the development of the Crop Health Device with Mobile Monitoring System in terms of physical structure, the needed materials are Acrylic, for the case of the device. For controlling materials, it needs GSM to receive notification regarding the crop's health, Bluetooth is needed for the connection, Grove based shield board used to connect the grove Temperature and Humidity sensor, Dust sensor, UV sensor, Soil Moisture, Soil Ph and Fertility sensor to measure the acidity and nutrients of the sensor; For power supply, the microcontroller gizDuino X needs 5 volts to supply all the programmable materials and Solar Panel for back up.

2. In the development of Crop Health Device with Mobile Monitoring System, Grove Temperature and Humidity sensor, Dust sensor, UV sensor, Soil Moisture and Soil Fertility is used for measuring the nutrients of the crop's health.

3. On the features to be considered in terms of Screen Layout, it shows the Bluetooth connection if the device is connected or not connected.

In terms of System Capability, the respondents approved that they received a text message after scanning.

4. On how the respondent's assessment in terms of Screen Design, the data and information regarding the crop could easily be generated and the buttons and theme is appropriate to the or background of the mobile system.

In terms of Effectiveness, the user can receive and determine the exact fertility of the soil and all the information concerning the condition of the crop.

In terms of Functionality, The mobile application is easy to operate and the user could receive a notification regarding his/her crop's nutrient after the scanning process.

Based on the summary of findings and conclusions of the study, the following recommendations were drawn as follows:

1. The experiments did by the researchers are necessary to apply in order to complete the study "Crop Health Device with Monitoring System".

2. Features on Screen Layout, System Capability and Effectiveness on the user should be followed in order to meet the demands of the respondents in the study "Crop Health Device with Monitoring System".

3. The researchers recommend this study "Crop Health Device with Monitoring System" to other students, farmers, crop owners and people who are interested in farming because they know that there are still features that could be added in order for this study to become more functional in the future use, and also, for the people to secure the healthy condition regarding their own crops.

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COMPUTER AIDED ASSESSMENT OF THE PERFORMANCE OF THE GRADUATE STUDENTS IN BASIC NIHONGO

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Trinidad D. Macasil

INTRODUCTION

Learning and knowing Nihongo gives an edge for every learner to link the language with their employment after graduating from colleges or universities. With these realities and employment opportunities, it is necessary in the Philippine education system to include Japanese language as a foreign language as a foreign language to be learned, studied and mastered.

Universities and colleges include Japanese Language Education (JLE) in their curriculum. Japan International Cooperating Agency (JICA), with the guidance of Japan Foundation Manila (JFM) started sending native volunteers to train and assist local Nihongo teachers on how to teach the language more effectively and provided additional instructional materials in the late 90's. On the other hand, few students show remarkable interest and high performance rating on the course. Due for being as a minor subject or an elective, most students regarded Japanese Language Education as an extra unit to complete their course load.

With the international situation at present, where every country is moving forward to globalization, the education sector is challenged to enhance and support students to be ready with the impact of globalization. In 2008, President Gloria Macapagal-Arroyo and Prime Minister Junichiro Koizumi agreed to enter into an Economic Partnership Agreement (EPA) that will booster economic cooperation between the two countries. The agreement will encompass not just trade, but will also cover the mutual recognition of professions and skills, human resource development and technology transfers. It will facilitate the access of Philippine healthcare and information technology professionals in the Japanese Market (TESDA 2008).

Ronda (2013) mentioned in his article that Filipino school children will be encouraged to take up a second foreign language in the two-year senior high school under the K-12 basic education curriculum (BEC) reform program.

Tohsaku (2013) stated that the goal of Japanese language education in the global age should be more than the acquisition of grammatical, phonological and lexical knowledge and functional communicative skills. Rather, it should be the acquisition of social and networking abilities, that is, abilities to encourage in social activities, to connect with others to develop new communities and societies, and improve quality of life by using the Japanese language. These abilities can be best acquired through social networking activities in the real world. This new approach to language teaching is called "social Networking Approach".

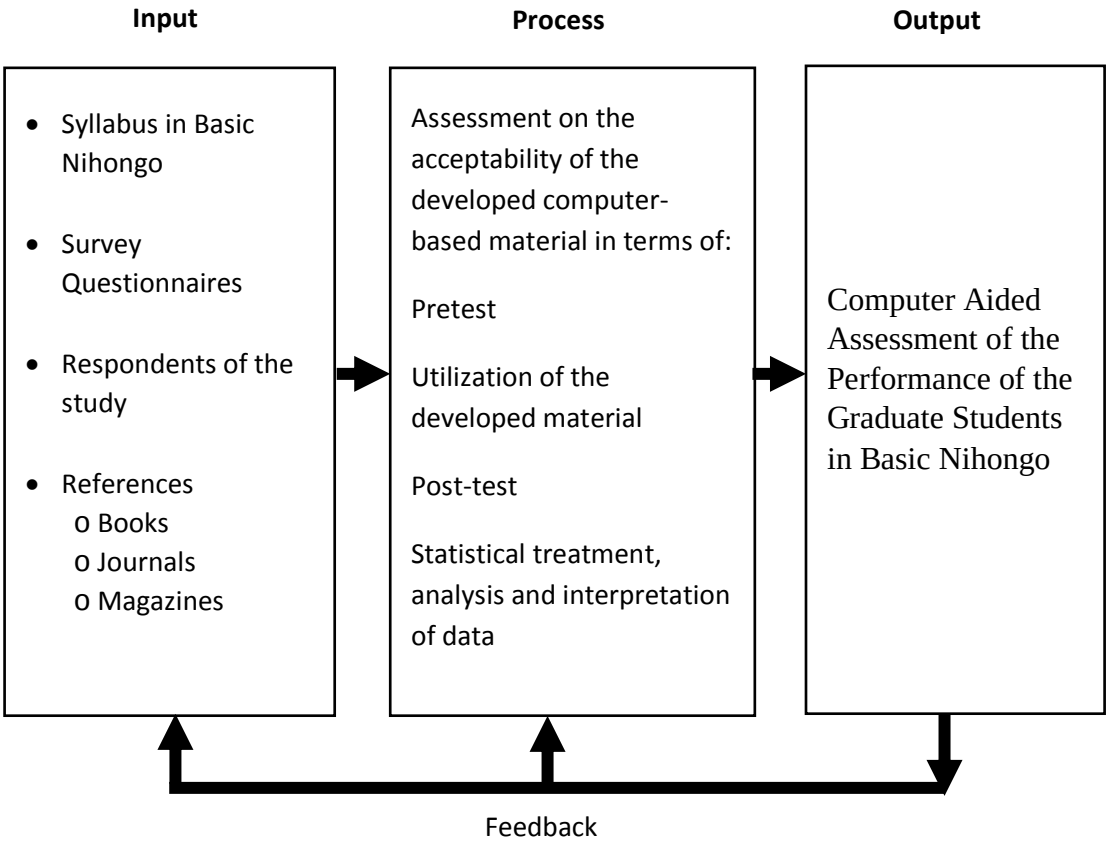
To attain this goal, instructional materials which are educational resources to improve students' knowledge, abilities are very important in the attainment of the desired goal and objectives.

The present study aimed to utilize localized instructional materials which were shown in certain contexts. This method helped them learned the vocabulary before learning the sentence structures or patterns. The introduction of new vocabulary was conducted through exposing them to real objects, places and situations.

The developed material attempted to assess the performance of the students learning the language and the acceptability of the material was assessed by the teachers teaching Basic Nihongo and computer experts.

CONCEPTUAL FRAMEWORK

The development process in the conduct of the study is presented in the paradigm. The researcher conceptualized the Input-Process and Output (IPO) in the conduct of the study.



METHODOLOGY

Research Design

This study made use of the descriptive-survey methods in gathering data and seeking information on the level of acceptability of the developed material.

Descriptive research is used to describe characteristics of a population or phenomena being studied. It does not answer questions about how/when/why the characteristics occurred. The concern on the current status of the phenomena as it describes the "what exists" of the variables or condition in a situation.

Respondents of the Study

The respondents of the study are composed of twelve (12) teachers teaching Basic Nihongo (Japanese Language), six (6) computer experts from different universities, and eleven (11) graduate students in Eulogio "Amang" Rodriguez Institute of Science and Technology (EARIST), Manila during the school year 2016 – 2017.

Data Gathering Procedure

A formal request for permission to conduct the study from the Dean of the Graduate School was secured. After given the permission, constructed and developed the instructional material. The questionnaire-checklist together with the material were distributed to the respondents for them to evaluate its validity and acceptability. A pretest was administered before the actual classes and a post test was given at the end of the Nihongo classes.
Retrieval of the questionnaire and analysis of the results of the evaluation and validation of the respondents was undertaken.

Research Instruments Used

1. Data were gathered through questionnaires. The first questionnaires were used to elicit data on the extent of utilization of materials in assessing the performance of students in Basic Nihongo. The second questionnaire utilized to gather the needed data and information for the research work. The instrument consisted of two (2) parts. Part I was profile of the respondents which included the needed information about the informants. Part II contained the following variables which were rated using the Likert scale: (5) Highly acceptable; (4) Acceptable; (3) Moderately Acceptable; (2) Less Acceptable and (1) Not Acceptable

2. Pretest and Posttest were administered that determined whether the performance was enhanced after using the material

3. Computer Aided Assessment of the Performance of the Graduate Students in Basic Nihongo. The developed material where the performance of students in selected topics were evaluated

Data Analysis

The data gathered were analyzed using the statistical tools as follows: frequency, percentage, ranking, weighted mean, and the T-test for the hypotheses testing.

The data were presented in a tabular form.

Results and Discussions

The data gathered were analyzed and interpreted. This portion presents the salient findings which answers the problems stated.

As to educational attainment of the respondents, three (3) or 16.66% with Master's degree with Doctorate degrees, four (4) or 22.22% with Master's degree, eight (8) or 44.44% with Bachelor's degree with Master's degree and three (3) or 16.66% with Bachelor's degree.

Table 1

Educational Attainment

Educational Attainment	Teachers		Computer Experts		Total	
	f	%	f	%	f	%
Master's degree with Doctoral Units	2	16.67	1	16.67	3	16.67
Master's Degree	3	25	1	16.67	4	22.22
Bachelor's Degree with Master's Degree	5	41.66	3	50	8	44.44
Bachelor's Degree	2	16.67	1	16.67	3	16.67
Total	**12**	**100**	**6**	**100**	**18**	**100**

The length of service, two (2) or 11.11% who have 16 years of above in service; five (5) or 27.78% with 12 to 15 years in service, seven (7) or 38.88% with 8 to 11 years in service, three (3) or 16.67 with 4 to 7 years in service, and one (1) or 5.56% in the 0 to 3 years in service.

Table 2

Number of years in the Service

Years in Service	Teachers		Computer Experts		Total	
	f	%	f	%	f	%
16 years and above	1	8.33	1	16.66	2	11.11
12 – 15	3	25	2	33.33	5	27.78
8 – 11	4	33.33	3	50	7	38.88
4 – 7	3	25	0	0	3	16.67
0 – 3	1	8.33	0	0	1	5.56
Total	**12**	**100**	**6**	**100**	**18**	**100**

Table 3 reveals the assessment of the respondents on the extent of utilization of instructional material in Basic Nihongo.

Generally, the respondents assessed the extent of utilization of Computer Aided Materials in Basic Nihongo as least available with composite mean of 2.85.

Table 3

Assessment of the Extent of Utilization of Computer Aided Materials in Teaching Basic Nihongo

Instructional Material	Teachers		Students		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. Modules	4.12	HA	4.02	HA	4.07	HA	2.5
2. Work text	4.08	HA	3.98	HA	4.03	HA	5
3. Textbook	4.0	HA	4.12	HA	4.06	HA	4
4. Learner's Materials	3.98	HA	4.15	HA	4.07	HA	2.5
5. Computer Aided Materials	2.80	LA	2.90	HA	2.85	LA	7
6. Handbook	4.16	HA	4.18	HA	4.17	HA	1
7. Workbook	3.90	HA	4.04	HA	3.98	HA	6

Table 4 presents the assessment of the respondents on the developed material. Each of the criteria are evidently accepted as depicted by their respective overall weighted mean.

Table 4

Assessment of the Respondents on the developed material as to Objectives

Criteria	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. Objectives are specific and clearly stated	4.08	A	4.00	A	4.04	A	4
2. Objectives are in accordance with learning competencies	4.08	A	3.83	A	3.96	A	5
3. Objectives are attainable and sufficient to improve students' performance	4.00	A	4.33	HA	4.17	A	1.5
4. Objectives are appropriate for students wide range of abilities	4.12	A	4.17	A	4.15	A	3
5.Objectives promote mental, physical and behavioral development of the students	4.0	A	4.33	HA	4.17	A	1.5
Overall weighted mean	**4.06**	**A**	**4.13**	**A**	**4.10**	**A**	

Table 5

Assessment of the Respondents on the developed material as to Learning Contents

Criteria	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. Objectives are specific and clearly stated	3.75	A	4.33	HA	4.04	A	4
2. Objectives are in accordance with learning competencies	4.08	A	4.17	A	4.13	A	2.5
3. Objectives are attainable and sufficient to improve students' performance	3.92	A	4.33	HA	4.13	A	2.5
4. Objectives are appropriate for students wide range of abilities	4.00	A	4.50	HA	4.25	HA	1
5.Objectives promote mental, physical and behavioral development of the students	4.00	A	4.00	A	4.00	A	5
Overall weighted mean	**3.95**	**A**	**4.27**	**HA**	**4.11**	**A**	

Table 6

Assessment of the Respondents on the developed material as to Activities

Criteria	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. Activities are provided for almost all topics	4.17	A	4.00	A	4.08	A	4
2. Activities are simple but relevant to the topics	4.17	A	4.17	A	4.17	A	2
3. Activities can enhance students' skills in analyzing situations and promote deeper understanding of the topic	4.08	A	4.17	A	4.13	A	3
4. Activities promote cooperative learning	4.00	A	4.00	A	4.00	A	5
5. Develop students' awareness of certain laws that are relevant to environmental and social issues	4.08	A	4.33	HA	4.21	HA	1
Overall weighted mean	**4.10**	**A**	**4.13**	**A**	**4.12**	**A**	

Table 7

Assessment of the Respondents on the developed material as to Application

Criteria	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1.The developed system/program operates what is supposed to perform	3.92	A	4.17	A	4.06	A	4
2.The developed system/program performed according to the command	4.25	HA	4.00	A	4.13	A	3
3.The developed system/program gives responses purposively	4.00	A	4.00	HA	4.00	A	5
4.The developed system/program produces the correct result to the degree of accuracy	4.08	A	4.50	A	4.29	HA	1
5.The developed system/program does not hang despite the entry of invalid inputs	4.17	A	4.17	HA	4.17	A	2
Overall weighted mean	**4.08**	**A**	**4.17**	**A**	**4.13**	**A**	

Table 8

Assessment of the Respondents on the developed material as to Evaluation

Criteria	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1.Directions, instructions, and problem statements are simple and easy to follow	4.00	A	4.17	A	4.09	A	4.5
2. Questions are jived with objectives, concepts, and the activities	4.00	A	4.33	HA	4.17	A	2
3. Construction of test questions matched with the level of understanding of the students	4.17	A	4.33	HA	4.23	A	1
4. The types of evaluation used are reliable	4.00	A	4.50	HA	4.13	A	3
5.Questions are clear and understandable	4.17	A	4.00	A	4.09	A	4.5
Overall weighted mean	**4.08**	**A**	**4.27**	**HA**	**4.14**	**A**	

Table 9

Assessment of the Respondents on the developed material as to Clarity

Criteria	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. The visual presentations are clearly seen	4.00	A	4.17	A	4.09	A	4
2. The sentences presented are clearly written	4.25	HA	4.00	A	4.13	A	3
3. The activities are presented in a simple manner that the students can perform and work independently	4.25	HA	4.17	A	4.21	HA	2
4. Pupils can follow the instructions at his own pace	4.33	HA	4.33	HA	4.33	HA	1
5. The language used are clear, brief, and within the level of students' understanding	3.83	A	4.17	HA	4.00	A	5
Overall weighted mean	**4.13**	**A**	**4.17**	**A**	**4.15**	**A**	

Table 10

Assessment of the Respondents on the developed material as to Presentation

Criteria	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. The topics are presented clearly within students' level	4.08	A	4.33	HA	4.21	HA	1.5
2. The language used is within their level of comprehension of the learners	4.25	HA	4.17	A	4.21	HA	1.5
3. The presentation of concepts is well-organized	4.17	A	4.00	A	4.09	A	4.5
4.Interactive activities are interesting and fun	4.08	A	4.17	A	4.13	A	3
5. Long topics are divided into sub-topics for easier understand	4.00	A	4.17	A	4.09	A	4.5
Overall weighted mean	**4.12**	**A**	**4.17**	**A**	**4.15**	**A**	

Table 11

Assessment of the Respondents on the developed material as to Navigation

Criteria	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. It is user friendly	3.92	A	4.33	HA	4.13	A	4
2. Easy to access and manipulate	4.08	A	4.33	HA	4.21	HA	2.5
3.All visual elements are successfully integrated into the learning sequence	4.33	HA	4.17	A	4.25	HA	1
4.The selected topics can be easily shown	4.42	HA	4.00	A	4.21	HA	2.5
5.Information is delivered without obstruction	4.00	A	4.00	A	4.00	A	5
Overall weighted mean	**4.15**	**A**	**4.17**	**A**	**4.16**	**A**	

Table 12

Assessment of the Respondents on the developed material as to Usefulness

Criteria	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. Activity-oriented materials	4.17	A	4.00	A	4.09	A	4.5
2. It will make teaching and learning more fun	4.33	HA	4.00	A	4.17	A	1.5
3. Acquisition of knowledge is more interesting	4.17	A	4.00	HA	4.09	A	4.5
4.Teaching materials are adaptable to the need and interest of the students	4.08	A	4.17	A	4.13	A	3
5. It deepens students' abilities to comprehend and explain theories	4.33	HA	4.00	HA	4.17	A	1.5
Overall weighted mean	**4.22**	**HA**	**4.03**	**A**	**4.13**	**A**	

Table 13 shows the summary of the assessment of the two groups of respondents. The composite means of the 9 variables are presented with the highest rank down to the least and these are as follows: Navigation (WM = 4.16); Clarity and Presentation (WM = 4.15); Application and Evaluation (WM = 4.13); Activities (WM = 4.12); Learning Contents (WM =4.11) and Objectives (WM= 4.10). All the variables are accepted as manifested by the overall weighted mean which is 4.10.

Table 13

Summary of the Assessment of the Respondents on the developed material

Variables	Teachers		Computer Experts		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. Objectives	4.06	A	4.13	A	4.10	A	9
2. Learning Contents	3.95	A	4.27	HA	4.11	A	8
3. Activities	4.10	A	4.13	A	4.12	A	7
4. Application	4.08	A	4.17	A	4.13	A	4.5
5. Evaluation	4.08	A	4.27	HA	4.13	A	4.5
6. Clarity	4.13	A	4.17	A	4.15	A	2.5
8.	4.12	A	4.17	A	4.15	A	2.5
9. Presentation	4.15	A	4.17	A	4.16	A	1
9. Navigation	4.22	HA	4.03	A	4.13	A	6
Overall Weighted Mean	**4.10**	**A**	**4.17**	**A**	**4.13**	**A**	

The mean performance score of the students in the pretest is 60.30 and interpreted as average while the mean performance score in the posttest is 90 and interpreted as closely approximating mastery. This means that the performance of the students improved after using the developed material.

Table 14

Results of the pretest and posttest of the students before and after using the developed material

Pretest		Verbal Interpretation	Posttest		Verbal Interpretation
Mean	MPS		Mean	MPS	
6.18	60.30	Average	24.45	90	Closely Approximating Mastery

Table 15 showing the computed t-value of 7.95 is significant at .05 level which is greater than the critical value of 1.81. Hence, the null hypothesis is rejected and this implies that the developed material is effective in improving the performance of the students in Basic Nihongo.

Table 15

Significant Difference in the Pretest and Posttest Mean Scores of the Students

Computed t-value	Critical value at .05	Decision	Interpretation
7.95	1.81	Reject H_o	Significant

CONCLUSIONS

In the light of the findings of this study, the following conclusions were drawn:

1. The respondents assessed the extent of utilization of Computer Aided Material in teaching Basic Nihongo as least available.

2. Based from the findings a computer-aided material was developed consisting the selected topics in Basic Nihongo such as: vocabulary; the use of *kore* (this), *sore* (that), and *are* (that over there); the use of *kono* (this), *sono* (that) and *ano* (that over there); Numerical classifiers of objects and proposition of locations and places.

3. The computer-aided material in teaching Basic Nihongo was acceptable to the teachers and computer experts.

4. There is no significant difference on the assessment of the two groups of respondents. This implies that they agreed that the developed material was effective in teaching Basic Nihongo.

5. The students performed better after they were exposed to the developed materials.

Recommendations

Based on the conclusions drawn the research recommends the following:

1. Utilization of the developed computer aided assessments of the performance of the students in Basic Nihongo to enhance the skill of the students as they enjoy learning the subject

2. Administrators should encourage teachers of Basic Nihongo to develop computer-aided materials to supplement strategies in teaching the subject

3. Teachers attend in-service trainings on the development of computer-aided instructional materials not only in the teaching of Basic Nihongo but also the other subjects

4. Encourage students to integrate real-life objects/places and actual scenario in teaching Basic Nihongo

5. The output of the present study be published, disseminated and utilized by all concerned as information and instructional materials and elicit feedback for purposes for revision and enrichment

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TBC FURNITURE

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INTRODUCTION

A table is an item of furniture with a flat top and one or more legs, used as a surface for working at or on which to place things. Some common types of table are the dining room table, which is used for seated persons to eat meals, the coffee table, which is a low table used in living rooms to display items or serve refreshments, and the bedside table, which is used to place an alarm clock and a lamp. Tables come in a wide variety of materials, shapes, and heights dependent upon their origin, style, and intended use. Many tables are made of wood or wood-based products, some are made of other materials including metal and glass. Most of them are composed of a flat surface and one or more support legs. A table with a single, central foot is a pedestal table. Long tables often have extra legs for support. Table tops can be in virtually any shape, it can be rectangular, square, round and oval tops are the most frequent. Others have higher surfaces for personal use while either standing or sitting on a tall stool. Many tables have tops that can be adjusted to change their height, position, shape, or size, either with foldable, sliding or extensions parts that can alter the shape of the top. Some tables are entirely foldable for easy transportation, like camping Tables can be freestanding or designed for placement against a wall. Tables of various shapes, heights, and sizes are designed for specific uses: Dining room tables are designed to be used for formal dining. Bedside tables, nightstands, or night tables are small tables used in a bedroom. They are often used for convenient placement of a small lamp, alarm clock, glasses, or other personal items. Coffee tables are low tables designed for use in a living room, in front of a sofa, for convenient placement of drinks, books, or other personal items. Refectory tables are long tables designed to seat many people for meals. Drafting tables usually have a top that can be tilted for making a large or technical drawing. Nested tables are a set of small tables of graduated size that can be stacked together, each fitting within the one immediately larger. They are for occasional use such as a tea party, hence the stackable design. These are the different examples of tables and their uses.

A bed is a piece of furniture used as a place to sleep or relax. Most modern beds consist of a soft, cushioned mattress on a bed frame, with the mattress resting either on a solid base, often wood slats, or a sprung base. Many beds include a box spring inner-sprung base, a large mattress-sized box containing wood and springs that provide additional support and suspension for the mattress. Beds are available in many sizes, ranging from infant-sized bassinets and cribs, small beds for a single child or adult, to large queen and king-size beds designed for two adults. While most beds are single mattresses on a fixed frame, there are other varieties, such as the Murphy bed, which folds into a wall, the sofa bed, which folds out of a sofa, and the bunk bed, which provides two mattresses on two tiers. Temporary beds include the inflatable air mattress and the folding camp cot. Some beds contain neither a padded mattress nor a bed frame, such as the hammock. Beds may have a headboard for resting against, with others also having side rails and footboards or footers.

A chair is a piece of furniture with a raised surface, used to sit on. Most often, it is with four legs and has a back, however, a chair can have three legs or can have a different shape. These are made of a wide variety of materials, ranging from wood to metal to synthetic material or plastic and they may be padded or upholstered in various colors and fabrics, either just on the seat as with some dining room chairs or on the entire chair. Chairs are used in a number of rooms in homes and in various other workplaces.

The researchers as future draftsmen used the project development method and this study was conducted specifically to innovate, design and construct a three in one (3 in 1) piece furniture. This project was named TBC furniture. It is a one piece furniture that can be converted into three different furniture; T stands for table, B stands for Bed and C stands for chair. TBC Furniture is composed of three major parts; 1. The table with seats, where the table top also functions as backrest for the chair and as 2. Bed flat form when converted into bed 3. The sitting part or Chair with built in storage cabinet or box. TBC Furniture combines all 3 to form a furniture with discreet function. A present innovation to provide a new and improved functional and structural design furniture convertible into Table, Bed, and Chair. Another objective of the present innovation is to provide an aesthetically pleasing piece of furniture that is easy to assemble and can be used by everyone in their daily lives and activities.

STATEMENT OF THE PROBLEM

This study mainly focused on the development and construction of a three in one furniture called TBC Furniture, Furniture plays a major role in the overall look and feel of your living space. It reflects the homeowner's personality, likes, and interests. In an era where everything is almost always on the go, people tend to look for things that have a lot of use so that they wouldn't need too much stuff to maintain. Hence, the invention of gadgets and accessories with various features and uses. This trend has also been applied in furniture innovations which led to the discovery of multipurpose furniture. Multipurpose furniture gives you the opportunity to utilize as little space as possible while serving several functions.

Specifically, this study sought to answers the following sub problems:

1. What are the materials, tools and equipment, and procedure in the preparation and development of TBC Furniture?

2. How do faculty, Drafting Technology students and Adviser's evaluate the quality of TBC Furniture?

3. How useful is the present innovation can be used by everyone in their daily lives and activities?

Development of the Project

Supplies and Materials

Table 1 presents the list of supplies and materials used in the development of the project with the total project costing.

Table 1 Supplies and Materials

QTY	UNIT	DESCRIPTION	UNIT COST	TOTAL COST
3	Pcs.	Plyboard 3/4	930.00	2,790.00
5	Pcs.	½ X 1 X 12 Wood Cleats	72.00	360.00
1	Liter	Polituff	180.00	180.00
1	Pc.	Wood Glue	50.00	50.00
4	Pcs.	Hinges	10.00	40.00
13	Sht.	Sand Paper #150 Grit	15.00	195.00
1	Pc.	Piano hinges	100.00	100.00
16	Pcs.	s/s Hex Bolt ¼ X3w/m	15.37	245.92
3	Pcs.	Hinge 3”	17.00	51.00
1/2	Kl.	Flat Head Screw 1” Diameter 0.04	50.00	50.00
2	Gal.	Locker Thinner	220.00	440.00
4	Pcs.	Hook and Eye	5.00	20.00
1	Pc.	Sandflex	50.00	50.00
2	liter	Boysen Thalo-blue	240.00	480.00
1	60 ml.	Acry Black	35.00	35.00
4	Pcs.	2 ½ ” Brush	25.00	100.00

GRAND TOTAL = P 5,186.92

Construction Procedure

The procedure listed is the order of steps in the construction of Table, Bed and Chair.

1. Gather all the needed listed Tools and Materials.

2. Refer to the prepared drawing plan for the details of the project.

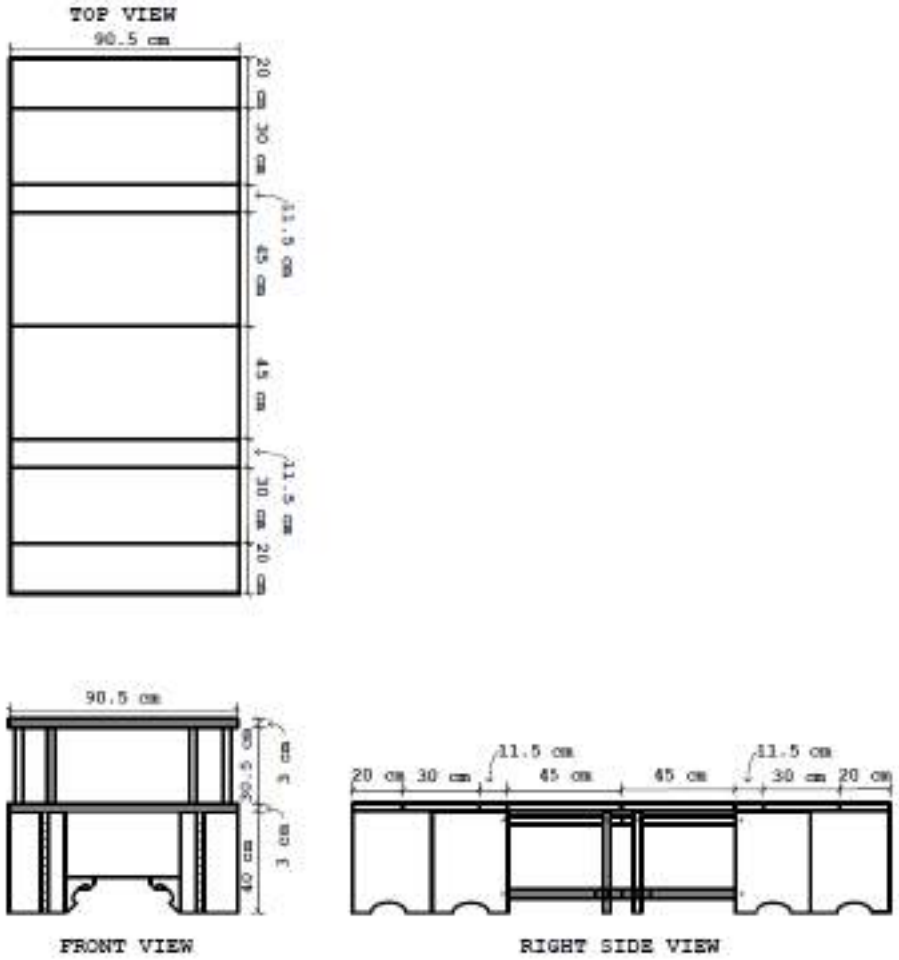

Figure 1. Working Drawing of TBC Furniture

Figure 2. Working Drawing of Bed

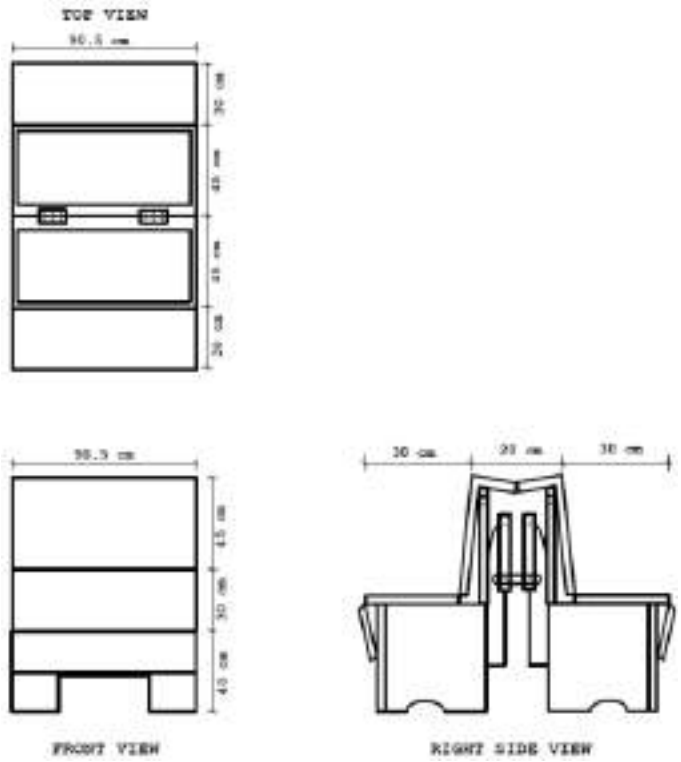

Figure 3. Working Drawing of Chair

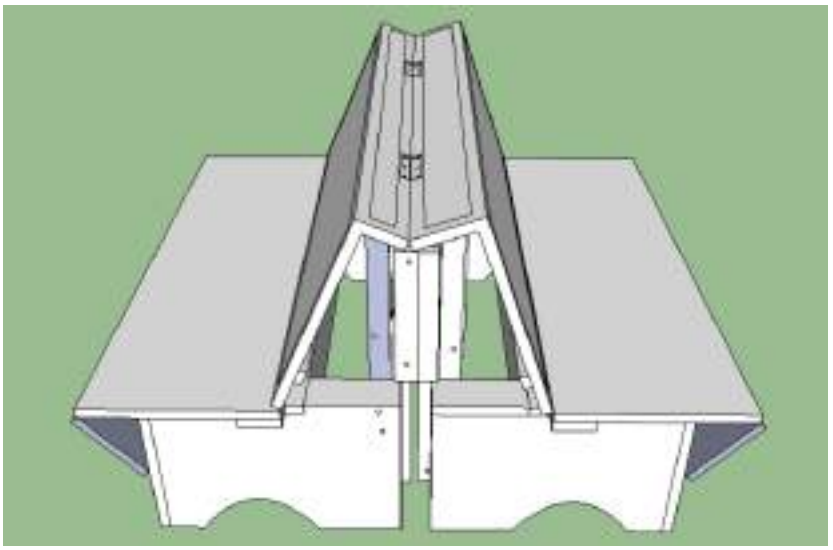

Figure 4. Pictorial Presentation of Chair

3. Mark and cut all the pieces as shown in the picture below. Refer to the individual piece plan on the previous page for the dimensions of each individual piece. Place a sticker on each marked piece. Write the piece identification number on each sticker for future reference.

4. Make a pattern for the round cuts and bolt holes. Cut out the circle and that will be your pattern. Using the pattern, mark and cut the round shapes on pieces as shown in the pictures below. Each pair should be a mirror image of one another. The middle of the pattern will mark the center of the bolt holes.

5. Each bolt hole will begin with a wider starter hole to embed (countersink) the bolt head or nut.

6. After cutting the pieces of each part, create the structure of the two chair. This is the main focus of this prototype because the two chair connects the table and bed. The following pictures below represent the structure of both chairs:

7. Structure of the back seat side frames.

8. Prepare the seat boards.


9. Add the seat board.


10. Structure of the front legs


11. Connect the table rails to the leg extensions and assemble the Side Frames.


12. Connect the seat braces and add the Table top boards.


13. Remove the table top board, move the two seat braces downward and put back again the table top board to form a bed.


14. Move the two seat braces upward to form a chair.


15. For the finishing of the Table, Bed and Chair. Use sand paper on the surface of the wood until it becomes smooth.

16. Check if all surfaces of the furniture are already smooth. If still there is a rough surface use sand paper.

17. Lastly, be ready to paint the parts of the prototype.


Cost Analysis

The TBC Furniture was based on material cost, labor cost, overhead cost, thus the materials cost was 35%, the Labor cost 35% and 15% on the overhead cost.

The material cost amounted to five thousand one hundred eighty six and ninety two centavos (PhP 5,186.92); the labor cost is one thousand three hundred sixty five pesos (PhP 1,365),and the overhead cost is therefore seven hundred seventy eight and thirty eight centavos (PhP778.38). The total cost of the development and construction of a 3-in-1 furniture is seven thousand three hundred twenty nine and ninety six centavos (PhP 7,329.96).

Table 5 presents the cost of materials and other expenses relative to the development and construction of a 3-in-1 Furniture.

Table 2

Cost Analysis

Cost	Total price
Material Cost	5,186.92
Labor Cost	1,365.00
Overhead Cost	778.038
Total Cost	7,329.96

The Development and Construction of TBC Furniture has a total cost of seven thousand three hundred twenty nine and ninety six centavos. The material cost has an amount of five thousand one hundred eighty six and ninety two centavos which is 35%, and the labor cost is 35% with an amount of one thousand three hundred sixty five while the overhead cost which is 15% amounted to seven hundred seventy eight pesos and thirty eight centavos.

Interrelationship

This research was designed to be space saver furniture: TBC Furniture is generally made of ply board that has a smooth and flawless surface. It is also a multi-function furniture move in specific angle in relation to the Anthropometric Data and Aerodynamics to make the user more comfortable. The Chair Joints is used to support the table and bed. The Hook is used to lock the chair while sitting.

Capabilities

TBC furniture is capable of Triple functions. It can perform the function of a Table, Bed and it can be used also as a chair to seat on.

Process

This covers procedural steps for the use and operation of the project, it also includes the proper maintenance, and the safety and control measures.

Assembly Procedure

The following processes are the steps for using the TBC Furniture.

1. Assemble the two chairs and arrange the seat braces that support the table and bed.
2. To form a Table, put the top board on the top of seat braces.
3. To convert the Table into Bed, remove the top board and move the seat braces downward and place again the top board.
4. To convert the Bed into a Chair, remove the top board and move the seat braces upward and attached the top board on both sides.

Maintenance

To maintain the good conditions for an overall functionality observe the following:

1. Wipe the wood surface of the table with clean dry cloth before and after use, this is hereby recommended to keep it from dust and stain.
2. Solid wood is a living material that is affected by daylight and humidity. The ideal relative humidity for solid wood tables is between 30% and 60%. Therefore solid wood furniture should not be placed too close to heat sources such as wood-burning stoves or radiators.
3. Solid wood table tops are also affected and dried by direct sunlight. Both factors contribute to very low relative humidity which may cause cracks in the table top and hence should be avoided.

SUMMARY OF THE FINDINGS

Based on the observation and analysis of this study, the following are hereby presented:

1. From the supplies, tools and materials such as ply board, edging, screw, nails, bolts and nuts, hinges, polituff, sandflex, stick well, sand paper, masilya, paint, and paint brush, the three in one fixtures called TBC Furniture was constructed.
2. This TBC Furniture weights 25 kilos.
3. Everyone could provide their own TBC Furniture that can be used in any activities.
4. The development of this furniture will provide relaxation and comfort to everyone who used it.
5. The TBC Furniture (Table, Bed and Chair) is easy to put in place in any situation.

6. The production cost of developing and constructing the TBC Furniture was much lower compared to when buying a separate Table, Bed and Chair since the furniture is three in one.

CONCLUSIONS

From the cited findings, the researchers of this study arrived at the following conclusions:

1. The supplies and materials, tools and the procedures in the construction of the Table, Bed and Chair are identified.
2. The TBC Furniture is an original design.
3. The TBC Furniture is functional and effective.
4. The TBC Furniture is very useful.

RECOMMENDATIONS

In the light of the findings and conclusions, the following recommendations were forwarded:

1. Financial support from our guardian in the reproduction of the project.
2. The development and construction of 3-in-1 furniture which is the Table, Bed and Chair, be innovating to become an effective products that are acceptable in the market.
3. Royalty may be given to the proponents for it is their intellectual property.

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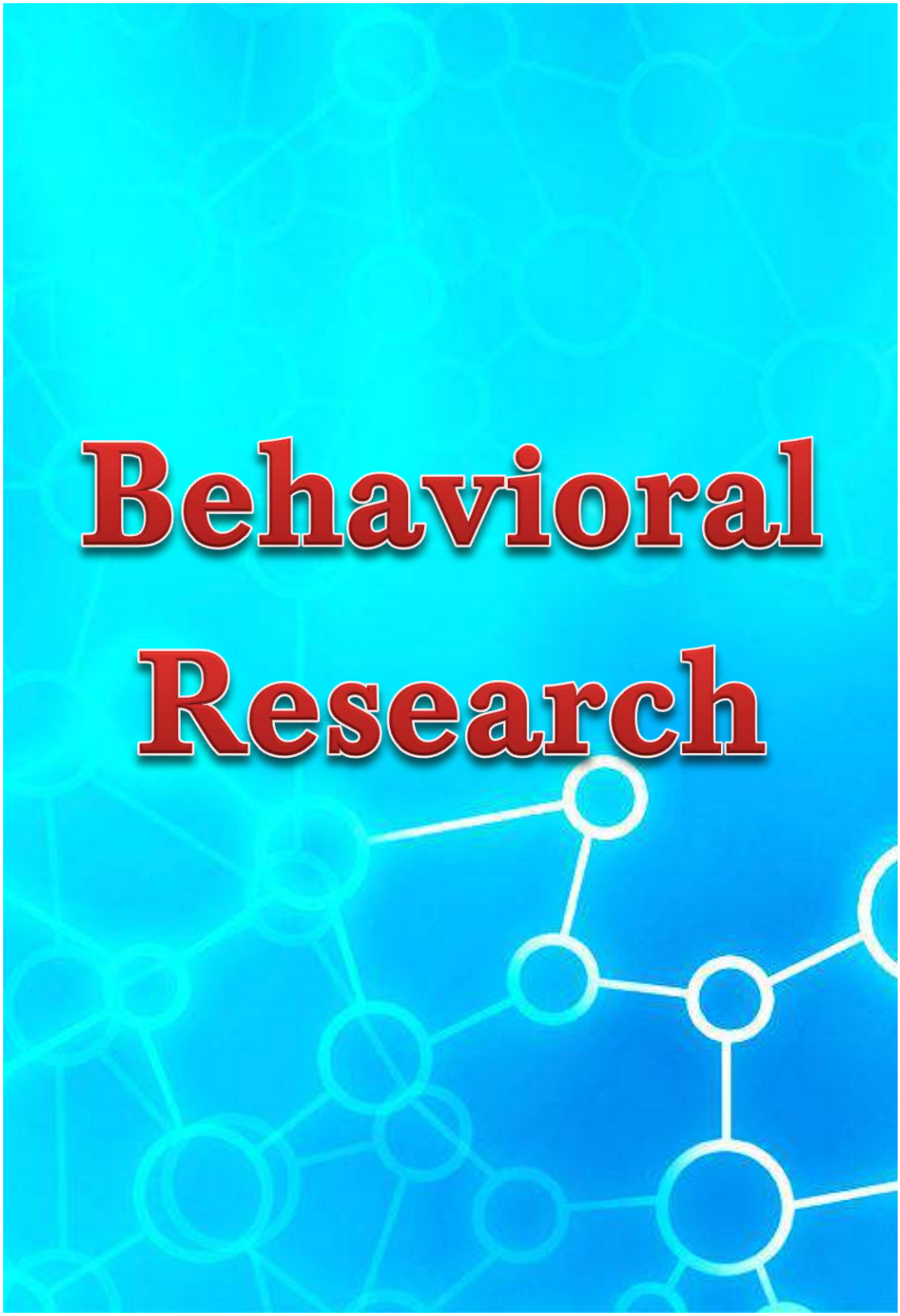

GOING BEYOND REPLICATION: ANALYSIS OF RESEARCH TITLES FOR TECHNOLOGY-BASED POLICY ENHANCEMENT

Rowena A. Bolotaolo

INTRODUCTION

Research in the graduate programs particularly at the doctoral level is intended to advance the frontiers of knowledge through the generation of new knowledge, test or apply theory, or improve existing practices. As the apex of formal education, scholarship and academic excellence must be reflected in the doctoral dissertations which ultimately speak for the prestige of the institution. The EARIST Graduate School offers the following doctoral programs: EdD in Educational Management, Ph.D. in Industrial Psychology, Doctor in Public Administration (DPA) and Doctor in Business Administration (DBA). Dissertation writers often meet difficulty in searching for topics to undertake research for their doctoral dissertation. Without a definitively compiled list of these titles or topics, there is a tendency to duplicate previous research. Among the most common problem areas are leadership styles, managerial practices, development of instructional materials, and the various student services. According to Upcraft (2003) assessment is becoming more important because it can be used to improve the quality of student services and programs, guide strategic planning, analyze cost effectiveness, justify student programs and services, assist in accreditation, and perhaps most importantly, guide decision making, policies, and practices. Strange (2003) asserted that the potency of any educational environment, whether a classroom, a residence hall, a student organization, or an entire campus, is a function of its design (planned or not), what it encourages and expects students to do, and what ends it serves. Effective educational settings take advantage of their physical, human aggregate, organizational and constructed features to offer inclusive, safe, involving, and communal environments to sustain and challenge students to learn, develop, and grow. Roper (2003) stressed that teachers build relationships with learners while providing them with the knowledge, skills, and awareness necessary to function in their social and professional roles. Educators must consciously develop the competencies needed in order to be good teachers and trainers. Content is important, but content loses meaning when it is not presented in a way learners can understand and translate into the desired behavior. Kimbrough and Nunnery (2003) identified critical task areas of educational administration as instruction and curriculum development, pupil personnel, community-school leadership, staff personnel, school plant, school transportation, organization and structure, and school finance and business management. Dela Paz Tomas (2014) reported that majority of the studies' participants were a mixed sample in terms of gender, but as regards age, more were adolescents or early adults sample in the college setting. As to research design, the primary research framework used was the research paradigm with a strong graphical representation of an Input-Process-Output framework. Many of these studies were quantitative in nature-descriptive-exploratory and used a lot of researcher-constructed measures (scales or interview schedules). Robles (2012) reported conclusive findings on a comprehensive survey of state-of-the-art review of educational research in the Philippines included the following: (1) the learner; (2) instructional materials; (3) instructional processes, systems, and procedures; (4) contextual variables; and (5) teacher outputs.

In order to promote this scholarship, this study is undertaken to provide a definitive master list of dissertation titles which will serve as a guide or accessible reference for the graduate students and advisers in preparing their dissertation proposals and to avoid or prevent duplication and intellectual piracy in the doctoral program. Likewise, findings will serve as a basis to improve practices in pursuit of scholarly outputs in the graduate school.

METHOD

This study utilized descriptive research with content analysis and open-ended questionnaire as research instruments. Data was sourced from 260 dissertation titles in the Doctor of Education major in Educational Management program from AY 1995-2014 and 100 doctoral candidates as respondents. The analysis focused on identifying and classifying dissertation titles according to subject/course, grade/year levels, programs and practices, item analysis in the elementary, secondary and tertiary levels.

RESULTS AND DISCUSSION

Commonalities of dissertation titles as to instructional materials by subject/course and grade/year level

Elementary Level. Table 1 presents the distribution of dissertation title undertaken by subject and grade level in the Elementary Level.

Table 1

Distribution of Dissertation Titles (Instructional Materials-Elementary Level)

Subject	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Total	%	Rank
Mathematics	1	3		1	4	4	13	28.26	1
Filipino		1	1			1	3	6.52	5
Reading	5		1			6	12	26.09	2
Physical Education						2	2	4.35	7
English			1	1		2	4	8.70	4
Science and Health				1	4	3	8	17.39	3
Edukasyong Pantahan at Pangkabuhayan (EPP)						1	1	2.17	9
Character Education				1	1		2	4.35	7
HEKASI				1		1	2	4.35	7
Total	6	4	3	5	9	19	46	100	

There were nine subjects as the main focus of developing instructional materials in the Elementary Level. Mathematics (n=13; 28.26%), Reading (n=12, 26.09%), and Science and Health (n=8; 17.39%) have the most number of these research outputs.. With six instructional materials, Reading in Grade VI has the most number of instructional materials developed.

Secondary Level. Table 2 reflects the distribution of dissertations undertaken by subject and year level at the Secondary Level.

Table 2
Distribution of Dissertation Titles (Instructional Materials-Secondary Level)

Subject	First Year	Second Year	Third Year	Fourth Year	Total	%	Rank
Electronics Technology			2	2	4	11.11	3.5
Makabayan (Araling Panlipunan)	2	1			3	8.33	6
English	2	1		1	4	11.11	3.5
Mathematics	2	1	4	1	8	22.22	1
Values Education	1				1	2.78	9.5
Electrical Technology		2	1		3	8.33	6
Drafting Technology	3				3	8.33	6
Civil Technology			1		1	2.78	9.5
Science & Technology	2	1	2	2	7	19.44	2
Business Management				1	1	2.78	9.5
Computer	1				1	2.78	9.5
Total	13	6	10	7	36	100	

Based on table 2, eleven subjects in the secondary level were the focus of developing instructional materials with Mathematics (n=8; 22.22%), Science & Technology (n=7; 19.44 %) and English and Electronics Technology (n=4; 11.11%) gained the most outputs. However, Mathematics in the Third Year had the most number of instructional materials developed.

Table 3
Distribution of Dissertation Titles (Instructional Materials-Tertiary Level)

Course	First Year	Second Year	Third Year	Fourth Year	Total	%	Rank
English	10				10	27.78	1
Computer	1				1	2.78	14
Garments	1				1	2.78	14
Trigonometry		1			1	2.78	14
Probability and Statistics		1			1	2.78	14
Electrical Technology		1			1	2.78	14
Entrepreneurship	1				1	2.78	14
Algebra	1				1	2.78	14
Biology	1				1	2.78	14
Mathematics	1				1	2.78	14
College Physics	1				1	2.78	14
Drafting Technology	1				1	2.78	14
Physical Science		1			1	2.78	14
Filipino	2				2	5.56	3.5
Management	1				1	2.78	14
Philippine History	2				2	5.56	3.5
General Botany	1				1	2.78	14
Ceramics	1				1	2.78	14
Business Mathematics	1				1	2.78	14
Agriculture	1				1	2.78	14
Digital Electronics	1				1	2.78	14
Industrial Automation		1			1	2.78	14
Fishery	3				3	8.33	2
Total	**31**	**5**			**36**		

Tertiary Level. Table 3 shows the distribution of dissertations undertaken in developing instructional materials by course and year level in the Tertiary Level.

Among the 24 courses at the tertiary level as the focus of developing instructional materials, there was proliferation of instructional materials produced in English (n=10; 27.28%) followed by Fishery (n=3; 8.33%), Filipino (n=2; 5.56%), and Philippine History (n=2; 5.56%) for First Year students. For the Second Year level, only one instructional material was produced for these courses: Trigonometry, Probability and Statistics, Electrical Technology, Physical Science and Industrial Automation. These findings closely resemble previous survey results on higher education that broad areas of topics are (1) the general education courses, (2) teaching effectiveness, (3) profiles of college students employing descriptive research design, with survey questionnaires as the most popular data collection tool (Bernardo, 1998; Salazar-Clemena, 2006).

Commonalities of dissertation title as to item analysis or students' level of performance

In the Elementary Level, there were three (3) subject areas in which item analysis on achievement test was undertaken, namely: Filipino (Grade III), Science and Health (Grade VI), and HEKASI (Grade VI). In the Secondary Level, four studies were undertaken on analysis of Achievement Tests in various subject areas (Mathematics, Science and Technology II, III, and Araling Panlipunan 2). In the Tertiary Level, one study was undertaken on the Departmental Examination in Psychology

Commonalities of dissertation titles as to programs/practices

Elementary Level. Table 4 presents the distribution of dissertations on Programs/Practices at the elementary level.

Table 4

Distribution of Dissertation Titles on Programs/Practices (Elementary Level)

Programs/Practices	Frequency	%	Rank
Basic Education Curriculum	4	8.70	4
Computer Literacy/Training Program	1	2.17	15.5
Development Plan	2	4.35	7.5
Edukasyong Pantahan at Pangkabuhayan Program	1	2.17	15.5
Elementary Science and Health Program	3	6.52	5
Leadership	7	15.22	1.5
Learning Action Cell	1	2.17	15.5
Makabayan Program	1	2.17	15.5
Management Information System	1	2.17	15.5
Non-Formal Education/Alternative Learning System	7	15.22	1.5
Performance Appraisal System	1	2.17	15.5
Performance Levels	2	4.35	7.5
Personnel Management Policies and Practices	1	2.17	15.5
Principal Empowerment	1	2.17	15.5
Quality of Work Life	1	2.17	15.5
Preschool Program	1	2.17	15.5
Reading Program	5	10.87	3
Scouting	2	4.35	7.5
Special Education	2	4.35	7.5
Teacher Performance (TLE)	1	2.17	15.5
Teaching Competencies (Mathematics)	1	2.17	15.5
Total	46	100	

Based on Table 4, there were 46 studies on 21 programs/practices were studied at the elementary level. The most frequently studied topics for dissertation was Leadership and Non-Formal Education/Alternative Learning System (n=7; 15.22 %). This was followed by Reading Program (n=5; 10.87%), Basic Education Curriculum (n=4; 8.70%) and Elementary Science and Health Program (n=3; 6.20%).

Secondary Level. Table 5 presents the distribution of dissertations on Programs/Practices at the secondary level.

As reflected in Table 5, 24 studies on 18 programs/practices in the secondary level were undertaken with Basic Education Curriculum (n=2; 8.33%) and Vocational Technical Education (n=2; 8.33%) were most frequently studied.

Table 5

Distribution of Dissertation Titles on Programs/Practices (Secondary Level)

Programs/Practices	Frequency	%	Rank
Basic Education Curriculum	2	8.33	1.5
Campus Journalism	1	4.17	10.5
Co/Extra-curricular activities	1	4.17	10.5
Drug Prevention	1	4.17	10.5
Edukasyong Pantahan at Pangkabuhayan Program	1	4.17	10.5
Entrepreneurship	1	4.17	10.5
Guidance	1	4.17	10.5
Human Relations Practices/Work Attitudes	1	4.17	10.5
Leadership Styles	1	4.17	10.5
Learning Styles	1	4.17	10.5
Livelihood Education Programs	1	4.17	10.5
Managerial Effectiveness	1	4.17	10.5
Managerial Roles	1	4.17	10.5
Physical Education Program	1	4.17	10.5
Technology & Livelihood Education Program	1	4.17	10.5
Environmental Awareness	1	4.17	10.5
Vocational Technical Education	2	8.33	1.5
Work Values	1	4.17	10.5
Total	24		

Tertiary Level. As reflected in Table 6, out of the 72 studies in 39 programs/practices, Student Teaching (n=8; 11.11%) was the most studied followed by seven (7) studies on Information Communication Technology/System (n=7; 9.72 %); Curriculum (n=6; 8.33 %); and Accreditation and Development Plan/Program (n=4; 5.56 %).

Table 6

Distribution of Dissertation Titles on Programs/Practices (Tertiary Level)

Programs/Practices	Frequency	%	Rank
Accreditation	4	5.56	4.5
Admission Test	2	2.78	11.25
Biochemistry	1	1.39	26.5
Business Administration	1	1.39	26.5
Career Officers Course (National Police College)	1	1.39	26.5
Competency Skills	1	1.39	26.5
Conflict Management	1	1.39	26.5
Cooperative Education	1	1.39	26.5
Curriculum	6	8.33	3
Departmental Examination	1	1.39	26.5
Development Program/Plan	4	5.56	4.5
Educational Assistance Program	1	1.39	26.5
Educational Technology Center	1	1.39	26.5
English Program/Proficiency	3	4.17	6
Extension Services	1	1.39	26.5
Faculty and Staff Development Program	1	1.39	26.5
Faculty Empowerment	1	1.39	26.5
Filipino as Medium of Instruction	1	1.39	26.5
Food Technology Program	2	2.78	11.25
Graduate Program	1	1.39	26.5
Higher Education Modernization Act	1	1.39	26.5
Hospitality Management	1	1.39	26.5
Information Communication Technology/System	7	9.72	2
Industrial Technology	2	2.78	11.25
Interactive Learning/Utilization	2	2.78	11.25
Laboratory High School Program	1	1.39	26.5
Language Learning	1	1.39	26.5
Learning Style	1	1.39	26.5
Library Services	2	2.78	11.25
Peace Education	1	1.39	26.5
Student Services	1	1.39	26.5
Student Teaching	8	11.11	1
Student Technologists and Entrepreneurs	1	1.39	26.5
Teacher Training	2	2.78	11.25
Technical Vocational Education	2	2.78	11.25
Total Quality Management	1	1.39	26.5
Tracer Study (Employability)	2	2.78	11.25
Training Programs	1	1.39	26.5
Total	72		

On problems encountered by the doctoral students in writing their dissertation

Table 7 presents the problems encountered by the dissertation researchers.

Table 7

Problems Encountered by Dissertation Writers

	Problems	Frequency	Rank
1.	No manual or standard guideline as a reference in writing the chapters.	67	1
2.	Statistical software is not used for data analysis.	65	2
3.	The library is sometimes closed.	23	9
4.	Inadequate reference materials and journals in the library.	55	5
5.	A patent search is not availed for technical topics.	63	3
6.	No clear policy on intellectual property protection of outputs.	58	4
7.	The adviser is not easily available for consultation.	29	8
8.	Confusing advice from faculty and adviser.	34	7
9.	Not enough funds.	12	10
10.	Not much time to finish dissertation because of workload.	45	6

Based on Table 7, ten problems were encountered by students in writing their dissertation. Foremost problems were lack of a manual or standard guideline as reference in writing their dissertation (n=67; rank 1), statistical software is not used for data analysis (n=65; rank 2), patent is not availed for technical topics (n=63; rank 3), no clear policy on intellectual property protection of outputs (n=58; rank 4), and inadequate reference materials and journals in the library (n=55; rank 5).

Implications for policy enhancement measures

For scholarly dissertation writing, this study implies some policy enhancement measures, namely: (a) update the Manual on Thesis and Dissertation Writing to incorporate latest guidelines in the 6th edition of the APA Publication Manual as an important guide for researchers and advisers as they undertake their research study; (b) there is also a need to subject all technology/technical research to evaluation by the Innovation Technology Support Office for patent search in order to avoid duplication of patented outputs; (c) a statistical center must be established to centralize all statistical analysis using statistical software for objective analysis of empirical data and (d) capacity building training in conducting qualitative studies or mixed method studies and writing/publishing in refereed journals may be undertaken.

CONCLUSION

In this study, there are common subject areas/courses in the elementary, secondary and tertiary levels in which dissertations studies have been frequently undertaken or replicated. Technical and personal problems were encountered by the dissertation writers while they are conducting and writing their dissertation. For policy enhancement, there is a need to update the standard format for thesis or dissertation writing, undertake a patent search of technological and technical research outputs, establish the statistical center, utilize statistical software, and improve capacity to undertake qualitative and mixed method research methods and writing/publishing in refereed journals may be undertaken, develop more ICT-based instructional materials and teaching approaches utilizing varied platforms and modalities.

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TEACHERS' BELIEFS, PRACTICES AND ATTITUDES ON SCIENCE AND TECHNOLOGY TEACHING AND LEARNING

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Anna Buenaseda
Daisy Mae Bongtiwon

I. INTRODUCTION

Teachers' beliefs, practices and attitudes are important for understanding and improving educational processes. They are closely linked to teachers' strategies for coping with challenges in their daily professional life and to their general well-being, and they shape students' learning environment and influence student motivation and achievement (OECD 2009).

Teachers' beliefs about education, schooling, teaching, learning, students and matters beyond their profession was becoming a vital issue in current education reforms (Parvinder Singh all Amar Sing, Zurida Haji Ismail 2007). The beliefs that teachers have about science and technology and science instruction play a critical role in shaping their patterns of instructional behavior (Garcia,Cathleen April 2003). Teachers' beliefs, attitudes and educational philosophies influence their teaching approaches (Thomas,Martin October 2013). Teacher attitudes and beliefs are important factors in understanding classroom practices and conducting teacher education programs that are designed to help science and technology teachers towards developing their thinking skills and classroom practices. In the 1960s, Robert Rosenthal began examining expectancy beliefs and self-fulfilling prophecies in which research has remained robust into the early 2000s. When teachers expect students to perform (i.e., high or low), they behave in different ways that give the expected performance. Teachers' beliefs are a form of subjective reality for what they believe is real and true. Teachers' beliefs guide them in their decision-making, behavior, and interactions with students and, in turn, create an objective reality in the classroom that what students experience are considered real and true.

Teachers' beliefs shape their planning and curricular decisions that determine what should be taught and what effective instruction should be used. The three messages that the literature implies on teachers' beliefs are: first, teachers' beliefs have profound impact on classroom life. Secondly, the beliefs that impact students are layered, multi-dimensional, sometimes implicit, and difficult to change. Lastly, teachers might fail to examine their beliefs which may bring about unanticipated consequences in the classroom. Such consequences as teachers may set aside valuable curriculum, overlook or marginalize students who need them, misinterpret students' motives or behavior, and limit their potential as professional individuals.

The attitude of teachers, is a teacher characteristic and a component of teacher personality.

1.1 Statement of the Problem:

The study aimed to determine the beliefs, practices and attitudes of college science teachers/ professors on Science and Technology teaching and learning in a selected Higher Education Institution (HEIs) in Manila.

Specifically, the study sought to answer the following questions:

1. What is the demographic profile of the teacher respondents in terms of:

    1.1 age;

    1.2 gender/sex;

    1.3 employment status;

    1.4 highest educational attainment/degree;

    1.5 years of teaching; and

    1.6 trainings attended for the last three(3) years such as professional, personal and academic?

2. What are the teachers characteristics towards science and technology teaching and learning in terms of:

    2.1 teachers' beliefs;

    2.2 teachers' practices; and

    2.3 teachers' attitudes?

3. What is the relationship between the teachers' profile and the teachers' characteristics towards Science and Technology teaching and learning?

4. What are the implications of the study on Science and Technology teaching and learning?

1.2 Conceptual Framework

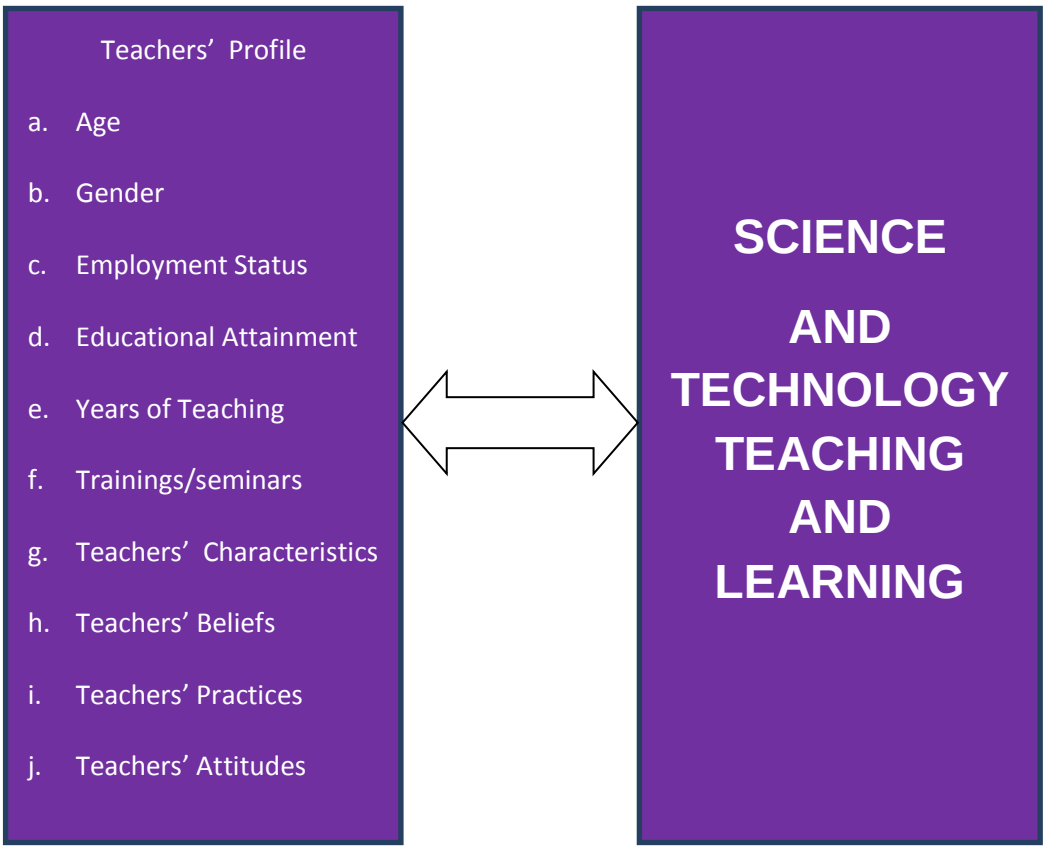
Based on the discussions, the present study made use of the two aspects that affect teaching and learning of science and technology teachers in the tertiary level. These aspects are teachers profile and teachers' characteristics. Teachers profile include age, gender, educational attainment/degree, employment status, teaching years and trainings or seminars while the teachers' characteristics are teachers' beliefs, attitudes and' practices.

The conceptual paradigm as conceptualized by the researchers presented in Fig. 1 shows the processes involved in order to achieve the objective of the study. This study was focused on the teachers as the guiding framework. The teacher-respondents profile were obtained such as age, gender, educational attainment/degree, employment status, teaching years and trainings or seminars while the teachers' characteristics are teachers' beliefs, attitudes and practices.

This study aimed at determining the teachers' profile and teachers characteristics on science and technology teaching and learning.

To determine the significant relationship between the teachers' profile and teachers characteristics on science and technology teaching and learning.

Figure 1. CONCEPTUAL PARADIGM



1.3 Objective of of the Study

The general objective of the study is to design a faculty development program utilizing the beliefs, practices and attitudes of science and technology teachers in selected Higher Education Institutions (HEIs) for the First Semester of the SY 2016 -17 in the City of Manila.

Specifically the researcher aim to:

1. To develop a faculty program that will cater on the beliefs, practices and attitudes of science and technology teachers in tertiary level.

2. To identify teachers characteristics towards science and technology teaching and learning activity.

3. To determine the relationship between the teachers' profile and the teachers' characteristics towards Science and Technology teaching and learning

1.4 Significance of the Study

The study will be beneficial to the following stakeholders:

College science and Technology Student. The result of the study may enhance their learning in science and technology concepts.

Science and Technology Teachers. The findings may help the teachers to change their way of teaching and their beliefs, concepts and attitudes towards science teaching and learning.

Science and Technology Coordinators. The output of the study may facilitate supervisors of the teaching-learning process in science subject.

Administrators. The administrator may be able to provide support on faculty development programs terms of trainings and seminars on teaching and learning.

Future Researchers. The future researchers may gain insights from the research study and conduct further research on teachers' characteristics.

II. REVIEW OF RELATED LITERATURE

The reviewed literature and studies both local and foreign provided the researchers with rich insights on the beliefs, attitudes and practices of the teachers/professors on Science and Technology teaching and learning in HEIs.

Related literature is stated in the present study to further substantiate what the researchers knew about the trends in educational system in the Philippines.

There are many aspects of teaching- learning-. One of the aspects is the teacher which includes their beliefs, practices and attitudes towards teaching and learning. There are many studies that focused and described about teachers' beliefs, practices and attitudes. Among the different theoretical frameworks were found from the works of (Lumpe, Andrew; Czerniak, Charlene; Haney, Jodi; Beltyukova, Svetlana,2012) which states that; Because of increasing calls for school accountability, an increased emphasis is placed on the role of the teacher, and theoretical connections between teacher beliefs and classroom action, a critical need exists to examine teacher professional development programs to determine their impact on teacher belief systems, teaching practices, and student learning Through the years, there were number of different studies and researches on teachers characteristics in relations to different aspects of teaching. These were based on responses to questionnaires and actual interviews. The approach relies on teachers' willingness and ability on develop their skills and how this affect the curriculum.

In the study made by Mansour, Nasser entitled "Science Teachers' Beliefs and Practices: Issues, Implications and Research Agenda" which explains that study of teachers' beliefs forms part of the process of understanding how teachers conceptualize their work which in turn is important to the understanding of teachers' practices and their decisions in the classroom. The purpose of this paper was to present an argument about the relationship of teachers' beliefs and practices and to find out frameworks of understanding the consistency and inconsistency of this relationship. Other studies were made by (Parvinder Singh all Amar Sing, Zurida Haji Ismail 2007) with the title" Teachers' Beliefs: Definitions and Assumptions". In

their study she mentioned that, "teacher belief' is not used constantly with some researchers referring instead to teachers' principles of practice, personal epistemologies, perspectives, practical knowledge or orientations. In short, there is lack of agreement in terminology among researchers as simply using the different words naming the same thing. There were other studies made by (de Souza Barros Susana and Elia, Marcos F.) which states that while it is true that there are teachers whose attitudes are positive towards the promotion of good science and technology teaching- learning situations, for most students, in many countries, the reality of the school classroom consists of lessons where science and technology is transmitted by their teachers, at best, as a set of facts, laws and data.

2.1 Synthesis of the Study

Teachers' beliefs, practices and attitudes are important for understanding and improving educational processes. There are many aspects of teaching- learning-. One of the aspects is the teacher which includes their beliefs, practices and attitudes towards teaching and learning. There are many studies that focused and described about teachers' beliefs, practices and attitudes. The approach relies on teachers' willingness and ability on develop their skills and how this affect the curriculum. Reforms in the teaching of science and technology overlooks a key factor on the psychological foundations of the practice of teaching science and technology, including the teacher's knowledge, beliefs and attitudes. Research on teaching and teacher education also under-emphasis this area, which Shulman terms the 'missing program' in research on teacher cognitions. curricular knowledge), knowledge of classroom organization, and knowledge. Also notable is the importance ascribed to the teacher's beliefs concerning the nature of science and technology, and concerning the processes of teaching and learning the subjects. The study has implications for teacher education.

III. 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.

3.1 Research Design

The researcher used the descriptive method which employed the quantitative research that involve data collection, analysis and interpretation of data and conclusion.. It is mainly statistical analysis needed to solve the research problems. It was designed to identify the teachers' profile based on their age, gender, educational attainment / degree, employment status, teaching years and trainings or seminars. The teachers' characteristics namely: teachers' beliefs, teachers' attitudes and teachers' practices were also obtained.

3.2 Sample and Procedure

The purposive sampling technique was used in this study. The respondents of the study were the science teachers in the selected HEIs in Manilas namely CEU, LCCM and EARIST for the first semester School Year 2016-17. There were 42 respondent teachers. The teacher respondents comprise of Science and Technology e.g, Biology, Chemistry and Physics majors.

3.3 Research Instruments

The study employed a researcher-made questionnaire patterned from TALIS 2013. The questionnaire has two parts. The first part involved the gathering of the personal profile of the respondents which includes age, gender. educational attainment, years of teaching, and trainings and seminars attended. The second part consists of items on teachers characteristics such as beliefs, practices and attitudes on science teaching and learning.

It was used in obtaining factual information from the teacher respondents about their profile.

The respondents were to answer all the items in the questionnaire by labeling their preference on each item using the 4- point Likert-scale instrument ranging from (1)Strongly disagree (2) Disagree (3) Agree (4) strongly agree for teachers' attitudes and beliefs while (1) Always (2) almost always (3) sometimes (4) never for teachers 'practices.

3.4 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, Standard Deviation, correlation and chi-square.

IV. RESULT AND ANALYSIS

4.1 Requirements Analysis (Statement)

The researcher utilized researcher - made questionnaires and were administered to 42 college teachers/professors to identify their beliefs, practices and attitudes towards science and technology teaching and learning. The research was developed to help them clarify their beliefs, practices and attitudes towards science and technology teaching and learning. Data were quantitatively tested for significant purposes. Descriptive method of research was utilized. Purposive sampling was used in which the respondents were composed of 42 college teachers and professors of three (3) HEIs in Manila namely Centro Escolar University (CEU), La Consolacion College. Manila (LCCM) and Eulogio "Amang" Rodriguez Institute of Science and Technology (EARIST). The Self delivered questionnaire was used as research instrument.

4.2 Data and Interpretation

1. Demographic Profile of the Respondents (Age, Gender, employment status, Highest educational attainment, years of teaching and trainings/seminars)

Table 1 shows the frequency and percentage distribution of the teachers according to sex/gender. It shows that 9 or 21.40% of the respondents are male and the other 33 or 78.60% are female.

It also shows the frequency and percentage distribution of the respondents according to age. The respondents vary in age ranging from 25 years below to 60 years. Based from the data, the largest number of the teacher-respondent ranged from 50-59 or 28.60%, both ages 25-29 years old and 40-49 years old were the second highest number which is 9 or 21.40%, that of age 30-39 have the frequency of 8 or 19.00%, while age 25 years old was the least in number with a frequency of 4 or 9.50%.

Table 1

Demographic Profile of the Respondents

Attributes	Frequency	Percentage
Gender		
Male	9	21.40
Female	33	78.60
Age		
25 Below	4	9.50
25-29	9	21.40
30-39	8	19.00
40-49	9	21.40
50-59	12	28.60
60 above	0	0
Employment status		
Permanent	26	61.90
Probationary	3	7.10
Fixed Term	13	31.00
Educ. Attainment		
Bachelor's Degree	10	23.80
Master's Degree	24	57.10
Doctoral's Degree	8	19.00
Years of teaching		
1-5	11	26.20
6-10	6	14.30
11-15	7	16.70
16-20	5	11.90
21-25	7	16.70
26-30	4	9.50
30 above	2	4.80
Seminars/ Trainings		
Professional		
(1-3)	23	54.80
(4-6)	11	26.20
(7-9)	5	11.90
(10-12)	3	7.10
Personal		
(1-3)	32	76.20
(4-6)	6	14.30
(7-9)	2	4.80
(10-12)	2	4.80
Academic		
(1-3)	28	66.70
(4-6)	9	21.40
(7-9)	2	4.80
(10-12)	3	7.10

In terms of employment status of the teachers, the results show that permanent status have the largest in numbers which is 26 or 61.90%, followed by fixed term status (13 or 31.00%), while probationary status has the least with 3 or 7.10%.

Presented in Table 1 is the frequency and percentage distribution of teachers according to their highest educational attainment. The results shows that the highest percentage which is 57.10% for the 24 teachers were with Master's degree, then 23.80% for the 10 teachers were Bachelor's degree and the least which is 8 teachers with Doctoral degree.

The data also shows the number of years of teaching of the teachers. We confirmed that majority of them have an teaching years of 1-5 years with a frequency of 11 or 26.20%, the second highest number is 7 or 16.70% (10-15), that of age 30-39 have the frequency of 8 or 19.00%, while age 25 years old was the least in number with a frequency of 4 or 9.50%.

The data also shows that for the professional, personal and academic seminar attended, the highest is 1-3,with 54.8%, 76.2% and 66.7% respectively secondly is 4-6, with 26.2%,14.3% and 21.4% respectively: 7-9 for the third with 11.9% and 11.4% and the least is 10-12 with 7.1 % and 4.8%.

2. Teachers characteristics towards science teaching and learning

Table 2

Distribution of Teachers characteristics towards science and technology teaching and learning in terms of beliefs, practices and attitudes.

Teachers' characteristics	Mean	SD	Verbal inter
Teachers' beliefs	3.1905	0.3433	Agree
Teachers' Practices	1.3841	0.6908	Always
Teachers' Attitudes	3.2889	0.3363	Agree

Table 2 shows the teachers' characteristics towards science and technology teaching and learning in terms of their beliefs, practices and attitudes. Based from the data, teachers' beliefs has a mean of 3.1905 which shows that almost all the items in the questionnaire about teachers' beliefs were agreed by the teacher respondents and the teachers' attitudes has mean of 3.2889 with a verbal interpretation of Agree. In terms of teachers' practices, it has a mean of 1.3841 with an interpretation of always which indicates that everybody perform the different practices every time they teach.

3. Relationship between the teachers' profile and the teachers' characteristics towards Science and Technology teaching and learning

Table 3

Relationship of the teachers' profile on teachers' beliefs

Teachers' Profile	Pearson r	Significance
Age	0.23	p=0.883> 0.05 NS
Gender	0.293	p=0.059> 0.05 NS
Employment status	0.006	p=0.971> 0.05 NS
Educational Attainment	0.213	p=0.176> 0.05 NS
Years of teaching	0.099	p=0.534> 0.05 NS
Seminars Attended		
Academic	0.182	p=0.249>0.05 NS
Personal	0.300	p=0.054>0.05 NS
Professional	0.172	p=0.276> 0.05 NS

Table 3 shows that there is no statistical significant correlation between the teachers' profile and the teachers' beliefs towards science teaching and learning. Teacher's profile such as age, gender, employment status, years of teaching and seminars attended (ACA, PER, PROF) do not affect whatever the beliefs they possess. These two variables do not relate with each other.

Table 4

Relationship of the teachers' profile on teachers' practices

Teachers' Profile	Pearson r	Significance
Age	-0.134	p=0.399> 0.05 NS
Gender	0.101	p=0.0524> 0.05 NS
Employment status	-0.063	p=0.690> 0.05 NS
Educational Attainment	0.134	p=0.399> 0.05 NS
Years of teaching	-0.36	p=0.819> 0.05 NS
Seminars Attended		
Academic	0.188	p=0.232> 0.05 NS
Personal	0.159	p=0.313> 0.05 NS
Professional	0.093	p=0.560> 0.05 NS

Table 4 shows that there is no statistical significant correlation between teachers' profile and teachers' practices towards science and technology teaching and learning. Teachers' profile such as age, gender, employment status, years of teaching and seminars attended (ACA, PER, PROF) do not affect whatever the practices they use and apply in teaching.

Table 5

Relationship of the teachers' profile on teachers' Attitudes

Teachers' Profile	Pearson r	Significance
Age	0.191	p=0.225> 0.05 NS
Gender	0.175	p=0.267> 0.05 NS
Employment status	0.334	p=0.031> 0.05 S
Educational Attainment	0.034	p=0.830> 0.05 NS
Years of teaching	0.172	p=0.277> 0.05 NS
Seminars Attended		
Academic	-0.106	p=0.507> 0.05 NS
Personal	-0.081	p=0.609> 0.05 NS
Professional	-0.082	p=0.605> 0.05 NS

Table 5 shows that there is a statistical significant correlation between the teachers' profile such as employment status and the teachers' attitudes towards science teaching and learning. Fixed term, probationary and permanent teachers differ in their attitudes regarding teaching. Other teachers' profile such as age, gender, years of teaching and seminars attended (ACA, PER,PROF) are not significantly related to their attitudes.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

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

1. The demographic profile of the teacher respondents in terms of:

   a. Gender. The frequency and percentage distribution of the teachers according to gender shows that majority of the respondents are female than male.

   b. Age. The respondents vary in age ranging from 25 years below to 60 years. Based on the data, the largest number of the teacher-respondent ranged from 50-59, both ages 25-29 years old and 40-49 years old were the second highest number, followed by that of age 30-39 while age 25 years old was the least in number.

   c. Employment Status. In terms of employment status of the teachers, the results show that permanent status have the largest in numbers, followed by fixed term status, while probationary status has the least number.

   d. Highest Educational Attainment. The highest percentage of the teacher respondents were graduates of Master's degree, followed by those teachers with Bachelor's degree and the least among the teacher respondents earned their Doctoral degree.

e. Number of Years of Teaching. The data confirmed that majority of them have an teaching years of 1-5 years, the second highest number is 10-15, followed by with an age 30-39, while age 25 years old was the least in number.

f. Seminars Attended. The data also shows that for the professional, personal and academic seminar attended, the highest is 1-3, secondly is 4-6, thirdly for 7-9 and the least is 10-12.

2. The teachers' characteristics towards science teaching and learning in terms of their beliefs, practices and attitudes. Based from the data, teachers' beliefs shows that almost all the items in the questionnaire about teachers' beliefs and attitudes were agreed by the teacher respondents. For teachers' practices, the response has an interpretation of always which indicates that everybody perform the different practices every time they teach.

3. There is no statistical significant correlation between the teachers' profile and the teachers' practices and beliefs towards science teaching and learning. However, there is significant relationship between the teachers' attitudes and teachers' employment status. Other Teachers profile such as age, gender, years of teaching and seminars attended (ACA, PER, PROF) do not affect their attitudes.

4. The study implies that teachers' profile like age. gender, years of teaching and seminars do not have bearing on the teachers' beliefs, practices and attitudes.

5.2 RECOMMENDATIONS

The following are the recommendations:

1. Conduct further research on other set of respondents like elementary and secondary teachers.

2. Proposed a Faculty Development Program based on teachers' beliefs, practices and attitudes.

3. Design a curriculum/ program of activities related to teachers' beliefs, practices and attitudes.

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UNDERSTANDING THE FACTORS AFFECTING THE STUDENT ENGAGEMENT OF ARCHITECTURE STUDENTS IN EULOGIO "AMANG" RODRIGUEZ INSTITUTE OF SCIENCE AND TECHNOLOGY: A LITERATURE REVIEW AND PRACTICE

Ar. Diane A. Jose
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I. INTRODUCTION

Education and professional success are intimately linked, and the emphasis in higher education is increasingly on successful placement of undergraduates and post-graduates into employment. The proof that education influences professional success is seen via a wealth of employment data especially as seen in each university/colleges/institutes' tracer study. The value of a degree is not just in the literal application of the knowledge gained from different courses, but in the skills and habits picked up via the process of study.

In School of Architecture, the concern of architectural education is to provide the students with comprehensive knowledge, skill and competence in architecture and their total growth and development within the framework of democratic ideals and values; and the preservation, conservation, and promotion of the Filipino Architecture heritage within the global context. Thus, through education, the employment and business gaining earns potentially higher, career possibilities are wider and career progression is faster.

More so, attaining the goal and objectives of architectural education, the students and the teachers must be fully engaged in school.

1.1 Statement of the Problem

The study focused on understanding the factors affecting the Student Engagement of Architecture Student in Eulogio "Amang" Rodriguez Institute of Science and Technology.

Specifically, it sought to answer the following:

1. What are the factors that potently affect the students' engagement in architectural education?

2. What are the role of educator and other external factors in student engagement?

1.2 Significance of the Study

The study provides useful information about student engagement that interest in student engagement levels grows, as it is an acknowledged way for students to experience increased learning and improved outcomes from an educational institution. This study exhibits the benefits of student engagement, institutional practices that encourage engagement, and the shared responsibility of faculty and staff to encourage student engagement.

Students. This study will explain the quality and quantity of student interactions directly influences student levels of learning and development. That an active student involvement in learning has a positive impact on the acquisition of course content that tends to decrease dropout rates.

Faculty and Staff. This study will discuss the importance of the shared responsibility of faculty and professional staff to encourage engagement among students will influence the positive outcomes students receive from time spent attending the higher education institution and a significant positive influence on student learning and outcomes.

EARIST-Architecture. This study will help to understand the role of the school to fostering engagement on instructional practices that could enhance a student's feelings of competence, autonomy and intrinsic motivation. With this, the Architecture Department could substantially attain the objective of the institute on producing quality graduates who are globally competitive to man the needs of business and industry.

II. LITERATURE AND STUDIES

Kuh, Cruce, Shoup, Kinzie, and Gonyea (2007) summarize research that identifies the key importance engagement behaviors have on student outcomes by stating, "What students do during college counts more in terms of what they learn and whether they persist in college than who they are or even where they go to college". As the benefits of engagement are identified, educators place increased importance on improving student engagement to increase positive student outcomes.

Defining Student Engagement

Student engagement has been defined as "participation in educationally effective practices, both inside and outside the classroom, which leads to a range of measurable outcomes" (Kuh et al., 2007), and as "the extent to which students are engaging in activities that higher education research has shown to be linked with high-quality learning outcomes" (Krause and Coates, 2008). Similarly, Hu and Kuh (2001) define engagement as "the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes". According to Fredricks 2004, student engagement includes behavioural, emotional, and cognitive engagement.

The National Survey of Student Engagement (NSSE), measures student engagement in ten engagement indicators organized into four engagement themes namely: Academic Challenge, Learning with Peers, Experiences with faculty and Campus Environment (NSSE 2014b).

- Academic Challenge — is the concept de- rived from Weiner's attribution theory, which mentioned that academic motivation in terms of task difficulty (or having the opportunity of a challenge) is one of the determining factors in the effort a student will expend on that activity (Weiner, 1985)
- Learning with Peers — recognizes that learning is collaborative and social. Active learning states that students learn more when they are intensely involved in their education. In general, active learning involves any instructional method that engages student in the learning process, and requires students to perform meaningful learning activities and think about what they are doing (Prince, 2004)
- Experiences with Faculty — are the quality communication between student and faculty. Studies have shown that when students interact with faculty inside and outside the classroom, students tend to learn firsthand information and/or knowledge. The transformation of learning environments into places of effective teaching and deep learning requires new ways of looking at the roles of teachers (Dunleavy and Milton, 2009)

- Campus Environment — indicates that students perform better and are more satisfied at institutions that are committed to their success and cultivate positive working and social relations among different groups on campus. In a broader sense, a group or a community is the result of interaction and deliberation by people brought together by similar interests and common goals (Rovai, 2002)

Table 1

Engagement themes and indicators (adapted and quoted from NSSE Engagement Indicators, 2014b)

Theme	Engagement Indicators
Academic Challenge	*Higher-Order Learning*: refers to how much students' coursework emphasizes challenging cognitive tasks such as application, analysis, judgment, and synthesis *Reflective & Integrative Learning*: requires students to relate their understandings and experiences to the content at hand *Learning Strategies*: refers to active engagement with and analysis of course material rather than approaching learning as absorption *Quantitative Reasoning*: refers to the ability to reason quantitatively – to evaluate, support, and critique arguments using numerical and statistical information
Learning with Peers	*Collaborative Learning*: collaboration with peers to solve problems or master difficult material *Discussions with Diverse Others*: interaction with and learning from others with different backgrounds and life experiences
Experiences with Faculty	*Student-Faculty Interaction*: interactions with faculty can positively influence the cognitive growth, development, and persistence of college students *Effective Teaching Practices*: organized instruction, clear explanations, illustrative examples, and effective feedback on student work
Campus Environment	*Quality of Interactions*: characterized by positive interpersonal relations which promote student learning and success. Students who enjoy supportive relationships with peers, advisors, faculty, and staff are better able to find assistance when needed, and to learn from and with those around them. *Supportive Environment*: institutions that are committed to student success provide support and involvement across a variety of domains, including the cognitive, social, and physical.

According to NSSE 2014b, student engagement is two-levelled: first, it refers to student investment in their studies and other educational purposeful activities; second, it refers to how institutions organize their resources, curriculum and other learning opportunities to encourage students to actively engage in the learning process.

Potent Engagement Strategies (Garrison & Kanuka, 2004)

Ten essential engagement strategies that have particular potency at critical stages of the semester emerged from the literature. They include:

Getting students engaged: Capturing student attention at the start of the course has the biggest impact on the retention of students as it is in the early stages that the largest number of dropouts occurs. Two major types of strategies were identified as being important:

1. Primers for getting student attention: Curiosity, relevance the literature identifies two possible approaches, curiosity and relevance. Students experience curiosity when they become aware of a gap in their knowledge and are motivated to find the answer. One interesting aspect of curiosity is that it grows as knowledge grows, which suggests that teachers may need to prime curiosity early in a course. When students see a subject or topic as having personal relevance, they are more likely to experience an optimal level of arousal for learning.

2. Social presence and belonging: Teacher enthusiasm, immediacy and an inclusive environment. The social context plays an important role in encouraging student engagement. Students who feel a part of the class and a part of the subject discipline are less likely to feel alienated or isolated and are consequently more likely to become engaged. Teachers, particularly in the online environment, are an important aspect of social presence. Impersonal environments are more likely to alienate students. Teacher immediacy a sense of the imminent presence of the teacher is reassuring to students.

Maintaining engagement: Maintaining student engagement through the course requires six strategies:

3. *Clear content structure*

When students start a new course, most of the material will be uncharted territory for them. The constants they expect in a course are a clear course outline that includes the content structure and other organisational features. Students become very disgruntled with disorganised courses and changes to the expected programme.

4. Clear, unambiguous instructions and guidelines

Students are intensely interested in assessment instructions and guidelines. They may experience high levels of anxiety associated with this part of the course, which increases the need for clarity in these matters.

5. Challenging tasks

Challenging tasks are those that make the student stretch to the limits of their performance. Learning happens when students make an effort; the greater the effort, the greater the sense of achievement and motivation. Students are not motivated when given high marks for simple tasks, nor are they motivated when the task is far beyond their ability.

6. Authentic tasks

Students are further motivated when they engage in tasks that they perceive as preparing them for the 'real world'. They understand that effort now has a benefit later. Transfer of learning occurs when learning tasks are structurally similar to real world tasks.

7. Timely feedback

The weight of evidence strongly suggests that in most circumstances immediate feedback is more effective than delayed feedback, as it allows students to correct errors quickly, making learning more efficient.

8. Elaborated feedback

Studies consistently report that highly specific feedback that elaborates on the ways students can improve their performance results in better learning.

Re-engaging students who drift away or fail to engage: In most courses a proportion of students will procrastinate at the start of the course, or stop engaging, usually at key points such as assessment. The literature identifies two critical strategies for recapturing the engagement of these students:

9. Monitoring and early identification

Early identification through monitoring student engagement is essential to recover these students. The earlier the identification, the greater is the chance of success. Ideally, this should start in the first week. Learning Management Systems (LMS) make this a very simple process. Taking rolls at class is also recommended. Students who are performing poorly are also at risk of dropping out and should also be monitored.

10. Personal contact and negotiated conditions for re-engagement

Having identified students who are not engaged, the most effective strategy for re-engaging is personal contact with the student by the teacher. A personal email to each student is one simple option. Follow-up contact for students who do not respond initially is also important. Such contact is most effective when the teacher works with the student to provide help and support for problems the student may have.

Student Engagement as to Architecture Student Outcomes

Academic outcomes, understood as achievement and school behaviour, have been related with students' level of engagement in school (Finn, Pannozzo, & Voelkl, 1995), in different age groups (Ryan & Deci, 2000). Overall, engagement has been associated with academic achievement, learning results and performance in standardized tests (Caraway et. al., 2003), and rates of school completion, being found statistically significant relationships, in the expected direction, between the different dimensions of engagement and these variables.

The primary purpose of architectural education is creating proficient, critically minded, innovative and ethical designers or builders whose contribution to the cultural, social, economic, development of society are considerable. Architecture education field has an interdisciplinary nature that includes social, humanities, physical sciences, creative arts and technology (Schreiber, 2010). However, the most important part of architectural education in terms of curriculum focus and time spent by students is architectural design. The design studio has undoubtedly been at the core of architectural design education since its inception in the 19th century (Schön, 1985). It is in the design studio that students are expected to bring

together knowledge from the different disciplines to inform the development of their architectural designs. The design studio offers the potential to provide a multifaceted and enriching learning experience.

Due to the nature of architectural education, there is an opportunity to create more effective pedagogical models based on practice-based learning. (Cunningham, 2005) As Jeremy Till suggests: “practice has the raw data on which architectural knowledge is founded"(Till, 2005) Curriculums that embrace this notion have better chances to increase student’s motivation in learning and to foster student’s engagement.

Alignment and coordination of learning outcomes within an architectural education curricula

Follow-up activities must be encouraged to develop learning outcomes. For instance, a specific set of actions should set the development of relevant grading rubrics and exemplars of different evaluation tools that can be used both in lecture and studio. Workshops can be organized to present ideas to help faculty members integrate specific learning outcomes within their syllabi and properly assess and report learning outcomes. Another strategy used in ongoing assessment of architecture education is to require a capstone course in which student exercise the full range of program learning outcomes. Grading rubrics can also be developed to examine students’ learning. (Bachman, 2009)

Table 2

Example of Rubric in Site Planning and Landscape Architecture Subject

Republic of the Philippines
EULOGIO "AMANG" RODRIGUEZ INSTITUTE OF SCIENCE AND TECHNOLOGY
Nagtahan, Sampaloc, Manila
Architecture Department

Name : _____ **Date:** _____
Title : _____ **SITE PLANNING AND LANDSCAPE ARCHITECTURE**

	EVALUATION	Weighted Score					Summary	%	Score
		1	2	3	4	5	Proj. Articulation	5	
A.	**PROJECT ARTICULATION (5%)**						Feasibility Studies	15	
	1 Articulation and Preparation						Site Analysis	30	
B.	**GREEN STRATEGIES (15%)**						Site Planning	40	
	1 With Green Solutions						Presentation	10	
C.	**PRESENTATION OF SITE DATA/DOCUMENT (30%)**						**TOTAL**		
	1 Site Selection (suited for the proposed Beach Resort)						**LEGEND**		**Rating**
	2 Distances from the major landmarks						Outstanding		5
	3 Road Network (Accessibility to the Site)						Very Satisfactory		4
	4 Appropriate Land Use and Zoning						Satisfactory		3
	5 Climatological Conditions						Incomplete/Unsatisfactory		2
	6 Physical Conditions (Geological and Hydrological)						Very Unsatisfactory		1
	7 Availability of Services (Telecom, Water, Power, Sewer, etc.)						**Juror**		
D.	**SITE PLANNING (40%)**								
	1 Building Position according to orientation								
	2 Building Postion according to prevailing winds								
	3 Building Proximity to other buildings and behavioral pattern								
	4 Vehicular and Pedestrian Linkages								
	5 Encompassing excellent vista (from building to sea)						Signature Above Printed Name		
	6 Provision of other amenities on site						**Adviser**		
	7 Provision and proper location of services								
	8 Provisions under BP344								
E.	**PRESENTATION (10%)**								
	1 PPT Presentation						Ar. DIANE A. JOSE		
	2 Scale Model / Miniature						Signature Above Printed Name		
	3 Documentation						**SCORE TABULATION**		

COMMENT (S)

Passed/Approved	86 - 100
Passed w/ Minor Revision	71 - 85
Passed w/ Major Revision	56 - 70
For Deliberation	46 - 55
Failed	20 - 45

The engagement literature, then, uses a number of lenses to investigate influences on engagement. These focus variously on student motivation, teacher–student interactions, and learners interacting with each other, the role of institutional policies, socio-political factors and the role of non-institutional influences such as family, friends, health and employment. While there is no unanimity about what motivates learners to engage, a strongly represented view is that education is about students constructing their own knowledge (Krause & Coates, 2008).

In a systematic literature review, (Zepke and Leach, 2010) used the organiser to identify actions that teachers and institutions can take to increase student engagement:

- enhance students' self-belief
- enable students to work autonomously, enjoy learning relationships with others and feel they are competent to achieve their own objectives
- recognise that teaching and teachers are central to engagement
- create learning that is active, collaborative and fosters learning relationships
- create educational experiences for students that are challenging, enriching and extend their academic abilities
- ensure that institutional cultures are welcoming to students from diverse backgrounds
- invest in a variety of support services
- adapt to changing student expectations
- enable students to become active citizens
- enable students to develop their social and cultural capital.

III. METHODOLOGY

In this study, the researchers used qualitative methods, to collect and analyse data for literature review. It provided insights into the problem and helped develop ideas for potential quantitative research for the future. This method help to understand the underlying factors affecting architecture students' engagement within the demography of architecture students of Eulogio "Amang" Rodriguez Institute of Science and Technology (EARIST) School Year 2016-2017 under the Course Specification of CMO no. 61 Series of 2006.

IV. RESULTS AND DISCUSSION

The study focused on improving the quality of learning by discussing the findings of the review literature addressing two focusing questions: "What are the factors that potently affect students' engagement in architectural education?" and "What are the role of educator and other external factors in student engagement?" The engagement indicators (Table 1) suggest that student engagement is a complex construct, understood in different ways with many factors affecting it. The multiple lenses identified in the research literature suggest that institutions and teachers can act in a variety of ways to enhance student engagement.

Table 3

A conceptual organizer of student engagement

Lenses on engagement	Chosen indicators
Motivation and agency (Engaged students are intrinsically motivated and want to exercise their agency)	A student feels able to work autonomously A student feels they have relationships with others A student feels competent to achieve success
Transactional engagement (Students engage with teachers)	Students experience academic challenge Learning is active and collaborative inside and outside the classroom Students and teachers interact constructively Students have enriching educational experiences
Transactional engagement (Students engage with each other)	Learning is active and collaborative inside and outside the classroom Students have positive, constructive peer relationships Students use social skills to engage with others
Institutional support (Institutions provide an environment conducive to learning)	There is a strong focus on student success There are high expectations of students There is investment in a variety of support services Diversity is valued Institutions continuously improve
Active citizenship (Students and institutions work together to enable challenges to social beliefs and practices)	Students are able to make legitimate knowledge claims Students can engage effectively with others including the "other" Students are able to live successfully in the world Students have a firm sense of themselves Learning is participatory, dialogic, active and critical
Non-institutional support (Students are supported by family and friends to engage in learning)	Students' family and friends understand the demands of study Students' family and friends assist with e.g. childcare, time management Students family and friends create space for study commitments

Table 3 outlines a possible agenda for action that is synthesised from the engagement literature. Initially introducing ten (10) propositions for teacher and institutional action, here the actions are explicitly linked to the six (6) lenses on student engagement. The items in the agenda are seen from teachers' and institutional perspectives as teachers and institutions have the largest influence on engagement. The items offer starting points for policy development that suits institutional values, missions and the political climate within which teachers and institutions work. While some educators may be able to develop all ideas in the agenda for action at the same time, most will want to start development on one or two fronts. The answer from our survey data to the second question suggests that a useful start would be with teachers and teaching.

V. CONCLUSION AND RECOMMENDATIONS

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

1. The social-cultural orientations that students bring to school are the most important factors affecting student engagement. This paper revealed that many of the factors identified in the Conceptual Organiser were important in encouraging student engagement in EARIST- Architecture students. In addition, more recent concept of student engagement has placed much interest in the influence of school context, more specifically in the relationships between campus climate and students' experience of engagement.

Students showed a strong liking for blended modes of learning. This was a considerable change as previous studies had shown that traditional modes of teaching (printed materials, lectures and tutorials) were substantially preferred over all other modes. Traditional modes were only marginally more preferred over blended modes.

The most successful students were those who reported being deeply engaged in structured learning activities designed by teachers. These students were high on planning and persistence, and low on procrastination. They used a wide range of learning resources and approaches, including talking to teachers, collaborating with other students, using additional resources and online forums.

2. Students' engagement in school arises as a reaction to educators' and general population restlessness to the increase of students alienation, academic motivation decline, high rates of school dropout. The multidimensional nature of the concept Students Engagement in School is consensual, being frequently introduced as a meta-construct with two to four dimensions, integrating behavioural, academic, psychological and cognitive components (Christenson, Reschly, & Wylie, 2012). It reveals agreement about the fact that engagement components may be influenced by various contextual and personal variables, which, in turn, are likely to trigger different effects.

Students' beliefs, values, and orientations toward schooling are critical, and educators must take them seriously. Teachers, through their selection and design of learning experiences, will influence the nature and quality of student learning. The skills and effort that teachers apply to create learning experiences is the single most important determinant of the quality of the learning environment.

Educators of architecture students create situations in which they hope the students, through inventing a design in response to a need, will find creativity, intuition, and invention within themselves. Although the design process consists of regular experimentation, it can be said that architectural curriculum generally has few real variations in different countries.

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

1. The conceptual organizer framework proposed in this study and engagement strategies presented the broad range of expectations and goals that higher education is expected to meet, and how the various motivations of students and other HE stakeholders relate to the student engagement agenda. A student engagement framework identifying the relationships between goals, engagement and practice is useful in considering how individual, course level and institutional practices may be developed to optimise engagement of all students. It can be used as the basis for development of holistic student engagement strategies both at institutional and course level and to underpin approaches to student transition and

induction, personal tutoring, and development of student partnership strategies. Whilst institutional missions and course contexts vary, the conditions of engagement have broad applicability.

2. In order to make real changes in teaching practices, teachers must have the support of the institute. Teachers need monetary support, support for designing quality work, and time to design quality lessons.

3. The researchers recommend that teachers should be designing lessons incorporating the quality work design qualities. Do quality knowledge lessons engage students? What level of engagement do students exhibit? What percent of the time? What prevents student engagement? How does the use of technology affect engagement and learning?

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INSTRUCTIONAL COMPETENCIES OF PUBLIC SCHOOL TEACHERS: IMPLICATIONS FOR ICT-ENABLED PEDAGOGY

Dr. Eric C. Mendoza

INTRODUCTION

Every teacher aspires to effect learning among the learners. But behind the mastery of learning stands the mastery of teaching. Teachers, being practitioners of what is universally recognized as the noble profession, must possess pedagogical skills necessary to become effective facilitators of learning. With the fast changing milieu and the need to respond adequately to the challenges of the 21st-century learners, teachers should have a hungering need to update themselves, to engage in professional growth, to expand and deepen their understanding. They must be attentive to fresh pedagogical techniques, pupil learning theories, and technological advances. Even the best teachers must continue learning in order to remain the best. Calderon (2008), Lardizabal (2001), Zulueta (2006), Arellano (2004), Adediwura and Bada (2007) and Sandy (2002) affirmed that teaching is the noblest profession as well as the vital importance for teachers to possess instructional competencies and professional characteristics which include proficiency in the field of teaching mastery in the subject matter, mastery in the learning principles, techniques and skills in teaching, understanding the different branches of knowledge and love of teaching profession.

Likewise, constantly assessing the strengths and weaknesses of teachers will provide valuable insights, ideas, and pointers for enhancing the proficiency level of teachers' instructional competencies to cope with new trends in teaching. Gargiulo & Pigge, (2014) found a moderately high relationship between elementary and special education teachers' reported need for a competency and their perceived proficiency within the competency area.

This study determined the proficiency level of the public elementary teachers on their instructional competencies as assessed by school administrators and teachers themselves in terms of (a) diversity of learners, (b) curriculum content and pedagogy, (c) planning, assessing, and reporting, (d) learning environment, (e) community linkages, (f) social regard for learning, and (g) personal growth and professional development. Also, it explored the difference in the assessment of the school administrators and teachers on these variables, the utilization of instructional technologies and explored its implications for information communication technology-enabled pedagogy to improve instruction.

METHOD

A total of 281 respondents consisting of 12 school administrators and 269 elementary public school teachers from District of Trece Martires City, Division of Cavite, Philippines were purposively selected as respondents of the study. A closed-ended questionnaire based on the different dimensions of effective teaching specified in the National Competency-Based Teacher Standards (NCBTS) using 5-point Likert-type scale measured the assessment of respondents on these criteria. Statistical significance of the difference between the means was tested using z-test at 0.05 level of significance.

RESULTS AND DISCUSSION

On the proficiency level of the public elementary teachers on instructional competencies

Table 1 shows the mean levels of the seven dimensions of instructional competencies where the instructional competencies of social regard for learning, diversity of learners, personal growth and professional development, community linkages, and learning environment, and planning/assessing, and reporting were assessed at high proficiency level. On the other hand, basic proficiency was given to curriculum content and pedagogy. This conforms with the findings of Chan (2011) who conceptualized that characteristics related to the individuality and change orientations and competencies related to specific teaching skills were rated as more important.

Table 1

Assessments on Instructional Competencies

Indicators	School Administrators			Teachers			Composite Mean		Rank
	WM	SD	VI	WM	SD	VI	WM	VI	
1. Diversity of learners	3.97	0.60	HP	4.16	0.74	HP	4.07	HP	2
2. Curriculum content and pedagogy	3.33	0.62	BP	3.50	0.85	BP	3.42	BP	7
3. Planning, assessing, reporting	4.00	0.63	HP	3.54	1.08	BP	3.77	HP	6
4. Learning environment	3.96	0.53	HP	3.71	1.07	HP	3.84	HP	5
5. Community linkages	3.97	0.54	HP	3.75	0.84	HP	3.86	HP	4
6. Social regard for learning	4.33	0.53	HP	3.98	0.98	HP	4.16	HP	1
7. Personal growth and professional development	4.17	0.47	HP	3.90	0.86	HP	4.04	HP	3
Overall weighted mean	**3.96**	**0.56**	**HP**	**3.79**	**0.92**	**HP**	**3.88**	**HP**	

Legend:

4.20 - 5.00	Very High Proficiency (VHP)
3.60 - 4.19	High Proficiency (HP)
2.40 - 3.59	Basic Proficiency (BP)
1.80 - 2.39	Below Basic Proficiency (BBP)
1.00 - 1.79	No Proficiency (NP)

On Social Regard for Learning, teachers observe punctuality in accomplishing tasks and requirements and in class attendance and in other occasions. It is observable that teachers maintain appropriate appearance and decorum at all times. Likewise, they demonstrate appropriate behavior in dealing with students, superiors, and stakeholders.

On Diversity of Learners, teachers show fairness in dealing with the learners. They set lesson objectives within the experience and capabilities of the learners. Lessons are paced appropriately to the needs and difficulties of learners. Learners at risk are provided with appropriate intervention activities. And teachers utilize varied techniques and strategies suited to different kind of learners.

On Personal Growth and Professional Development, teachers use self-assessment to enhance strengths and correct one's weakness. They abide by the Code of Ethics for Professional Teachers. Teachers reflect on one's quality of teaching vis-à-vis learning outcomes of pupils. They maintain stature and behavior that upholds the dignity of teaching. Teachers participate in professional organizations and update themselves with the recent developments in education. They maintain personal qualities like enthusiasm, flexibility, caring attitudes. They demonstrate a personal philosophy of teaching in the classroom.

On Community Linkages, teachers encourage learners to apply classroom learning at home and in the community. Learners, parents and other stakeholders are informed regarding school policies and procedures. Teachers share with the community information on school events and achievements. Teachers involve the community in sharing accountability for learners' achievement. Teachers also use varied and available community resources (human materials) to support learning. They also use the community as a laboratory for teaching and learning.

On Learning Environment, teachers maintain a safe and orderly classroom. They keep accurate records of learners' performance level. They provide gender sensitive opportunities for learning. Situations are created that develop a positive attitude among learners towards their subjects and teachers. Teachers handle behavior problems quickly and with due respect to children's rights. They engage learners in differentiated activities for higher learning. Roper (2003) stressed that teachers build relationships with learners while providing them with the knowledge, skills, and awareness necessary to function in their social and professional roles. Educators must consciously develop the competencies needed in order to be good teachers and trainers. Content is important, but content loses meaning when it is not presented in a way learners can understand and translate into the desired behavior. Various studies have supported that using computer-based instructional materials in various subjects have increased learning performance of students in all levels (Caniya, 2015; Sicat 2016; Bunagan, 2016; Martinez, 2014; Luzano, 2016).

On Planning, Assessing and Reporting, teachers keep accurate records of learners' performance level. They use appropriate formative, summative test congruent to the lesson. They provide timely, appropriate reinforcement/feedback to learners' behavior as well as an opportunity for learners to demonstrate their learning. Teachers likewise use non-traditional authentic assessment techniques when needed.

On Curriculum Content and Pedagogy, teachers align lesson objectives, teaching methods, learning activities and instructional materials. They teach accurate and updated content using approaches and strategies. Lessons are presented logically in a development manner while routines and procedures are established to maximize the use of time and instructional materials. Learners are encouraged to use higher order thinking skills in asking questions. Likewise, teachers create a situation that encourages learners to use higher order thinking skills. Teachers integrate literacy, skills, and values in teaching. And learner's interest in the subject is engaged and sustained by making content meaningful and relevant to the use of ICT-based instructional materials. Jung (2005) emphasized that information and communication technology (ICT) can provide more flexible and effective ways for professional development for teachers, improve pre- and in-service teacher training, and connect teachers to the global teacher community.

With an overall weighted mean of 3.88, this level of proficiency implies that the minimum essentials for these instructional competencies have been met by the teachers. Their pre-service and in-service preparations have equipped them with the basic knowledge, skills, and attitudes to be proficient at what they are doing. However, there is so much room for

improvement in the areas of planning, assessing, and reporting curriculum content and pedagogy. Hence, the teachers' need to constantly update themselves in the subject matter and pedagogical approaches, methods, and strategies in their teaching. On the other hand, school administrators must already avoid the practice of assignment teaching loads to teachers without the necessary specialization or expertise. Their performance may have been hampered by their lack of training in modern trends in instruction and assessment.

Significant difference in the respondents' assessment

Table 2 presents the significant difference in the assessment of instructional competencies.

Table 2

Difference on the Assessment of Instructional Competencies

Indicators	School Administrators		Teachers		t-test		
	WM	SD	WM	SD	Comp t-value	VI	Decision
1. Diversity of learners	3.97	0.60	4.16	0.74	1.03	NS	Fail to Reject H_o
2. Curriculum content and pedagogy	3.33	0.62	3.50	0.85	0.88	NS	Fail to Reject H_o
3. Planning, assessing, reporting	4.00	0.63	3.54	1.08	2.26	S	Reject H_o
4. Learning environment	3.96	0.53	3.71	1.07	1.41	NS	Fail to Reject H_o
5. Community linkages	3.97	0.54	3.75	0.84	1.28	NS	Fail to Reject H_o
6. Social regard for learning	4.33	0.53	3.98	0.98	2.01	S	Reject H_o
7. Personal growth and professional development	4.17	0.47	3.90	0.86	1.75	NS	Fail to Reject H_o
Overall Difference	3.96	0.56	3.79	0.92	0.95	NS	Fail to Reject H_o

$p < .05$
S = Significant
NS = Not Significant

In general, both groups of respondents share the same assessments on the five indicators of instructional competencies. However, there are divergent perceptions on planning, assessing and reporting and social regard for learning which may be due too adjustment teachers have to make with the changing behavior of digital learners and revisions in tools, measures and procedures in the assessment of learning. As regards social regard for learning, this may be due to circumstances that may affect the regular attendance of teachers as well as inconsistencies or shortcomings in interpersonal relations. While getting acquainted with new and different practices in assessment of learning such as those in UBD, use of matrix and portfolios may have contributed to teachers' hesitation and confusion. Inadequate provision of opportunity for learners to demonstrate their learning, as well as timely and appropriate reinforcement/feedback to learners' behavior, may have also caused the variance in perception regarding planning, assessing and reporting.

On implications of information communication technology-enabled pedagogy for effective instruction

Based on Table 3, a vast array of instructional technologies was utilized by the teachers in their classrooms. Traditional technologies predominate their classrooms such as use of blackboards/whiteboards (n=177; rank 1), textbooks/references (n=156; rank 3), manila paper/cartolina (n=120, rank 4) and workbooks/modules/manuals (n=98, rank 5). Interestingly, teachers are using the internet (n=150; rank 2) for research assignments but infrequently the other ICT-based instructional technologies.

Table 3

Utilization of Instructional Technologies in the Classroom

Instructional Technologies	Frequency	Rank
Textbooks/references	156	3
Workbooks/modules/manuals	98	5
CD/DVD	78	6
Manila paper/cartolina	120	4
Blackboards/whiteboards	177	1
Powerpoint/multimedia presentations	66	7
Blended learning	24	8
Flipped classroom	0	10
Quipper School/Schoology	5	9
Internet research	150	2

CONCLUSION

Amidst 21st century learners, effective and efficient teaching requires adapting to the nature of learners, their learning styles, and preferences, and current trends in utilization of information communication technology-enabled pedagogy for effective instruction. Teachers can improve their instruction using ICT-based pedagogical approaches which may range from simple powerpoint/multimedia presentations to blended learning, flipped classroom, and Quipper School/Schoology. Likewise, there is a need to conduct capacity building activities to develop or enhance the competence of teachers in using technology-based instruction. The purpose of using and integrating these ICT-based pedagogies in instruction is to commit the teacher to individual accountability for professional growth and shared responsibility for the learner's improved learning outcomes and school's development.

The public elementary school teachers in the District of Trece Martires City of the Division of Cavite, Philippines performed at high proficiency in social regard for learning, diversity of learners, personal growth and professional development, community linkages, and learning environment. However, they had basic proficiency in planning, assessing, reporting and curriculum content and pedagogy. Therefore, there is room for improvement in upgrading the teacher's teaching-learning competencies thru in-house or external capacity building seminar-workshops or faculty development activities particularly in integrating or adopting an ICT-based pedagogy in the classroom which will improve instruction and cater to the needs and interests of 21st-century learners.

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ASSESSMENT OF THE CAREER DEVELOPMENT PROGRAM OF THE LANDBANK OF THE PHILIPPINES (LBP)

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Evelyn A. Arpon
Anna Victoria Mailas

INTRODUCTION

Career Development Program is a form of a strategic component of an organization's human resource development to facilitate the alignment of employees' career goals and aspirations with the business goals and vision of the organization. It is the individually-perceived sequence of attitudes over the span of the person's work life in the company or corporation where he or she employed.

Some Employees or workers who have been with the company since its establishment are being taken for granted by the management. Employees being the profit earner for the company should have career development programs in order to become productive employees. Management should find ways to provide for the financial needs as well as the career development of their employees. They should be reminded that as managers, their main role is to develop the behavior and attitudes of their employees. And this can be done by having a career development program.

Career development program is commonly offered as one of the solution for those who are tired of their daily job routines. If employees see no career growth opportunity, positive attitude and performance will eventually weaken.

Career development programs have an impact on the operational system of an organization. If there is a poor career growth opportunities, it may lead to high turnover of hired employees, decreasing employee involvement and inefficient utilization of people's skills.

Career planning as a means of a more participatory and committed workforce which appears to be a powerful tool of any organization, should be undertaken only by a management willing to assume that added risk that may only arise employees begin to take the initiative to seek greater opportunities.

Historical Background

Land Bank of the Philippines stylized as LANDBANK or also known by its initials LBP, is a universal bank in the Philippines owned by the Philippine government with a special focus on serving the needs of farmers and fishermen. While it provides the services of a universal bank, it is officially classified as a "specialized bank" with a universal banking license.

LANDBANK is the fourth largest bank in the Philippines in terms of assets and is the largest government–owned bank. It is also one of the biggest government owned and controlled corporations in the Philippines.

LANDBANK was established on August 8, 1963 as part of the Agricultural Land Reform Code and as part of a program land reform in the Philippines. It was to help with the purchase of agricultural estates for division and resale to small land-holders and the purchase of land by the agricultural lessee. In 1965, LANDBANK's by-laws were approved and its first board of trustees was formed, with the Secretary of Finance as Chairman.

On July 21,1973 Marcos signed Presidential Degree No. 251 which revitalized the bank. The degree granted LAND BANK a universal banking license (the first bank in the Philippines to be issued such a license) with social mission to spur countryside development. LANDBANK was reorganized in 1977 when it was divided into three sectors to better assess the needs of the customers. It was divided into Agrarian, Banking and Operations sectors to strengthen operations and ensure long–term viability.

On Feb 23, 1995 LANDBANK's charter was once again amended, its authorized capital was increased to nine billion pesos and it became an official government depository. The number of members of the board of trustees was also increased to nine. On August 25, 1998, LANDBANK authorized capital was once again increased to 25 billion pesos, and it then increase 200 billion pesos, after DBP–LANDBANK merger in 2016.

On November 11, 2016 Finance Secretary and LANDBANK Chairman of the Board Carlos Dominguez III administers the oath–taking of Alex V. Buenaventura as the new President and CEO of LANDBANK.

VISION

By 2018, LANDBANK will be the top universal bank that promotes inclusive growth and improves the quality of life especially in the countryside through the delivery of innovative financial and other services in all provinces, cities and municipalities.

MISSION

To Our Clients and Publics:

We will use the best technology solutions to deliver responsive financial and support services to our clients, while promoting sustainable development, and environmental protection.

To Our Employees:

We will develop and nurture talents that will exemplify the highest standards of ethics and excellence consistent with the best in the world.

STATEMENT OF THE PROBLEM

This study is designed to assess the career development programs of employees of Land Bank of the Philippines.

Specifically the study aims to answer the following questions:

1. What are the career development programs prepared by the management?
2. What are the factors considered in the career development program?
3. What are the problems encountered in the conduct of the career programs?
4. What are the suggested solutions to solve the problems in the career programs?
5. What are the most requested system designs as perceived by the respondents?

SIGNIFICANCE OF THE STUDY

The results of this study are deemed particularly useful to the following:

Employees – The findings of the study will help the employees in such a way that they would realize the importance of career development programs for their satisfaction and productivity.

Personnel/Human Resource Development Managers – The result will serve as the guideline or basis for the management to facilitate the alignment of employee's career goals and aspirations with the organization's business goals and aspirations.

Top Managers – The findings of the study will be useful to top management who will use it in order to help their employees set realistic career goals and to overcome the barriers that prevent them from achieving their career goals**.**

Students/Future Researchers – This study would also contribute to the literature of Career Development Programs and could be a source of reference for student and future researchers.

RELATED LITERATURE AND STUDIES

The researchers consider the following related literature and studies as relevant and vital to the conduct of this study.

Martires, Conception and Rodel (2014) define career management as the pathing, planning, and development of one's work schedules and activities in relation to the individual's abilities, skills, competencies at the initiative and with the assistance of management in order that he can take greater job and personal responsibility for his future.

Career development program seek to inject a vision that enfolds the future of the employees in the company. It is a view of what and where the employees wanted to be. Career development program binds the management and employees in a shared pursuit of primary goals of the company. To be effective employees, management should develop the career of each employee. Management should do something in order to enhance the skills, attitudes and capabilities of the employees towards a more fruitful production. Career development compliments job satisfaction to make excellent job performance.

Employees are concerned for their future in the company they are working at present precisely because they are the ones who bring profit for the company. Management should plan, and organize the career development of the employees, so that in the end they can achieved their goals through the effort of their employees. They have to influence the attitudes, skills and abilities of their employees in order to be more productive.

Haldane, Bernard, et Al (2012) explained that career development includes ways and procedures by which one's career can be enhanced and can grow in accordance with the employee's overall desires and ambitions. It is divided into various stages. These are the 1) explanation stage, 2) establishment stage or early career, 3) maintenance stage or mid-career, 4) late career, 5) the decline stage.

Bernard considers it to be a "lifelong process" by which an individual efficiently and effectively develops and pursues realistic and challenging goals that enable him/her to become the person he/she wants to be. Career development may only be applied to those whom the organization would like to retain.

Florentino, V. (2015) emphasized that when career management becomes institutionalized making the individual feel of the organizations concern for him, he becomes ,motivated to work for it, and able and willing to accept responsibility for his growth and accomplishment, he mentioned that "there is impressive evidence that can be taken to individual career planning and organizational planning pays off in increased productivity, deeper job satisfaction and higher retention of employees…" this is a result of a good matching of individual career goals with the right organizational opportunities.

He mentioned that the characteristics of the typical Filipino worker, which is usually shy, timid and fearful, affect the implementation of career management , Sometimes young, aggressive and ambitious individual possess more professional qualifications than his supervisors, he just remains silent and patient which is a hindrance in his career or sometimes he/she looks for a better and easier career paths somewhere else.

According to him career is the pattern of work or work- related activities that people develop throughout a lifetime. Career development program is a response to change a complex educational strategy intended to change the beliefs, attitudes, values and structure of the employees and managers, so that they can both adopt to new technology.

Baricua and Gonzales described career development as a component of organizational strategy that will help your organization attract, develop, and retain the right people; it also optimized what would fit between employee goals and aspirations.

Lapuz and Dr. Santamaria explained that career development prepares the employee to become more resilient and responsive to organizational changes and it improves the employee's satisfaction and organizational productivity by enabling them to move into the jobs where they can best contribute their talents and skills, and finally, it ensures your organization's stability to support growth and expansion. Globalization has not only resulted in a stiff competition for products , goods and services, but also competition among organization to attract and retain the right people. The organizations competitive edge are employees.

Siegel LL. (2012)said that training refers to industrial efforts to provide those experiences calculated to facilitate the development of attitudes, skills, and knowledge most germane to satisfactory job performance. He explained further that training programs are directed toward maintaining and improving current job performances and development programs that seek to develop skills for future jobs. The value both to management and employees of training for job – related behavior is self-evident. An effective training program may increase productivity, generate job satisfaction and turnover and accidents and so on.

He explained further that both managers and non–mangers can receive help from training and development programs, but the mix of experience is likely to vary. Non manager much more likely to be trained in the technical skills required for their current jobs, while managers frequently received assistance in developing the skills particularly conceptual and human relations skills required in future jobs.

Analysis of training needs typically begins with an overview of the entire company in an attempt to identify areas of relatively inefficient operation. Interviews, studies of company records, concurring turnover accident and customer complaints and observations by the training analyst may all be suggestive. Finally, the analysis of training needs should get down to the level of individual workers.

Training may be necessary only for certain workers within a department. Various test of abilities, skills or job knowledge especially those that are appropriate to the identified areas of

training need may be administered. A training program properly conceived permits all levels and activities of an individual organization. A worker with varying amounts of experience at various levels of classifications will feel its impact.

One of the greatest challenges to the development programs takes place when the trainee returns to his or her job. If on the job environment does not encourage or support the new managerial skills and knowledge they will quickly disappear.

Training programs are designed to achieve goals that meet instructional needs, however, are - examination of the instructional model will emphasize the danger of beginning any programs without a complete assessment of task, behavior and environment, Goals and objectives are the key steps in determining a training environment and unless they are specified, there is no way to measure success.

It is important to emphasize that the choice of a particular methodology should be based on an analysis of the particular application requiring job information. Even the choice of questions within a particular methodology is dependent on the application. In some cases, to be critical of performance is important, in other cases, opportunity to learn information related to where learning takes place is the key issue. In other instances, a whole variety of questions must be addressed. The critical point is this, thoughtful planning that considers the variety of methods and applications must precede any assessment effort.

It is a waste of valuable resource to conduct a need assessment effort only discover that the wrong questions have been asked on the wrong problems are solved. It is of course a serious waste of valuable resources to design a training program without a careful needs assessment.

Training is a continual process of employees performed at a high level from the first day that they start to work. Training is designed to improve a person's skills to do the current job. Whether it occurs at a place of work or a special training facility. Experts in educational process should always supervise training.

Training goals must be defined clearly before specific program is undertaken. Once the goals are well formed, the methods are set in place. The content of the training programs may not be learned adequately if the appropriate methods are not used. It is for the instance not enough to teach human retentions without actually "doing it".

Managers are chosen for their technical excellence, but they have little or no training in human relations. They would rather avoid training and prefer to hire potential and experienced manager from other companies. Also, managers are interested in enhancing their own status rather than in helping their subordinates. And, they know very little about their subordinate's potential preferring to select a carbon copy of themselves when promotional opportunity comes.

Victor A. Florentino in his thesis entitled "The Corporate Staff Training and Development Plan of TESDA as received by his Technical/Professional Staff- NCR for 1996", discussed training as a continuous process because of the growing demand for new technology therefore needing enough time to develop one's training system to cope with the challenges facing the demands of the environment. It is very important for managers to ensure that their organization possess the appropriate attitude, knowledge and skills to improve continuously over-all effectiveness, because skills are the basic source of an organization's effectiveness. Thus, every organization, whether big or small should decide how to best allocate its' manpower skills and resources in order to optimize its productive capacity.

Mary Ann O. Aldea, on her study entitled "An Assessment of the Implementation of the Promotion Policies of Garments and Textile Export Board (GTEB) of DTI in Makati", explained that when an employee accepts a job throughout his life. He looks forward to being shifted to another job, which will give him greater satisfaction or higher remunerations. To realize this, the employee does his job well, tries to improve himself and acquire the skills and experiences needed for higher positions. When he is promoted, more complex duties and greater responsibilities and challenges will be experienced.

Opportunity for advancement of every employee is very vital. This is one way of motivating them to improve their performance. When line of advancement are clearly defined, employees will promoted to job for which their previous experiences and skills that they have acquired and developed will be rewarded with the most deserving positions and remunerations.

Career development programs will not just benefit the employees but also the management, due to the fact that employees will be motivated to work, they will persevere because they know there will be proper rewards for every positive actions/effort they will contribute for the good of the company/corporation.

METHODOLOGY

To attain the objectives of this study, the descriptive-normative type of research was used. The main data gathering instruments was the questionnaire together with the interview. Two hundred sixty one employees (261) both from the executive and the rank and file of the Land Bank of the Philippines (LBP) during the school year 2016-2017, constituted the sample or the respondents of the study. The respondents were taken from the four sectors of LBP, namely: the corporate services sector, representing 104 or 40% of the population; the agricultural and development lending sector, with 25% of population; operations sector with 20% and the branch banking sector with sample population of 15%.

RESULTS AND DISCUSSION

This is the detailed presentation, analysis, and interpretation of the data that were gathered to respond systematically to the problems posted in this research.

The statistical analysis as bases for interpretation of data were done through frequency counts, percentage and ranking as in the case of distribution of respondents according to sex, age, civil status and years of service. Percentage distribution was used to verify the respondents' background in Land Bank of the Philippines in accordance to age, sex, civil status and length of service while the mean was used to obtain the average level of career development program frequently used.

Table 1
Respondents as to Sex

Sex	Frequency	Percentage	Rank
Male	109	42%	2
Female	152	58%	1
Total	**261**	**100%**	

Table 1 shows the respondents as to sex.

As gleaned in the table, out of 261 respondents 58% or (152) were female and 42% or (109) were male.

Table 2
Respondents as to Age

Age	Frequency	Percentage	Rank
21-25	23	9%	6
26-30	45	17%	3
31-35	47	18%	2
36-40	60	23%	1
41-45	31	12%	5
46-50	24	9%	7
51-above	31	12%	4
Total	**261**	**100%**	

Table 2 indicates the respondents as to age.

As indicated in the table, respondents from age 36-40 had the highest percent with 25%. This is followed by age bracket 31-35 with 18% and 17 percent for age bracket 26-30; while 41-45 years old and 51- above occupy the same rank both with 17%. Nine percent for both age bracket 21-25 and 46-50, a total of 100% (261) respondents.

Table 3
Respondents as to Civil Status

Civil Status	Frequency	Percentage	Rank
Single	83	32%	2
Married	178	68%	1
Total	**261**	**100%**	

Table 3 illustrates the respondents as to civil status.

As illustrated in the table, 68% or 178 are already married while the remaining 32% or 83 respondents are single.

Table 4
Respondents as to Number of Years in Company

No. of Years	Frequency	Percentage	Rank
1-5	71	27%	2
6-10	115	44%	1
11-20	61	23%	3
21 above	14	6%	4
Total	**261**	**100%**	

Table 4 as to number of years in company, 44% had 6-10 years in service followed by 1-5 years of service with 27 percent.

For those with 11-20 years and 21 above, in the company which rank third and fourth, had 23% and 6% percent, respectively.

Table 5
Respondents as to the Criteria of mostly conducted Career Development Program of the Company

Scopes	Frequency	Percentage
Age	11	4%
Sex	11	4%
Skills	114	44%
Education	50	15%
Length of Service	42	16%
Others (e.g Job Description, Professional Enhancement, and Needs)	33	13%
Total	**261**	**100%**

Table 5 as to criteria of mostly conducted career development program of the corporation, shows that the criterion of skills is the most conducted career development program.

Table 6
Summary of Career Development Program used in Land Bank of the Philippines

Career Development	Mean	Remarks
Career Planning	1.03	Very Satisfactory
Career Counseling	1.04	Very Satisfactory
Career Pathing	0.82	Outstanding
Career Awareness	0.80	Outstanding
X	0.92	Outstanding

Table 6 indicates that the most usually used Career Development Program, evaluated by the top management, are concerned about the good future of their employee in the corporation. At the same time, the top management helps their individual employees in planning his career in the corporation.

Table 7
Areas of concern in Career Development Program

Scopes	Mean	Remarks
Training	1.04	Often
Promotion	1.15	Often
Job Improvement	1.04	Often
Organizational Goals	1.28	Often
X	1.13	Often

Table 7 shows that the areas of concern in career development are always training and job improvement of the employees.

Table 8
Problems encountered by respondents in the conduct of career program

Problems	Frequency	Percentage Distribution	Rank
Employees Attitude	107	41%	1
Lack of Career Growth	90	34%	2
Treatment of the Management	64	25%	3
Total	**261**	**100%**	

Table 8 presents the problems encountered by respondents in the conduct of career programs which are ranked as follows: Employees attitude, rank- 1; Lack of career, rank-2; and Treatment of Management, rank-3.

Table 9
Suggested Solutions to the Problems Encountered by Respondents in Career Programs

Solutions	Frequency	Percentage Distribution	Rank
Assure the employees that management will provide opportunities to self-growth	90	34%	2
Establish direct communication	109	42%	1
Eliminate personal preferences and opinions of management	62	24%	3
Total	**261**	**100%**	

Table 9 reflects the solutions to the problems encountered by respondents in career programs.

As shown in the table, there were three basic solutions considered by respondents which were ranked as follows: Rank 1- Establish direct communication, Rank 2- Assure the employees that management will provide opportunities to self-growth, Rank 3- Eliminate personal preferences and opinions of management.

Table 10
Requested System Designs as Perceived by the Respondents

System Design	Mean	Remarks
Career Resiliency	1.00	Outstanding
Step-by-step Job Coaching	1.71	Very Satisfactory
Salary Negotiation	1.54	Satisfactory
Outplacement	2.55	Poor
Work and Family	1.30	Very Satisfactory
X	1.62	Satisfactory

Table 10 reveals the respondent's assessment at system design.

As revealed in this table, Career Resiliency was chosen as the best career system design.

FINDINGS

The major findings of this study are the following:

1. Status of the career development program as assessed by the respondents from the executive department and the rank and file of the LBP in term of:

    1.1 Sex, Majority of the respondents were female representing 58% out of total 261.

    1.2 Age, Most of the respondents are between 36-40

    1.3 Civil Status, 68% of the respondents are married.

    1.4 Number of years in service, 44% served the corporation for 5-10 years.

2. Assessment of the respondents on the career development programs prepared by the management:

    2.1 As to Criteria, criterion of skills is the most conducted career development program with 44% manifestation.

    2.2 As to Program, career pathing and awareness programs are most usually used career development program both rated with outstanding remarks.

    2.3 As to Areas of Concern, training and job improvement of the employees are always the areas of concern both with a mean of 1.04

3. The problems encountered by the two groups of respondents were assessed as follows; Employee attitude had 41% rank-1; Lack of career growth had 34% rank-2; and Treatment of the management had 25% and rank-3.

4. The suggested solutions to solve the problems in career programs were assessed as follows; Rank 1- Establish direct communication had 42%, Rank 2- Assure the employee that management will provide opportunities of self-growth had 34%, Rank 3- Eliminate personal preferences and opinions of management had 24%.

5. As to respondents' assessment of system design, career resiliency was chosen among the six system design as the best career system.

CONCLUSION

The conclusions drawn from the major findings in this study are as follows:

1. Majority of the employees of LBP are predominantly married female with and age-bracket of 36-40 and had served the corporation for 6-10 years.

2. Holistically, in the evaluation of the two groups of respondents on the criteria of mostly conducted career development program the skills of the employee prevailed as the most

important, the most usually used are career pathing and career awareness. On the other hand, training and job improvement of the employees dominates as the areas of concern in career development program.

3. In terms, of the problems encountered, the employees' attitude was bank first among the three common problems.

4. Apparently, among the suggested solutions to the problem encountered, establishing direct communication was on the top with a rating of 42%.

5. Among the system designs offered by the corporation through the HRD, career resiliency was rated outstanding as a remark with a weighted mean of 1

RECOMMENDATION

Based from the findings and conscious drawn from the study, the researchers recommend the following;

1. The company/corporation should consider job descriptions, needs of the employees and professional enhancement as factors in conducting a career development program for the employees.

2. The management should always be the forerunner in setting a realistic goal or target and provide for the needed mechanism for its growth thereby insuring its success in attaining a stable environment of excellence which would encourage or motivate further their employees to improve more on their career and be a pro-active participant in all undertakings of the company/corporation.

3. The management should treat promotion of the employees on equal values and importance with training and job improvement rather than ignoring it and focus only on the latter. As part of the scope of their career development program the three should complement with each other in achieving an environment that will encourage the employees to work harder.

4. The employees should endeavour to further improve their ways of attending to client needs and should give their best to the task assigned them not just expecting to compensate their effort with immediate reward from management so that a balance healthy environment of give and take would be created.

5. Strict adherent to internal promotion to deserving employees, provide them with reasonable pay and job security as well as necessary benefits due them.

6. Management should encourage transparency and openness among employees to ensure cooperation, and achievement of goal set and improve performance level.

7. Managers must insure proper reporting of employees' accomplishment and acknowledge those that perform well by way of giving them rewards through promotion and/or material benefits.

8. Management must have a definite direction of the things they want to achieve and how it should be done.

9. Management must conduct sensitivity skill and leadership training to enhance interpersonal relationship and managerial skills, to insure efficient and effective delivery of services to the client.

10. The company/corporation must campaign or the outplacement (orientation upon exit in the company)as one of the necessary system design in the company, because outplacement will be a great help for the employee who will be lay-off or near the retirement period.

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CORPORATE SOCIAL RESPONSIBILITY (CSR) OF SELECTED LOCATOR-INDUSTRIES: BASIS LINKAGES AND PARTNERSHIP

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INTRODUCTION

A corporation exists and is given recognition by society, through its instrumentality of public authority. Thus, social responsibility and responsible citizenship are embedded at the very core of the corporation. Corporations establish, operate, and sustain themselves for purposes that have a direct bearing on the common good of society.

Corporate Social Responsibility (CSR) is considered as voluntary behavior that attributes to the society welfare. Corporations should not only concentrate on their economic and business outcomes, but also give attention of their effect on the society and the environment. Practicing Corporate Social Responsibility on the business cannot be overemphasized. Its concerned is not only on the profits but on the environmental improvements as well. It can go a long way to improve on product quality and service to customers.

Locators industries in Clark Freeport Zone are establishments who have relocated to get tax a grant and paying only a minimal tax fee of 5 percent. The idea that various locators in Clark Freeport Zone where they should be more socially responsible, fails to give adequate ethical guidance to the executives must decide which causes to pursue and how much to commit to them. This problem becomes severe. Locators were committed to exercise greater social responsibility, and need more specific moral rules or principles to give them reasons for acting in one way rather than another. It is for this reason that this study was conducted to determine the corporate social responsibility practices, impact of selected locator-industries in Clark Freeport Zone, the facilitating and hindering factors in the implementation of corporate social responsibility programs.

The researchers believed that for Corporate Social Responsibility to be effective and sustainable, there must be support from business leaders. Corporate officers have a vital role in championing CSR in the company; therefore, it is very important to determine the practices so that a company can reinforce and apply it to his company. For this to be materialized, it is essential to examine the dimensions that serve as guides to determine the best CSR practices as well as the facilitating and hindering factors affecting the CSR programs.

STATEMENT OF THE PROBLEM

Specifically, it sought to answer the following questions:

1. What are the Corporate Social Responsibilities Practices of the locator-industries as assessed by the implementers and adaptors in terms of:
   - 1.1 Relevance and Responsiveness;
   - 1.2 Access and Equity;
   - 1.3 Efficiency and Effectiveness; and
   - 1.4 Partnering with Experts?

2. Is there a significant difference in the assessment of the groups of respondents on the Corporate Social Responsibilities Practices?

3. What is the impact of Corporate Social Responsibilities Program to the adaptors in terms of:
   - 3.1 Economic;
   - 3.2 Knowledge; and
   - 3.3 Skills?

4. Is there a significant relationship between the Corporate Social Responsibilities practices and the impact to the adaptors?

5. What are the facilitating and hindering factors experienced by the respondents?

6. Based from the findings, what linkages and partnership for SUCs may be proposed?

CONCEPTUAL FRAMEWORK

This study used the Input-Output-Process (IPO) Model System Analysis as shown in Figure 1.

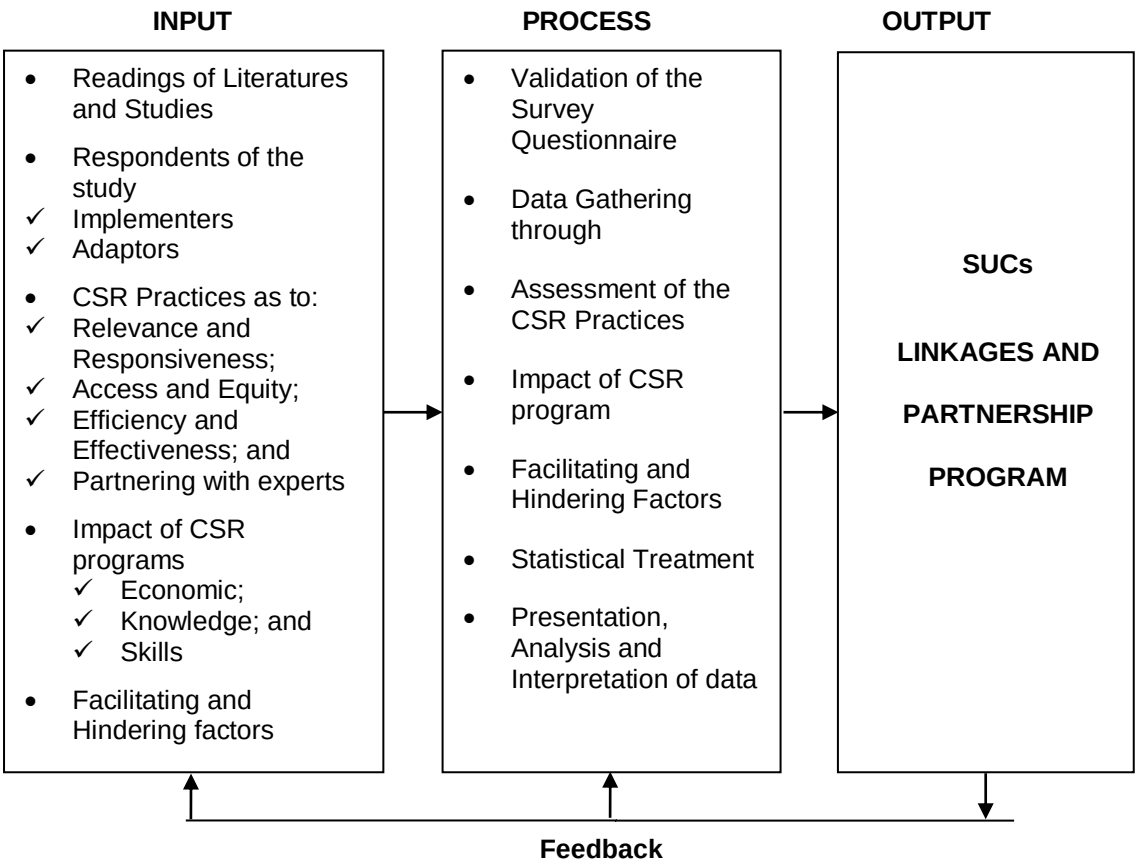

Figure 1. Conceptual Framework

OBJECTIVES OF THE STUDY

1. To develop a linkages and partnership in the assessment of the respondents on Corporate Social Responsibility practices of the locator-industries.

2. To develop livelihood projects and trainings for the community.

3. To identify the hindering factors in the implementation of Corporate Social Responsibility practices in the community.

4. To implement the linkages and partnership of the different locator-industries.

SIGNIFICANCE OF THE STUDY

The study has significant contribution to the State Universities and Colleges (SUCs). It is thru this study SUC can build partnership and linkages to the industry locators in Clark Zone Freeport. The adaptors will serve as input to improve the development and implementation of the CSR programs to be more responsive to the needs of the community. Implementers will give an insight to determine the extension and community program/project that each school will have to conduct. The result of the study would inspire the employees to initiate their own assessment of the best corporate social responsibility practices of their companies. The result can be a basis on how they can help to improve the gray areas in the implementation of CSR programs of the company. Researcher will open the door for EARIST for partnership and linkages for the school extension and community projects.

RELATED LITERATURE

Corporate Social Responsibility has become a pervasive topic in the business literature, but has largely neglected the role of institutions. In the article entitled, “Corporate Social Responsibility and Institutional Theory: New Perspective on Private Governance examines the potential contributions of institutional theory to understanding Corporate Social Responsibility as a mode of governance. This perspective suggests going beyond grounding Corporate Social Responsibility in the voluntary behavior of companies, and understanding the larger historical and political determinants of whether and in what forms corporations take on social responsibilities.

Meanwhile, Corporate Social Responsibility is more tightly linked to formal institutions of stakeholders’ participation or state intervention in other advanced economies. The tension between business-driven and multi stakeholder forms of Corporate Social Responsibility extend to the transnational level where the form and meaning of Corporate Social Responsibility remained highly contested.

Corporate Social Responsibility research and practice thus rest on a basic paradox between a liberal notion of voluntary engagement and a contrary implication path to explore how the boundaries between business and society are constructed in different ways and improve the understanding of the effectiveness of Corporate Social Responsibility within the wider institutional field of economic governance (1).

Maximiano (5) cited that corporate responsibility extends to corporate stewardship of the environment, one of the triple bottom lines (economic, social and environmental). In the course of doing business, corporations have an impact on wide spectrum of stakeholders, the environment is included, in a variety of ways. The business has enormous responsibility to

ensure that the activities and the behaviour of business is conducted with utmost integrity. While business strives to maximize wealth they should not ignore their responsibility to the physical environment, the renewability of resources and the consequences of haphazard industrialization.

According to Sibal (6), the trend under globalization is the weakening of the state as a result of privatization in and further strengthening of private multinational corporations. Citizens are at a loss since the state is no longer in the strong position to protect them. Added to this is the weakening of the formal sector of the world's economies as a result of global of job and contractualization. Hence, workers and citizens' organization (called the civil society) are becoming more vigilant and suspicious in the growing private enterprises.

According to management expert Lim (12) management has three responsibilities: to make profit; satisfy employees; and be socially responsible. Moreover, capitalization and ownership of corporations are becoming more diverse and the controlling owners and operating managers realize fully that their loyalty should first and foremost be with the public in general. In the strict sense, corporations are no longer a "private property". Two surveys conducted by Credit Lyonnais HongKong and U.S. Securities and Exchange Commission revealed that investors are willing to pay 12 percent to 30 percent premium on corporations practicing good corporate governance. The Credit Lyonnais survey further showed that these corporations have yielded higher return on capital at 33.8 percent.

Sibal (23) enumerated the components of CSR:

- **Participate Corporate Governance**

Corporate governance is concerned with the manner an organization is managed, or the degree of democratic or participative processes in the management of an enterprise. It refers to the relationships among the company's policy makers and operating managers with its various stakeholders especially the employees. Corporate governance is concerned with the direction and control that a company takes. It is about transparency, accountability and employee involvement in decision making. It also refers to the accuracy and fairness of management decisions which should be subjected to participative processes, checks and balances and monitoring.

Incidentally, there are various mechanisms for employee participation in decision making that can be instituted to ensure that operating managers act in the best interest of the company and its stakeholders.

For instance, researchers show that sound corporate governance is positively linked with the financial success of enterprises. While the interest of the various stakeholders of a corporate entity may be in conflict with one another, if taken from a wholistic perspective, there are more things that should unite them to be able to successfully accomplish the organization's goals. Corporate governance is a mechanism and does not promote division among the various stakeholders. This is very true with management and their employees.

There are at least two reasons why management and labor should become partners in the decision making process. First is that they can check and control each other for the benefit and interest of the other stakeholders. Second is that if ever there are problems were partially caused by both management and labor. Hence, both of them are in the best position to find solutions and solve these problems for survival and growth of the enterprise.

In the Philippines, the more participative form of corporate governance is practiced mostly in big enterprises. The dominant form of governance in the country is a paternalistic, enterprise-based unilateral decision making process practice in micro, small and medium sized

companies. In 2003, these enterprises accounted for more than 99 percent of all business establishments in the Philippines and employed 68 percent of the recorded employment.

In the rural areas and in the informal sector, the prevalent workplace relationships are a combination of the peasant-lord (feudal), primitive market and small manufacturing. Land-based elite political families control both the political and business institutions.

The country's formal sector is dominated by private and state enterprises run by elite groups of bureaucrats, politicians and businessmen. The IR system in big enterprises is characterized by enterprise bargaining and reinforced by tripartism where the state is the most dominant actor.

In other enterprises in the formal sector, the Japanese influenced consultative mechanism is slowly being incorporated in the unilateral decision making type of corporate governance. Collective negotiations are practiced in the public sector and various labor-management cooperation mechanisms are incorporated in the essentially top-down, paternalistic management style in the sector.

- **Strategic Planning Management**

Strategic management defines the long term directions of the business organization through its vision, values, missions and strategies. It involves environmental scanning, strategic formulation, strategy implementation and evaluation and control. It emphasizes assessment of strengths and weakness and the monitoring and evaluation of environmental opportunities and threats.

Strategic management is a managerial process of formulating strategic vision, values, missions, strategies, goals and objectives, implementing the strategic and tactical plans, evaluating accomplishments and initiating the needed corrective measures.

Several factors affect the choice of strategies. The interplay of these factors will vary from one situation to another. Management needs to study the external and internal factors that affect the strategy formulation process. Organizations operate a bigger environment. The economic and political environs as expressed in laws, rules, government policies and regulations are critical in the formulation and reformulation of strategies. Likewise, social-cultural factors like ethical standards, societal norms and environmental concerns can limit the strategic actions of enterprises and organizations. The external and internal factors that shape the choice of a corporate strategy include the following:

1. Gives the organization direction as the vision, mission and goals of the organization are clear to members.

2. Makes the members aware of new opportunities and threats and can therefore plan accordingly.

3. Helps unite the organization.

4. Creates proactive management measures.

5. Encourages leaders of the organization to monitor, review evaluate actions that can lead to better results.

In the Philippines, among the foremost social reformers include Isabelo de los Reyes, Lope K. Santos and Herminigildo Cruz. In 1902, they organized Union Obrera Democratica, a labor federation of various trade unions and gemios (local guilds and community organizations).

The labor federation pressured foreign and local enterprises to improve the lot of Filipino workers while providing community social services (6).

Mirvis (14) as published in California Management Review studied the relevance of Corporate Social Responsibility for engaging employees, including its impact on their motivation, identify and sense of meaning and purpose. The study showed three different ways, namely: transactional approach, relational approach and developmental approach. The transactional approach was based on the programs undertaken to meet the needs of employees who want to take part in the Corporate Social Responsibility efforts of a company. The relational approach was more on psychological contract that emphasizes social responsibility. Lastly, the developmental approach was more on aiming to activate social responsibility in a company and to develop its employees to be responsible corporate citizens.

Pollach (19) examined the integration of Corporate Social Responsibility into corporate communication in large European companies. They found out that Corporate Social Responsibility was frequently managed by the Corporate Social Responsibility departments and by communication departments at a small extent. Communication departments frequently engaged in cooperation with the Corporate Social Responsibility departments. The more frequently they cooperated, the more likely they has a formalized cooperation. The authors also concluded that communication departments were generally aligned to strategic management of the organization, which was not the case for the Corporate Social Responsibility departments.

SYNTHESIS OF THE STUDY

The materials provided information that highlights the need for the business enterprise to be socially responsible. Foreign literature enumerates the CSR's components, which include the economic performance, legal, ethical and philanthropic. The work of Hartman (3), Crane (2), Calderon (1), disclosed the profile and characteristics of a socially responsible companies from the point of view of different stakeholders and the public.

The concepts of Mostovics (16) and Parast (18) emphasized the pillars of CSR, how to maximize returns, and the importance of outcomes measurement of CSR programs among the firms.

Maximiano (5) extended such responsibility of business to environment or what he called environmental stewardship.

The foreign studies revealed that the CSR practice of various businesses in European countries. Here, CSR was frequently managed by the CSR departments and communication department. The author (19) concluded that communication departments were generally aligned to strategic management of the organization.

On the local note, Sibal's (6) CSR book has further discussed and enlighten the proponents on the various concepts and theories on CSR and presented position both government and private sectors need to undertake worthy casues for a good cause. Of course, the role of the League of Corporate Foundations, Sibal (23) in helping the corporate responsiveness of the MNCs.

METHOD OF RESEARCH

This study used the descriptive research. It is a design to gather information that may lead to determine the corporate social responsibility practices of selected locator-industries, and facilitating and hindering factors for which the researcher sought to provide linkages and partnership for SUC's.

RESEARCH DESIGN

Descriptive research is the most appropriate method since this presents and provides systematic and factual information to assess and evaluate the present and existing condition of the variables being investigated.

This involves gathering of data, analysis, interpretation to answer postulated problem. It allows the qualitative and quantitative description of the impact of corporate social responsibilities program and facilitating and hindering factors.

It is also correlational since it is used to evaluate the extent of relationship between the corporate social responsibilities practices and impact of corporate social responsibilities.

Sample and Procedure

Table 1

Distribution of the Respondents from Selected Locator Industries

Respondents	Population	Sample	Percentage
Implementers	42	40	95
Adaptors	42	40	95
Total	**84**	**80**	

There were two groups of respondents involved in the study, implementer and adaptor respondents. Implementers and Adaptors respondents with 40 or 95 percent out of 42 respondents were the subject of the study.

Convenience sampling was used to select the locators' and the respondents of the study. The researcher gathered the list of all locators' from Clark Development Corporation. The list were sorted and classified to industry's they belonged. Top five (5) locators' per industry were selected as the target companies. In cases were the said locators' refused to participate for some reason, the next in the rank in the same industry served as replacement. With regards to the target companies, the research has made one general assumption that these companies most likely were already implementing corporate social responsibility practices and values. Therefore, information and opinions coming from its officers and/or staff were considered essential as far as corporate social responsibility issues and surely provide baseline of opinions of those company leaders implementing corporate social responsibility philosophies and concepts.

Data Gathering Procedures

The researcher drafted the survey questionnaire and submitted to the adviser for comments, suggestions and recommendations. Prepared the final copy of the survey questionnaire with due consideration to the suggestions given. Requested permission from the Office of the Human Resource Management of the selected locator industries to conduct the study. Distributed the questionnaires personally to the implementer and adaptor respondents. Retrieved, collected, tallied and tabulated the data gathered. Submitted the data for statistical treatment.

Proposed SUCs Linkages And Partnership For Corporate Social Responsibility

Rationale: To identify companies for partnership and linkages by the SUCs

No.	Areas	Proposed Community Development Plan	Industry Category	SUCs/Department Involved
1.	Advocacy agenda	Health Wellness	APDI Health Services, CRL Environmental Corporation	All Colleges
2. 3.	Livelihood projects Trainings for the community.	Entrepreneurship Handicraft	Clark Interiors, Inc., PSMC Philippines, Inc., Alpha Aviation Group (Philippines), Inc.	College of Industrial Technology College of Business Administration College of Hospitality Management College of Teachers Education
4.	Network equipment, kiosks, or small mobile services.	Appliance and server virtualization.	NCO Philippines, S-Corp Philippines, Inc.	College of Engineering College of Industrial Technology College of Arts and Sciences
5. 6. 7.	Fast-paced processes. Corporate cause and involvement Awareness of a good corporate citizen.	Process Development	Sutherland Global Services Philippines	College of Education College of Business Administration
8.	Product innovation, Development	Product Development	Amerton, Inc., Phoenix Semiconductor, Inc. Industrial	College of Business Administration College of Architecture and Fine Arts College of Hospitality Management College of Industrial Technology
9.	Jobs	Construction labor jobs	Dongwang Clark Corporation, PTT Philippines Trading Corporation	College of Industrial Technology College of Business Administration College of Hospitality Management
10.	Nutritional and relief assistance	Disaster volunteer activities. Psychological care.	Cyber City Teleservices, L.T.D., CCIS Educational Foundation, Inc.	College of Hospitality Management College of Industrial Technology
11.	Support	CSR support to the organization.	Australian International Training and Management	All Colleges
12.	Budgeting	15 million and above	Global Gateway Development Corporation	All Colleges

STATISTICAL TREATMENT OF DATA

The data gathered were compiled, collated and summarized separately per group. The responses for each item were categorized based on the specific problems raised. The following were utilized in the treatment of the data:

1. Percentage. This was used as descriptive statistics or something that describes a part of the whole.

2. Frequency. It is the actual response to a specific item/question in the questionnaire where the respondent ticks his choice.

3. Weighted Mean. This was used to measure the respondents' assessments. Multiplying each value in the group by the appropriate weighted factor and the product were summed up and divided by the total number of respondents.

Formula: $$WM = \frac{\sum_{i=1}^{n} f_i x_i}{N}$$

The following scales were utilized to determine the corporate social responsibility practices by industry-locators as assessed by the respondents.

Option	Equivalent	Verbal Interpretation	Symbol
5	4.20 – 5.00	Highly Practiced	HP
4	3.40 – 4.19	Practiced	P
3	2.60 – 3.39	Moderately Practiced	MP
2	1.80 – 2.59	Least Practiced	LP
1	1.00 – 1.79	Not Practiced	NP

To determine the impact of CSR to the adaptors and the facilitating and hindering. The Likert's scale:

Option	Descriptive Equivalent		
5	Strongly Agree	(SA)	4.20 – 5.00
4	Agree	(A)	3.40 – 4.19
3	Moderately Agree	(MA)	2.60 – 3.39
2	Least Agree	(LA)	1.80 – 2.59
1	Disagree	(DA)	1.00 – 1.79

4. t–Test of Significant Difference between two Means used to determine whether or not significant difference exist between the perceptions of the respondents. It will be solved using formula (Garcia 2004).

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_1^2}{n_2}}}$$

where:

$\bar{X}_1$ = mean of the 1st group
$\bar{X}_2$ = mean of the 2nd group
s_1^2 = standard deviation of the 1st group squared
s_1^2 = standard deviation of the 2nd group squared
n_1 = sample size (1st group)
n_2 = sample size (2nd group)

5. Pearson Correlation r. used to determine whether or not significant relationship exist between the assessments of the respondents. It was solved using the formula: (Garcia 2004).

$$r = \frac{N(\sum xy) - (\sum x)(\sum y)}{\sqrt{[N(\sum x^2) - (\sum x^2)][N(\sum y^2) - (\sum y^2)]}}$$

where:

$\sum xy$ = summation of the product x & y
$\sum x$ = summation of x
$\sum y$ = summation of y
$\sum x^2$ = summation of the source of x
$\sum y^2$ = summation of the source of y
N = no. of Districts/variable
r = Pearson Product Moment Correlation

To determine the significance of r, the t-test was used with the following formula:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Guide in interpreting coefficient of correlation

+1 - Perfect correlation.

±0.91 to ±0.99 - Very high Correlation, very dependable relationship.

±0.71 to±0.90 - High Correlation, marked relationship.

±0.41 to±0.70 - Moderate Correlation, substantial relationship.

±0.21 to ±0.40 - Slight Correlation, but small relationship.

±0.01 to ±0.20 - Slight Correlation, almost negligible relationship.

0 - No correlation

RESULT AND ANALYSIS

Requirement Analysis

The summary on respondents' assessment on the Corporate Social Responsibilities Practices of the locator-industries as assessed by the implementers and adaptors is manifested in Table 9.

Table 2

Summary on Respondents Assessment on the Corporate Social Responsibilities Practices

Criteria	Implementers		Adaptors		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. Relevance and Responsiveness	3.54	P	3.73	P	3.67	P	3
2. Access and Equity	3.69	P	3.75	P	3.65	P	4
3. Efficiency and Effectiveness	3.98	P	3.74	P	3.86	P	1
4. Partnering with Experts	3.72	P	3.72	P	3.72	P	2
Overall Weighted Mean	**3.73**	**P**	**3.74**	**P**	**3.73**	**P**	

It can be depicted in the data, that all variables were assessed as very practiced: Efficiency and Effectiveness (WM = 3.86) rank 1; partnering with experts (WM = 3.72) rank 2; relevance and responsive (WM = 3.67) rank 3 and rank 4 is access and equity (WM = 3.65). Lastly, the respondents as practiced on the corporate social responsibilities practice assessed the computer overall weighted mean of 3.73.

User Design

Table 3 presents the summary of significant difference on the corporate social responsibilities practices of the respondents.

Table 3

Summary of Significant Difference on the Corporate Social Responsibilities Practices

Criteria	Implementers		Adaptors		t-Test		
	WM	SD	WM	SD	t-value	Dec.	VI
1. Relevance and Responsiveness	3.54	0.83	3.73	0.91	0.98	NS	Accept Ho
2. Access and Equity	3.69	0.89	3.75	0.84	0.31	NS	Accept Ho
3. Efficiency and Effectiveness	3.98	0.78	3.74	0.81	1.35	NS	Accept Ho
4. Partnering with Experts.	3.72	0.80	3.72	0.74	0.00	NS	Accept Ho
	3.73	**0.83**	**3.74**	**0.83**			

As presented in the table, all variables intercepted as not significant: relevance and responsiveness (t-value = 0.98); access and equity (t=0.31); efficiency and effectiveness (t = 1.35); and partnering with experts (t =0.00) are fell below the critical values of 1.645 at 5 percent level of significance with a 78 degrees of freedom, hence the hypothesis that there is no significant difference between the assessment of respondents on corporate social responsibilities is accepted.

Data Interpretation

Table 4 shows the significant relationship among the impact of corporate social responsibilities program to the adaptors.

Table 4

Significant Relationship Among the Impact of Corporate Social Responsibilities Program

Variables	r-value	t-test value	Decision	Interpretation
Economic vs Knowledge	-0.18	1.62	Accept Ho	Not Significance
Economic vs Skill	0.20	1.80	Reject Ho	Significance
Knowledge vs Skills	0.15	1.34	Accept Ho	Significance

df=78 cv at 5% = 1.645

As shown in the table, the computer r-value of -0.18 with a t-test value of 1.62 which is lower than the critical value of 1.645 at 5 percent level of significance, with 78 degrees of freedom, hence we accept the hypothesis that there is no significant relationship between economic and knowledge of the respondents since the interpretation is negative slight correlation, almost negligible relationship between the impact of corporate social responsibilities program to adaptors.

On the other hand, the relationship between economic and skill have a computer r-value of 0.20 with t-test of 1.80 higher than the critical value of 1.645 at 5 percent level of significance with a 78 degrees of freedom hence we reject the hypothesis that there is a significant difference between the economic and skill of the respondents, but there is a positive correlation, almost negligible relationship.

Moreover, the relationship between knowledge and skills has a computer r- value of 0.15 at positive correlation, almost negligible relationship with t-value of 1.34, below the critical value of 1.645 with 78 degrees of freedom, hence we accept the hypothesis that there is no significant difference in the assessments of respondents on knowledge and skills of the respondents.

Table 5 reveals in the table, the criteria assessed by the implementers and adaptors as follows. These are: Respected adaptor rights (WM= 4.47), rank 1; conform to legal laws (WM= 4.34), rank 2; Obey the policies and regulations (WM=4.28), rank 3; Sponsor programs to alleviate poverty (WM=4.13), rank 4; Engage the poor in the livelihood activity project (WM= 4.12), rank 5; allotted enough budget for CSR programs (WM= 4.10), rank 6; Listen to the concern of beneficiaries (WM= 4.04), rank 7. This was supported by a composite mean value of 4.21 interpreted as strongly agree.

Table 5

Assessment on the Facilitating Factors Experienced by the Respondents

Criteria	Implementers		Adaptors		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. Engage the poor in the livelihood activity project.	4.08	A	4.15	A	4.12	A	5
2. Obey the policies and regulations.	4.12	A	4.43	SA	4.28	SA	3
3. Conform to legal laws.	4.35	SA	4.33	SA	4.34	SA	2
4. Alloted enough budget for CSR programs.	3.95	A	4.25	SA	4.10	A	6
5. Respected adaptor rights.	4.43	SA	4.50	SA	4.47	SA	1
6. Sponsor programs to alleviate poverty.	3.98	A	4.28	SA	4.13	A	4
7. Listen to the concern of beneficiaries	4.03	A	4.05	A	4.04	A	7
Composite Weighted Mean	**4.13**	**A**	**4.28**	**SA**	**4.21**	**SA**	

Legend:

5	Strongly Agree	(SA)	4.20 – 5.00
4	Agree	(A)	3.40 – 4.19
3	Moderately Agree	(MA)	2.60 – 3.39
2	Least Agree	(LA)	1.80 - 2.59
1	Disagree	(DA)	1.00 - 1.79

Table 6 depicts the Respondents Assessment on the Hindering Factors Experienced by the Respondents.

Table 6

Assessment on the Hindering Factors Experienced by the Respondents

Criteria	Implementers		Adaptors		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. No support from the top management.	3.68	A	3.75	A	3.72	A	6.5
2. Absence of ethical and legal grounds.	3.78	A	4.38	SA	4.08	A	1
3. Look of awareness about CSR among the general public to make CSR initiative more effective.	3.68	A	4.13	A	3.91	A	3.5
4. No effective partnership between private sector, employees, local, communities, government, and society in general.	3.83	A	3.98	A	3.91	A	3.5
5. Lack of budget for the implementation of CSR programs.	3.80	A	3.75	A	3.78	A	5
6. Employees are not interested to participate.	3.85	A	4.00	A	3.93	A	2
7. Lack of awareness on becoming a good corporate citizen.	3.70	A	3.73	A	3.72	A	6.5
Composite Weighted Mean	**3.22**	**A**	**3.96**	**A**	**3.86**	**A**	

As depicted in the table, Absence of ethical and legal grounds (WM= 4.08), rank 1; employees are not interested to participate (WM= 3.93), rank 2; Look of awareness about CSR among the general public to make CSR initiative more effective (WM= 3.91), rank 3.5; No effective partnership between private sector, employees, local, communities, government, and society in general (WM= 3.91), rank 3.5; Lack of budget for the implementation of CSR programs (WM= 3.78), rank 5; No support from the top management (WM= 3.72), rank 6.5; Lack of awareness on becoming a good corporate citizen (WM= 3.72), rank 6.5.

As a whole, the Respondents Assessment on the Hindering Factors Experienced by the Respondents as to evaluation assessed as agree with a composite mean of 3.86.

CONCLUSIONS

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

1. Currently, the respondent's assessed that the locator industries are efficient and effectively practicing the corporate social responsibility.

2. No significant difference exist in assessment of two groups of respondents in relevance and responsiveness, access and equity, efficiency and effectiveness and partnering with experts since the null hypothesis is accepted.

3. Significant variances exist in the impact of corporate social responsibility in economic, knowledge and skills since the r-values obtained are not in the rejection region, hence, null is rejected.

4. In the issues and concerns in the relationship between the impact of corporate social responsibilities to economics, knowledge and skills to the adaptors the null hypothesis is accepted.

5. The respondent's rated that there is no support from the top management and lack of budget in the implementation of CSR as the highest rank in the hindering factors to have been pursued and give full attention.

6. A proposed SUCs linkages and partnership with the Corporate Social Responsibility Program of the locator-industries will positively contribute to the communities to operates and conducts business.

RECOMMENDATIONS

In the light of the findings and conclusions, the following recommendations are hereby presented:

1. To carry out more effectively and efficiently the company's CSR, the Management should use proactive approaches, especially focusing on CSR programs and projects that will focus on people, education, socio-economic and technological needs so as to make these corporate initiatives their living testimony to its Corporate's commitment to excellence and quality public service.

2. The company should hasten and sustain its existing CSR programs and projects; and meet the challenges of major dimensions of the CSR, namely: relevance and responsiveness, access and equity, efficiency and effectiveness and partnering with experts to

improve the quality of life of the people and a difference in its efforts to contribute to nation-building.

3. The company should put more meaning to its CSR so it can give back and share the fruits of its success with the society that made the success possible. It can also showcase its responsible corporate citizenship by getting involve in the country's poverty alleviation, skills and training program though enhanced education programs and projects, addressing the basic needs of the community.

4. Increase the level of awareness of the employees, suppliers, community and customer on current laws and human rights protection through dissemination.

5. Allocate more funds or financial resources to corporate social responsibility programs of the company yearly to maintain its sustainability.

6. Establish a partnership between the locator industries and the community in the development and implementation of community development program.

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PERSONALITY DEVELOPMENT PROGRAM FOR BSOA STUDENTS IN EARIST CAVITE CAMPUS

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INTRODUCTION

Personality development is rooming and enhancing ones inner and outer personality to bring the positive outcome to change your life. Personality of a person is an overall pattern of a person structure, each individual has own features that can polish, improve, define and develop. It is important to help ourselves to change our weaknesses and boost our self-confidence. Personality Development is the developed pattern of attitude and behavior that makes an individual distinctive. It is a characteristic design of feelings, behavior, and thoughts, which makes every person special.

In addition, personality development stays fairly and consistent during the whole life. Personality development has two basis, one from the physical appearance which consists physical hygiene, grooming and the other one consists attitude, feelings, and thoughts, that can serve as a basis to reflect their personality. It is simply our behavior occasionally goes just little off tract; therefore we speak about enhancing personalities.

Those individuals who seek their ways on how to interact and how to exhibit and state their feelings says that first impression lasts; everyone should have a good personality specially in dealing with people; The personality is their attitude, attitude will become their habit and habit will become their character. The personality refer to individual differences in characteristic patterns of thinking, feeling, and behaving.

In conducting a program for personality development, students should learn how to overcome their weaknesses and boosting their personality strengths. They must learn the social business etiquette for formal gatherings and at the same time manage their self with technical skills and fruitful contribution that can be useful for their lives through their family, peers, classmates, workmates and community. Personality continues to develop throughout their lifetime. It only needs a willingness and effort to have a personality development.

STATEMENT OF THE PROBLEM

The purpose of this study is to determine the personality practices of BSOA Students as basis for personality development program in EARIST Cavite Campus:

Specifically it answers the following questions:

1. What is the demographic profile of the students:
    - 1.1 Age
    - 1.2 Gender
    - 1.3 Scholastic Rating

2. What are the personality practices of BSOA Students related to:

2.1 Physical Attribute

2.2 Ethical Behavior

2.3 Psychological Attribute

2.4 Self- Esteem

3. How do the BSOA Faculty describe the personality practices of the respondents in terms of:

3.1 Physical Attribute

3.2 Ethical Behavior

3.3 Psychological Attribute

3.4 Self-Esteem

4. Is there a significant difference between the assessments of the two (2) groups of respondents on the above variables?

5. Based on the results, what personality development program can be proposed?

SIGNIFICANCE OF THE STUDY

This Study will benefit the following:

BSOA Students. This study will serve as an assessment of personality development of the BSOA Students for personality enhancement.

Faculty. This study will serve as information about BSOA Students that will be useful guide for the instructors to help their students to improve their skills.

Future Researchers. They will be inspired to conduct a program for improving the skills of the students, it will also serve as their useful reference.

LITERATURE AND STUDIES

Local Literature: Personality defined as an integrated general characteristic of the individual's total behavior and his and her unique adjustments in the environment. Those traits are evident that make every person special (Apruebo, 2008). Evangelista (2010), stated that in everyday life, traits of personality are roughly determine by watching the person directly, by asking other about him, or by asking him as to what he would he do in certain situation. In the year 2009 from the book of Santos "Personality for Today's Young Professionals", asserted that personality refers to all the factors within the person that influence his characteristics ways of behaving, thinking, and feeling. It is the image people create on others. Trajeco and Gappi (2013), mentioned that personality came from the latin word "per" and "sonare" which means

"to sound through" Personality refers to a combination of long lasting and distinctive behaviors, thoughts, motives and emotions that typify how we react and adapt to other people and situations. Arandia (2008) shows about the Neuroticism and conscientiousness facets among the big five personality traits and positive cognitive restricting are highly associated with overall post-traumatic.

Foreign Literature: Smith and Mackie (2011) defined it by saying "The Self-Concept is what we think about the self; self-esteem is the positive or negative evaluations of the self, as in how we feel about it. According to Funder, D.C. (2000), Personality is individuals characteristic patterns of thought, emotion, and behavior, together with the psychological mechanisms—hidden or not—behind those patterns. This definition means that among their colleagues in other subfields of psychology, those psychologists who study personality have a unique mandate; to explain whole persons. Feist and Feist (2009) defined personality as a pattern of relatively permanent traits and unique characteristics that give both consistency and individuality to a person's behaviour. According to Filbeck, Hatfield and Horvath (2012), business and finance researchers where interested in how personality affected the way they invest money. Personality is describe as a collective perceptions, emotions, cognitions, motivations, & actions of the individual that interact with various environmental situations (Patrick & Leon-Carrion, 2011).

METHODOLOGY

In this study, introduces the methods and procedures of the study. To explain the methodology in detail, this study introduces the research method used, population and sampling, respondents of the study, research instruments used, data gathering procedures and statistical treatment of data.

RESULT AND DISCUSSION

There were two (2) groups of respondents that were utilized to ensure an analysis on the assessment of the developed personality traits.

Table 1

Population and Sample Size of Respondents BSOA Students

Respondents Students	Population	Sample Size (50%) (n)	Percentage (%)
BSOA I	241	121	43
BSOA II	185	93	33
BSOA III	82	41	15
BSOA IV	48	24	9
TOTAL	**556**	**279**	**100**

Table 1 shows the population and sample size of BSOA Students. The sample size is 50% of the population per year level, 121 from the first year, 93 from the second year, 41 from

third year, and 24 from fourth year are the sample size of BSOA Students. The percentages are 43% from the first year, 33% from the second year, 15% from third year, and 9% from fourth year. The total population is 556, the total sample size is 279 with 100% percentage.

Table 2

Population and Sample Size of Respondents

Respondents	Population (N)	Sample Size (n)	Percentage
BSOA Faculty	10	10	100
Students	556	279	50

Table 2 describes the Population and Sample Size of Respondents, Wherein, the BSOA Faculty Respondents was randomly selected. 10 BSOA Faculty respondents with the percentage of 100. While in the Students, there are 279 Respondents, 50% Total population of BSOA Students.

CONCLUSION

After observation, research and careful analysis of findings, the following conclusions are revealed:

1. The students self-assessment shows that personality development is for all age and gender.

2. The overall self-assessment of the BSOA Students on their personality development is “often practised”. It shows that students need to improve their personality practices specifically on Physical Attribute, Ethical Behaviour, Psychological Attributes and Self-Esteem.

3. The faculty evaluation of the personality practices of the students is rated as “often practised”, They care also required to provide activities which will helps students to improve their personality development skills.

4. There is a significant difference between the student and faculty assessment.

RECOMMENDATION

Based on findings and conclusions presented, the following recommendation are suggested:

1. The faculty must provide activities on how to maximize the development of the personality through self- awareness and personal growth.

2. The school administrators should conduct seminars and workshops to encourage and train their students on how to improve their personality.

3. Expose the students in personality development training in which the students can enhance and strengthen their personality practices.

4. A proposed personality development program was made to enhance the personality development practices of the BSOA Students for implementation

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