

ISSN: 2467-4893



Asian Intellect

FOR ACADEMIC ORGANIZATION AND DEVELOPMENT INC.

VOLUME 1 NO. 1

MAY 2016



Journal for
Research,
Education, and
Management

The *Asian Intellect*
Journal for Research, Education, and Management
is an online refereed journal and is published by the

FOR ACADEMIC ORGANIZATION AND DEVELOPMENT INC.
with
SEC REGISTRATION NO. CN201539886
and office address at
BLOCK 33B, LOT 1, PHASE 2, KAUNLARAN VILLAGE, NAVOTAS CITY
and
SAN RAFAEL, TARLAC CITY

EMAIL: asianintellectorg@gmail.com WEBSITE: www.asianintellect.org



Asian Intellect

FOR ACADEMIC ORGANIZATION AND DEVELOPMENT INC.

**JOURNAL
FOR
RESEARCH,
EDUCATION,
AND
MANAGEMENT**

VOLUME 1, No. 1, MAY 2016

Editorial Board

LINO L. DIZON, PH.D.
Editor-in-Chief

ENGR. MURPHY P. MOHAMMED, Ed.D.
Editorial Consultant

JULIE LIEZEL C. FERRER, MDA
Issue Editor

JENECY MARZEL C. FERRER
Managing Editor

MELVIN REN ADDUN
Circulation

JOAN MARION ADDUN
Cover Design

Publication Guidelines

1. All articles must be authorized for publication by the author/s.
2. All the research papers published must have a high degree of scholarship.
- 3 All the research papers published must be approved by the editorial board .
4. All the research papers published must have undergone evaluation from our corps of referees thru double-blind referee process.
5. The articles may either be written in English or Filipino. All articles written in either languages must be accompanied by an Abstract which is written in English.
6. All contributions must be original.

TABLE of CONTENTS

Nutritional Status of Children—Beneficiaries of Sama-samang Serbisyo Gabay sa Gawaing Ikaunlad ng Pamumuhay (SSG SAGIP) Program: Basis for Feeding Project <i>By: Juliet S. Trujillo</i>	<i>page 8</i>
Pre-Service Teaching Competence and Board Performance: How One Year Student Teaching Matters? <i>By: Dr. Orlando Z. Beñales</i>	<i>page 14</i>
Integrating E-module as a Tool in Teaching Concepts of Significance Level in Education Statistics for Graduate Students <i>By: Melanie G. Gurat</i>	<i>page 24</i>
Analysis of LET Results of the Teacher Education Graduates of Cagayan State University at Lal-lo Covering Academic Year 2010-2013 <i>By: Ferdinand Bulusan, MAEd</i>	<i>page 30</i>
Computer-Aided Language Learning in the eyes of the Indigenous People College Students <i>By: Edwin L. Nebria, Ed.D.</i>	<i>page 34</i>

**NUTRITIONAL STATUS OF CHILDREN- BENEFICIARIES
OF SAMA-SAMANG SERBISYO
GABAY SA GAWAING IKAUNLAD NG PAMUMUHAY (SSG SAGIP)
PROGRAM: BASIS FOR FEEDING PROJECT**

*** JULIET S. TRUJILLO**

Faculty, College of Education

Carlos Hilado Memorial State College-Alijis

Bacolod City, Negros Occidental, Region VI- Philippines

Abstract

Nutritional and health status are powerful influence on a child's learning. The main purpose of this study is to determine the nutritional status of children-beneficiaries of Sama-Samang Serbisyo Gabay SA Gawaing Ikaunlad ng Pamumuhay (SSG SAGIP) Program as basis for supplementary hot feeding project. Descriptive research design utilizing documentary analysis was used. The 60 subjects were purposively selected in terms of their nutritional status, age, and parent's occupation. The data were gathered through the document provided by the Catabla Elementary School where in the children are presently enrolled. It was statistically treated using the frequency count and percentage as well as chi- square for the association of subject's nutritional status to their aforementioned variables. Majority of the children beneficiaries were 6 to 9 years old, and male with parents' work as laborer and fisherman with normal, wasted, severely wasted nutritional status.

It is concluded that malnutrition is prevalence among children beneficiaries.

In view of the above findings, supplementary hot feeding project should be proposed to help alleviate the nutritional status and to help achieve the Millennium Development Goal.

Keywords: *Nutritional status, wasted, severely wasted, Supplementary Hot Feeding project*

A. Introduction

Nutritional and health status are powerful influence on a child's learning. School age is the active growing phase of childhood. Primary school age is a dynamic period of physical growth as well as of mental development of the child (Strivastava, A et al 2012).

According to the 2007 Food and Agriculture Organization's (FAO) estimate, 923 million people in the world were chronically hungry, which was an increase of about 75 million people from the 2003-05 estimates (FAO 2008). Many of these are children, and a vast majority of them are in developing countries. These numbers suggest that the Millennium Development Goals related to hunger and malnutrition may not be met by 2015. Cited by (Lawson, 2012) the persistence of hunger, malnutrition, and micronutrient deficiencies can have long lasting effects on the health status and productivity of people and their nations. Early malnutrition can adversely affect physical, mental, and social aspects of child health, which in turn leads to underweight, stunted growth, lowered immunity, and mortality.

Research has shown that the physical effects of malnutrition as measured by indicators such as body mass index (BMI), have a significant impact on an individual's productivity and wages (Broca and Stamoulis 2003). Jomaa et al. (2011) state that childhood under-nutrition imposes significant economic

costs on individuals and nations, and that improving children's diets and nutrition can have positive effects on their academic performance and behaviors at school as well as their long-term productivity as adults. Alderman, Hoddinott, and Kinsley (2006) found that malnutrition led to delayed entry to school, less overall schooling, smaller stature, and 14% lower earnings as adults. Furthermore, poor nutrition and health among schoolchildren contributes to the inefficiency of the educational System (Del Rosso, 1999). Children who do not consume adequate amounts of key nutrients, including calcium, potassium and vitamin C may be unable to work to their full potential at school (Nabarro et al. 2012). Having a poor health is detrimental to the cognitive development of learners (Chinyoka, 2014). Thus, research has established that poor nutrition in early life can limit long term intellectual development (Lacour & Tissington 2011).

Since that nutrition in childhood is vital to everyone and to the nation, the Philippine Constitution, Article XI, Section 13 directs the state to promote and protect the physical, moral, spiritual, intellectual and social well- being of the youth, while Article XV,

Section 3.2 mandates the state to defend the right of children to assistance including proper care and nutrition (De Leon H. S & De Leon, H. M, Jr., 2011). Furthermore, in 1974, the government created the Presidential Decree 491, the Nutrition Act of the Philippines. It aims at fighting malnutrition problems in the country and defines the integration of nutrition education in the school curriculum. It declares that nutrition is a priority program to be implemented by all branches of the government (Official Gazette, 2016).

However, despite these proclamations, the Filipino children remain malnourished and undernourished. Updating the nutritional status of Filipino Children reveals that protein-energy malnutrition continued to persist in the Philippines (FNRI, 2008). To help solve this problem, the Carlos Hildao Memorial State College through the Sama- samang Serbisyo Gabay SA Gawaing Ikaunlad ng Pamumuhay (SSG SAGIP) Program, takes active role in formulating strong initiative to strengthen its involvement in community development programs reflective in its mission, vision and goals. Through its adopted community barangay, the feeding program will be introduced as a social safety net for achieving one the Millennium Development Goals. This program targets pupil- beneficiaries who skip breakfast, experience food insecure and reside in areas with high concentrations of families from low socioeconomic status, as well as with poor attendance in school. According to Elle, P. (n.d.), eating breakfast can improve cognitive performance of the students, especially in younger children. Breakfast provides children with energy and essential nutrients, including iron, calcium and vitamins B and C, which are necessary for growth, development and good health (Australian Red Cross, n.d). Furthermore, eating breakfast has positive effect to students' overall dietary health and academic performance (Gleason, P., & Suitor, C., 2001). There was additional evidence that habitual breakfast (frequency and quality) and School Breakfast Program have a positive effect on children's academic performance with clearest effects on mathematical and arithmetic grades in undernourished children (Adolphus, 2013).

It is in this context that this study was undertaken. After determining the nutritional status of children- beneficiaries, the feeding project will be proposed and implemented to help increase the attention and concentration of pupils producing gains in cognitive function and learning. It also motivates parents to enroll their children in school and have them attend regularly. Lastly, it also helps to address specific micronutrient deficiencies in school-age children.

B. Statement of the Problem

The main purpose of this study is to determine the nutritional status of children- beneficiaries of SSG SAGIP Program as basis for supplementary hot breakfast feeding project.

Specifically, the following questions were raised in relation to the aforementioned problem:

1. What is the profile of children- beneficiaries in terms of age, sex, and occupation of parents?
2. What is the nutritional status of children- beneficiaries when grouped according to the categories of:
 - a. severely wasted;
 - b. wasted; and
 - c. normal?
3. Is the nutritional status of children- beneficiaries dependent on their age, sex and occupation of their parents?
4. Based on findings, what feeding program should be proposed?

C. Research Methodology

This study used the descriptive research design utilizing documentary analysis method in order to attain its objectives. According to Johnson & Christensen (2012), the primary purpose of descriptive research is to provide an accurate description or picture of the status or characteristics of a situation or phenomenon. On the other hand, Scott (2006) explained that the use of documentary analysis is to support the view point and a process of conceptualizing, using and assessing documents. Since, the researcher analyzed the documents on the results of nutritional status of children beneficiaries; the design was the most suited framework to use.

Subjects of the Study

The subjects of the study were 60 selected enrollees of Catabla Elementary School. They were purposively selected as children- beneficiaries who came from primary grade and with normal, wasted, severely wasted nutritional status.

Source of Data

Data were gathered through the document provided by the Catabla Elementary School where in the children are presently enrolled. The document provided the data on the grade level, age, sex, parents' occupation and their nutritional status as of July.

It contains the name of the children- beneficiaries, their profile and nutritional status such as normal, wasted, severely wasted.

D. Results and Discussion

Data were gathered in connection with the objectives set forth in this study. These data were analyzed and interpreted accordingly with the use of appropriate statistical tools.

1. Table 1 presents the profile of children- beneficiaries in terms of their age, sex and parent's occupation. It that majority children beneficiaries were 6 to 9 years old, and male with parents' work as laborer and fisherman. Findings in several studies conducted by FNRI/ DOST (DOH, 1998), and that of the DECS- SHNC (1992) study on nutritional status of Filipino elementary school children 7-14 years old revealed that among 6- 10 year old school children, boys were more at risk than girls.

Table 1. Profile of Children- beneficiaries of SSG SAGIP Program

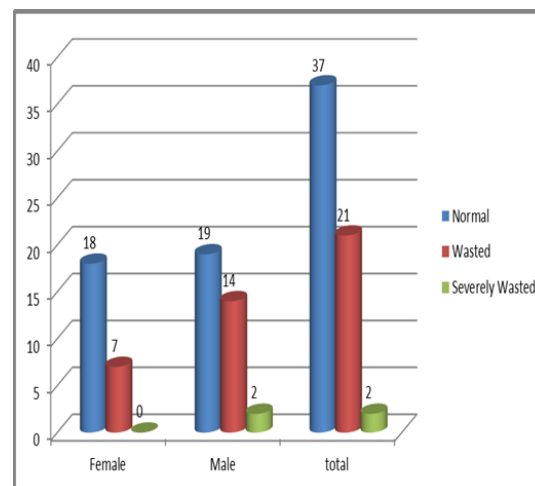
Variables		n	%
Sex	Female	25	42
	Male	35	58
	Total	60	100
Age	6 to 7 years old	33	55
	8 to 9 years old	16	27
	10 to 11 years old	7	12
	12 to 13 years old	2	3
	14 years old and above	2	3
Parent's occupation	Total	60	100
	Laborer	24	40
	Fishermen	27	45
	Construction worker	4	7
	Carpenter	2	3
	Fish vendor	2	3
Total	None	1	2
		60	100

2. Table 1 presents the nutritional status of children- beneficiaries when they are group according to sex. The data indicated that from the 37 normal subjects, 18 or 30 percent were female, 19 or 32 percent were males; wasted subjects were 7 or 12 percent female and 14 or 23 percent were males; and in severely wasted composed only the 2 or 3 percent of male. The result shows that the prevalence of under nutrition was higher among male than female beneficiaries. The result was similar to the evidence suggests that boys are more likely to be stunted and underweight than girls, and in some countries, more likely to be wasted than girls (Strivastava, A et al 2012). The same result could be found in the study of Triño (2002), among beneficiaries, males were more susceptible to stunting than their female counterparts.

Table 1. The Nutritional Status of children- beneficiaries when grouped according to sex

Figure 1. The Nutritional Status of children- beneficiaries when grouped according to sex

Category	Normal		Wasted		Severely Wasted		Total	
	F	%	f	%	f	%	f	%
Female	18	30	7	12	0	0	25	42
Male	19	32	14	23	2	3	35	58
Total	37	62	21	35	2	3	60	100

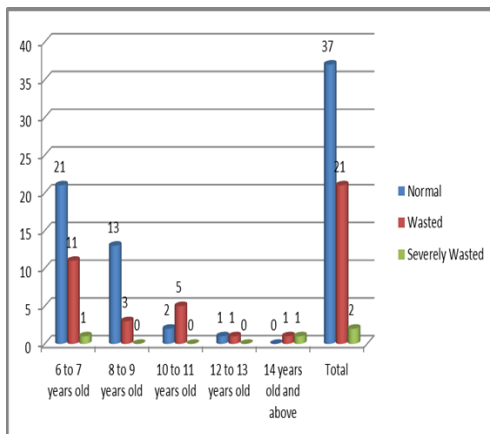


3. Table 2 presents the data on the nutritional status of children beneficiaries when they were grouped according to age. It shows that the wasted and severely wasted groups were characterized by a sharp increase from the age bracket of 6-7 with 11 or 18 percent and 1 or 2 percent respectively. This sharply decreases from the age bracket of 12 years old and above. The result reveals that among the subjects, the ages most heavily affected with under nutrition was age bracket 6 to 7 years old at 33 or 55 percent, followed by 8 to 9 years old at 16 or 27 percent, 10 to 11 years old with 7 or 12 percent, and ages 12 years old and above had the lowest number of percentage. Recently, the findings of FNRI/DOST indicated that children 5 to 10 years old were prevalence to underweight compared to the 0-5.0 age group at 29.1%, though this is already an improvement from the 32% prevalence in 2011. Wasting/ thinness is also higher than in the younger age group at 8.6%; this is unchanged from the 8.5% of 2011 (FNRI/DOST, n.d).

Table 2. The Nutritional Status of children-beneficiaries when grouped according to Age

Category	Normal		Wasted		Severely Wasted		Total	
	f	%	f	%	f	%	f	%
6 to 7 years old	21	35	11	18	1	2	33	55
8 to 9 years old	13	22	3	5	0	0	16	27
10 to 11 years old	2	3	5	8	0	0	7	12
12 to 13 years old	1	2	1	2	0	0	2	3
14 years old and above	0	0	1	2	1	2	2	3
Total	37	62	21	35	2	3	60	100

Figure 2. The Nutritional Status of children beneficiaries according to age



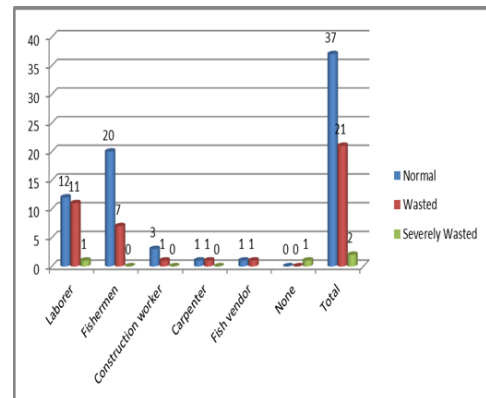
4. Table 4 presents the Nutritional Status of children-beneficiaries when grouped according to parent's occupation. It shows that 27 or 45 percent of the subjects' parent's occupation is fisherman, followed by 24 or 40 percent of their parent's occupation is laborer, 4 or 7 percent of the subjects' parents is construction worker, 2 or 3 percent of their parent's occupation is carpenter and fish vendor. A scrutiny of the data showed that 11 or 18 percent and 7 or 12 percent of the beneficiaries belong to the wasted group was children of the laborers and fishermen; 1 or 2 percent of the subjects' parents occupation is construction worker, carpenter, and fish vendor. It is shown also that 1 or 2 percent of those belonging to the severely wasted subjects have the parent's occupation as laborer or the other 1 or 2 percent has parents that do not have work. The results implies that children-beneficiaries of SSG SAGIP Feeding Project are children of fishermen and laborers with low-income. The findings of Maximo (1975), reveals that most of the children who came from low-income families and earned their livelihood from manual labor, hence malnourishment was common among them. This was true in study of Fuchs C, Sultana T, Ahmed T, Hossain MI (2014) entitled "Factors Associated with Acute Malnutrition among Children Admitted to a Diarrhea Treatment Facility in Bangladesh". According to them father's occupational status turns out to be a more accurate indicator for malnutrition rather than household in-

come as found in their study; and this finding is just similar to few studies in past- who found that children of fathers who were day laborers were -3 times more likely to be severely underweight and the fathers of most (84%) of the wasted children were either rickshaw pullers or day laborers (Saito K, Korzenik JR, Jekel JF, Bhattacharji S., 1997).

Table 4 The Nutritional Status of children-beneficiaries when grouped according to parent's occupation

Category	Normal		Wasted		Severely Wasted	
	f	%	f	%	F	%
Laborer	12	20	11	18	1	2
Fisherman	20	33	7	12	0	0
Construction worker	3	5	1	2	0	0
Carpenter	1	2	1	2	0	0
Fish vendor	1	2	1	2	0	0
None	0	0	0	0	1	2
Total	37	62	21	35	2	3

Figure 3. The Nutritional Status of children-beneficiaries according to parent's occupation



5. Data on Table 5 presents the association of nutritional status to children-beneficiaries characteristics in terms of sex, age, parent's occupation. It shows that the variables of sex gave a tabular value of 1.763 at degree of freedom of 2. The computed chi-square value was .414, which means that the nutritional status is not associated with the sex. The same finding was found in the parent's occupation with the tabular value of 16.553 at degree of freedom of 12. The computed chi-square value is .167 is greater than 0.05 level of significance which shows that this variable is independent or not associated with the children nutritional status. However, the variable of age gave a tabular value of 48.663 at the degree of freedom of 16. The computed chi-square of .000 is lesser than the

nutritional status of children is associated with their age.

Table 5 The Independence of Nutritional Status of Children-beneficiaries from their selected Variables

Variables	Value	df	Asymp. Sig. (2-sided)
Sex	1.763 ^a	2	.414
Age	48.663 ^a	16	.000
Parent's Occupation	16.553 ^a	12	.167

6. Supplementary Hot Feeding Project will be proposed to alleviate the nutritional status of the children beneficiaries. The project entitled, "Mainit na Almusal: Alay sa Mag-aaral will be given three times a week to children-beneficiaries by teachers with cooperation of parents and students' extensionist. This project aims to create awareness on the importance of eating breakfast; provide nutritionally adequate breakfast to the pupils and to utilize the feeding as an avenue to develop health and nutrition values and behavior. The sample one-week menus are arroz caldo rolyale, banana blossom medley, and champorado with mungbean. These sample recipes were selected with consideration on low cost, easy handling and preparation, and nutritional adequacy.

I. Conclusions and Recommendations

On the basis of the findings, the following conclusions were drawn:

1. Majority of the beneficiaries ages 6 to 10 years old are male and children of laborers, fishermen, and construction workers.
2. Malnutrition is still prevalence among children-beneficiaries.
3. Age is associated with the nutritional status of the children.

Based on findings, supplementary hot feeding breakfast will be introduced.

Recommendations

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

1. The program planners, school administrators, teachers and other school personnel with knowledge regarding the importance of supplementary program and the delivery of its services, should strengthen the program for the continuous improvements of the physical health of the school children.
2. Intensive participation of both the adopted school and the community for home gardening planted with vegetables needed for the supplementary feeding of children, dissemination of information to

the community regarding home activities for children and organizing parents into association.

3. School administrators, teachers and parents must use these research findings to be included in policy making and program development for the school children.

References

- Alderman, H., Hoddinot, J and Kinsey, B., (2006). Long Term Consequences of Early Childhood Malnutrition, Oxford Economic Papers. Volume 58. Issue 3
- Adolphus, k. L. et al (August 2013). The effects of breakfast on behavior and academic performance in children and adolescents. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3737458/>
- Australian Red Cross (n.d). Why is breakfast important for students? retrieved from [http://www.redcross.org.au/files/Fact_sheet_4_\(2\).pdf](http://www.redcross.org.au/files/Fact_sheet_4_(2).pdf), February 22, 2016.
- Broca S., Stamoulis K., (2003). Micro- and Macro evidence on the Impact of Undernourishment, Nutrition Intake and Economic Growth, and Social Development, Food and Agriculture Organization of the United States
- Christensen, & Johnson (2012). Educational Research (Quantitative, Qualitative, and Mixed Approaches) Fourth Edition. United States of America: SAGE Publications, Inc.
- Chinyoka, K. (2014). Impact of Poor Nutrition on the Academic Performance. International Journal of Learning & Development, p12.
- De Leon, Hector & De Leon, Hector M. Jr (2011). Textbook on the Philippine Constitution. Rex Printing Company, Inc. : Quezon City, Philippines.
- Del Rosso, J. M. (June 1999). portal.unesco.org/Ipinanumbalik_mula_sa_kay_www.google.com:http://portal.unesco.org/education/en/files/37434/11029402593School-feeding-p5rograms.pdf/School-feeding-programs.pdf
- Elle, Puala (n.d), Benefits of Eating Breakfast for Students retrieved from <http://healthyeating.sfgate.com/benefits-eating-breakfast-students-7697.html>, February 22, 2016.
- Gleason, P., & Suitor, C. (2001). Children's diets in the mid-1990s: Dietary intake and its relationship with school meal participation. Nutrition Assistance Program Report Series, No. CN-01-CD1. Alexandria, VA: USDA, FNS, Office of Analysis, Nutrition and Evaluation. p 61.

- Lawson, T. M. (2012). Impact of School Feeding Programs on Educational, Nutritional, and Agricultural Development Goals: A Sytematic Review of Literature. Retrieved August 10, 2015, from google.com.
- Lacour, M. & Tissington, LD. 2011. Educational research and reviews. *Academic Journal*, 7 (9): 522-527.
- Food and Agricultural Organization (2008) of the United Nations, *The State of Food Insecurity in the World*. Rome
- Jomaa L.H., McDonnnel E., and Probart C. (2011), *School Feeding Programs in Developing Countries: Impacts on Children's Health and Educational Outcomes*. *Nutrition Review*.
- Fuchs C, Sultana T,Ahmed T, Hossain MI.(2014). "Factors Associated with Acute Malnutrition among Children Admitted to a Diarrhoea Treatment Facility in Bangladesh," *International Journal of Pediatrics*, vol. 2014, Article ID 267806, 5 pages.
- Maximo, Olympia V. (1975). "Some Problems of the Nutrition Program of the Elementary Schools of Cavite City, District II, , Master Thesis: Ortanez University Manila. Published by Child and Youth Research Center, Manila, Philippines.
- Nabarro, D., Menon, P., Ruel, M. & Yosef, S. 2012. *Scaling Up Nutrition: A global movement to accelerate progress in reducing maternal and child under-nutrition*. Brief 9. In: J. Linn. (ed.).
- Official Gazette (2016). Presidential Decree No. 491, s. 1974. Retrieved from <http://www.gov.ph/1974/06/25/presidential-decree-no-491-s-1974>
- Strivastava, A. et al (2012). Nutritional Status of School -Age Children- A Scenario of Urban Slums in India. *Archives of Public Health*, 11.
- Saito K, Korzenik JR, Jekel JF, Bhattacharji S. A case-control study of maternal knowledge of malnutrition and health-care-seeking attitudes in rural South India. *Yale J Biol Med*. 1997 Mar-Apr; 70(2):149-60.
- Triño, Marcelita D. (2002). *Supplementary Hot Breakfast: Its Impact on the Nutritional Status and Academic Performance of Its Pupil-Beneficiaries*, A Unpublished Dissertation Presented to the Faculty of the Graduate School, PROJECT FREE, University of St. La Salle, Bacolod City

Pre-Service Teaching Competence and Board Performance: How One Year Student Teaching Matters?

Dr. Orlando Z. Beñales

Carlos Hilado Memorial State College
Talisay City, Negros Occidental
E-Mail Address: *OZB_Sheerland@yahoo.com*
Phone: 09398869404

ABSTRACT

The thrust of teacher education is to develop the teaching efficacy of the Pre-Service Teachers (PSTs) to ensure their passing performance in the Licensure Examinations for Teachers (LET) and enhance their entry into professional teaching. Towards this thrust, how One Year Student Teaching (OYST) matters? This descriptive-correlational research explored the teaching competence of the sampled PSTs in OYST during the Academic Year 2012-2013, and looked into their performance in the LET in 2013 and 2014. Completed in October 2015, the PSTs and their Supervising Teachers (STs) assessed the teaching competence in the professional, technical, and personal-social areas using the 74-item validated Student Teaching Performance Evaluation Instrument. Means and standards deviations were used for descriptive analyses. For inferential analyses set at .05 level of significance, t-test for independent samples, t-test for correlated samples, Pearson's r and ANOVA including Tukey test as post hoc test were used. Computer-processed data showed that generally, the PSTs saw themselves to be possessing very high level of teaching competence in both semesters of training, although their STs rated it to a high level which is one level lower than their self-rating. The immersion of the PSTs to another semester of student teaching all the more improved their teaching competence. The programs they enrolled in, their specializations, and the student teaching periods are factors in the development of their teaching competence. Whether they are BEEd or BSEd PSTs did not affect their performance in the LET but their specializations did. Generally, they were average performers in the three components of the LET, although the TLE, MAPEH, and General Education groups fell below the passing mark. The teaching competence they demonstrated in OYST significantly influenced their performance in the LET.

Keywords: *one year student teaching, pre-service teaching competence, board performance*

INTRODUCTION

Teacher Education Institutions (TEIs) are tasked to produce teaching practitioners through quality Teacher Education Programs (TEPs). One mark of quality is gauged in the graduates who possess necessary teaching competence and passing performance in the LET to be allowed entry into the teaching profession. The rigid entry requirements underscore the fact that professional teaching is demanding as teaching practitioners should clearly understand what should be done to bring about the most desirable learning in the students and be highly proficient in the skills necessary to carry out these tasks (www.journals.savap.org.pk).

The Commission in Higher Education (CHED) emphasizes that all efforts to improve the quality of education are dependent on the service of teachers who are properly prepared to undertake the various important roles and functions of teachers. As such, it is of utmost importance that the highest standards are set in defining the objectives, components, and processes of the pre-service teacher education curriculum (CMO No. 30, s. 2004). It is necessary that the PSTs get the

right training and be equipped with the needed competence before they join the teaching force (Dinagsao, 2013). In the actual teaching field, teachers who have had more preparation for teaching are more confident and successful with students than those who have little (Hammond, 2000).

With the enactment of Republic Act 7836, the "Philippine Teachers Professionalization Act of 1994" all the more sets a rigid screening mechanism for entrants to the teaching profession to ensure that only those who passed the LET, with valid certificate of registration and valid professional license be allowed to practice their teaching profession (Article IV, Section 27). The LET, administered by the Philippine Regulatory Commission (PRC), serves as a gauge of the effectiveness of the delivery of the teacher education curriculum completed by the teacher applicants and a quality assurance to those who enter the teaching profession. It is designed to protect the public by

ensuring that graduates are allowed to practice the teaching profession after they have met the requirements of becoming teachers. Performance in the LET is one major indicator of quality and excellence (Gerundio & Balagtas, 2014).

Many teacher educators continue to look for effective ways to better prepare future teachers for the students they will encounter in the classroom. A continuing concern for teacher educators is how to improve the effectiveness of student teaching and demonstrate the benefits of the program to prospective teachers (Buitink, 2009).

Amid all efforts to improve the TEP is the question as to whether the PSTs are ready for the job. In an effort to prepare the PSTs to be more responsive to the demands of the teaching profession, the College as research venue, has embraced program accreditation and has undergone continuous curricular development. Among others, the lengthening of student teaching to two semesters for both the BEEd and BEEd TEPs is a milestone in this continuous improvement. OYST took initial implementation during Academic Year 2009-2010. In March 2013, the pioneer graduates of this program earned their degrees and majority of them took the LET in September 2013 and some in January 2014. How teaching competence and LET performance interplay in the picture can provide empirical data to demonstrate the contribution of the OYST to the development of teaching competence among PSTs, to validate better prospect for passing the LET, and for curricular development in teacher education.

Statement of the Problems

This study sought answers to the following questions:

1. What is the level of teaching competence of the Pre-Service Teachers (PSTs) in One Year Student Teaching (OYST) as assessed by them when they are taken as entire group and when classified as to programs, training periods and specializations?

2. What is the level of teaching competence of the PSTs in OYST as assessed by the Supervising Teachers (STs) when the PSTs are taken as entire group and when classified as to programs, training periods and specializations?

3. What is the level of their performance in the three curricular components of the LET, namely, General Education, Professional Education, and Major Courses when they are taken as entire group and when classified as to programs and specializations?

4. How does the teaching competence of the PSTs in OYST differ as assessed by them when they are classified as to program, training periods and specializations?

5. How does the teaching competence of the PSTs in OYST differ as assessed by the STs when the PSTs are classified as to programs, training periods and specializations?

6. How does the performance in the LET differ when the graduates are classified as to programs and specializations?

7. How does the teaching competence of the PSTs in OYST as assessed by the STs relate with their performance in the LET?

Theoretical / Conceptual Framework

All academic thrusts in teacher training underscore the fact that the teachers are the main pillar of the educational system (Kant, 2011). As it is, the development of teaching skills or teaching competence of the PSTs is directed towards developing their self-confidence and self-efficacy. Gibbs (2015) explains that the capacities of teachers to survive, to demonstrate resilience, persistence, and innovativeness are governed primarily by their beliefs about their capacity – that is their self-efficacy as teachers. Giallo and Little (2003) point out that the teachers who are the most effective classroom managers are the most confident in their abilities. Preparedness and classroom experiences are factors that are involved in the development and maintenance of teacher self-efficacy.

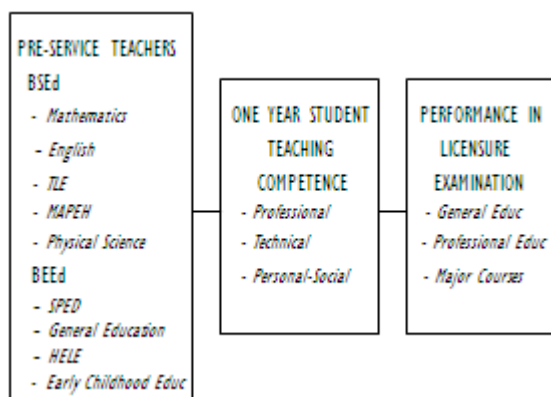
A better understanding of the development of self-confidence and its influence on behavior and performance can be gleaned from the Theory of Self-Efficacy of Bandura (1986). Self-efficacy, in this perspective, is conceptualized by Bandura as a person's judgment of his/her ability to execute successfully a behavior required to produce certain outcomes. Giallo and Little (2003) elucidate that behavior is influenced not only by the belief that a particular action will lead to desirable outcomes, but also by the belief that one has the ability to perform the action. Bandura (1986) speaks of this ability to persist in difficult situations – a belief that determines how a person thinks, behave, and feel.

The teacher's sense of efficacy is an important variable in teacher development and how teachers teach (Moran, 1998). How to improve effectiveness of student teaching as component of pre-

service education such that it prepares prospective teachers with necessary ability, confidence or self-efficacy becomes a continuing concern for teacher educators (Buitink, 2009). Within the pre-service teacher education program, the prospective teachers are immersed to various trainings that culminate in student teaching, which is considered to be the most significant component of teacher preparation programs (Plourde, 2002). Its primary goal is to provide the opportunity for acquisition and demonstration of instructional competence for beginning professional educators (www.utpa.edu/colleges/coe).

Teaching competence can be measured through mastery of content knowledge and pedagogical skills. A competent teacher should have the professional artistry to induce learning among students. Cognitive skills like critical thinking, creative thinking, and problem solving are required of the teacher (Dayagbil & others, 2012). In this study, the teaching competence of the PSTs is measured in the professional, technical, and personal-social competence areas and is linked with their performance in the LET. The LET is composed of three components namely, general education, professional education, and major courses for the Secondary TEP. The Elementary TEP graduates take the general education and professional education courses only. An examinee has to score not lower than 50% in any areas in order to pass the examination (<http://education-teaching-careers.knoji.com>). The schematic diagram below illustrates the conceptual framework of the study:

METHODOLOGY



Method of Research Used

This study used a descriptive type of research as it focused on the teaching competence demonstrated during the OYST as assessed by the PSTs themselves and on documentary analyses on their performance in OYST as gauged by the grades submitted by the STs at the end of the training, and on their scores obtained in the LET.

Subjects / Respondents of the Study

The subject-respondents were the 171 PSTs enrolled in the Level III-AACCUP accredited BSEd and BEEd programs of Carlos Hilado Memorial State College (CHMSC) in Talisay City, Negros Occidental, Philippines. The sample represented the total population of 299 PSTs during the Academic Year 2012-2013. The sample size was computed using the formula of Pagoso (1992). Using stratified random sampling technique, the representative samples from the various specializations of the BSEd and BEEd programs were identified for this research (Table 1). Their respective STs were the sources of data in their capacity as evaluators of student teaching performance. The biggest number of subject-respondents came from the BEEd General Education majors (n=67) and the lowest number was represented by the BSEd MAPEH (n=22).

Research Instrument and Sources of Data

The Student Teaching Performance Evaluation Instrument which has been used by the College since 2002 in the evaluation of teaching performance of the PSTs was used in this study. As an official doc-

Table 1
Distribution of PSTs as to Programs & Specializations

Academic Programs	N	%	n
Overall	299	100	171
BSEd Program			
BSEd - Mathematics	20	6.43	11
BSEd - English	36	12.28	21
BSEd - TLE	31	10.53	18
BSEd - MAPEH	22	7.60	13
BSEd - Physical Sci	27	8.77	15
BEEd Program			
BEEd - SpEd	28	9.36	16
BEEd - Gen Ed	67	22.22	38
BEEd - HELE	36	12.28	21
BEEd - ECE	32	10.53	18

ument, this 74-itemed instrument covers three major teaching competence areas, namely, professional, technical, and personal-social aspects. The validity and reliability of the research instrument were established prior to its initial year of utilization in the Student Teaching Program of the College of Education. To ensure, however, of its reliability for the conduct of the present research, the instrument was reliability-tested

among the thirty BSEd and BEEd students who were exposed to teaching demonstrations. The reliability index of 0.97 resulting from the use of Cronbach alpha indicated that the instrument had the capacity to elicit stable data. On the other hand, the performance in the board examination was sourced from the scores obtained in the LET in September 2013 and January 2014 which were requested by the College from the PRC in 2015.

Procedures for Data Analysis

In order to provide answers to the problems of the study, means and standard deviations were used as descriptive statistics. For inferential analyses set at .05 level of significance, t-test for independent samples, t-test for correlated samples, Analysis of Variance (ANOVA), and Pearson's Product Moment Coefficient of Correlation (PPM) were used. All data were computer-processed.

RESULTS AND DISCUSSIONS

Level of Teaching Competence

Generally, as assessed by themselves, the PSTs believed that they possess a very high level of teaching competence ($M = 4.32$) in OYST (Table 2). The same very high level of teaching competence was also obtained during the first and second semesters of training ($Ms = 4.26$ and 4.37 , respectively).

When grouped as to program, the BEEd group exhibited a very high level of teaching competence both during the first and second semesters with means

All majors under the BSEd programs obtained a high level of teaching competence during the first phase of student teaching with mean scores ranging from 4.09 to 4.20. Except for TLE and MAPEH majors who maintained a high level of teaching competence, the English, Physical Science, and Mathematics groups raised their level of teaching competence to a very high level during the second phase of immersion to actual teaching with mean scores ranging from 4.15 to 4.40.

The SDs which ranged from 0.25 to 0.53 indicated a narrow dispersion of the scores indicating that the PSTs were homogeneous in their responses when asked about their level of teaching competence at the end of every semester of student teaching.

The findings were indicative that PSTs believed that after the two-semester exposure to student teaching, they acquired a favorable level of teaching skills and attributes needed for teaching. Their assessment of their teaching competence to the very high level showed their confidence to meet the challenges of the teaching profession. The teaching competence of the MAPEH and TLE majors in the BSEd program which retained the high level even after the second semester student teaching is a valuable input in the analysis of the effectiveness of the activities they were exposed to during their pre-service education.

Level of Teaching Competence as Assessed by the STs

Generally, as assessed by the STs (Table 3), the PSTs obtained a high level of teaching competence ($M = 91.35$). High levels of teaching competence were also earned during the first and second semesters of training ($Ms = 90.90$ and 91.81 , respectively).

Table 2

Self-Assessed Teaching Competence of PSTs

Variable Groupings	Student Teaching Competence								
	First Semester			Second Semester			Overall		
	M	SD	Desc	M	SD	Desc	M	SD	Desc
Overall	4.26	0.45	VH	4.37	0.45	VH	4.32	0.36	VH
Program									
BSEd	4.08	0.48	H	4.30	0.40	VH	4.19	0.39	H
BEEd	4.41	0.37	VH	4.43	0.49	VH	4.42	0.31	VH
Specializations									
Math	4.20	0.36	H	4.38	0.39	VH	4.29	0.32	VH
English	4.09	0.47	H	4.39	0.27	VH	4.24	0.33	VH
TLE	4.14	0.42	H	4.18	0.42	H	4.16	0.36	H
MAPEH	3.80	0.59	H	4.15	0.51	H	3.98	0.53	H
Phy Sci	4.17	0.47	H	4.40	0.41	VH	4.29	0.36	VH
SpEd	4.29	0.31	VH	4.44	0.34	VH	4.37	0.31	VH
Gen Ed	4.45	0.36	VH	4.43	0.62	VH	4.44	0.36	VH
HELE	4.44	0.39	VH	4.44	0.45	VH	4.44	0.28	VH
ECE	4.41	0.40	VH	4.42	0.32	VH	4.41	0.25	VH

scores of 4.41 and 4.43, respectively. Their BSEd counterpart obtained a high level ($M = 4.08$) of teaching competence during the first semester. However, during the second semester, their teaching competence raised to a very high level ($M = 4.30$).

When classified as to specializations, the BEEd group with majors in General Education, HELE, ECE, and SPED exhibited a very high level of teaching competence both during their first and second semesters, with mean scores ranging from 4.29 to 4.45.

Table 3

Teaching Competence of PSTs as Assessed by STs

Variable Groupings	Student Teaching Competence								
	First Semester			Second Semester			Overall		
	M	SD	Desc	M	SD	Desc	M	SD	Desc
Overall	90.90	2.85	H	91.81	2.44	H	91.35	2.65	H
Program									
BSEd	89.87	3.53	H	90.97	3.09	H	90.42	3.10	H
BEEd	91.77	1.70	H	92.51	1.40	H	92.13	1.30	H
Specializations									
Math	92.00	3.49	H	92.27	1.79	H	92.14	2.22	H
English	91.38	1.99	H	92.10	1.51	H	91.74	1.62	H
TLE	90.50	1.86	H	91.56	2.73	H	91.03	1.92	H
MAPEH	84.62	4.15	A	87.31	4.68	A	85.96	4.22	A
Phy Sci	90.00	1.46	H	90.93	1.71	H	90.47	1.37	H
SpEd	89.47	1.73	H	91.75	1.65	H	90.66	1.32	H
Gen Ed	91.89	1.18	H	92.32	1.23	H	92.11	0.97	H
HELE	92.71	1.27	H	93.05	1.36	H	92.88	1.18	H
ECE	92.33	1.37	H	92.94	1.21	H	92.64	0.94	H

Further, whether grouped as to programs or by semesters, high level of teaching competence was exhibited by the PSTs with mean scores ranging from 89.47 to 93.05.

When grouped as to specializations, all groups of PSTs obtained a high level of teaching competence during both semesters, with mean scores ranging from 89.47 to 93.05. The MAPEH group, whether overall performance ($M = 85.96$) or by semester ($M_s = 84.62, 87.31$), registered an average level of teaching competence. The nature of the course, which is characterized by physical dexterity, may have come into the way of student teaching activities of this group of PSTs.

Level of Performance in the LET

Generally, as shown in Table 4, the graduates obtained an average level of performance in the LET ($M = 76.17$). This overall level is attributed to the average levels of performance they obtained in the three curricular components of the LET, namely, general education ($M = 76.40$), professional education ($M = 73.63$), and major courses ($M = 77.02$).

Further, when grouped as to program, both the BEED and BSED graduates registered an average level of performance with mean scores ranging from 76.07 and to 76.29, respectively.

Table 4
Performance of the Graduates in the LET

Variable Groupings	Performance in Licensure Examination for Teachers											
	General Ed			Professional Ed			Major			Overall		
	M	SD	Desc	M	SD	Desc	M	SD	Desc	M	SD	Desc
Overall	76.40	5.31	A	73.63	6.27	A	77.02	5.75	A	76.17	5.07	A
Program												
BSED	75.51	6.07	A	75.95	5.31	A	77.02	5.75	A	76.29	4.60	A
BEED	77.15	4.47	A	75.37	7.00	A				76.07	5.45	A
Major												
Math	76.27	4.52	A	74.27	5.75	A	82.00	7.78	H	76.77	4.89	A
English	79.14	4.49	A	80.05	3.88	H	79.00	2.28	A	79.45	2.70	A
TLE	71.67	6.98	A	73.50	6.37	A	73.50	6.69	A	73.13	5.75	A
MAPEH	72.15	5.10	A	73.54	3.57	A	76.31	4.73	A	74.37	3.22	A
Phy Sci	77.40	4.95	A	76.47	2.95	A	75.47	3.66	A	76.25	2.69	A
SpEd	77.56	4.00	A	78.38	3.22	A				78.05	3.13	A
Gen Ed	76.50	4.15	A	73.89	6.59	A				74.95	5.15	A
HELE	79.67	3.51	A	75.43	10.30	A				77.12	7.35	A
ECE	75.06	5.35	A	75.72	4.78	A				75.46	4.73	A

When grouped as to major fields, an average level of LET performance was obtained by all specializations with mean scores ranging from 73.13 to 79.45. The English group exhibited high level of performance in professional education courses ($M=80.05$), and the Mathematics majors obtained high level of performance in the major courses ($M = 82.00$).

The data further show that the collective per-

formance of the sampled groups like TLE ($M=73.13$), MAPEH ($M=74.37$), and General Education ($M=74.95$) did not meet the LET cut off passing mark of 75.00. This finding points to the weakest link in the board performance of the graduates.

Difference in the Self-Assessed Teaching Competence of the PSTs

When the PSTs were categorized as to programs, significant difference was shown between their student teaching competence levels ($t = -.4319$, $p < .01$), with the BEED group exhibiting better teaching competence (Table 5).

This can be taken to show that the prospective elementary teachers perceived themselves to be better

Table 5
Difference in the Self-Assessed Teaching Competence of the PSTs Grouped as to Programs and Student Teaching Periods

Variable Groupings	Student Teaching Competence				Findings
	M	t-value	df	p-value	
Programs					
BSED	4.19	-4.319**	169	0.000	Significant
BEED	4.42				
Student Teaching Periods					
First Semester	4.26	-2.698**	170	0.008	Significant
Second Semester	4.37				

** $p < .01$

student teaching performers. The significant difference in the levels of teaching competence of the PSTs showed that the program where they were enrolled and the student teaching phase are factors in their teaching competence. When their competence was compared as to training periods, significant difference was noted and it was during the second semester where they registered better performance ($t = -.2698$, $p < .01$). It can be deduced that the realities of the student teaching program, where the PSTs were assigned to another venue or school and were exposed to another new learning environment, another supervising teacher, another set of learners, new subjects to be taught, and a host of many other factors caused the possibility of obtaining lower or higher level of teaching competence during the second semester.

Further analysis of data (Table 6) showed that there was significant difference in the levels of teaching competence of the PSTs as assessed by them when they were grouped as to specializations ($F = 3.371$, $p < .01$). Using the post hoc analysis indicated that significant differences were noted between MAPEH and General Education Majors, in favor of

English group, and TLE and MAPEH, with TLE having better teaching competence.

Table 6
Difference in the Self-Assessed Teaching Competence of PSTs When Grouped According to Specializations

	Sum of Squares	df	Mean Square	F	p-value	Finding
Between Groups	3.215	8	.402	3.371**	.001	Significant
Within Groups	19.313	162	.119			
Total	22.528	170				

**p < .01

Table 7
Post Hoc Results on the Difference of Self-Assessed Teaching Competence as to Specializations

Specialization	Mean Differences	Std. Error	p-value	Findings
MAPEH & Gen Ed	-6.6674**	.11094	.001	Significant
English & MAPEH	-4.95908**	.12185	.007	Significant
TLE & MAPEH	-4.3774**	.12567	.008	Significant

**p < .01

Difference in the Assessment of the STs of the Teaching Competence of PSTs

This study (as indicated in Table 8) established the fact that the BSEd and BEEd PSTs differed significantly in their teaching competence acquired during OYST as assessed by the STs ($t = -.4554$, $p < .01$), with the BEEd group having better teaching competence. The finding indicated that, while the PSTs were subjected to common student teaching evaluation instrument used by the STs, the difference in education levels, the nature of teaching and learners, and a host of other circumstances must have contributed to the development of their teaching competence in student teaching.

Table 8
Difference in ST-Assessed Teaching Competence of PSTs

Variable Groupings	N	Student Teaching Competence			
		t-value	df	p-value	Findings
Programs					
BSEd	90.42	-4.554**	169	0.000	Significant
BEEd	92.13				
Student Teaching Periods					
First Semester	90.90	-5.843**	170	0.006	Significant
Second Semester	91.81				

**p < .01

When their teaching competence was compared according to the training periods, significant difference was noted ($t = -.5.843$, $p < .01$) and it was during the second semester training where they performed better. This finding also indicated that the additional one semester of student teaching afforded the PSTs with opportunity to all the more improve their instructional delivery practices and enhance the development of their teaching competence.

Further analysis of data (Table 9) showed that there was significant difference in the levels of teaching competence of the PSTs as assessed by the STs when the PSTs were grouped as to specializations ($F = 20.256$, $p < .01$).

Table 9
Difference in the Teaching Competence of PSTs in OYST According to Specializations as Assessed by STs

	Sum of Squares	df	Mean Square	F	p-value	Finding
Between Groups	509.496	8	63.687	20.256**	.000	Significant
Within Groups	509.349	162	3.144			
Total	1018.845	170				

**p < .01

Using the post hoc analysis employing Tukey Test to determine where the significant differences lie indicated that, as to the BSEd groups, significant differences were noted between Mathematics and MAPEH, in favor of the Mathematics group; English and MAPEH, in favor of the English group; TLE and MAPEH, in favor of the TLE group; and Physical Science and MAPEH, in favor of the Physical Science majors. With regards BEEd groups, significant differences in the student teaching competence were noted between SPED and HELE, with the HELE group having better competence; and SPED and ECE majors, with ECE majors having better teaching competence.

Table 10
Post Hoc Results on the Difference of Teaching Competence as to Specializations

Specialization	Mean Differences	Std. Error	p-value	Findings
Mathematics & MAPEH	-6.17483**	.72642	.000	Significant
English & MAPEH	-5.77656**	.62576	.000	Significant
TLE & MAPEH	-5.06624**	.64539	.000	Significant
Physical Science & MAPEH	-4.50513**	.67191	.000	Significant
SPED & HELE	-2.22470**	.58841	.007	Significant
SPED & ECE	-1.98264*	.60925	.036	Significant

**p < .01

*p < .05

Difference in LET Performance

When the BEEd and BSEd graduates were compared in terms of their performance in the LET, no significant difference was noted ($t = 0.284$, $p > .05$) and this indicated that both groups performed more or less at the same level in the board examination.

Table 11

Difference in the LET Performance as to Programs

Variable Groupings	Performance in the Licensure Examination				
	<i>M</i>	t-value	df	p-value	Finding
Programs					
BSEd	76.29	0.284	169	0.777	Not Significant
BEEd	76.07				

Analysis of data also showed that there was significant difference in the levels performance of the PSTs in the LET when they were grouped as to specializations ($F=3.249$, $p < .05$). The post hoc analysis using Tukey Test which was used to determine where the significant differences lie indicated that, as to the BSEd groups, significant difference was noted between English and TLE majors, with English majors having better performance. The English and General Education majors differed significantly in their board performance, in favor of the English majors.

Table 12

Difference in the LET performance as to Specializations

	Sum of Squares	df	Mean Square	F	p-value	Finding
Between Groups	603.425	8	75.428	3.249*	.002	Significant
Within Groups	3761.46000	162	23.219			
Total	4364.885	170				

* $p < .05$

Table 13

Post Hoc Results on the Difference in LET Performance as to Specializations

Specializations	Mean Differences	Std. Error	p-value	Finding
English and TLE	6.31429**	1.54777	.002	Significant
English & Gen Ed	4.50025*	1.31022	.021	Significant

** $p < .01$

* $p < .05$

Relationship Between Teaching Competence and LET Performance

A positive and significant relationship (Table 14) was noted between the teaching competence devel-

oped by the PSTs in OYST as assessed by the STs and their performance in the LET ($r = .153$, $p < .05$). The finding indicated that there is a causal evidence to show the influence of OYST on the acquisition and further development of the teaching competence and on achieving license to teach as professional teachers.

Table 14

Relationship Between the Teaching Competence of the PSTs and LET Performance

	Performance in the LET		
	r	r Probability	Finding
Student Teaching Competence	0.153*	0.046	Significant

* $p < .05$

FINDINGS

The following are the findings of the study:

1. Generally, the PSTs assessed their teaching competence in one year student teaching to be at a very high level. Very high level of teaching competence was how they rated themselves during the first and second semesters of training. The BEEd group rated themselves to have a very high level of teaching competence both during the first and second semesters. Their BSEd counterpart rated their teaching competence to a high level during the first semester. However, during the second semester, they felt their teaching competence raised to a very high level. All specializations under the BEEd program such as General Education, HELE, ECE, and SPED believed they exhibited a very high level of teaching competence both during their first and second semesters. All majors under the BSEd program obtained a high level of teaching competence during the first phase of student teaching. Except for TLE and MAPEH majors who maintained a high level of teaching competence, the English, Physical Science, and Mathematics groups raised their level of teaching competence to a very high level during the second phase of immersion to actual teaching.

2. Generally, as assessed by the STs, the PSTs obtained a high level of student teaching competence and this is one level lower than the assessment of the PSTs. This is attributed to the high level of competence registered during the first and second semesters of training. Whether grouped as to programs or by semesters, high level of teaching competence was exhibited by the PSTs. When grouped as to specializations, all groups of PSTs obtained a high level of teaching competence during both semesters. The MAPEH group, whether overall performance or by

semesters, registered an average level of teaching competence.

3. Generally, the graduates obtained an average level of performance in the LET. This overall level is attributed to the average levels of performance they obtained in the three curricular components of the LET such as general education, professional education, and major courses. When grouped as to program, the BSEd PSTs registered an average level of performance in the three components of the LET. The BEEd group also obtained an average level of LET performance in the general education and professional education courses, the only two curricular components included in the LET for elementary teachers. When grouped as to major fields, an average level of LET performance was obtained by all specializations. The English group exhibited high level of performance in professional education courses, and the Mathematics majors obtained high level of performance in the major courses. It was shown that the collective performance of the sampled groups like TLE, MAPEH, and General Education did not meet the cut off passing mark of 75% of the LET. This finding points to the weakest link in the board performance of the sampled PSTs.

4. When the PSTs were categorized as to programs, significant difference was shown between their student teaching competence levels as assessed by them, with the BEEd group exhibiting better teaching competence. When their competence was compared as to training periods, it was during the second semester where they registered better performance. There was significant difference in the levels of teaching competence of the PSTs when they were grouped as to specializations. The post hoc analysis indicated that significant differences were noted between MAPEH and General Education Majors, in favor of the later, English and MAPEH, in favor of English group, and TLE and MAPEH, with TLE having better teaching competence.

5. The BSEd and BEEd PSTs differed significantly in their teaching competence acquired during OYST as assessed by the STs. When their teaching competence was compared according to the training periods, significant difference was noted and it was during the second semester training where they performed better. There was significant difference in the levels of teaching competence of the PSTs when they were grouped as to specializations. The post hoc analysis indicated that, as to the BSEd groups, significant differences were noted between Mathematics and MAPEH, in favor of the Mathematics group; English and MAPEH, in favor of the English group; TLE and MAPEH, in favor of the TLE group; and Physical Science and MAPEH, in favor of the Physical Science majors. As regards BEEd groups, significant differences in the student teaching competence were noted

between SPED and HELE, with the HELE group having better competence; and SPED and ECE majors, with ECE majors having better teaching competence.

6. No significant difference was noted between the LET performance levels of the BEEd and BSEd graduates. There was significant difference in the levels performance of the PSTs in the LET when they were grouped as to specializations. As to the BSEd groups, significant difference was noted between English and TLE majors, with English majors having better performance. The BSEd -English and BEEd-General Education majors differed significantly in their board performance, in favor of the English majors.

7. A positive and significant relationship was noted between the teaching competence developed by the PSTs in OYST and their performance in the LET.

CONCLUSIONS

The following are the conclusions made based on findings:

1. The PSTs viewed themselves as possessing teaching efficacy being highly competent and very high performers in one year student teaching.

2. The STs assessed the teaching competence of the PSTs one level lower than their self-assessment and they were rated as high performers in one year student teaching.

3. The immersion of the pre-service teachers to another semester of student teaching all the more improved their teaching competence.

4. Programs enrolled, specializations, and student teaching periods are factors in the development of student teaching competence.

5. As education graduates, generally, they were average performers in the LET, but particularly, the TLE, MAPEH, and General Education as groups fall short of the passing cut-off score of the examination.

6. Whether they are BEEd or BSEd PSTs did not affect their performance in the LET but their specializations are factor in their LET performance.

7. Student teaching competence developed within one year student teaching influenced the performance of graduates in the board examination.

RECOMMENDATIONS

This study offered the following recommendations:

1. Opportunities to maximize the development of teaching efficacy or competence among the pre-service teachers can be provided through continuous review and enrichment of the teacher education curriculum and of the delivery system of instruction, specifically that of the student teaching program.

2. Screening mechanism for entrants to the various TEPs can be reviewed to establish admission standards vis-à-vis immersion to responsive instructional activities across programs and specializations to be comparable with others in their level of teaching competence and board performance, considering that some specializations do not fare well in the LET.

3. The teaching competence areas or practices where the PSTs were found to be needing more improvement can be looked into as pivotal point for the implementation of relevant enhancement program to all the more increase their competence level and passing performance in the LET.

4. Immersion of PSTs to another semester of student teaching is one best practice in teacher training that is worth-implementing to enhance teaching efficacy and board performance much more so with the unfolding curriculum-decongestion in tertiary education with the implementation of K to 12 program. Lengthening of student teaching to two semesters may be considered in the development of the teacher education curriculum.

5. The performance of the graduates in the board examination whether by programs, specializations, and curricular components deserves the needed look in any attempt for continuous improvement in the implementation of the teacher education curriculum to be responsive to the demands of licensure examination.

6. Similar and relevant studies may be conducted to cover other pre-service teachers of external campuses and of other TEIs, whenever applicable, that focus on other variables which interplay with the contribution of OYST to the performance of the graduates in the licensure examinations or in professional teaching.

LITERATURE CITED

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, New Jersey: Prentice Hall.

Buitink, J. (2009). What and how do student teachers learn during school-based teacher education? *Teaching and teacher education*, 25,118-127.Doi: 1016/j.tate.2008.07.009; Zeichner, K. & Schulte www.icctejournal.org/issues/v612-hoskins-schuette-charlton/.

Commission in Higher Education Memorandum Order No. 30, s. 2004 on Revised Policies and Standards for Undergraduate Teacher Education Curriculum.

Dayagbil, F., Abao, E., Lapingcao, N., Polinar, D., Laplap, F., Villareal, N., Borado, H., Inocian, R., and Olvido, M. (2012). *Special topics in education*, Volume 3. Quezon City: Lorimar Publishing

Dinagsao, A.V. (2013). *Pre-service teachers: Are they prepared for the real job?* Conference.pixel-online.net/foe2013/common/download/Abstract-pdf247-SOE64-ABS-Vedua-Dinagsao-FOE2013.pdf.

Gerundio, Maribel G. & Balagtas, Marilyn U. (2014). Exploring Formula for Success in Teachers' Licensure Examination in the Philippines, *Educational measurement and evaluation review*, Vol. 5, 104-117.

Giallo, Rebecca and Little, Emma. (2003). Classroom Behavior Problems: The relationship Between Preparedness, Classroom Experiences, and Self-Efficacy in Graduate and Student Teachers, , Vol. 3, *Australian journal of education and development psychology*. Retrieved December 5, 2015 from https://www.newcaslt.edu.au/_data/assets/pdf_file/0017/100484/v3-giallo-little.pdf.

Gibbs, Collin. Effective teaching: *Exercising self-efficacy and thorough control action*. Retrieved December 10, 2015 from www.leeds.ac.uk/educol/documents/00002390.htm.

Hammond, Linda, D. (2000). How teacher education matters? *Journal of teacher education*, May 2000, Vol. 51, No. 3. Retrieved December 10, 2015 from <http://jte.sagepub.com/content/51/3/166>.

<http://education-teaching-careers.knoji.com/how-to-pass-the-licensure-examination-for-teachers-let/>. Retrieved February 19, 2016.

Kant, R. (2011). *A study of teaching aptitude and responsibility feeling of secondary school teachers in relation to their sex and local*. Retrieved October 15, 2013 from [www.savap.org.pk/journals/ARInt/Vol.1\(2\)/2011\(1.2-25\).pdf](http://www.savap.org.pk/journals/ARInt/Vol.1(2)/2011(1.2-25).pdf)

Pagoso, C., Garcia, G. & De Leon, C. (1992). *Fundamental statistics for college students*. Manila: Sinag-tala Publishers.

Plourde, L. (2002). The influence of student teaching on pre-service elementary teachers' science self-efficacy and outcome expectancy beliefs. *Journal of instructional psychology*, 29(4), 245-523; in Hoskins, J., Schuette, C. and Charlton, M. Program Improvement and Practice: In-Service and Pre-Service Student Teaching Reflections, *Journal of the International Christian Community for teacher education*, ictejournal.org/issues/v612- Hoskins, J., Schuette, C. and Charlton/.

Republic Act 7836, the Philippine Teachers Professionalization Act of 1994

www.journals.savap.org.pk).

www.utpa.edu/colleges/coe/ofe/docs/InternhandbookSp13.pdf.

INTEGRATING E-MODULE AS A TOOL IN TEACHING CONCEPTS OF SIGNIFICANCE LEVEL IN EDUCATIONAL STATISTICS FOR GRADUATE STUDENTS

MELANIE G. GURAT

Faculty, Mathematics Department and Junior Statistician, University Research Center;
Saint Mary's University
Bayombong, Nueva Vizcaya, Philippines

Abstract

The need to understand statistics in conducting research is very important especially when working on quantitative data. A very important concept that needs to be fully understood particularly in hypothesis testing is the significance level. Collado (2015) found out that graduate students have a fair level of understanding of the concepts of significance level; thus she constructed an e-module on the said topic designed for use by graduate students. The e-module was used in conducting true experimental design particularly randomized pretest-post test control group design with two classes of graduate Statistics to compare instructions with e-module and without e-module. The class with e-module was only given brief discussion on the interventions, while the group with e-module was taught with pure lecture method. The students taught with e-module obtained relatively higher scores than the students taught without the e-module only in one cluster of the lesson. After controlling the initial differences in scores, there was no significant difference in the mean scores of graduate students who differ in sex and intervention revealing further that e-module can be a substitute to lecture method. This implies that e-module could reinforce graduate students' independent learning and could help them cope with the lessons missed in class. E-module can also be taught in combination with the traditional methods to better improve the understanding about the level of significance.

Keywords: *e-module, significance level, statistics, true experimental, Graduate Students*

Introduction

Statistics is a structural method in solving a problem and frequently used in various fields (Sahari, et al., 2009). Statistics is the systematic collection and analysis of numerical data, in order to investigate or discover relationships among phenomena so as to explain predict and control their occurrence. Statistics is divided into two branches: Descriptive and Inferential Statistics (Harris, 2007). Descriptive statistics are used in everyday life in areas such as government, healthcare, business, and sport while Inferential (analytical) statistics makes inferences about populations (entire groups of people or firms) by analyzing data gathered from samples (smaller subsets of the entire group), and deals with methods that enable a conclusion to be drawn from these data and investigates whether the data are consistent with that hypothesis (Harris, 2007).

It is important for researchers to understand statistics so that they can be informed, evaluate the credibility and usefulness of information, and make appropriate decisions. Some of the major purposes of statistics are to help us understand and describe phenomena in our world and to help us draw reliable conclusions about those phenomena (Baltimore County Public Schools, 2010).

With these importance mentioned, it is stated in CHED memo no. 53, series of 2007 on policies and standards for graduate programs in education for teachers and other education professionals as part of the goal of Graduate education that:

...Graduate education is also one of the most effective means of developing capacities related to doing research that will improve educational theory and practice in the many different aspects of the educational process...

Aside from that, the curriculum outline found in the same document includes 9 units of core/foundation courses for both thesis and non-thesis program which includes 3 units Statistics, 3 units methods of research and 3 units that depends on students' major. Hence, Commission on Higher education requires the graduate students to take statistics course to prepare them in making research.

With these, the need to understand statistics in conducting research is very important especially when working on quantitative data. One of the basic concepts needs to be developed is the significance level because this is the guide of the researcher whether to accept or reject the null hypothesis stating that there

is no significant relationship/difference or correlation between and among the variables involved. However, methodologists constantly point out that researchers misinterpret *p*-values (Magnuson. nd). Furthermore, Collado (2015) in her study cited that significance level is a misleading term that many researchers do not fully understand (Creative Research Systems, 2014), thus some researchers misinterpret their research' results (Bruce, 1994) and so her study aimed to investigate the level of understanding on significance level by graduate students who took statistics and would probably write their thesis or dissertation. She found out that graduate students have a fair level of understanding on the concepts of significance level revealing that they have fairly correct notions about levels of significance so as part of her problem, a module, on significance level with particular focus on specific levels of significance and its importance is designed for use of graduate students. Since the module was only part of her problem, the effectiveness of the module was not yet checked. Thus, this study aimed to determine the effectiveness of integrating the e-module as a tool in teaching significance level in educational statistics for graduate students.

Statement of the Problems

The purpose of this study was to determine the effectiveness of the e-module as a tool in teaching among the graduate students enrolled in Statistics during the first semester, school year 2015-2016. Specifically, this study aimed to answer the following questions:

1. What is the level of understanding on concepts about significance level of the students in the 2 classes of Statistics taught before and after the intervention a) with e-module and b) without e-module?
2. Is there a significant difference between the mean gained score (total and per cluster) of students when grouped by intervention?
3. After controlling the initial differences in scores, is there significant difference in the mean score of graduate students who differ in sex and intervention?

Methodology

This study employed true experimental design particularly the randomized pre-post test control group design. The design used in the study was shown below.

This study also used descriptive-comparative type of research. The subjects of the study were the students enrolled in graduate Statistics during the first semester, SY 2015-2016. To compare the effectiveness of the instruction with e-module and without e-module,

Group	Pre-test	Teaching Method	Post-test
A	O ₁	With e-module	O ₂
B	O ₃	Without e-module	O ₄

Legend: O₁ and O₃ – pretest, O₂ and O₄ – post test

random sampling on larger class was performed to have equivalent number of samples. This is in consideration of conditions that need to meet in using statistical test. The class with e-module was only given brief discussion on the interventions, while the group with e-module was taught with pure lecture method.

The study made use of assessment test on level of understanding on level of significance that serves as pre-test and post-test adopted from Collado(2015) with a Cronbach's alpha of 0.702. The reliability in the current study was 0.876.

Findings

Section 1. Level of Understanding on Concepts about Significance Level of the Students enrolled in Statistics Class Taught with E-module and without E-module Before and After the Intervention.

Table 1.1 Level of Understanding on Concepts about Significance Level of Students in Statistics Class Taught Before and After the Intervention with E-module and without E-module.

Level	With e-module		Without	
	Before f (%)	After f (%)	Before f (%)	After f (%)
P	2 (8.3)	0 (0)	0 (0)	0 (0)
F	16 (66.7)	4 (16.7)	7 (70)	0 (0)
M	6 (25)	7 (29.2)	3 (30)	5 (50)
G	0 (0)	6 (25.0)	0 (0)	5 (50)
VG	0 (0)	7 (29.2)	0 (0)	0 (0)
Total	24 (100)	24 (100)	10 (100)	10 (100)

P(poor); F(fair); M(moderate); G(great); VG(very great)

The interventions conducted in the two classes have changed the level of understanding of students in statistics class from poor-moderate to fair-great understanding. This indicates that there was a level up on understanding concepts about significance level of students in statistics class after the interventions.

Based on the frequency count and percentage, the interventions performed were effective in increasing the level of understanding on significance level. The intervention with e-module can improve level until very great understanding compared with intervention without e-module; it can increase level until great understanding only.

Table 1.2 Descriptive Statistics of the Level of Understanding on Concepts about Significance Level of Students in Statistics Class Taught Before and After without E-module

Table 1.2 shows that the intervention without e-

		Before		After	
Concepts		MMd* (SD)	QD	MMd* (SD)	QD
a.	Meaning of significance	33.3* (8.05)	F	68.33 (16.6)	G
b.	Specific levels of significance	23.3 (14.1)	F	25.00 (16.2)	F
c.	Importance of significance	33.8 (15.7)	F	65.00 (14.2)	G
d.	Types of decision error	26 (10.8)	F	58.00 (20.4)	M
e.	p value	55 (30.5)	M	61.67 (22.3)	G
f.	confidence level	25* (26.4)	F	100* (21.1)	VG
Overall		33.7 (9.4)	F	58.16 (10)	M

Legend: 0-19.49 (Poor understanding/P), 19.5-39.49 (fair understanding/F), 39.50-59.49 (moderate understanding/M), 59.50-79.49 (great understanding/G) and 79.5-100 (very great understanding/VG).

*not normally distributed

module can improve the level of understanding of the participants in the concepts on meaning of significance, importance of significance, types of decision error, *p* value and confidence level but not with specific levels of significance. Further lecture-discussion on specific levels of significance was needed to improve the level of understanding on specific levels of significance concepts.

Overall, the level of understanding of the participants increased from fair (M=33.69, SD=9.43) to moderate (M=58.16, SD=10.04).

Table 1.3 Descriptive Statistics of the Level of Understanding on Concepts about Significance Level of

Students in Statistics Class Taught Before and After Intervention with E-module

		Before		After	
Concepts		MMd* (SD)	QD	MMd* (SD)	QD
a.	Meaning of significance	50* (20.3)	M	83.33* (23.5)	VG
b.	Specific levels of significance	16.67* (16.3)	P	58.34* (32.6)	M
c.	Importance of significance	29.17 (16.8)	F	64.58 (27)	G
d.	Types of decision error	31.25 (14.8)	F	60.83 (24.1)	G
e.	p value	41.67 (20.2)	M	66.67* (23.1)	G
f.	confidence level	50* (35.1)	M	100.0* (40.8)	VG
Overall		32.13 (11.8)	F	64.26 (22.2)	G

Legend: 0-19.49 (Poor understanding/P), 19.5-39.49 (fair understanding/F), 39.50-59.49 (moderate understanding/M), 59.50-79.49 (great understanding/G) and 79.5-100 (very great understanding/VG).

As
*not normally distributed

gleaned from table 1.3, the levels of understanding on concepts about significance level were improved in the statistics class taught with e-module. The result shows that 2 clusters were improved from moderate to very great. Overall, the level of understanding on concepts about significance level of students in statistics class taught with e-module improved from fair (M=32.13, SD=11.17) to great (M=64.26, SD 22.2).

Based on the results presented in table 1.2 and 1.3, the interventions performed were effective in increasing the level of understanding of students in concepts about significance level. The interventions without e-module can improve the level of understanding until moderate understanding only while with the aid of e-module, the level can be increased even until great level.

This was also showing that students have different understanding in the concepts of statistics with the difference in the level of understanding.

Section 2. Significant difference between the mean-gained score (the total and per cluster) when grouped by intervention.

Table 2.1 Significant difference between the mean gained score (the total and per cluster) when grouped by intervention in the randomized samples.

Cluster	Treatment	N	Mean (SD)	t(df) Sig. (2-tailed)
Meaning of significance	without	10	1.80 (1.14)	t(18)=-.88, p=.391
	with	10	2.40 (1.84)	
Specific levels of significance	without	10	.10 (1.20)	t(18)=-2.88, p=.010**
	with	10	2.40 (2.22)	
Importance of significance	without	10	2.50 (1.84)	t(18)=-.41, p=.686
	with	10	2.90 (2.47)	
Types of decision error	without	10	3.20 (2.86)	t(18)=.30, p=.771
	with	10	2.80 (3.19)	
p value	without	10	.40 (2.41)	t(18)=-.67, p=.509
	with	10	1.10 (2.23)	
confidence level	without	10	1.30 (.67)	t(18)=1.74, p=.098
	with	10	.60 (1.08)	
Over all	without	10	9.30 (6.15)	t(18)=-.77, p=.453
	with	10	12.20 (10.24)	

*significant at 0.05 level
**significant at 0.01 level

Table 2.1 reveals that there was no significant difference in the mean gained scores of students taught with or without e-module. Significant difference only existed in the concept of specific levels of significance, $t(18)=-2.88$, $p=0.010$. The gained score of students taught with e-module was significantly higher only in concept of specific level of significance. Furthermore, the result also reveals that students taught with e-module have higher scores in some clusters but students taught without e-module have also obtained higher scores in others.

The study was supported by the result of the studies of Ramey (2015), Gundlach, Richards, Nelson, and Levesque-Bristol (2015) showing that the interventions such as e-module, fully online, flipped sections, used of instructional videos can improve the learning of students in statistics but no difference with traditional lecture-discussions.

Section 3. After controlling the initial differences in scores, is there significant difference in the mean score of graduate students who differ in sex and intervention.

Table 3.1 Descriptive Statistics of the Mean Score of Graduate Students who differ in Sex and Intervention after controlling differences in pre-test score

Sex	Treatment	Unadjusted Mean (SD)	N	Adjusted Mean
Female	Without	21.0 (4.08)	4	23.4 ^a
	With	24.0 (11.15)	6	24.2 ^a
	Total	22.8 (8.78)	10	
Male	Without	22.83 (3.82)	6	21.538 ^a
	With	25.00 (5.94)	4	24.253 ^a
	Total	23.70 (4.60)	10	

a. Covariates appearing in the model are evaluated at the following values: PRE = 12.500.
Dependent Variable: POST

Table 3.1 shows that the mean score of students taught with e-module was higher than the mean score without e-module for both male and female graduate students.

Table 3.2. Significant difference in the mean score of graduate students who differ in sex and intervention after controlling the initial differences in scores
Tests of Between-Subjects Effects
Dependent Variable: POST

A 2 by 2 between-groups analysis of covariance was

Source	Type III Sum of Squares	F(df), Sig.	Partial Eta Squared
Corrected Model	79.75 ^a	F(4)=.37 p=.826	.090
Intercept	676.71	F(1)=12.56 p=.003	.456
PRE	42.83	F(1)=.80 p=.387	.050
Sex	2.42	F(1)=.05 p=.835	.003
Intervention	13.85	F(1)=.26 p=.620	.017
Sex * Intervention	3.60	F(1)=.07 p=.799	.004
Error	808.00		
Total	11699.00		
Corrected Total	887.750		

a. R Squared = .090 (Adjusted R Squared = -.153)

conducted to assess the effectiveness of the two interventions in improving the scores of students in the concepts of level of significance for male and female participants. The independent variables were the interventions (with e-module and without e-module) and sex.

The dependent variable was post test scores in level of significance. Pretest scores were used as a covariate to control for individual differences. The two-way effect of sex and intervention, main effect of intervention and main effect of sex were not significant. Similar to the result of

Liu and Garfield (2002). Furthermore, this also shows that since there was no significant difference, then e-module can be a substitute to lecture method especially that approaches in teaching graduate students were different from undergraduate students.

Conclusions

Based from the result and discussions, the following conclusions were the following:

1. The interventions without e-module can improve the level of understanding until great understanding only while with the aid of e-module; the level can be increased even until very great level.
2. The understanding of the students taught with e-module and without e-module was the same except on specific levels of significance concept. The students taught with e-module learned better in the specific level of significance compared with students taught without the e-module. E-module can be substitute to lecture method.
3. After controlling the initial differences in scores, there was no significant difference in the mean score of graduate students who differ in sex and intervention.

Recommendations

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

- The e-module could reinforce them in independent learning.
- E-module could be a substitute to traditional learning. This can also help the graduate students to cope up with the lesson missed in class.
- E-module can be taught in combination with the traditional methods to better improve the understanding in the level of significance.
- Graduate teachers to continue integrating innovations in class and further studies could also be conducted.

References:

Agus, M., Però-Cebollero, M. Guàrdia-Olmos, J. and Penna, MP (2013). The measure-

ment of statistical reasoning in verbal-numerical and graphical forms: a pilot study. *Journal of Physics: Conference Series* 459 (2013) 012023
doi:10.1088/1742-6596/459/1/012023

Ashaari, N.S., Judi, H.M., Mohamed, H., Wook, T.M.T.W. (2011). Student's Attitude towards Statistics Course. *Procedia Social and Behavioral Sciences* 18. Pp. 287-294. doi:10.1016/j.sbspro.2011.05.041. Available online at www.sciencedirect.com

Baltimore County Public Schools (2010). Role of Statistics. Retrieved from https://www.bcps.org/offices/lis/researchcourse/statistics_role.html

Boston University (2015). Why study statistics? Retrieved from <http://www.bu.edu/stat/undergraduate-program-information/why-study-statistics>.

Bude, L. (2006). Assessing Students' Understanding of Statistics. ICOT-7.

Capilla, C (2006). Assessing Students Reasoning about Statistical Measures and Association. ICOTS-7

Chan, S. & Ismail, Z. (2013). Assessing misconceptions in reasoning about variability among high school students. *Procedia - Social and Behavioral Sciences* 93. pp. 1478 - 1483. doi: 10.1016/j.sbspro.2013.10.067. Available online at www.sciencedirect.com

Collado, M. (2015). Level of Understanding on Concepts about Significance Levels among Graduate Students. Unpublished Thesis.

delMas, R., Ooms, A. & Garfield, J. (2006). Assessing Students' Statistical Reasoning. ICOTS-7.

Delmas, R., Garfield, J., Ooms, A. & Chance, B. (2007). Assessing Students' Conceptual Understanding after a First Course in Statistics. *Statistics Education Research Journal*, 6 (2), 28-58, <http://www.stat.auckland.ac.nz/serj>. International Association for Statistical

- International Association for Statistical Education (IASE/ISI), November, 2007
- Garfield, J. & Ben-Zvi, D. (2007). How Students Learn Statistics Revisited: A Current Review of Research on Teaching and Learning Statistics. *International Statistical Review* 75, 3, 372–396 doi:10.1111/j.1751-5823.2007.00029.x
- Gundlach, E., Richards, N., Nelson, D. and Levesque-Bristol, C (2015). A Comparison of Student Attitudes, Statistical Reasoning, Performance, and Perceptions for Web-augmented Traditional, Fully Online, and Flipped Sections of a Statistical Literacy Class. *Journal of Statistics Education* Volume 23, Number 1. www.amstat.org/publications/jse/v23n1/gundlach.pdf
- Liu, H. & Garfield, J. (2002). Sex Differences in Statistical Reasoning. Retrieved from ojs.lib.ntnu.edu.tw/index.php/bep/article/viewFile/312/210
- Harris, T. (2007). Why you need to use statistics in your research. Chapter 1. Dealing with Statistics. Kerry Press Ltd. McGraw-Hill. Retrieved from <https://www.mheducation.co.uk/openup/chapters/9780335227242.pdf>
- Magnusson, K. (nd). Understanding Statistical Power and Significance Testing. Retrieved from <http://rpsychologist.com/d3/NHST/>
- Nolan, M., Beran, T. & Hecker, K. (2012). Surveys Assessing Students' Attitude Toward Statistics: A Systematic Review of Validity and Reliability. *Statistics Education Research Journal*, 11(2), 103-123, <http://www.stat.auckland.ac.nz/serj>. International Association for Statistical Education (IASE/ISI), November, 2012
- Ramey, James M. (2015). Differences in Statistical Reasoning Abilities through Behavioral-Cognitive Combinations of Videos and Formative Assessments in Undergraduate Statistics Courses. *Electronic Theses and Dissertations*. Paper 2494. <http://dc.etsu.edu/etd/2494>
- Sahari, N., et al (2009). Student's Attitude towards Statistics Course. *Procedia Social and Behavioral Sciences* 18 (2011) 287–294. Retrieved from www.sciencedirect.com/science/.../S1877042811011542
- Shan, S. & Ismail, Z. (2014). A technology-Based Statistical Reasoning Assessment Tool in Descriptive Statistics for Secondary School Students. *The Turkish Online Journal of Educational Technology* – January 2014, volume 13 issue 1. *The Turkish Online Journal of Educational Technology* 29
- Slootmaecker, K. (2015). A Barrier to Learning Statistics and to Acquiring Quantitative Skills. *Journal of Statistics Education*, Volume 23, Number 1
- Vanhoof, Sotos, et al (2006). Attitudes Toward Statistics and Their Relationship with Short- and Long-Term Exam Results. *Journal of Statistics Education* Volume 14, Number 3. www.amstat.org/publications/jse/v14n3/vanhoof.html
- Tempelaar, D. (2006). A Structural Equation Model Analyzing the Relationship the Students' Statistical Reasoning Abilities, Their Attitudes toward statistics and learning approaches.
- Vanhoof, Sotos, et al (2006). Attitudes Toward Statistics and Their Relationship with Short- and Long-Term Exam Results. *Journal of Statistics Education* Volume 14, Number 3. www.amstat.org/publications/jse/v14n3/vanhoof.html
- Wang, W., Wang, X. & Chen, G. (2009). Survey and Analysis of the Statistical Reasoning among High School Students in China and Dutch. *Journal of Mathematics Education*. Vol. 2, No. 1, pp.15-26.
- Sorden, S. (2012). The Cognitive Theory of Multimedia Learning. Retrieved from http://sorden.com/portfolio/sorden_draft_multimedia2012.pdf

**ANALYSIS OF LET RESULTS OF THE TEACHER EDUCATION GRADUATES
OF CAGAYAN STATE UNIVERSITY AT LAL-LO COVERING
ACADEMIC YEARS 2010-2013**

***FERDINAND BULUSAN, MAEd**

College of Teacher Education
Cagayan State University
Sta. Maria, Lal-lo, Cagayan Valley, Philippines
fgbulusan_gmail@yahoo.com

Abstract

Generally, this study assessed the performance of the Teacher Education Graduates in the Licensure Examination for Teachers (LET) from 2010-2013. Specifically, it determined the performance of both the BSEd and BEEd LET examiners as compared to the National Percentage of Passing and the performance of the BSEd LET examiners as compared to the BEEd LET examiners. It looked into the trend in the LET performance of graduates in terms of percentage of passing for BSEd and BEEd first timers and repeaters from 2010-2013.

Data were taken from the Philippine Regulation Commission (PRC) website on LET results from September 2010 to March 2013.

Both the first timers and repeaters in the BSEd program performed higher than the national passing percentage with an average difference of 22.27 percent. Meanwhile, the BEEd LET takers (first timers) performed best in the September 2012 exam; however, the repeaters performed lower.

Also, BSEd (60.28) LET takers performed better than the BEEd (54.21 percent) takers. The trend in the performance of graduates in the last two exams for both first timers and repeaters is better than the first three exams.

It is concluded that both the BSEd and BEEd LET taker performed higher than the national passing rate; the first timers performed far better than the repeaters. Moreover, the BSEd LET examiners performed better than the BEEd LET examiners in all exams considered. Finally, the percentage of passing for both programs for first timers and repeaters slightly increased in the last two examinations.

Keywords: *Education, Licensure Exam for Teachers, Teacher Education, College Graduates, Analysis of Licensure Exam*

I. Introduction

Enrolment in the College of Teacher education (CTE) gradually decreased few years ago due to the increasing demand of manpower in the commercial and industrial world. More graduates from the Basic Education preferred

to enroll in courses like Information Technology and Hospitality Industry Management which are relevant to the needs of industries and businesses both here and abroad. But the curriculum reforms in the Department of Education particularly the introduction of kindergarten to senior high school basic education, which increases the number of years in secondary education, has enticed secondary school graduates to pursue teacher education courses; hence, an increase again in enrolment. By 2016, when two more years (Senior High School) of secondary education shall have been completely implemented, more teachers will be needed to man the implementation of the said program. Teacher Education institutions are therefore

encouraged to strengthen their programs to participate also in the call for quality education. Akin to this, there is a need to assess the performance of education graduates in the LET as one measure to ensure quality education in the tertiary institutions for they are the producers of human resources of the basic education institutions.

Generally, the study assessed the performance of Teacher Education graduates in the Licensure Examination for Teachers (LET) from 2010-2013. Specifically, it sought to analyze the performance of the Bachelor of Secondary Education (BSEd) and Bachelor of Elementary Education (BEEd) graduates or LET takers as compared to the national percentage of passing for both first timers and repeaters; the overall performance of LET takers as compared to the national percentage of passing; the performance of the BSEd LET takers compared to the

national percentage of passing; the performance of the BSEd LET takers compared to the BEEd LET takers for both first timers and repeaters; and to determine the trend in the LET performance in terms of percentage of passing for both BSEd and BEEd first timers and repeaters.

II. Methodology

Data were taken from the Philippine Regulation Commission (PRC) website on LET results from September 2010-March 2013. Results of March and September exams were all considered in the analysis. This research used a trend analysis tool.

III. Results and discussion

A. BSEd Results

Table 1 shows the results for the BSEd LET takers (first timers). Result indicates that the percentage of passing of the first timers in all the exams is higher than the national percentage with an average difference of 27.22%. The latest exam appears as the highest result where only one among the takers did not make it. Despite the longer exam for the BSEd, results reveal that the takers performed well because the percentage of passing is higher than the national passing rate.

The success is highly attributed to the conduct of course audit in the curriculum of the first time takers of LET. The course audit is a review scheme that is embedded in the institutionally crafted curriculum. Moreover, the selective retention, through the use of screening test administered before they had entered second year, also aided in the success of the first time takers. Immediately after their graduation, these students were encouraged to attend the college summer LET review packaged with LET simulated questions and test-wisness mentoring.

B. LET Results of Repeaters

In Table 2, LET results of repeaters reveal that the repeaters' performance is very unsatisfactory. It was only in the March 2013 examination where the perfor-

Table 1. BSEd LET results (first timers).

Date	No. of Takers	No. of Passers	Percentage of Passing	National Percentage of Passing	Difference
Sept. 2010	8	4	50	25.86	24.14
Sept. 2011	19	10	52.03	31.45	20.58
March 2012	4	2	50	24.85	25.15
Sept. 2012	22	14	63.64	43.50	20.14
March 2013	7	6	85.71	39.61	46.10
Total/Average	60	28	60.28	33.05	27.22

mance of repeaters is higher than the national passing rate. This is because the repeaters graduated several years before taking the exam for the second time or

third time around and had no refresher courses or had not attended any review class before taking the exam again.

C. Overall Performance of BSEd

Table 3 presents the overall performance of the BSEd LET takers in the last three years. Additionally, it shows that despite of the very low result of the

Table 2. BSEd LET results (repeaters).

Date	No. of Takers	No. of Passers	Percentage of Passing	National Perc. of Passing	Diff.
Sept. 2010	7	0	0	25.86	-25.86
Sept. 2011	6	0	0	31.45	-31.45
March 2012	7	1	14.29	24.85	-10.56
Sept. 2012	12	2	16.67	43.50	-26.83
March 2013	12	8	66.67	39.61	27.06
Total/Average	44	11	19.526	33.054	

repeaters, the overall performance in the exams is still higher than the national percentage of passing (73.68 against 39.61).

D. Performance of BEEd first time takers.

For the BEEd, table 4 shows the LET results of the first timers. It can be gleaned on the table that like in

Table 3. BSEd overall performance.

Date	No. of Takers	No. of Passers	Percentage of Passing	National Percentage of Passing	Difference
Sept. 2010	50.00	0	26.67	25.86	0.81
Sept. 2011	52.03	0	40.00	31.45	8.55
March 2012	50.00	14.29	27.27	43.50	3.56
Sept. 2012	63.64	16.67	47.06	43.50	3.56
March 2013	85.71	66.67	73.68	39.61	34.07

the BSEd, the BEEd LET takers also garnered a higher percentage of passing in all the exams as compared to the national percentage of passing. Results reveal that they performed best in September 2012 exam with only one among the takers (9 against 8) failed.

Still, the conception and implementation of one semester course audit scheme, selective retention mechanism, and the conduct of summer LET review of the College are the primordial attributions to their success.

Table 4. BEEd LET results (first timers).

Date	No. of Takers	No. of Passers	Percentage of Passing	National Percentage of Passing	Difference
Sept. 2010	15	6	40	19.58	20.42
Sept. 2011	10	3	30	22.68	7.32
March 2012	13	7	53.85	42.26	11.39
Sept. 2012	9	8	88.89	49.29	39.60
March 2013	12	7	58.33	27.78	30.55
Total/Average	59	31	54.21	32.36	21.85

Overall Performance of BEEd LET Repeaters

The performance of the BEEd repeaters is not satisfactory because in all the exams, the result was lower than the national percentage of passing, except for the September 2012 exam. Repeating the exam long after graduation without attending refresher courses or review classes reduces their chance to pass the exam. More so, items in LET do constantly change to cope with the new trends and issues in pedagogy.

Table 5. BEEd LET results (repeaters).

Date	No. of Takers	No. of Passers	Perc. of Passing	National Perc. Passing	Diff.
Sept. 2010	12	0	0	19.58	-
Sept. 2011	22	2	9.09	22.68	-
March 2012	1	0	0	42.46	-
Sept. 2012	20	11	55.00	49.29	5.71
March 2013	4	1	25.00	27.78	-2.78
Total/Average	59	12	17.82	32.36	-

F. Three-year Overall Performance of BEEd and BSEd LET Takers

The overall performance of the BEEd LET takers in the last three years indicates that only in September 2011, the percentage of passing was lower than the national passing rate (22.68 against 19.54). The result of the repeaters immensely affected the overall results.

Results also disclose that the BSEd performed better in the licensure examination as revealed in the average percentage of passing of 60.28% as compared to an average of 54.21% of the BEEd. Similarly for the repeaters, the BSEd average percentage of passing of 19.52% is higher than the BEEd, with only an average of 17.82%.

In anent to the trend in the performance of graduates in the LET, results expose that their performances in the last two exams for both first timers and repeaters are better than the first three exams. If the observation would continue in the next few years, it could be a determinant of an improving quality of instruction. Intervening measures of the CTE, like conducting course audit and colloquium, selective retention through screening test, and summer LET

review, are sound indications of success.

IV. Conclusion

Both the BSEd and BEEd first timer LET takers had a higher percentage of passing as compared to the national passing rate; the first timers performed far better than the repeaters; BSEd Let takers performed better than the BEEd Let takers in all the exams considered; and the percentage of passing in both programs and for both first timers and repeaters slightly increased in the last two exams.

Also, repeaters who have long graduated in their undergraduate programs and who have just taken the LET recently may likely fail the exam again due to the continuing change of items in the LET vis-à-vis the latest trends and issues in pedagogy.

Recommendations

To sustain the increasing percentage of the LET institutional passing rate versus the national passing rate, the college is urged to continue the intervening measures like the conduct of a one-semester continuum or course audit, the selective retention scheme with maintaining general average of 85 before teacher education students second year, and the conduct of the summer LET review with simulated LET questions and mentoring.

Since attendance to a LET review class should be a requirement for LET takers, the college may craft a review scheme specifically for prospect repeaters. LET readiness assessment should also be conducted to both prospect repeaters and first time takers to identify those who would most likely fail. After the identification process, the college may use another intervention to ensure the passing of those who are not yet ready for the LET.

As for the curriculum, the college may upgrade the both the BEEd and BSEd curricula by stressing topics that are perennial ambits in LET.

Finally, benchmarking with other universities regarding good and effective practices in sustaining LET passing rate may be done by the college to increase its perspective on

References

- Aquino, G. (2004). *Effective teaching* (3rd ed). Mandaluyong City: National Bookstore.
- Arce, Sheila Marie E., Josephine L. Belen (2011). The Pre-Board Examination Part of the In-house Reviews as predictor of LET Results. *Manuel S. Enverga University Foundation*. Vol.13, No.1.
- Barrientos, Eva Maria Corazon S., Dominador S. Garin, Ph.D. (2008). Readiness and Competencies of Students in Teacher Education Institutions of the Cordillera Administrative Region. *Research Journal*, Vol.16.
- Bilbao, P. (2006). *The Teaching Profession*. Metro Manila: Lorimar Teaching Co.
- Brigman, Greg, Chari Campbell, Ph.D. (2007). *Helping Students Improve Academic Achievement and School Success Behavior*. Florida Atlantic University. Boca, Raton. Vol.7, No.2.
- Davis, B.G. (1999). Quizzes, tests, and exams. Retrieved August 1, 2008 from: <http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/quizzes.htm>.
- Espino, Nely G., Dr. Ma. Fe. V. Roman, and Dr. Glenda C. Magno (2011). *The Academic Performance, Licensure Examination for Teachers Results from 2004- 2008 and Work Performance of BSED Graduates: An Analysis*. Bataan Peninsula State University. Balanga City, Bataan.

Computer-Aided Language Learning in the eyes of the Indigenous People College Students

Edwin L. Nebria, Ed.D.
College Professor 1 / Chair - Language Discipline
University of Mindanao, Bolton Street, Davao City
Philippines
edwin_nebria@yahoo.com

Abstract

Being proficient in the use of the English language is a must to be globally competitive. However, studies show that students have difficulty in using English both in speaking and writing as cited by Alvior, (2007). With the consistent growth in ethnic diversity in schools, teachers have to learn at the university level or in professional development course how to educate ethnically diverse students. This prompted the University of Mindanao to employ Computer Assisted Language Learning through Dynamic Education Software. This study aimed to document Indigenous People students' experiences in Computer-Aided Language Learning, and to evaluate its effects to their language proficiency after the exposure and how students interact and adjust themselves in learning English with the aid of the multimedia computers in the second semester of School Year 2013 – 2014. The study employed a one-shot case experimental design with qualitative explanatory notes research approach, specifically the pre-test - post-test design or before-after survey, with the weighted mean, and t-test as statistical tools, and the primary data taken from Dyned pre-placement and post-placement tests results and in-depth interview. Results revealed that the IP college students showed an increase of their exit placement after exposure to DynEd software, and IP students considered their CALL experience as nervousness at the onset as they learn how to navigate and use the computers. Evidently, as their confidence and skills increased, they henceforth enjoyed their computer-aided language learning via DynEd. This means that utilizing CALL can improve the English proficiency of the IP students. This supports the theory of Little, David (1996) states that "Freedom to learn and compulsion to interact promotes the learner's autonomy through the use of technologies." This further supports the statement of Knowles (2004) that synchronized activation of the auditory, phonological and visual systems in the brain are important in the development of the macro skills.

Keywords-component; Indigenous People; Computer-Aided Language Learning; Dynamic Education; English Language Proficiency.

Introduction

To be globally competitive, one must be proficient in the English language. However, studies show that students have difficulty in using English. In the study of Tippeconnic and Faircloth (2010) as cited by Napil (2014) there are 370 million approximately of indigenous people in the world.

With the consistent growth in ethnic diversity in schools, teachers have to learn at the university level or in professional development course how to educate ethnically diverse students. Glimpse (2007) opined that since education is the process of gaining information about the surrounding world, it is a must for the educators to create an effort that promotes students' welfare. Accordingly, schools must improve facilities and promote enhancement programs in order to maximize learning of the students (Klent, 2001). These programs may include computer aided instructions.

Moreover, as cited by Muaña (2011) in the study of Napil (2014), that beyond half of the approximated number of young indigenous students in Western Australia were rated by their teachers as slow learners in the general academic performance. Further, they stated that there is a big disparity in the general academic performance of indigenous and non-indigenous students. The incidence of low academic performance is notably higher among indigenous students compared to non-indigenous students.

Despite the recent reports that show Filipinos getting ahead in speaking English, there are still thousands who are struggling communicators. This fact pushed the different Philippine Universities in seeking for an efficient way of improving the proficiency of Filipinos in the English Language especially in native tribes.

Globally, Knowles (2004) said, the use of the computer-aided instructions for the English language has gained popularity in the USA, Europe, and Asia. Moreover, he said that this helps achieve one of the goals of education, that is, to be proficient in the use of the English language so that students may become globally competitive. This is done because research shows that students have difficulty in using the English both in conversation and writing as cited by Alvior (2007). Moreover, Knowles stressed that students' academic preparation was inadequate and did not afford them the opportunity to engage in conversation in a language other than their own. Most schools in the USA are utilizing Computer-Assisted Modules in order to improve communication skills of students (De George, 2000).

Nationally, Filipinos' self-assessed proficiency in the English language has declined over the past twelve years, according to the March 2006 Social Weather Survey, compared to earlier SWS surveys in December 1993 and September 2000. The use of the computer-aided training and instructions are increasingly visible in different schools and universities in the Philippines. This becomes a priority for school administrators so that the developments of the communicative skills of their clients are maximized.

Regionally, several schools in region XI are using the Computer-Aided Instructions in order to improve students' macro-skills. The University of Mindanao is employing computer aided language learning since School Year 2006 and recently the Davao Maritime School of Davao also adapting (CALL) via Dynamic Education Software (DynEd) for developing communication skills / proficiency particularly in the English language of the students.

Locally, in Davao City, the students of University of Mindanao are observed to have no firm hold of their writing and speaking skills in English (Alderite, 2003). Hence, the University of Mindanao Administration has been supportive in all the projects launched by the Language department to arrest the problem. In fact, the Administration provided the students with computers to be used in their 10 hour exposures in computer-aided language instruction via DynEd (Dynamic Education) software as an embedded program for students enrolled in any English subject across colleges.

DynEd is in its full blast of operations as an embedded program of the language department of the University of Mindanao. However, a study must be conducted to find out if students' problem in English proficiency has been solved particularly in the group of IP (indigenous people) college students since they

are mostly from far-flung provinces and had no experience in using computer in actual scenario. Being new in the environment as college students, they even hesitate to communicate someone of different language particularly in the English.

Based on the observation of the researcher, DynEd for the Indigenous People is something new which is not easy to do with a lot of apprehensions seen in their facial expressions, with a lot of queries since they are still neophytes in their new journey as college students in the university. The IP students seem may encounter some difficulties or barriers in dealing with software. Hence, the researcher ought to find out how beneficial it is for the case of indigenous college students to develop their language proficiency and computer skills to be globally competitive through computer-aided language learning program.

Indigenous People (IP)

The Lumad is a group of indigenous peoples of the Southern Mindanao, Philippines. Lumad is a Cebuano term meaning 'native' or 'indigenous'. The term is short for "indigenous peoples".

Due to the impact and influence of information technology on society and education, computer-assisted language learning is becoming the trend in foreign language teaching. Computer-assisted language learning can reduce the anxiety of students and turns out to be a positive side of learning (Gates, 1997).

Computer-Aided Language Learning is an acronym for computer-assisted instruction, a type of educational program designed to serve as a teaching tool. It is related to the use of computers in teaching; others include computer-assisted learning, computer-augmented learning, computer-based learning, computer-based training, and computer-managed instruction, a diverse and rapidly expanding spectrum of computer technologies that assist the teaching and learning process.

According to the study of Bañados and Ripoll (1999), computer-aided language learning is of great advantage since this provides a human like dimension for positive and corrective feedback, giving the students the sense of belonging to a learning community, and helping them develop their self-confidence and

their language skills through individual practice, communication both through face-to-face and collaborative activities.

CALL helped basically the students on how to follow instructions given by the computer itself. It could develop listening skills and right pronunciation. Ducker (2009) as cited by Pacual (2012) has noted that the lack of literacy skills among indigenous student specifically in word recognition and reading comprehension are common problems and critical barrier in education

In a study conducted by Frigaard (2002), it was found out that the computer lab was a beneficial tool, benefiting some students more than others. Most students believed that the lab improved their Listening skills and made class more interesting.

DynEd's unique interactive program enables students to work at their own pace, with instant access to repetition and comprehension aids such as translation, on-screen text, glossary support, and mastery test. Students record their own voices and compare their recordings with the native speaker model provided in the courseware. It is designed to help acquire the target language in a natural but accelerated mode of learning.

The software exposure or trainings premised on the holistic and authentic approaches to learning and adopts student/participant – centered methodology. The content has been sequenced according to fundamental elements of English language skills. It offers a variety of activities and opportunities in understanding International English sounds, crucial grammar points and valuable language skills to be learned, and emphasized on practical use of language.

Alvior (2007) cited in her study that using computer-aided language learning could enhance the English Proficiency of the students in practicing and recording their voice whether hands-on or even just in mobile method of exposure to the DynEd software.

Based on the observation of the researcher, teaching DynEd is not easy for the teachers handling this program since the IP students are still neophytes in their new journey, they need to be taught about computer operations. The IP students encountered some unexpected difficulties or barriers due to lack of sufficient knowledge and computer skills, lack of experience, insufficient time, computer anxiety and lack of confidence, although all participants in the study had positive attitudes towards the use of technology and strong intrinsic motivation such as personal curiosity and interest, they still need to be taught in using computer aside from teaching language via

DynEd.

English Language Proficiency is a critical element in the process of becoming literate and all of the other public manifestations of human intelligence that enable a person to become more effective and efficient in all other areas especially in the non-English speaking countries where the medium of instruction at school in English (De George, 2000).

Conceptual Framework

This study is anchored on the theory of Little, David (1996) states that “Freedom to learn and compulsion to interact: promoting learner autonomy through the use of technologies.” The theory has proven true by the concept of Knowles (2004) which states that synchronized stimulation of the auditory, phonological and visual systems in the mind are important in the development of listening, reading and speaking skills.

This theory is also supported by Castillo (2001) who explained that exposure of students to advances in technology clearly relates to the English proficiency achievement.

This theory is likewise supported by Chun and Brandl (1992), stated that the computer assisted in learning the language which is interactive is an attractive teaching tool. Furthermore, the theory has proven true by the concept of Klent (2001) that interactive media environment can help students find clear objectives, and clear instructions of what they are expected to do, to achieve their language learning goals for second language learning.

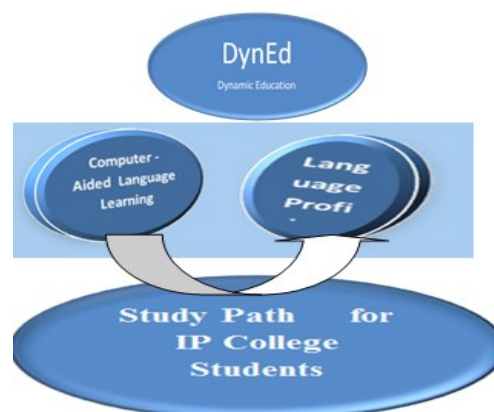


Figure 1: Schematic Diagram of the Study

The researcher, being a language professor for more than two decades, believes that embarking on this study would somehow give light about how beneficial computer-aided language learning used by the university for the students together with the (IP) Indigenous People to their academic performance. Thus, the researcher is challenge to investigate and thereby create an intervention program exclusively designed for them.

DynEd's exceptional collaborative package empowers students to work at their own pace, with prompt access to reiteration and understanding aids such as paraphrase, on-screen text, glossary support, and mastery test. Students record their personal voices and compare their recordings with the native speaker model provided in the courseware. A software intended to support students improve abilities in speaking, listening, reading, and writing, which was initiated in 1987 by the past administrator of the Language Institute of Japan (LIOJ), Lance Knowles with a team of engineers.

Moreover, there are numerous forms of questions in the Placement Test. New Dynamic English (NDE) is one of the courseware of the DynEd software, comes in eight modules. Each module divided five units. Some of these units are Names and Places, Jobs and Family, Planning Ahead, and life Choices. The language models in these units prepare students to communicate about their own lives and experiences in increasing detail as the course progresses.

The software exposure or trainings premised on the holistic and authentic approaches to learning and adopts student/participant – centered methodology. The content has been sequenced according to fundamental elements of the English language skills. It offers a variety of activities and opportunities in understanding International English sounds, crucial grammar points and valuable language skills to be learned, and emphasized on practical use of language.

This study aims to discover how Indigenous People college students regulate themselves in learning English with the help of multimedia computers and the collaboration between students and multimedia computers, for the researcher to figure out whether the breakthrough on computer-aided learning really affects the language proficiency of IP college students.

STATEMENT OF THE PURPOSE

This study aimed to document IP students' experiences in Computer-Aided Language Learning and to evaluate its effects to their language proficiency in the second semester of School Year 2013 – 2014. Specifically, the study tried to answer the following questions:

1. What is the profile of the IP college students when grouped into,

1.1 gender;

1.2 course; and

1.3 tribe?

2. What are the pre-test and post-test mean scores of the IP students in DynEd Placement test?
3. Is there a significant pre – post mean gain scores of the IP students in DynEd Placement test when grouped into tribe?
4. Is there a significant difference in the mean gain scores among IP students in DynEd Placement test when grouped according to tribe?
5. What are the experiences of the IP college students in computer-aided language learning via DynEd?
6. Based on the findings, what enhancement program can be proposed for the IP college students?

Hypotheses

The null hypotheses below will be tested at 0.5 level of significance

1. There is no significant difference in mean gain scores of the pre and posttest of the IP college students.
2. There is no significant difference in mean gain scores of the pre and posttest of the IP college students when grouped according to tribe.

III RESEARCH METHODOLOGY AND PROCEDURES

This chapter presents the research method, participants, environment, research instrument, data gathering procedure in the conduct of the study and the statistical treatment to be used.

Research Method

The study is dominantly one-shot case experimental design with qualitative explanatory notes research approach specifically the pre-test-post-test and in-depth survey design. The result of the two tests was compared to determine if there's a change in the students mean scores particularly in IP students. According to Merriam (1998), qualitative research will be conducted to gain insight or understand the experiences of the participants.

The “Study Path” and the flow of the DynEd sessions for the students; First, was the creation of the classes and enrollment, and during first day of the specific schedule, the students were inducted with DynEd courseware and given the placement test which was considered as the pretest or pre-placement test. Then after taking the placement test, the students underwent with the recommended courseware for the sessions and extension activity, finally after the 10 hours exposure with the program they took the last placement or the post-test placement.

Beforehand, orientation was administered, then the IP college students took the placement test, supposedly, the computer was the one to decide what lessons they need to take based on their pre-placement results according to the DynEd placement level, but in-order to avoid bias for the students who got high or low placement level, there was a unison or respective guide for them to work-on no matter what level they had in their pre-placement test, this is called “study path”. The students took the New Dynamic English, one of the DynEd coursewares which is considered as the foundation or basic in grammar, composed of eight modules, but the students were required to accomplish the first three modules only for the first year across college. In accomplishing the study path, the student has to answer the lessons in sequence with 30% completion rate in-order to open the mastery test automatically. For the review exercises, the students need to answer two items in dictation, and nine items in fill-ins activity, five sets in speech practice, and for video interaction, the students need only to answer one activity with SRV or Speech Record Video.

After the completion of each activity with thirty percent completion rate, the students can take the nine mastery test out of the three modules, then exit or post-placement test must be taken. Extraction of students records through the records manager of the DynEd software.

Participants

The participants of the study were the identified 73 IP college students in the University of Mindanao from eight different tribes as shown on the table. Among the participants, most of the number were coming from Manobo tribe generally coming from the remote area of Davao city and towns nearby followed by the Mandaya tribes mostly coming from the oriental part of Davao, then Bagobo and Ata tribes who have almost the same in number of participants. Bagobo tribes are coming from south Davao area and the Ata are from the mountainous part of Davao city. The rests of the participants with the least in number were from the tribes of B’laan, Matigsalog, and T’boli. The participants were the identified IP college students of the University of Mindanao for the School Year 2013 – 2014.

Shown in Table 1 is the distribution of respondents classified by tribes. Involved in the study are 73 IP respondents with 9 ATA respondents, 10 Bagobo, 7

B’laan, 3 Kalagan, 14 Mandaya, 22 Manobo, and the Matigsalog and T’boli is 4 respondents. Majority of the

Table 1. Distribution of IP participants

TRIBES	Participants
Ata	9
Bagobo	10
B’laan	7
Kalagan	3
Mandaya	14
Manobo	22
Matigsalog	4
T’boli	4
Total	73

participants are coming from the Manobo tribe, this is an evident that even the Manobo tribe nowadays valuing education, for them to compete to a very competitive world, followed by the Mandaya, then Bagobo who opted to be in the city rather than staying in the mountain just working in the field. This implies that indigenous people residing near the city of Davao like the Manobo tribe chose to enroll in the University of Mindanao to avail the scholarships extended by the university to every qualified indigenous people students. This is followed by the Mandaya tribe who hails from the oriental part of Davao province, and the same with the Bagobo tribe who are from the south Davao province. The rest of the participants are from Cotabato city, South Cotabato, and from the new province of Davao which is Davao Occidental Province who opted to continue their tertiary education in the University of Mindanao.

Environment

The students were attended their DynEd sessions according to their given schedules at the IEL (Interactive English Laboratory) both in UM Bolton and UM Matina campus. The students started with the orientation regarding to the rules and regulations in using the laboratory equipment, and the study path to work on during the duration of DynEd sessions, then took the pre-placement test and work according to their pace with the help of the study path as guide, after

working with the lessons provided in the study path, then took the post placement test.

The study was conducted in the University of Mindanao, the biggest university in Region 11 where a substantial number of IP students were enrolled. These IP students were attracted to enroll in the university due to its proven quality education recognition. To name a few, the university was awarded as the only ISO, Autonomous Status, Category A+ status, 1 Center of Excellence (College of Teacher Education), 4 Centers of Development, Level IV Accredited Status, Level III Accredited Status. In addition, the university supports the constitutional mandate of Commission on Higher Education in providing equitable access to education regardless of socio-cultural backgrounds. In fact, the university convened all Indigenous People (IP) students into a recognized university student organization-the PAGLAUM to smoothly transition them in the students' life full of struggles and insecurities.

The main instruments were based from in-depth interview and the results of the Pre and Post placement tests from DynEd (Dynamics Education) of the IP college students. The Placement tests were Research Instruments taken in the DynEd laboratory of the University of Mindanao both Matina and Bolton campus. The pre-test and post-test placement scores of the students were used in analyzing the significance of the program with the IP college students.

The Placement Test is a computer adaptive, variable length test. It responds and adjusts to the student's performance.

In-Depth Interview Guide. To determine the perceptions, and experiences of the Indigenous People (IP) college students regarding computer-aided language learning via (DynEd).

Data Gathering Procedure

Data gathering was conducted during summer of the School Year 2013-2014. As the first step, the researcher sent a letter to the President of the university and to the adviser of PAGLAUM to seek permission to conduct the study. The same letter was sent to the laboratory custodians for the access of the IP students' records from the records manager of the software in three DynEd laboratories. After the approval, the researcher then personally administer the questionnaires and interviewed the IP students during one of their monthly meetings. The administration of the questionnaires was so timely in the sense that it was during their monthly meeting, the researcher was able to gather IP students. The data were retrieved, classified according to its gender, course and tribe. It was tallied, tabulated, analyzed, and interpreted confidentially and accordingly.

For the qualitative part of the study not all respondents answered the questions, because out of 73 enlisted and recognized IP members of the PAGLAUM

organization, only around 30 percent, a total of 22 IP students were enrolled the during Summer 2014.

Retrieval of Data. The Students' result of the pre-test and post-test scores/level of the UM IP college students were extracted from the records manager of the said DynEd software as computer-aided language learning tool.

Analysis of Data. Analyzed the data using appropriate statistical tools.

Data Analysis Tools

The following statistical treatments were used to interpret the data gathered.

Percentage. This is the ratio of the part with respect to the whole. Assumption is based on the concept of dividing the whole into one hundred equal parts and each part represents a percent. In this study, it was used to present the ratio of the respondents with respect to the total number of students enrolled in the DYNED programs.

Mean. This is the ratio of the total score and the number of cases involved in the process. In this study, this was used to present the pre-test and post-test scores of the UM IP college students.

T – test. This is the test of differences of the means whether they are dependent or independent. In this study, this was used in order to test if there are significant differences in the mean scores of the UM IP college students. In addition, the difference of the pre-test and the posttest scores of the UM IP students will also be studied and verified.

Anova. One way Anova was used to answer subproblem 2 to determine the difference in the Pre-test and Post-test of respondents when grouped by tribe, by gender, and by course. This was also used to determine the impact to the independent variables with the dependent variable. A statistical analysis tool that separates the total variability found within a data set into two components: random and systematic factors.

IV PRESENTATION, ANALYSIS, AND INTERPRETATION

Presented in this section are the data obtained from the IP students as the respondents of the study. The order of the discussions is based on the problems stated in the previous chapter. The major topics discussed in

this study include profiles of the respondents; pre-test and post-test scores of the IP students, pretest and posttest scores across gender, pretest and post-test scores across college, pretest and posttest scores across tribes, difference on the pre-post mean gain scores of the IP students across tribes, difference between gender, difference across college, difference across tribes, and difference on pre-post mean gain scores of the IP students across tribes.

Profiles of IP Students

Presented in Table 2 are the profiles of the respondents classified according to gender, course and tribe. Data show that majority of the IP students involved in the study are female respondents. This indicates that most of the female IP individuals are more interested to pursue with the tertiary education compared to male group. In terms of course, data show a greater number of students enrolled in Teacher Education program and this would mean that the said students are more attracted with the teaching profession. This may indicate that most of the IP respondents are interested to spend their lives to the teaching profession. It is evident in the table that when classified by tribe, most of the respondents are Manobo.

Table 2. Profile of the IP College Students

Variable	Category	Frequency	Percentage
Gender	Male	23	31.51
	Female	50	68.41
Course	Accountancy	3	4.11
	Bachelor of Arts	9	12.33
	Business Administration	3	4.11
	Criminology	6	8.22
	Hospitality Education	5	6.85
	Nursing	1	1.37
	Teacher's Education	37	50.68
	Information Technology	1	1.37
	Social Work	5	6.85
	Tourism	3	4.11

Tribe	Ata	9	12.33
	Bagobo	10	13.70
	B'laan	7	9.59
	Calagan	3	4.11
	Mandaya	14	19.18
	Manobo	22	30.14
	Matigsalug	4	5.48
	T'boli	4	5.48

Note: n = 73

It can also be gleaned from the table that out of seventy-three participants, in terms of course taken, majority of the respondents were taking up Bachelor of Science in Education. This was due to the reason that greater job opportunity awaits in the community where the respondents belong. Considers of taking up this course entails less financial support. With the number of IP college students implies that even the indigenous people from the remote area are now very particular in education.

Pre-Test and Posttest Scores of the IP Students

Presented in Table 3, the pre-test mean score of the respondents is 0.7 which is interpreted as beginner level. Their post-test mean score is 1.0 which means elementary level.

Table 3. Pre-test and Post-test Scores of the IP Students

It appears in the table 3 that the IP students have increased mean score in the post-test which is an indicative of an improved performance ranging from

	Mean	SD	Interpretation
Pre-test Score	0.7	.52347	Beginner level
Post-test Score	1.0	.67971	Elementary level

Note: n = 73

beginner level to elementary level. This means that the respondents before they were exposed to the dynamic education were not able to communicate in English, even about time and numbers.

Some of the respondents may have prior knowledge of basic English. After their exposure to the intervention, the students' level became

elementary level which means that they can answer simple questions; however, these respondents may have difficulty in life history or future plans since their skill is limited to basic patterns only.

It implies further that the pre-test and post-test scores of IP students obtained a mean difference of 0.3. This result is also supported by Chun and Brandl (1992) who stated that the interactive and multimedia capabilities of the computer make it an attractive teaching/learning tool. They said computers can provide immediate feedback to students and students can work at an individualized pace. Further, this is also supported by the concept of Klent (2001) that interactive media environment can help learners find explicit objectives, and clear instructions of what they are expected to do to achieve their language learning goals for foreign/second language learning. In agreement Castillo (2001) explained that exposure of students to advances in technology clearly relates to English proficiency achievement.

Pre-test and Post Test Scores Across Gender

Presented in Table 4 are the pre-test and post-test scores across gender.

Table 4. Pre-test and Post-test Scores in Language Test Scores across Gender

It can be gleaned in the table, that the pre-

Gender	Pre-test	Interpretation	Post-test	Interpretation
Male	0.7	Beginner	1.0	Elem. Level
Female	0.7	Beginner	1.0	Elem. Level

test mean score across gender considered as beginner according to the DynEd placement test level. It means that the participants before the exposures having a little knowledge in basic grammar and just able to answer the 5 WH questions, while the post-test mean score for both gender was slightly improved which described as elementary level of the same test. Data indicate an increase in the post-test performance of students after their exposure to the dynamic education. This implies that the experience with the dynamic education has contributed a little to the students' mean rating. This further implies that students' mean increase only shows little improvement in their language skills which corresponds to ability of using short sentence only to answer simple questions. Data further indicate that both male and female respondents have the same mean ratings in pre-test and post-

test evaluations. This implies that male and female are equally capable of performing elementary level of English language skills after their exposure to the dynamic education. This indicates that there is an improvement from Beginner to Elementary level of the post-test according to the DynEd placement test. This further implies that the conduct of computer assisted learning was helpful in the enhancement of the respondents' knowledge and skills on basic English concepts. These findings corroborate the report of Singhal (1997) who stressed microcomputers and quality computer assisted language learning enhances vocabulary, grammar and writing as well as reading.

Pre-test and Post-Test Scores of Students across College

Shown in Table 5 are the pre and post-tests scores across colleges.

Shown in the table that for accountancy students, their scores in pre-test and post-test are described false beginner with mean scores of zero for the pre-test and 0.2 for the post-test, which would mean that the said

College N	Pre-test	Interpretation	Post-test	Interpretation
CAE 3	0.0	False Beginner	0.2	False Beginn
CAS 9	0.8	Beginner	1.1	Elem. Leve
CBA 3	0.7	Beginner	1.2	Elem. Leve
CCJE 6	0.7	Beginner	1.3	Elem. Leve
CHE 5	0.9	Beginner	0.9	Beginner
CNE 1	1.0	Elem. Level	1.0	Elem. Leve
CTE 37	0.7	Beginner	1.0	Elem. Leve
IT 1	0.7	Beginner	0.5	Beginner
S W 5	0.6	Beginner	0.7	Beginner
Tourism 1	0.7	Beginner	1.0	Elem. Leve

respondents was not able to listen, read and analyzed properly the lesson. The CBA students have indicated a pre-test rating of 0.8 and a post-test rating of 1.1

which means improved skills of students after having exposed to dynamic education. The CAS, CBA and CCJE students were beginners as based on their pre-test mean score, but their performance have reached to 1.1, 1.2 and 1.3 respectively with elementary level. Data further show that the CHE students have the same rating both in pre-test and post-test evaluations.

This is an indicative that the dynamic education has not helped the CHE students in terms of language development. Further, the CNE students demonstrate the same ratings of 1.0 in their pre-post evaluations. This entails no difference in the respondents' knowledge and skills even if they were exposed to dynamic education. This means that the said intervention is considered ineffective for the CNE students. The CTE students have improvement in their ratings from 0.7 pre-test score to 1.0 post-test score. This means that the CTE students have improve a little which is from beginner level to elementary level. There is a little increase in the performance of CTE respondents after having exposed the dynamic education.

The IT and social work students were beginner during pre-test and are still beginner after their exposure to dynamic education. This is an indicative that the said students have not learned anything from the intervention on dynamic education. On the other hand, the CAS, CBA and CCJE students were beginners as based on their pre-test mean score, but their performance have reached to 1.1, 1.2 and 1.3 respectively with elementary level. This implies that these students are unable to communicate using the English language. Also shown in the table, the tourism students indicate mean increase in their post-test mean scores, showing a little bit favorable language skills after their dynamic education exposure. This is an evident that DynEd would really help in increasing the knowledge of the students particularly in English based on its principles of increasing two points is good enough for a beginner.

Pre-Test and Post-Test Scores across Tribes

Shown in Table 5 are the pre-test and post-test scores of students coming from different tribes.

Table 6. Pre-test and Post-test Scores across Tribes

Tribes (N)	Pre-test	Interpretation	Post-test	Interpretation
Ata 9	0.5	Beginner	0.5	Beginner
Bagobo 10	0.5	Beginner	0.8	Beginner
Blaan 7	0.7	Beginner	1.1	Elem. Level
Kalagan 3	0.6	Beginner	0.7	Beginner

Mandaya 14	1.3	Elem. Level	1.7	Adv. Elem level
Manobo 22	0.6	Beginner	0.8	Beginner
Matigsalug 4	0.7	Beginner	0.8	Beginner
Tboli 4	0.6	Beginner	0.6	Beginner

Note: n = 73

It can also be gleaned from the table that out of seventy-three participants, in terms of course taken, majority of the respondents were taking up Bachelor of Science in Education. This was due to the reason that greater job opportunity awaits in the community where the respondents belong. Considers of taking up this course entails less financial support. With the number of IP college students implies that even the indigenous people from the remote area are now very particular in education.

Pre-Test and Posttest Scores of the IP Students

Presented in Table 3, the pre-test mean score of the respondents is 0.7 which is interpreted as beginner level. Their post-test mean score is 1.0 which means elementary level.

Table 3. Pre-test and Post-test Scores of the IP Students

	Mean	SD	Interpretation
Pre-test Score	0.7	.52347	Beginner level
Post-test Score	1.0	.67971	Elementary level

Note: n = 73

It appears in the table 3 that the IP students have increased mean score in the post-test which is an indicative of an improved performance ranging from beginner level to elementary level. This means that the respondents before they were exposed to the dynamic education were not able to communicate in English, even about time and numbers. Some of the respondents may have prior knowledge of basic English. After their exposure to the intervention, the students' level became elementary level which means that they can answer simple questions; however, these respondents may have difficulty in life history or future plans since their skill is limited to basic patterns only.

It implies further that the pre-test and post-test scores of IP students obtained a mean difference of 0.3. This result is also supported by Chun and Brandl (1992) who stated that the interactive and multimedia capabilities of the computer make it an attractive teaching/learning tool. They said computers can provide immediate feedback to students and students can work at an individualized pace. Further, this is also supported by the concept of Klent (2001) that interactive media environment can help learners find explicit objectives, and clear instructions of what they are expected to do to achieve their language learning goals for foreign/second language learning. In agreement Castillo (2001) explained that exposure of students to advances in technology clearly relates to English proficiency achievement.

Pre-test and Post Test Scores Across Gender

Presented in Table 4 are the pre-test and post-test scores across gender.

Table 4. Pre-test and Post-test Scores in Language Test Scores across Gender

Gender	Pre-test	Interpretation	Post-test	Interpretation
Male	0.7	Beginner	1.0	Elem. Level
Female	0.7	Beginner	1.0	Elem. Level

It can be gleaned in the table, that the pre-test mean score across gender considered as beginner according to the DynEd placement test level. It means that the participants before the exposures having a little knowledge in basic grammar and just able to answer the 5 WH questions, while the post-test mean score for both gender was slightly improved which described as elementary level of the same test. Data indicate an increase in the post-test performance of students after their exposure to the dynamic education. This implies that the experience with the dynamic education has contributed a little to the students' mean rating. This further implies that students' mean increase only shows little improvement in their language skills which corresponds to ability of using short sentence only to answer simple questions. Data further indicate that both male and female respondents have the same mean ratings in pre-test and post-test evaluations. This implies that male and female are equally capable of performing elementary level of English language skills after their exposure to the dynamic education. This indicates that there is an improvement from Beginner to Elementary level of the post-test according to the DynEd placement test.

This further implies that the conduct of computer assisted learning was helpful in the enhancement of the respondents' knowledge and skills on basic English concepts. These findings corroborate the report of Singhal (1997) who stressed microcomputers and quality computer assisted language learning enhances vocabulary, grammar and writing as well as reading.

Pre-test and Post-Test Scores of Students across College

Shown in Table 5 are the pre and post-tests scores across colleges.

College N	Pre-test	Interpretation	Post-test	Interpretation
CAE 3	0.0	False Beginner	0.2	False Beginn
CAS 9	0.8	Beginner	1.1	Elem. Leve
CBA 3	0.7	Beginner	1.2	Elem. Leve
CCJE 6	0.7	Beginner	1.3	Elem. Leve
CHE 5	0.9	Beginner	0.9	Beginner
CNE 1	1.0	Elem. Level	1.0	Elem. Leve
CTE 37	0.7	Beginner	1.0	Elem. Leve
IT 1	0.7	Beginner	0.5	Beginner
S W 5	0.6	Beginner	0.7	Beginner
Tourism 1	0.7	Beginner	1.0	Elem. Leve

Shown in the table that for accountancy students, their scores in pre-test and post-test are described false beginner with mean scores of zero for the pre-test and 0.2 for the post-test, which would mean that the said respondents was not able to listen, read and analyzed properly the lesson. The CBA students have indicated a pre-test rating of 0.8 and a post-test rating of 1.1 which means improved skills of students after having exposed to dynamic education. The CAS, CBA and CCJE students were beginners as based on their pre-test mean score, but their performance have reached to 1.1, 1.2 and 1.3 respectively with elementary level. Data further show that the CHE students have the

same rating both in pre-test and post-test evaluations.

This is an indicative that the dynamic education has not helped the CHE students in terms of language development. Further, the CNE students demonstrate the same ratings of 1.0 in their pre-post evaluations. This entails no difference in the respondents' knowledge and skills even if they were exposed to dynamic education. This means that the said intervention is considered ineffective for the CNE students. The CTE students have improvement in their ratings from 0.7 pre-test score to 1.0 post-test score. This means that the CTE students have improve a little which is from beginner level to elementary level. There is a little increase in the performance of CTE respondents after having exposed the dynamic education.

The IT and social work students were beginner during pre-test and are still beginner after their exposure to dynamic education. This is an indicative that the said students have not learned anything from the intervention on dynamic education. On the other hand, the CAS, CBA and CCJE students were beginners as based on their pre-test mean score, but their performance have reached to 1.1, 1.2 and 1.3 respectively with elementary level. This implies that these students are unable to communicate using the English language. Also shown in the table, the tourism students indicate mean increase in their post-test mean scores, showing a little bit favorable language skills after their dynamic education exposure. This is an evident that DynEd would really help in increasing the knowledge of the students particularly in English based on its principles of increasing two points is good enough for a beginner.

Pre-Test and Post-Test Scores across Tribes

Shown in Table 5 are the pre-test and post-test scores of students coming from different tribes.

Table 6. Pre-test and Post-test Scores across Tribes

3	0.6		0.7	
Mandaya		Elem. Level		Adv. Elem level
14	1.3		1.7	
Manobo		Beginner		Beginner
22	0.6		0.8	
Matigsalug		Beginner		Beginner
4	0.7		0.8	

B'laan		Beginner		Elem. Level
7	0.7		1.1	
Kalagan		Beginner		Beginner
3	0.6		0.7	
Mandaya		Elem. Level		Adv. Elem level
14	1.3		1.7	
Manobo		Beginner		Beginner
22	0.6		0.8	
Matigsalug		Beginner		Beginner
4	0.7		0.8	
T'boli		Beginner		Beginner
4	0.6		0.6	

It appears in Table 6 that the tribes of ATA, Bagobo, Kalagan, Manobo, Matigsalug and T'boli students were classified as beginners before the dynamic education, which means the participants can only speak and understand a few phrases in English, and has knowledge of basic English grammar, such as pronouns and simple WH question formation. However, in the post-test scores, said respondents are still classified as beginners. This means that these students can use short sentences to answer simple questions, but sentences are short or fragmented, limited to basic patterns. This indicates that these students did not improve their ratings after they were exposed to dynamic education. This may imply that their exposure to the said intervention was not very effective since no difference was noted after the respondents' involvement in the said dynamic education program. This may further implies that 10 hours of exposure is not enough for the IP students who are just started to be exposed in the technology. This corroborates to the study of Napil (2014), that more than half of indigenous students aged 4-16 years (58%) even in Western Australia were rated by their teachers as having low over-all academic performance.

On the other hand, B'laan and Mandaya students have indicated a favourable change after their exposure to the dynamic education. This implies that the program was found helpful for the said groups of IP students. This implies that the B'laan and Mandaya were unable to communicate in English, but their exposure to the said intervention could have improved their communication skills using English language. This result supports the claim of Castillo (2001) who explained that exposure of students to advances in technology clearly relates to English proficiency achievement. In fact, Chun and Brandl (1992) also stated that the interactive and multimedia capabilities of the computer make it an attractive teaching/learning tool for students, thus

supports maximum learning potential.

Difference on Pre-Post Mean Gain Scores of the IP Students across Tribes

Shown in Table 7 are the results of the test of difference in the pre-post mean gain of the IP college students.

Table 7. Difference on Pre-Post Mean Gain Scores of the IP Students across Tribes

	P	Decision	Interpretation
Pre-Post Mean Gain Scores of the IP College Students	.001	Reject Ho	Highly Significant

Note: Significant at $p < .05$

It appears in the table a p-value which is less than 0.05 alpha level indicating significant difference in the pre-post-main score of the IP college students in favour of the post-test. The test of difference in the gain scores of the IP students as shown in Table results to probability value which is less than 0.05 level of significance, indicating significant difference in the mean gain scores of the respondents when the respondents were grouped by tribes. Data imply a favourable change in the performance of the respondents after their exposure to the dynamic education and as noted earlier, B'laan and Mandaya made a difference in the mean gain scores.

Generally, the students have significantly improved their ratings in the post-test and this favourable difference may be attributed to students' exposure to the dynamic education. The null hypothesis has no significant difference between the pre-post mean gain scores of the IP college students. It is rejected giving favour to the post-test ratings. Therefore, Dyned is effective in dealing with language enhancement. This corroborates the idea of Klent (2007) that schools must improve facilities and promote enhancement programs in order to maximize learning of the students, and Corldhill (1996) added the idea that using computer software program in teaching and reinforcing a comprehensive range of grammar topics.

Difference in mean scores between Genders

Shown in Table 8 are the difference of the mean ratings of the respondents across gender found on the next page.

	F	T	p	Decision	Interpretation
Pre-test	3.163	.071	.994	Accept Ho	Not significant
Post-test	2.621	.248	.806	Accept Ho	Not significant
Mean Gain	0.821	.368	.747	Accept Ho	Not significant

Significant at $p < .05$

It appears that both male and female respondents do not differ significantly in their pre-test, post-test and mean gain scores. This implies that all respondents regardless of gender equally perform as evident in their mean ratings. This further implies that the null hypothesis of no significant difference in the pre-test, post-test and mean gain scores of the respondents classified by gender is accepted. This means that no matter what gender the students belong, if they are going to be exposed to the DynEd program and practice well, there is an assurance of improvement in language proficiency. This implies that the software exposure or trainings premised on the holistic and authentic approaches to learning and adopts student/participant – centered methodology. The findings agree with the conclusions of the study of Frigaard (2002) who found out that the computer laboratory was beneficial tool benefiting students. Further, these computer activities have become their favourite part of the class that improved their skills.

Difference in the Language Test Scores across Colleges

Shown in Table 9 are the results of test of difference in the Language Test Scores across colleges in terms of their mean ratings that could be found on the next page.

Data in Table 9 revealed that there is no significant

Table 9. Difference in the Language Test Scores across Colleges

	F	P	Decision	Interpretation
Pre-test	0.155	.997	Accept Ho	Not significant
Post-test	0.636	.762	Accept Ho	Not significant
Mean Gain	1.698	.108	Accept Ho	Not significant

Significant at $p < .05$

difference in the pre-test and post-tests mean gain

scores of all students coming from different courses are evident in the computed F-probabilities which are greater than 0.05 alpha level. Data imply that all respondents regardless of their courses have the same mean scores. This means that their mean differences may be different but the said differences are not statistically significant. This further implies that the performance of the education students in the pre-test, post-test, including their mean gain scores are the same with the performance of students from different colleges. Thus, the null hypothesis of no significant difference in the pre-test, post-test, and mean gain scores when analyzed by colleges is accepted. This means that every students particularly the Indigenous People students may improve in utilizing the computer-aided language learning. This corroborates the idea cited by Alvior (2007) that using computer aided language learning could enhance the English Proficiency of the students in practicing and recording their voice whether hands-on or even just in mobile method of exposure to the DynEd software.

Differences in the Language Test Scores across Tribes Shown in Table 10 are results of test of difference in the pre-test, post-test and mean gain scores of the respondents classified by tribes.

Table 10. Difference in the Language Test Scores across Tribes

	F	P	Decision	Interpretation
Pre-test	3.856	.001	Reject Ho	Highly significant
Post-test	4.457	.000	Reject Ho	Highly significant
Mean Gain	1.169	.330	Accept Ho	Not significant

Significant at $p < .05$

It appears that the re-

spondents significantly vary in their pre-test and post-test mean scores indicating that the two groups significantly differ in their performance and the cause of the difference as mentioned in the previous discussion is due to the higher mean ratings of B'laan and Mandaya students. On the other hand, the respondents do not significantly differ in their mean gain scores, which means that in the overall grouping of the respondents by tribe, they manifest the same level of communicative skills which means they still need to exert extra efforts to develop their skills together with computer-aided language learning devices. This corroborates the statement of Brandl (1992) that the interactive and

multimedia capabilities of the computer make it an attractive teaching/learning tool. This further corroborates the facts presented by Hall (1998), who emphasized that the use of word processing packages, electronic dictionaries, the World Wide Web, electronic mail, computer games aids to overcome the grammar deficit.

In-depth interview/FGD

In the focus group discussion (FGD), student informants from various indigenous groups yielded the following common responses to the four questions given to them, to wit:

Perceptions about computer-aided language learning (CALL).

Informants generally were filled with a sense of anxiety as most of them were not familiar with CALL. However, as they had their hands-on sessions, their anxiety was slowly replaced with curiosity and awe as they anticipate and encounter "fun-filled learning activities". They eventually realize the importance of CALL and how the program complements their classroom subject sessions. As informants puts it, Ata - Nahalo á to pog gamit to DynEd, Nalipay a lagboy to ug maka-anad-a to soin no teknolohiya. Bagobo "Para kadakel su mga katawan tam a mga basa sa English endu kaumanan su pidtalo a kategel sa kadtalo. Upama", Matigsalog - "Ka peg neneng te Inglis ne linalahon egpakabulig te mo estudyante ne mateles neg pangguhod karuren egpakalimul suni te kautenean te estudyante te pagsulat" or (The computer-aided language learning helps the students become better communicators someday since it increases the capabilities of the students in terms of correct sentence construction). Informants were also in agreement that CALL would improve their communication skills and improve their grammar (Matigsalog - Para kadakel-sumgakatawan tam amgabasasa English endukauman-anupidtalo a kategelsakadtalo.)

Experiences in learning the English language via DynEd.

Mandaya - "Matigan da ako about sa mga spelling and correct grammar", "Sa permiro excited gayod ako kay first time ko makaexperience sin-I ug ya prove gayod na aside sa lingaw ini, daig gayod sab matunan", Ata - "Kulba, excited", Kalagan - "Niya kanggiginawa ko kanu kutika nu nasabutan ko na mapya", another Kalagan says "Una-una madayg yang mga mangkalisud na pyagalawng o language peru tungud sidi na programa madayg yang ikatigaman ko aw ngad mawnuno awn bun ikadagan ku agad tagbis", Bago-bo - "Makamanamana lagengan ta sa libte a kapan-gagi para kaumanan su pangagi sya ba sa basa anga English", Kalagan - "Niya kanggiginawa ko kanu

kutika nu nasabutan ko na mapya”, “Una-una madayg yang mga mangkalisud na pyagalawng o language peru tungud sidi na programa madayg yang ikatigaman ko aw ngad mawnuno awn bun ikadagan ku agad tagbis”, Matigsalog --“Ka tawag eg uyyan kanta peendiye to meupian pagkahikahi pegmanimeg wey pegneneng” – (CALL brought us back and forth towards good pronunciation right enunciation and free ourselves from anxiety towards using the technology. Its great and fun, the instructions are clearly stated). More Matigsalog say “Nue timpou ne semi malemu unya buwa sug pakaheran at pagkalagew ne hinugdan ne pagkatul-id nig pamineg” or (Sometimes it is not easy, since I experienced nervousness that can caused me panic and can’t concentrate), “nan tuenan ku ka muepiyan peg lalag wey te peg tabak te me inse” or (I learned that, learning the English language requires a lot of “should and must” for to be highly competitive in using the English), “Te hun-a, amaan natelesi wey na haldok se ware maiya computer diye te kanamin inged. Naupiana se ke eg pamineg kare iya wey eg iling te in panulu,masulug iya ka kateunan ne”, or (At first I exited and felt nervous because there’s no computer in our place. It’s amazing because if you just focus, listen carefully and follow the instructions, definitely you can get a lot of learning). These responses from the informants sum up the overall experience of the rest of the informants. IP students considered their CALL experience as nervousness at the onset as they learn how to navigate and use the computers but as their confidence and skills increased, they henceforth enjoyed their computer-aided language learning via DynEd experience.

Learned from CALL.

“Migkatawakosamgamadidalem a basana Ingles angaa pidtaloEndumadakel i nangatawanku a mgakatigansakapedtalo” or (I learned more words that I never heard and I learned how to communicate to other persons using the English language) says an informant from the Bagobo tribe, “nata ó to paglalag, woy pog” or (learned the proper pronunciation or diction) said by an Ata informant. Similar responses were also given by the rest of the informants as they lose self-consciousness and gain confidence in the speaking or speech component of the DynEd (i.e CALL) program. The speech activities simulates actual conversation situations and students are made to adjust their intonation and pronunciation, approximating the samples given of native English speakers.

Another Bagobo informant states “Due timpou ne semi malenu, unya buna sug pagkaheran as makalanggaew ne hinugdan ne pagkatul-id dana ka paugtaran wey sinugdul te me mangan” or (I learned to make use of my time since there was only a short time frame. I also learned that learning through a book is way different from computer-aided language learning. With CALL I was very excited and also not bored), from Matigsalog informants “Ka umew eg

uyan kanta te pegkasinsinundul ne katutuan iling te meupian pagkahi-kahi te me lalag” or (CALL leads us series of learning such as, sentence construction right pronunciation of words). The new learning environment away from the traditional classroom setting increases student interest in learning. Indeed, learning becomes fun. Further, students own up to how they use their time inside the laboratory since the allotted sessions given to them must be prudently used to finish the study path for each English subject with the DynEd component. Hence, it is not only the English communication skill that is targeted but also the value of proper time-management.

Implications of learning from CALL.

Ata – “gipraktisan, mas na confident paggamit English”, Kalagan – “Yama implicate ko yang ikatigaman ko sikon sa CALL magunawa nag pagpaningog aw pagbasa”, “Makihalubilo sang kadaygan aw di magkamumwa mag-istorya sa pagunawa nan”, “Yaimprove ko yang, pronunciation ko sa tabang ng CALL. Pyagsundog ko yang ilawng sa computer, tapas hinay-hinay da maimprove”, Bagobo – “Niya nakatidto sa mapya ahh ungayan”, “Takaamung den sa umanggay a gangula ku I napan-gayangyan ku anga sa upama min na kapembitya sa pagidsan ta a manusya.”, Mandaya – “Daku yang gamit sin_i kanak labi na sa umabotay na panahon labi na sa kanak kurso pagmahuman ko ini, kelangan ko gaud makipagcommunicate , sa kanak pakipagcommunicate maapply ko gayod ini”, Matigsalog – “Nakabuling seini te keddin kangalingen te menewen te peg uyan ka tamn nilalahan te mu duman etew”, “Ka DynEd nakabuling seini te taman peg iling te me in panulu, ka nilalahan wey ka pegpamineg”, “Seinei egpaneneng te masulug ne me butang ilabi-e te kidding pegkahi teahi, pegpamineg wey pegneneng”, “Mingbehey seine kantale malayag ne pagteteng. Tenged te seinintik. Hudyi, matangen me estudyante kaya huklu te peg apuya te kanean ne katuenen te inglis ne lihalahan”, “Seini ne peg tudlu, dakel-e ka tabong te mu studyanti wey te mu kahirapan te englis”. Overall response is best given by a Matigsalog informant—“Mingbehey seine kantale malayag ne pagteteng. Tenged te seinintik. Hudyi, matangen me estudyante kaya huklu te peg apuya te kanean ne katuenen te inglis ne lihalahan.”— (It gives us the vision, that through this technology, lots of students will be guided to improve their English proficiency). Computer-aided language learning further impresses the classroom lessons since actual English

communication situations are simulated for students to participate as they interact with computers. The activities provide students with opportunities to apply the basic rules on grammar, syntax and mechanics of the English language. All of these they experience without the pressure of a critical professor monitoring the student's performance. Thus, the learning environment is friendly and the student learns at his own pace without as stated earlier, the prying eyes of the teacher.

V SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions and recommendations of the study.

The study is about the effects of computer-aided language learning and the experiences of the Indigenous People students. It aims at identifying the effects of computer-aided language learning in developing their language proficiency. Further, this study is designed to document their experiences and opportunities given to them during the DynEd sessions and proposed an enhancement program based on the findings.

Summary

The study is about the effects of computer-aided language learning and the experiences of the Indigenous People college students. It aims at identifying the effects of computer-aided language learning in developing their language proficiency. Further, this study is designed to document their experiences and opportunities given to them during the DynEd sessions and proposed an enhancement program based on the findings. The specific sub-problems of the study are as follows: What are the profile of the IP college students when grouped into gender, course, and tribe? What are the pre-test and post-test mean scores of the IP students in DynEd Placement test? Is there a significant pre – post mean gain scores of the IP students in DynEd Placement test when grouped into tribe? Is there a significant difference in the mean gain scores among IP students in DynEd Placement test when grouped according to tribe? What are the experiences of the IP college students in computer-aided language learning via DynEd? Based on the findings, what enhancement program can be proposed for the IP college students?

Findings

Below are the pertinent findings of the study. Majority of the respondents were female Indigenous People students, and most of them belong to the Manobo tribe. For courses -taken, Teachers' Education got the highest enrollee of IP among the other courses offered in the university. The post-test mean score of the IP college students is greater than their

pretest mean score. The pre-test of the IP was described as beginner according to the Dyned Placement test. It is revealed that the post-test of the IP students was increased which is described as elementary level according to the Dyned Placement test. There is a significant difference between pre-test and post-test scores of the IP college students in DynEd. The significance of the difference between the mean gain scores of the IP college students was found significant at 0.05 level.

In addition, it was then revealed that the perception of the participants in an innovative and interactive approach in teaching the language, the students could learn more. They have favorable experiences in learning English language during the exposure of the program. These favorable experiences are as follows: fun, interesting, exciting and challenging. They described the different opportunities where they apply their knowledge in speaking the English language. Most of them said this made them talking with their members of the family and classmates, or even in the school sharing of thoughts, reporting certain topics, dramatizing an event, and explaining concepts using English language.

Conclusions

Based from the foregoing findings, the following conclusions are drawn:

The post-test mean score in the IP is greater than the pretest mean score in DynEd. It is revealed that the posttest of the IP college students is 1.0, which is described as elementary according to the Dyned Placement Levels in dynamic education. The conduct of computer assisted language learning through dynamic education is helpful in acquisition and enhancement of the students' knowledge and skills in English proficiency based on the results of their post-test which is considered as elementary level according to the DynEd placement test compared to their pre-test which was considered as beginner. Teachers find administering DynEd in the IP college students for the first time quite challenging, because most of the IP's having no skills in manipulating the computer added with the task to study the lessons in DynEd software. All participants in the study had positive attitudes towards the use of technology and strong intrinsic motivation such as personal curiosity and interest. The students also benefit from the program during a specified period of time as evident in the respondents' post-test results.

Recommendations

Based from the foregoing findings and conclusions, the following recommendations are offered:

1. The study found out that the performance of the participants in the dynamic education is still within the elementary level. Thus, the researcher recommends that the conduct of the computer assisted language learning should be more intensified by adding more time for the DynEd laboratory exposure to make the learners more equipped with knowledge and skills on English proficiency.
2. The study found out that the conduct of the computer assisted language learning is effective in the acquisition and enhancement of the students' knowledge and skills. With this, the researcher recommends that this English enhancement program of the University of Mindanao should be continued to benefit the students.
3. The continuous evaluation of the students' test results should be made to monitor the strengths and weaknesses of the IP college students and its feedback will be used as basis in coming up with better instructional materials.
4. In view of the findings from this study, the utilization of the proposed enhancement program is recommended for the students together with IP students of the University of Mindanao.

REFERENCES

- Alderite, E. (2002). Multimedia and Proficiency in English. Unpublished. Institutional Research. University of Mindanao
- Alvior, L. (2007). Communiqu'e. A Journal of Research and Ideas of the College of Arts and Sciences. March to June 2007.
- B'laan History - <http://www.ncca.gov.ph/about-culture-and-arts/e-books/ebook.php?id=67&t=2>
- Banados & Ripoll (1999). CTS and interactive multimedia b-learning environments for teaching and learning English as a foreign language. Retrieved from <http://www.formatex.org/mic2006on> February 9, 2007
- Brandl, K. (2002). Integrating internet-based reading materials into the foreign language curriculum: from teacher- to student-centered approaches.
- Castillo, A. (2001). The effectiveness of the oral fluency kit on the performance of second language learners. Unpublished Dissertation, University of Mindanao.
- Chun, D. M., & Plass, J. L. (1996). Facilitating reading comprehension with multimedia. System, 24, 503- 519. <http://ilt.msu.edu/vol11num3/pdf/murphy.pdf>
- Corldhill, A. (1996). Software review: mastering German grammar - a personal German grammar tutor. On- Call, 10(2), 42-43.
- DynEd Europe, (2014). Retrieved May 12, 2014 from <http://www.dynedeurope.com/home#>
- DynEd, (2014). Retrieved May 12, 2014 from <https://www.dyned.com/us/about/>
- Frigaard, A. (2002). Does the computer lab improve student performance on Vocabulary, grammar, and listening comprehension? Retrieved November 19, 2007 from <http://edres.org/eric/ED476749.htm>.
- Faircloth, S., Tippeconnic, JW. (2010). The Dropout/ Graduation Rate Crisis Among American Indian and Alaska Native Students version <http://www.readbag.com/civilrightsproject-ucla-research-k-12-education>
- Glimpse, W. (2007). Assessing English Language Proficiency. Copyright 2007. Retrieved April 2, 2007 from <http://www.proximityone.com/elp.htm>
- Klent, F. (2001). Visual Communication in Web-based Learning Environments. Retrieved from ifets.ieee.org/periodical/vol_4_2002/klett.pdf on March 1, 2007
- Knowles, L. (2004) Journal of Communication and Education Retrieved from <http://www.language-magazine.com> on February 9, 2007.
- Little, David (1996) Freedom to learn and compulsion to interact: promoting learner autonomy through the use of technologies. <http://elc.polyu.edu.hk/cill/HASALD/CALL-the.htm>
- Muaña, Jane. (2011). Academic performance of ip students. Retrieved June 28, 2013, from <http://www.termpaperwarehouse.com/essay-on/Academic-Performance-Of-IP-Students/49643>

Napil,M.(2014). The beliefs and strategies of Filipino Language Learning and the Academic Performance of the Indigenous People (IP) of the University of Mindanao. Unpublished Dissertation

Ompang, M. (2001). The Mandaya Ethnic Group. Retrieved May 17, 2014. for <http://www.ncca.gov.ph/about-culture-and-arts/articles-on-c-n-a/article.php?igm=4&i=239>

Proficiency In English Declines Social Weather Stations
<http://www.sws.org.ph/pr060418.htm> Retrieved: July 30, 2014

Quito, S. (2008). Incidence of interactive teaching methodologies in the english classroom for improving communicative skills in the students of second year of Emiliano Ortega Espinoza School in the period may, july 2007.

Recla, E, (2011) Ethnicity and Reading Proficiency of Grade V Students of IP School in Marilog District. Unpublished master's thesis University of Mindanao, Davao City

SWS (200618) April 2006 March 2006 Social Weather Survey: National Language Learning & Technology, 6(3), 87-107. <http://ltt.msu.edu/vol11num3/pdf/murphy.pdf>

Velasquez, J.(2013). Mandaya. Retrieved May 17, 2014. for http://literalno4.tripod.com/mandaya_frame.html

