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# TABLE OF CONTENTS

- 09** | **ORAL COMMUNICATION DIFFICULTIES OF THE PRE-SERVICE TEACHERS**  
Analyn D. Almoite
- 17** | **ADDRESSING SUBJECT-VERB AGREEMENT PROBLEMS THROUGH INTERACTIVE SLIDES**  
Carmijane J. Peña
- 25** | **NATIVIZED HISPANIC BORROWED WORDS: CEBUANO VISAYAN**  
Chile Abarido-Villadarez
- 31** | **ASSOCIATION OF HEALTH LITERACY AND SELF-MEDICATION OF OVER-THE-COUNTER DRUGS AMONG FILIPINO PARENTS AGED 18-50 IN METRO MANILA, PHILIPPINES**  
Dominique M. Gamboa, Althea Nicole R. Cunanan, Christopher Aaron C. Dychauco, Rumely Noreen B. Espiña, Joan Gabrielle C. Gonzales, Jose Eva Christina I. Lomboy, Clarenz Sarit M. Concepcion
- 45** | **MILLENNIAL AND OLDER GENERATION'S COMMUNICATION GAP: A GROUNDED THEORY**  
Antonieta O. Ocana, PhD, EdD
- 53** | **FILIPINO TEACHERS' PRACTICE, PROBLEMS AND REMEDIAL MEASURES TO STRENGTHEN FILIPINO TEACHING**  
Edna R. Paraiso
- 61** | **PROBLEM-BASED LEARNING, SELF-EFFICACY, PROBLEM-SOLVING SKILLS AND PROBLEM-SOLVING PERFORMANCE**  
Elaine H. Anzures, PhD
- 68** | **ON-THE-JOB TRAINING PERFORMANCE OF BS ELECTRICAL TECHNOLOGY STUDENTS OF BISU BALILIHAN CAMPUS**  
Estrella Marie A. Vaño Uy, Evangielyn P. Lumantas, Jhonmar S. Avergonzado



## TABLE OF CONTENTS

- 77** | **THE SAVINGS AND INVESTMENTS BEHAVIOR OF SELECTED FISHERFOLKS IN THE MUNICIPALITY OF ROSARIO, CAVITE**  
Jerico B. Tadeo
- 83** | **SELF-EFFICACY AND DIFFICULTIES IN MATHEMATICS OF ELEMENTARY LEARNERS IN THE SCHOOLS DIVISION OF ISABELA**  
Jovelyn A. Valdez
- 92** | **MALASA (MALUNGGAY (MORINGA) AND KALABASA (SQUASH) MACAROONS**  
Meldred D. Lagon
- 96** | **STREET HARASSMENT EXPERIENCE AMONG PRE-SERVICE TEACHERS**  
Nover D. Esteban  
Nerissa P. Batoon, PhD
- 102** | **WORK VALUES OF SECONDARY SCHOOL TEACHERS IN THE PROVINCE OF ISABELA**  
Mario P. Tamana, MAEd  
Francisco A. Recobo, Jr., EdD
- 112** | **POSTHARVEST BEHAVIOR AND CHARACTERISTICS OF 'CARABAO' MANGO (*Mangifera indica* L.) FRUITS HARVESTED AT DIFFERENT LOCATIONS AND MATURITY**  
Sheryl N. Galvan
- 116** | **UTILIZING STUDENT-CENTERED CLASS ACTIVITIES AMONG BUSINESS MANAGEMENT STUDENTS IN THE NEW NORM OF LEARNING**  
Xavier Lawrence D. Mendoza, MBA  
Nerisa B. Abug, LPT, MBA  
Richard P. Perez, MBA (Candidate)  
Jerico B. Tadeo, PhD (Candidate)







# ORAL COMMUNICATION DIFFICULTIES OF THE PRE-SERVICE TEACHERS

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## ABSTRACT

The present study investigated the oral communication difficulties of the pre-service teachers of Quirino State University-Maddela Campus. The researcher adopted the descriptive method of research in data gathering, tabulating, and analyzing results. The participants were asked to answer the questionnaire on profile. Likewise, the same number of participants took the oral skills test in intonation, stress, and pronunciation. The data gathered were submitted for statistical treatment to come up with a tabular and textual presentation of the results. Based on the oral skills test, the study revealed that the participants committed the greatest frequency of error in the pronunciation of vowel sounds. The other difficulties were stress and intonation. The chi-square test was used to test the hypothesis which indicated that there were no significant differences in their oral communication difficulties when grouped according to their profile variables such as age, gender, and language/dialect spoken.

*Keywords: Intonation, Oral Communication, Oral Communication Difficulties, Pre-Service Teachers, Pronunciation, Stress*

## INTRODUCTION

Communication is one of the most fundamental assets of humans. It's not simply a skill; it's a requirement. Since communication is used to persuade, inform, share, and uncover ideas, it is important in all aspects of human action. Despite the technological advancements of the past century, the ability to communicate orally remains one of the most important skills that students should develop at the tertiary level to effectively communicate their ideas to others, improve their academic performance, and participate successfully in society.

Oral communication is a sound representation of a language that entails the ability to communicate through spoken words. In other words, the process starts with the expression of thoughts through the use of words. It is believed that effective communication occurs when an intelligible message is successfully transmitted to the listener. Because the communicative classroom focuses on interaction, one crucial feature of oral communication in the classroom is that students should converse with one another (Ella & Dapudong, 2014).

Oral communication is a complex process that begins with the creation of a message that is understandable to others and ends with the delivery of that message using proper phonology, stress, intonation, juncture, phrasing, and blending. According to Ahmadi and Gilakjani (2011), pronunciation which is one of the most important features of speaking affects the way how verbal speech is produced or recognized by the participants of a conversation. Not only pronunciation makes the listening comprehension of an individual easy and enables one to be intelligible during a speech but also helps learners to gain the skills they need for effective communication in English.

In the classroom setting, oral communication is very important as it continues to be one of the indispensable skills to be mastered by the students because it is useful as they engage in their classroom activities. Students are required to observe pronunciation of words, word stress as well as intonation at the end of the sentence to convey meanings. However, it is a fact that the speaking proficiency of the students now a day is deteriorating. Based on the observation and pre-test result of the students in speaking which was conducted by Radjab (2013), he came to the prelimi-

nary conclusion that the students' English skills remained inadequate. Few students could respond well during the teaching-learning process, while the rest of the students did not respond or were reluctant to talk.

Quirino State University's pre-service teachers have difficulty with oral communication activities, particularly responding to oral questions. Students are hesitant to express themselves in English because they appear to be unsure and scared to talk; as a result, they are unable to improve their speaking skills, which are critical in their chosen profession.

For this reason, the researcher embarks on this study to identify the oral communication difficulties and eventually to propose a program that improves oral communication skills.

## LITERATURE REVIEW

### Oral Communication

Oral communication is a two-way process between the speaker and the receiver involving the productive skill of speaking and the receptive skill of understanding. Guia (2011) defined oral communication as the process of creating, transmitting, receiving, interpreting messages between source and receiver through spoken words. Valdez and Dela Cruz (2013) also added that this process is produced by working together of certain human linguistics abilities such as the ability to distinguish speech sounds, to produce the distinction among speech sounds and to express their meanings.

### Level of Oral Communication

Several studies were undertaken to determine the level of spoken communication among students. One is Baradillo (2014) who determined the level of oral communicative competence in terms of voice production, pronunciation, mechanics and content of the University of the Immaculate Conception (UIC) Hotel and Restaurant Management (HRM) students. The results revealed that the respondents' level of oral communicative competencies is average for all specified parameters.

Similarly, Ella and Dapudong (2014) sought to examine the factors affecting English oral communication achievement of the students enrolled in Bachelor of Arts major in EIC at RMUTL, Tak Campus, Thailand. The results revealed that the Thai university students have average English oral communication levels and they perceived apti-

tude, attitude, and motivation as significant factors that affect their English oral communication skills.

Abao (2013) also assessed the Bachelor of Secondary Education and Bachelor of Elementary Education-student teachers' English communication skills in oral and written discourses and their teaching performance. Using the Pearson  $-r$  correlation, finding revealed that both groups are comparatively better in oral than in written communication.

### Oral Communication Difficulties

One study that investigated the causes of pronunciation problems for Turkish EFL learners was carried out by Bekleyen (2011) with 43 participants. The data were collected through the recordings of ten class sessions of the Listening and Pronunciation course and interviews conducted with the students. The study revealed that the irregularities in English language spelling and Turkish learners' tendencies to make over-generalizations were among the main causes of Turkish learners' failure to guess the pronunciation of words correctly. Though separate sounds were not the main focus of the study, the 23 phonemes that do not exist in Turkish such as /æ/, /θ/, /ð/, /ŋ/, and /w/ appeared to be among the most problematic sounds that cause Turkish learners to have pronunciation difficulties.

Ambrozová (2014) also focused on English pronunciation difficulties among Czech speakers or learners of English and their possible causes and possible compensating strategies. It proposes four main problematic areas of English pronunciation which include seven consonants. These areas have been observed in comparative research through the voice recordings of a native speaker and the Czech speakers of English.

More studies about pronunciation were conducted. Just like Kho (2011) who investigated the pronunciation errors in English made by six Chinese undergraduates according to Contrastive Analysis (CA) and Error Analysis (EA). These errors reflect the interference of different sound systems on English pronunciation. Speech samples of the subjects' pronunciation were taken through words and sentences readings. Using Contrastive Analysis, potential difficulties of English pronunciation for the six subjects were listed by comparing the sound systems of English, Mandarin Chinese and Malay. The findings helped in providing a clear understanding of the common characteristics of pronunciation errors made.

In addition, Hassan (2014) also investigated

the problems in English pronunciation experienced by fifty students from the University of Sudan of Science and Technology (SUST), and thirty university teachers of English language from the same university learners whose first language is Sudanese Spoken Arabic. The findings of the study revealed that Sudanese Students had problems with the pronunciation of English vowels that have more than one way of pronunciation in addition to the consonant sound contrasts e.g./z/ and /ð/, /s/ and /θ/, /b/ and /p/, and /tʃ/.

Gilakjani (2012) emphasized in his study that pronunciation is an integral part of foreign language learning since it directly affects learners' communicative competence as well as performance. Learners' self-confidence is harmed by poor pronunciation skills, which limit social interactions and severely affect perceptions of a speaker's credibility and talents. His paper's objectives were to identify the characteristics of pronunciation learning, explain the factors that influence pronunciation learning, elaborate on the integration of pronunciation into the curriculum, and discuss teaching strategies for the pronunciation that can help EFL learners meet their personal and professional needs.

In another study, Saito (2011) identified problematic segmental features of English for native Japanese learners and presents eight English segmental (/æ/, /f/, /v/, /θ/, /ð/, /w/, /l/, that account for important pronunciation problems that most native Japanese learners encounter with. According to Saito (2011), Japanese students tend to pronounce the above segmental features by replacing them with 22 segmental features or sounds in their native language. He claims that the pronunciation difficulties experienced by the Japanese learners stem from the differences between the learners' native language (Japanese) and English, the target language.

Likewise, Megdad (2012) conducted a study on major and serious difficulties facing English department juniors at IUG in learning intonation. It was found out that they were hard up when asked to indicate the appropriate intonation patterns in simple and complex contexts at the same exercise (falling, rising, falling -rising, rising-falling). Secondly, when students are asked to explain the two possible meanings of each sentence, it is proven to be the least area of difficulty when learning intonation. Students encounter more difficulties regarding the intonation patterns in spoken context than in written context. In addition, students face difficulties when they are asked to repeat the sentences which imply the tonic syl-

labic. They repeated them randomly. When listening to a native speaker (by using a tape-recorder), students misused the placement of the tonic syllable and the prominence.

As such, students must be acquainted with the English vowel and consonant segments and are functionally aware of the roles played by intonation, blending, stress, juncture and phrasing. Schwartz (2013) explained that mistakes in word stress are a common cause of misunderstanding in English. Stressing the wrong syllable in a word can make the word very difficult to hear and understand. Likewise, intonation is a feature of pronunciation and is common in all languages. Other features of pronunciation include stress, rhythm, connected speech and accent (Muniem, 2015).

### **Strategies that improve Oral Communication Difficulties**

Some researchers have recommended activities and tactics that might be utilized in the classroom to help students overcome the decline in oral communication. The effectiveness of audio books on pronunciation skills was the focus of Saka (2015). Her study aimed to find out a difference in students' pronunciation skills as a result of exposure to audio books occurs based on their proficiency levels. Students' perceptions about audio books and their effectiveness on pronunciation learning and teaching were also investigated in the study.

Similarly, technology plays an important role in the development of students' spoken communication abilities. To a large extent, technology has begun to be used in the teaching of pronunciation. Computers and computer-based technologies, in particular, have made significant contributions to language learning and instruction. Golonka et al., (2012) stated that "Technology made a measurable impact in FL learning came from studies on computer-assisted pronunciation training, in particular, automatic speech recognition."

In the study of Yangklang (2013) which aimed to investigate the improvement of English stress and intonation pronunciation of the first year students at Nakhon Ratchasima Rajabhat University after using an e-learning program; to explore students' satisfaction with the e-learning program for improving stress and intonation pronunciation showed that the students improved their pronunciation after they used the e-learning program. In addition, they were satisfied with the e-learning program in that, it encourages and motivates their pronunciation improvement.

Similar to the previous study, Takan (2014)

examined the relationship between pronunciation skills and spoken reading exercises that are similar to audio books in terms of their structural features. Spoken versions (audio forms) of the reading exercises in students' course books were used to support pronunciation learning. He found that after listening to spoken reading exercises, there was an increase in the correct pronunciation of the participants.

## STATEMENT OF THE PROBLEM

The study on the oral communication skills of the pre-service teachers of Quirino State- University Maddela Campus specifically attempted to answer the following questions:

1. What is the profile of the pre-service teachers of Quirino State University -Maddela Campus in terms of:
  - a. Age
  - b. Gender
  - c. Language/Dialect Spoken
2. How do the participants perceive their common difficulties in oral communication skills as to:
  - a. Intonation
  - b. Stress
  - c. Pronunciation
3. Is there any significant difference in the oral communication skills difficulties of the participants when grouped according to their profile variables?

## METHODOLOGY

The study used quantitative research, namely a descriptive approach. According to Creswell (2012), descriptive research entails the identification of characteristics of a single phenomenon based on observation or the investigation of the relationship between two or more occurrences. The current study examined the common oral communication skills difficulties of the 37 pre-service teachers enrolled at Quirino State University- Maddela Campus during the first semester of 2017-2018. The outcomes served as the foundation for the creation of enhancement initiatives.

Administering an oral skill test to the participants to gather and explain their oral communication difficulties together with a profile questionnaire was the most appropriate instrument for reaching the study's goal. The researcher person-

ally floated the participant's profile questionnaire, which was followed by an oral skills test conducted in their spare time. The researcher recorded the participants while reading aloud the words and sentences during the oral skills exam. Then, the researcher attentively listened to the voice recordings to assess the total number of correct and incorrect intonation, stress, and pronunciation, and the results were tabulated. The collected data were eventually submitted for statistical analysis using frequency count and percent, weighted mean and Chi-square.

## FINDINGS

### 1. Profile of pre-service teachers of Quirino State University-Maddela Campus in terms of:

#### A. According to Age

Majority (19 or 51.35%) of the participants are 20 to 22 years old. A significant number (12 or 32.43%) of the participants are 17 to 19 years old. Three (3) pre-service teachers belong to the age range of 23 to 25 years old and 26 years and above. The data reveal that the participants are mostly in their adolescent age.

#### B. According to Gender

Majority (29 or 78.38%) of the participants are female. The remaining 8 or 21.62% are males. The data reveal that females are getting more interested to be teachers in this cohort of students.

#### C. According to Language/Dialect Spoken

Majority (31 or 83.78%) of the participants are Iloko speaking. Three (3) or 8.11% speak Ifugao and Tagalog. As gleaned from the data, the participants are mostly Iloko speaking.

### 2. Common Difficulties Affecting their Oral Communication Skills as to:

#### Intonation

The participants read sentences emphasizing a rising or falling intonation. Of the 10 sentences on intonation, the 37 participants got the correct intonation of item no. 1: "The children are not very hungry this morning" which requires a falling intonation. The participants have difficulty with item no.3:

“What would you like for breakfast?” only 15 or 40.54% got the correct falling intonation. Generally, however, most of the participants got the correct intonation in 9: “Sit down” or 90% of the total items. The findings suggest that the pre-service teachers are unaware of the correct use of intonation in asking questions.

Parallel to the present study, Megdad (2012) conducted a study on the major and serious difficulty in learning intonation. It was found out that the participants were hard up when asked to indicate the appropriate intonation patterns in simple and complex contexts. Beltran (2015) also confirmed that there is an interference of the first language (Filipino) in the production of the student teachers' intonation patterns which describes the Philippine English intonation pattern for wh- questions and yes/no questions.

### B. Stress

The items on stress require the participants to raise their voices on the syllable where the primary stress is emphasized. It is either on the first, second, or third syllable as they read the twenty (20) words given. Thirty-three (33) or 89.19% of the participants got the correct stress on item no. 20, which is the word "delight". The most number of errors was committed on the stress of the word "ceremony" by 27 or 72.97% of the participants. Only four (4) words or 20% of the 20 items on stress were correctly answered by the majority of the participants. The results indicate that they have difficulty in determining the stress on certain English words.

Schwartz (2013) concurred with the findings of this study, claiming that errors in word stress are a prevalent source of misinterpretation in English. When a word's erroneous syllable is stressed, it becomes incredibly difficult to hear and understand. The study of Yangklang (2013), however, stressed that after using the e-learning program, forty students from Nakhon Ratchasima Rajabhat's English major improved their English stress and pronunciation

### C. Pronunciation

Majority of the participants are poor in the articulation and enunciation of vowels as evidenced by their errors on 5 of the 6 items on vowels. On the other hand, they are better in articulating and enunciating consonants as

evidenced by their correct articulation and enunciation of 5 of the 6 words with consonants.

The current findings support the study of Shak, Lee and Stephen (2016) which revealed that the vowels sound such as pure short vowels, pure long vowels and diphthongs, and the consonants plosives, fricatives and affricates, silent letters, and the ‘-ed’ form were commonly mispronounced by the Malaysian students. Likewise, Hassan (2014) found that Sudanese students had problems with the pronunciation of English vowels that have more than one way of pronunciation in addition to the consonant sound contrasts. Moreover, Herman (2016) found that for the Indonesian students, the most difficult position in pronouncing the English consonants particularly the labiodental sounds is the final position in sound / v /.

**Table 1. Summary Table on Oral Communication Difficulties**

Oral Difficulties	Highest Frequency of Error	Highest Percent of Error
Intonation	22	59.46
Stress	27	72.97
Pronunciation		
Vowels	34	91.89
consonants	22	59.46

The table shows that most of the participants committed the highest frequency of error in the pronunciation of vowel sounds with 34 or 91.89 percent followed by stress with 27 or 72.97 percent, and intonation with a frequency of error of 22 or 59.46 percent.

### 3. The difference in the Oral Communication Difficulties of the Pre-service Teachers When Grouped According to their Profile Variables

**Table 2. Chi-square Test Results to Determine Whether Significant Differences Exist on the Oral Communication Difficulties of the Students when Grouped According to their Profile Variables**

Oral Communication Difficulties Compared in terms of Profile Variables	Computed X <sup>2</sup>	Probability	Decision
Age	12.335	.1782	Not Significant
Gender	8.014	.0971	Not Significant
Language /Dialect spoken	10.627	.3245	Not Significant

The results of the chi-square test revealed that there are no significant differences in the oral communication difficulties of the pre-service teachers when grouped according to their profile, namely age ( $X^2 = 12.335$ ,  $p > .05$ ), gender ( $X^2 = 8.014$ ,  $p > .05$ ), and language/dialect spoken ( $X^2 = 10.627$ ,  $p > .05$ ). The results suggest that the participants encounter oral communication difficulties regardless of their ages, gender, or language/dialects spoken.

Contrary to the present study, Chentez et al. (2019) revealed that there was a significant relationship between the student's profile and a significant difference in the common problem of oral communication among high school students of Saint Michael College of Caraga.

### CONCLUSION

Based on the above findings, the following conclusions were drawn:

1. The majority of the participants are 20-22 years old, mostly females who speak Iloko.
2. In terms of the oral skills difficulties, it is revealed that the majority of the participants are poor in the pronunciation of vowels.
3. There are no significant differences in the oral communication difficulties of the participants when grouped according to their profile, namely age, gender, and language/dialect spoken.

### RECOMMENDATIONS

Based on the foregoing findings of the study, the following are recommended:

1. The teachers are to further develop students' oral communication skills through implementing various enhancement activities to lessen oral skills difficulties.
2. The students are to be exposed to technology-based instruction such as e-learning and audio books to improve oral communication skills.
3. The school administrators are to support the implementation of the proposed activities to improve the oral communication skills of the students.

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The researcher is indebted to her colleagues from Quirino State University-Maddela Campus for their wonderful collaboration and deep thoughts which inspired the researcher to pursue this study. Million thanks are also extended to the pre-service teachers for their patience and cooperation in devoting their vacant time to taking the oral skills test.

### REFERENCES

- Abao, E. L. (2013). Second language facility of student teachers in the Philippines: an opportunity or a challenge? *European Scientific Journal*, 9(34).
- Abu Alyan, A. (2013). Oral communication problems encountering English major students: Perspectives of learners and teachers in Palestinian EFL. *Arab World English Journal*, 4.
- Aguisando, M. D. (2013). The influence of grammar and vocabulary proficiency on speaking competency of the education students in the University of Immaculate Conception. *UIC Research Journal*, 19(2), 83-89.
- Ambrozová, M. (2014). *English pronunciation difficulties among Czech students: Causes and compensation strategies*.
- Amogne, D. & Yigzaw, A. (2013). Oral communication apprehension, competence, and performance among maritime engineering trainees. *Journal of Media and Communication Studies*, 5(1).
- Baradillo, D. G. (2014). Oral communicative competence of second year Hotel and Restaurant Management students in the University of the Immaculate Conception. *UIC Research Journal*, 20 (2).
- Bekleyen, N. (2011). Pronunciation problems of the Turkish EFL learners. *Electronic Journal of Social Sciences*, 10(36).
- Beltran, E. (2015). English intonation patterns of non-English major student teachers. *International Journal of Interdisciplinary Research and Innovations* 3(2), 16-33.

- Cedar, P. S. (2004). *Transferability and translatability of idioms by Thai-speaking learners of English*. Dissertation Abstracts International, 64 (8), 25-70.
- Chentez, K.J., Felisilda Jr., J., Felisilda A. & Tabanag, R. (2019). Common problems in oral communication skills among high school students. *SMCC Higher Education Research Journal*
- Collins, L. (2002). The role of L1 influence and lexical aspect in the acquisition of temporal morphology. *Language Learning*, 52(1), 43-94.
- Creswell, J.W. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research*, 4<sup>th</sup> ed. Boston: Pearson Education, Inc.
- Ella, R. B. & Dapudong, R. C. (2014). Oral communication achievement of the Bachelor of Arts students major in English at Rajamangala University of Technology Lanna, Thailand. *International Journal of Academic Research in Progressive Education and Development*, 3(4).
- Gilakjani, A. P. & Ahmad, M. (2011). Why is pronunciation so difficult to learn? *English Language Teaching*, 4(3).
- Golonka, E. et al., (2014). Technologies for foreign language learning: a review of technology types and their effectiveness. *Computer Assisted Language Learning*.
- Guia, Clarissa D. (2011). *Speech and oral communication 2<sup>nd</sup> Edition*. Manila: Mindshapers Co., Inc.
- Gudu, B. (2015). Teaching speaking skills in the English language using classroom activities at secondary school level in Eldoret Municipality, Kenya. *Journal of Education and Practice*, 6 (35).
- Hassan, E. M. I. (2014). Pronunciation problems: A case study of English language students at Sudan University of Science and Technology. *English Language and Literature Studies*, 4(4).
- Herman (2016). Students' difficulties in pronouncing the English labiodental sounds. *Communication and Linguistics Studies*, 2 (1),1-5.
- Jaiprasong, S. & Pongpairroj, N. (2020). L2 production of English word stress by L1 Thai Learners. *Language Education and Acquisition Research Network*, 13(2), 142-157.
- Kho, I. C. Y. (2011). *An analysis of pronunciation errors in English of six UTAR Chinese Studies undergraduates*.
- Megdad, B. I. S. (2012) *Difficulties facing English Department Juniors at IUG in learning intonation*. Published Dissertation. The Islamic University of Gaza.
- Mojares, J. G. (2015). Multiple Intelligences (MI) of Associate in Hotel and Restaurant Management students and its implication to the teaching of oral communication. *Asia Pacific Journal of Multidisciplinary Research*, 3(4).
- Muniem, F.(2015). *How English learners can improve intonation*. Retrieved from <https://www.britishcouncil.org/voices-magazine1>
- Pagcaliwagan, S. (2015). Assessment of instructional materials in Speech and Oral Communication: Basis for curriculum enhancement. *Assessment*, .2 (11).
- Pathan, A. K. (2013). Major linguistic barriers of oral communication in English as perceived by the tertiary level ESL students. *Language in India*, 3(3).
- Salaria, N. (2012) Meaning of the term descriptive survey research method. *International Journal of Transformations in Business Management*, 1(6).
- Saito, K. (2011). *Identifying problematic segmental features to acquire comprehensible pronunciation in EFL settings: The case of Japanese learners of English*.
- Saka, Z. (2015). *The effectiveness of audio books on pronunciation skills of EFL learners at different proficiency levels*. MA, Program of Teaching English as a foreign language.
- Schwartz, M. (2013). *Word stress*. Retrieved from <https://lto.blog.ryerson.ca/2013/09/05/word-stress/>
- Shak, P., Lee, C. & Stephen J. (2016). Pronunciation problems: A case study on Shak, P., Lee,

- English pronunciation errors of low proficient students. *Instructional Journal of Language Education and Applied Linguistics*, 4, 25-35.
- Takan, D. (2014). The effect of listening to spoken reading exercises on pronunciation in English as a foreign language classes for state secondary school students.
- Tendero, E. et al., (2014). Developing effective speech and oral communication skills. Malabon City: Mutya Publishing House, Inc.
- Valdez, S. & Dela Cruz, R. (2013). Essentials of oral communication towards effective and responsible speech. Manila: Purely Books Trading and Publishing Corp.
- Verapornvanichkul, P. (2011). A survey of problems in oral communication skills when dealing with English-speaking clients: A case study of employees at one of the big 4 audit firms in Thailand. Published Dissertation. Thammasat University Bangkok, Thailand.
- Yangklang, A. (2013). Improving English stress and intonation pronunciation of the first year students of Nakhon Ratchasima Rajabhat University through an e-Learning. *Procedia-Social and Behavioral Sciences*, 2(3).
- Zulkurnain, N. & S. Kaur. (2014). Oral English communication difficulties and coping strategies of Diploma of Hotel Management Stat UiTM. *The Southeast Asian Journal of English Language Studies*, 20(3).



# ADDRESSING SUBJECT-VERB AGREEMENT PROBLEMS THROUGH INTERACTIVE SLIDES

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## ABSTRACT

This research study aimed to determine the effectiveness of using interactive slides in addressing subject and verb agreement problems. The participants of this study were 44 Grade 7 learners of Gattaran National Trade School for school year 2020-2021. The quasi-experimental research design was used in this study. Purposive sampling method was used in identifying the participants of the study. In this study, the researcher purposively selected the participants who obtained a mastery level below 75% in subject and verb agreement. Pretest and Posttest were administered as the main sources of data. Mean and Standard was used to analyze the pretest and posttest scores. Independent Samples t-test was used to determine the significant difference while eta<sup>2</sup> was used for the effect size. Weighted mean and four-point Likert scale was used to describe and analyze perception of the learners. The pretest mean score was 16.07 while the posttest mean score was 33.59. Result showed that there is a significant difference in the pretest and posttest mean scores of the participants after the intervention. A value of 0.86 was computed, which means that the effect size was large. All participants agree to all perception indicators with a weighted mean of 3.96. It is therefore suggested that Interactive Slides be used as a supplementary instructional material in addressing problems on subject-verb agreement. A parallel study on the effectiveness of Interactive Slides involving bigger number of participants is encouraged.

*Keywords: Subject-Verb Agreement, Interactive, Slides*

## INTRODUCTION

Grammar awareness and structure is one of the content standards of the integrated language arts curriculum. This content standard gives opportunities for learners to show their grammar abilities by being able to read, speak, and write correctly; it also allows them learners to communicate effectively, both written and oral, through correct grammatical structure in English. Knowing that it is a valuable content standard in the integrated language arts curriculum, grammar awareness and structure needs to be developed among learners. Anent this, there is a need to master the concepts of standard grammar when writing and speaking. Subject and Verb Agreement is a grammatical concept that is usually considered a “sore thumb” among learners. As a matter of fact, there have been studies confirming that indeed learners found difficulty with this grammar concern.

In the study of Yee and Gan (2017) of Malay-

sia they mentioned that problems in SVA exist in most learners and that an intervention must be carried out to arrest the said problem. In the Philippines, similarly, Baraquo (2015) also found out that “students failed in the area of subject and verb agreement” when she conducted a grammar proficiency test among college students in Colegio de San Juan Letran. Furthermore, Basa et al. (2017) concluded in their local research that “none of the respondents have mastered the rules of SVA and majority of them failed the SVA assessment”. Mabuan (2015) also found out that students encounter grammatical problems which include subject and verb agreement.

In the same way, the researcher also found out that her learners exhibit problems in subject and verb agreement. Based on the written compositions of her students, the researcher found out that they have committed SVA errors. This is very evident in the written outputs submitted by her students, after answering written activities in their self-learning modules and learning activity sheets.

Their sentences, in their outputs, show that their subjects do not agree with their verbs or vice versa. To confirm this, the researcher reviewed the administered diagnostic test particularly on subject and verb agreement and it was revealed that 44 or 93% of the 47 test takers from Grade 7-Mercury learners have a mastery level which is below 75% standard of achievement when it comes to SVA.

Furthermore, the researcher also found out that 40 or 85% of the 47 learners from Grade 7 Mercury have a low grade in their first grading academic grades in English. The low academic grades of the learners in English gave the researcher a problem for their performance is another indicator that they would have a very poor performance in their other academic subjects if not remedied especially that written output is one of the requirements that fall in the performance with a percentage of 40 in the academic grade of every learner.

In view of the foregoing subject-verb agreement problem encountered by the Grade 7 learners, the researcher thought of addressing the said grammatical problem through interactive slides because if these concerns on SVA will not be addressed the more they will find difficulty in constructing sentences which affects their performance in English and other related area. As such, the researcher wants to ascertain if interactive slides could be an effective tool for addressing the subject and verb agreement problems encountered by the 44 Grade 7-Mercury learners of Gattaran National Trade School for school year 2020-2021.

### **STATEMENT OF THE PROBLEM**

Generally, this research study determined the effectiveness of using interactive slides in addressing subject and verb agreement problems of the Grade 7-Mercury learners of Gattaran National Trade School for the school year 2020-2021.

Specifically, it answered the following questions:

1. What are the pretest and posttest scores of the participants after the utilization of the intervention?
2. Is there a significant difference in the pretest and posttest scores of the participants after the utilization of the intervention?
3. What is the effect size of the interactive slides to the participants' mastery on subject and verb agreement?
4. How does the intervention influence the

learning ability of the learners as perceived by themselves?

5. What plan of action can be done by the proponent to improve/develop/sustain the implementation of the intervention?

### **LITERATURE REVIEW**

#### **English Language in the Philippines**

The Philippines has lately been failing to fulfill its duties, particularly to provide good quality of education in English. According to Salazar (2007), it can clearly be seen in the decline of the English proficiency rate at the March 2006 SWS survey where only two out of three Filipino adults said that they understood and could read English in the March 2006 compared to the September 2000 survey.

Poor English has been pointed out by Hidalgo (2005) as culprit for low performances among students who were taught in English. Unsatisfactory English has also been the scapegoat for the defects in our education system, the corruption in government, and the decline in investment. Schools need not remain mum on the issue of unsatisfactory English performances but take a good grip instead on the state of English, and ease problems after its having served as medium of instruction for years.

English has become the preferred language of choice for international communication in a variety of domains, thus gaining the status of a lingua franca. As such, English language skills have been recognized as essential skills to acquire to be successful in a globalized society (Lee, 2016). Inside the schools, English Language Learners were entitled to equal access to educational opportunities – achieving content-area knowledge and English proficiency (Wayne, 2015).

Based on 2019 results of the Programme for International Student Assessment (Pisa) by the Organization for Economic Cooperation and Development (OECD), Filipinos fared worst among 79 countries in reading literacy using the English language in reading assessment and second lowest in both mathematical and scientific literacy that use English as a medium of instruction (Philstar, 2019).

According to Gaerlan (2016) that not all Filipino learners were successful in learning in English which was their second language and was the medium of instruction in Philippine schools. It was undeniable that there were problems that arose as students strive to learn English, consider-

ing that many factors were affecting their reading, writing, and speaking skills.

### **The Concept of Subject-Verb Agreement**

According to Eastwood (2002), in English grammar, subject-verb agreement is the correspondence of a verb with its subject in person (first, second, or third) and number (singular or plural) which is also called subject-verb concord. In other words, they both must be singular or they both must be plural. For instance, Subjects and verbs must agree with one another in number (singular or plural). Thus, if a subject is singular, its verb must also be singular; vice versa. The girl [singular subject] reads [singular verb] mystery stories. The girls [plural subject] read [plural verb] mystery stories. Tonya [singular subject] is [singular verb] asleep. Tonya and her friends [plural subject] are [plural verb] asleep. Further, there is agreement with be, have, and a present-simple verb. Then he adds that with a past-tense verb is an agreement only with be. It means that subject-verb agreement of simple past tense is in nominal form. For instance, "I was happy yesterday", "We were late for the movie last night". However, the following structure for verbal is added "ed" in the end of verb or change into V2 for instance "Robert played soccer this last morning", "Sophia went swimming in the pool last weekend". Subject-verb agreement in present simple, the singular subject (she,he,it) takes a verb in -s, -es, or is. It means that verb in present simple tense both of verbal and nominal form should agree with its subject. For instance, "Marco works in an office", "Jorge's Dad Allan is retired", "Marina is Bob's wife", or "Frada lives in Jakarta". Plural subject (you, they, we) with to be "are" and also I with "am", for examples:" I am English teacher in Malang". In verbal form the subject is followed by verb and do or does is used as an auxiliary for all of the subjects in negative or question sentence. For example, "Marco doesn't have any brothers". "Does Marco have any brothers?". The present continuous, also called the present progressive, is one of the present tenses used in modern English, the others being the simple present and the emphatic present. To describe something which is happening at the exact moment of speech, for instance "The boy is crying". Likewise, the rules are same as present simple, and to distinguish it the teacher can put time signal at the end or in the first sentence. From the explanations above, it is clear that subject-verb agreement is an agreement between subject and verb. If the subject is singular, the verb is singular

and if the subject plural, the verb is plural because the meaning of the sentence will be unclear without the subject and the verb that agrees on each other. Agreeing to the explanation above, the concept of subject-verb agreement is a basic principle of the English language grammar.

However, Al Murshidi (2014) found that the students are still confused in applying subject-verb agreement rules and their lack of knowledge of the rules of the target language is the main factor in causing the written production errors.

### **Causes of Errors**

Based on Brown (2007) there are four sources of errors made by language learner in learning. First, Interlingual errors or mother-tongue influence, this kind of errors are influenced by the native language which interferes with the target language. They are very frequent in the initial stages of L2 Learning since the L1 is the only language system the learner knows and able to draw on, therefore negative transfer takes place. Second, Intralingual errors, these type of errors are caused by the target language itself such as: false analogy, misanalysis (learners form a wrong hypothesis). Incomplete rule application (this is the converse of overgeneralization or one might call it under generalization as the learners do not use all the rules). Exploiting redundancy, this error occurs by carrying considerable redundancy. This is shown throughout the system in the form of unnecessary morphology and double signaling. Overlooking co-occurrence restrictions, this error is caused by overlooking the exceptional rules. Hypercorrection or monitor overuse, this is results from the learners' over cautious and strict observance of the rules. Overgeneralization or system-simplification, this error is caused by the misuse of words or grammatical rules. Third, communication strategies which the learners use are consciously used by the learners to get a message across the hearer. They can involve both verbal and non-verbal communication. There are distinctions among the following communication strategy: (1) prefabricated patterns is a memorized phrase or sentence. Learner who memorized them usually does not understand the components of the phrase; (2) cognitive and personality styles can also cause errors. For instance, a student with high self-esteem may be willing to risk more errors, in the interest of communication, since he/she does not feel as threatened by committing errors as a student with low self-esteem; (3) language switch is applied by the learner when all

the other strategies have failed to help him or her. Thus, the learner uses his or her native language to get the message; nevertheless that hearer may not know the native language. Fourth, Context or Induced Errors, it refers to the setting where a language is learned, e.g. a classroom or a social situation, and also to the teacher and materials used in the lessons.

Zhan (2015) investigated a large number of grammatical errors frequently found in Chinese EFL learners' writings namely a misuse of tense and verb form. Others included those in spelling, use of particular words and phrases, Chinese-English expression, singular and plural form of nouns, parts of speech, non-finite verbs, run-on sentences, and pronouns. Similar with this, Singh et al. (2017) found that the most common type of grammar errors made by Malaysian students in primary and secondary schools were subject-verb agreement and tenses. Another common error found was in the students' construction of the complex sentence. In such constructions, they failed to include essential and nonessential clauses. Meanwhile, the students in Indonesia also have a difficulty in learning grammar as observed by Moehkardi (2002) due to the following problems in grammatical errors; the students still transfer from L1 to target language (TL) this is may cause mistakes because of the different concept between L1 to TL. For instance, the Indonesia expression "tertarik dengan" is literary transferred to English "Interested with", however it should be "Interested in". It is difficult to remember because preposition "in" is same to Indonesian "di". The other researcher also found the grammatical errors in written English sentences by Thai EFL student.

## METHODOLOGY

**Research Design.** The quasi-experimental research design was used in this study. Through this design, pretest and posttest were administered to one group of participants.

**Participants and/or other Sources of Data and Information.** The data analyzed and interpreted were derived from the Pretest and Posttest results of the 44 Grade 7-Mercury learners of Gattaran National Trade School for school year 2020-2021. Purposive sampling method was utilized in identifying the participants of the study. In this study, the researcher purposively selected the 44 participants who obtained a mastery level below

75% in subject and verb agreement. Due to the Covid-19 pandemic, face-to-face interaction is prohibited, so the proponent administered the Pretest to each learner remotely following the AITF protocol and health standards among the 44 Grade 7- Mercury learners of Gattaran National Trade School.

**Data Gathering Methods.** The proponent utilized the Interactive Slides as an intervention in this study. The study employed the quasi-experimental research design which considered two variables and established a formal procedure to compare and conclude that one is better than the other if significant difference exists. In this study, two variable scores were considered—the pretest scores and the posttest scores—and both scores were compared to establish if there existed a significant difference when the interactive slides were used. Before the intervention was introduced, the proponent conducted the pre-test to get the level of mastery in SVA of the target learners. After which, parents of the target learners were informed of the proposed intervention activity. Then, the interactive slides were given to each 44 Grade 7 Mercury learners and they could access the interactive slides via mobile phones, tablets and personal computers. The interactive slides were accessed by the learners through online and offline with the guidance of their parents/ guardians and/ knowledgeable others. The learners used the intervention at their own pace within three weeks only. The proponent monitored the conduct of this activity via phone calls, group chats and text messaging. The proponent provided technical assistance on how to use the intervention. After the implementation of the intervention, posttest was conducted by the proponent among learners remotely following again the AITF protocols and health standards. The credibility and integrity of test results were safeguarded through strict monitoring during the taking of exams, ensuring that the participants independently answered the questions.

The proponent administered the intervention in four weeks, from May 3 to 30, 2021. The intervention was given to the learners during the distribution and retrieval of Self-Learning Modules which was scheduled on every Friday of the month and forwarded to them electronically in their group chat. Since face-to-face interaction is prohibited because of the pandemic, the proponent administered the Pretest and Posttest remotely following again the AITF protocols and health standards among Grade 7- Mercury learners of Gattaran National Trade School. The results of the

Pre-test and Post-test were recorded, analyzed, compared and interpreted after the use of intervention.

**Data Analysis.** Mean and Standard was used to analyze the pretest and posttest scores. Independent Samples t-test was used to determine the significant difference while eta2 was used for the effect size. Weighted mean and four-point Likert scale was used to describe and analyze perception of the learners.

**Ethical Considerations.** The researcher considered the following ethical considerations concerning the study: First, the researcher sought approval to conduct the study from concerned authorities through channels. Then, the protocols of the COVID-19 Inter-Agency Task Force for the Management of Emerging Infectious Diseases in the Philippines were strictly followed in the implementation of the study. After that, an informed consent from the parents of the participants was sought. Moreover, a consent from the barangay officials to conduct the study was also sought. Lastly, all references used in this study were properly cited to avoid plagiarism issues.

## RESULTS AND DISCUSSIONS

**Table 1: Pretest and Posttest Results**

Table 1 shows the pretest and posttest scores of the participants. The pretest and posttest scores were analyzed using mean and standard deviation. The table reveals that the participants' performance before the utilization of the intervention was poor, as justified by the pretest mean score. This implies that the participants had a poor mastery of the subject-verb agreement rules and their application in written and spoken discourse. This further implies that there was a dire need to give remediation and intervention material to address the language problem.

The table also shows a higher posttest mean score of the participants. Their performance in the posttest almost doubled with respect to their pretest mean score. This implies that the intervention, the use of interactive slides, improved the performance of the participants in applying subject-verb agreement rules.

The use of interactive slides in teaching helps learners to increase their interest on the subject as supported by Ismail, Suhaimin et.al (2018) and also increases their motivation in learning as affirmed by O O Babakina et al 2021 in his study.

**Table 1. Pretest and Posttest Results**

Test	Mean	Standard Deviation
Pretest	16.07	7.02
Posttest	33.59	2.56

**Table 2: Significant Difference in the Pretest and Posttest Results**

Table 2 illustrates the test of difference between the pretest and posttest results. The computed posttest mean score is significantly higher than the pretest mean score as shown in the computed t-value. This means the difference is highly significant at 0.05 level of significance.

This implies that students' performance in using subject-verb agreement rules has improved. The use of interactive slides significantly resulted to better application of subject-verb agreement rules in written discourse.

This is supported by the findings of Drahman & Hashim (2020) that the usage of Interactive PowerPoint slides helped pupils' in understanding correct Subject-Verb Agreement structures. Also, the result is backed up by the study of Perdue (2016), indicating that the technology-aided intervention increased pupils' interest towards the lessons, hence increased their engagement and resulted in improved performance due to more comprehensive understanding of the topic.

**Table 2. Significant Difference in the Pretest and Posttest Results**

Test	Mean	SD	t-value	Probability	Statistical Inference
Pretest	16.07	7.02	16.298	0.000	Significant
Posttest	33.59	2.56			

**Table 3: Effect Size of the Intervention**

Table 3 shows the effect size of Interactive Slides in addressing the Subject-Verb Agreement problems of the participants. The computed Effect Size is Large, which means that the intervention is effective in addressing problems on Subject-Verb Agreement.

This implies that the intervention addressed the problems in SVA helped the participants in using correctly the rules, which greatly improved their performance in the test given.

The positive effect of technology in teaching grammar such as using interactive slides is supported by Harwati (2018) where teachers need to promote technology in the classroom using software, hardware, digital, technological, and social

media. This is affirmed by Florentino (2020), stating that interactive activities in teaching Subject-Verb Agreement helped students master the rules and application in sentence construction.

**Table 3: Effect Size of the Intervention**

Test	Mean	SD	t-value	Effect Size	Statistical Inference
Pretest	16.07	7.02	16.298	0.86	Large Effect
Posttest	33.59	2.56			

**Table 4: Perception on the Effectiveness of the Intervention**

Table 4 shows that weighted mean and the descriptive interpretation of students' perception on the effectiveness of the Interactive Slides in addressing SVA problems. It reveals that the participants absolutely agree to all the perception indicators given, as justified by the computed mean. The over-all mean also shows that they absolutely agree to the same perception indicators. This implies that the use of Interactive Slides as an Intervention in addressing SVA problems is highly effective and beneficial to the learners as it helped them understand the rules better and guided them in constructing sentences.

This is affirmed by Linnes and Metcalf (2017) where today's learners have positive attitude towards technology-aided instructional materials. This is however negated by Ujbanyi et al., 2017, saying that technology-aided intervention is not guaranteed effective despite its role to support the acquisition of new knowledge and skills.

**Table 4: Perception on the Effectiveness of the Intervention**

Learners' Perception on the Effectiveness of Intervention Materials Used by the Teacher in Teaching Subject-Verb Agreement Rules	Weighted Mean	Standard Deviation
1. It provides for better understanding of the Subject-Verb Agreement Rules and their application	3.95	Absolutely Agree
2. It motivates me to learn more about the concepts	3.95	Absolutely Agree
3. It increases my knowledge, skills and enable me to think on the subject matter	3.98	Absolutely Agree
4. It is interesting and enjoyable activity for the lesson	3.93	Absolutely Agree
5. Through the interactive slides, it enhances my comprehension skill on the lesson	3.98	Absolutely Agree

6. The tool gives significant and meaningful difference in the scores obtained	3.98	Absolutely Agree
7. The intervention material (Interactive Slides) allows me to engage in the different activities provided by my teacher	3.95	Absolutely Agree
8. Through the Interactive Slides, it contributes a lot for me to remember the Subject-Verb Agreement Rules and their application	3.91	Absolutely Agree
9. The intervention made easier for me to comprehend and retain information about the lessons on SVA	3.95	Absolutely Agree
10. The Interactive Slides held my attention longer	3.98	Absolutely Agree
11. It provides better explanations of the SVA rules	4.00	Absolutely Agree
12. Through the Interactive Slides, it motivates me to learn the different rules on SVA and how to apply them in sentence construction	3.95	Absolutely Agree
<b>OVER-ALL MEAN</b>	<b>3.96</b>	<b>Absolutely Agree</b>

\*4–Absolutely agree 3–Substantially agree 2–Partially agree 1–Disagree

**Table 5: Action Plan on the Sustainability of the Intervention**

Table 5 shows the action plan on the sustainability of the intervention Interactive Slides in addressing SVA problems. This shows how the proponent further sustain the effectiveness of the intervention and its utilization. It is evident in the results of the study that the intervention is beneficial to the learners however the researcher needs to add more interactive features of the intervention, including exercises and links for more information. This is confirmed by Malinovska, N., Borova et al. (2020) that well-made presentation can attract students' attention and arouse interest in learning. Moreover, Даминова, Г. (2020) highlighted that the use of new information technologies in teaching English improves the quality of education.

The intervention can be used as an enrichment material for the incoming Grade 7 students especially this present time as face-to-face classes are still prohibited amid the threat of the dreaded virus.

**Table 5: Action Plan on the Sustainability of the Intervention**

Strategies	Program	Activities	Task	Resources			Time-line
				Human	Material	Financial	
Sustain the effectiveness of the intervention and its utilization	Interactive Slides	Sustaining the intervention and its utilization	<p>A. Improve the interactive features of the intervention</p> <p>B. Include more interactive activities and exercises</p> <p>C. Add graphics in the interactive slides to make it more appealing</p> <p>D. Add more links for additional information, more in-depth discussion, and comprehensive exercises</p> <p>E. Use the intervention as an enrichment material for incoming Grade 7 students</p> <p>F. Encourage teachers to adopt the intervention material to sustain its utilization</p>	Proponent, School Head, PSDS, Teachers, Students	Internet Connectivity Bond papers	1000	September 2021 - onwards
<b>TOTAL</b>						<b>1,000.00</b>	

### SUMMARY OF FINDINGS

The pretest mean score of the participants suggests that they have poor performance in Subject-Verb Agreement. Their posttest mean score shows an improvement in their performance after the utilization of the intervention.

There is a significant difference between the pretest and posttest scores of the participants.

The intervention material has a large effect on the SVA skills of the participants.

The participants absolutely agree that the intervention material is highly effective in improving their SVA skills.

The researcher needs to add interactive features of the intervention, including exercises and links for more information.

### CONCLUSIONS

Based on the findings of the study, it is hereby concluded that the participants improved their performance in Subject-Verb Agreement based on the result of the pretest and posttest. This means that the use of the interactive slides as an intervention is effective in improving the performance of participants in SVA. This is supported by their perception that the intervention material helped them master the rules in SVA and eventually apply them in constructing correct sentences.

### RECOMMENDATIONS

In light of the findings and conclusions made, the following are recommended:

Teachers may use the interactives slides in teaching subject-verb agreement rules and improving students' performance, especially in the new normal landscape of education.

Teachers may innovate their instructional materials to cater to the diverse needs of learners specifically focused on the language learning.

Teachers from other discipline may also use Interactive Slides in teaching least mastered competencies among their learners.

School heads may encourage teachers to integrate technology -aided instruction in helping learners in distance education.

Further studies may be conducted involving bigger number of participants and longer exposure to the intervention material.

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Pagyamanan kada kayo amin Apo!  
Dios mabbalo nika mu ngamin!

- CJP

## REFERENCES

- Amalia, E., Surya, E., & Syahputra, E. (2017). The effectiveness of using problem-based learning (pbl) in mathematics problem solving ability for junior high school students. *International Journal of Advance Research and Innovative Ideas in Education*, 3(2), 23954396.
- Coetzee, J. & Mammen, K. J. (2017). Science and engineering students' difficulties with fractions at entry-level to university. *International Electronic Journal of Mathematics Education*, 12(3), 281-310.
- Department of Education. (2017). *Research Management Guidelines*. Author: Manila, Philippines. Retrieved from [www.deped.gov.ph](http://www.deped.gov.ph)
- Department of Education- Bureau of Learning Resources. (2017). *English 7 Learner's Material* (1st ed.).
- Drahman, G. S. A. F., & Hashim, H. Integrating Interactive PowerPoint Slides to teach Subject-Verb-Agreement (SVA) in Rural Primary Schools in Sarawak.
- Harris, S. (2020). Using Interactive Slides and Videos to Engage Students. *UNLV Best Practices Expo*. 98. Retrieved from://[digitalscholarship.unlv.edu/bt\\_expo/98](http://digitalscholarship.unlv.edu/bt_expo/98)
- Harwati, H. 2018. Application of technology in the digital era education. *International Journal of Research in Counseling and Education* 1(2):1-5.
- Lee, C. (2017). An appropriate prompts system based on the Polya method for mathematical problem-solving. *EURASIA Journal of Mathematics Science and Technology Education*, 13(3), 893-910.
- Linnes, Cathrine & Metcalf, Brian. (2017). iGeneration And Their Acceptance of Technology. *International Journal of Management & Information Systems (IJMIS)*. 21.11.10.19030/ijms.v2li2.10073.
- Novriani, M. & Surya, E. (2017). Analysis of student difficulties in mathematics problem solving ability at MTs SWASTA IRA Medan. *International Journal of Sciences: Basic and Applied Research*, 33 (3), 63-75.
- Tong, D. & Loc, N. (2017). Students' errors in solving mathematical word problems and their ability in identifying errors in wrong solutions. *European Journal of Education Studies*. Retrieved from <https://www.oapub.org/edu/index.php/ejes/article/view/741>
- Ujbanyi, T., Sziladi, G., Katona, J. & Kovari, A. 2017. ICTbasedinteractive and smart technologies in education-teaching difficulties. *ISERD International Conference*, hlm. 39-44. [https://www.researchgate.net/publication/330905772\\_The\\_Students%27\\_Ability\\_in\\_Using\\_SubjectVerb\\_Agreement\\_in\\_Grade\\_XI\\_IPS\\_1\\_of\\_SMA\\_Ar-Rahmah\\_Malang](https://www.researchgate.net/publication/330905772_The_Students%27_Ability_in_Using_SubjectVerb_Agreement_in_Grade_XI_IPS_1_of_SMA_Ar-Rahmah_Malang)



# NATIVIZED HISPANIC BORROWED WORDS: CEBUANO VISAYAN

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## ABSTRACT

Of the 150 languages spoken in the Philippines, which was colonized by Spain for three centuries, Spanish words have definitely been borrowed and have definitely been Filipinized in terms of morphology and phonology. The study, which was anchored on the theory of phylogenetic change focusing on linguistic borrowing, assumed that Hispanic words borrowed in Cebuano Visayan were acculturated through lexical nativization. It aimed to investigate the linguistic borrowing phenomenon by Cebuano Visayan, which nativized borrowed Hispanic words, by utilizing prototype print media articles extracted from Chronicle of Dipolog Zamboanga del Norte, Volume no. 36, March 10-16, 2019, which were written in Cebuano Visayan as models of textuality for lexical analysis. The study revealed that the Hispanic borrowed words were made up of nouns, verbs, and adjectives and no Hispanic borrowed adverb was used in the articles. Some Hispanic borrowed words retained their Spanish spellings and some were acculturated by nativizing their orthography, which definitely corresponds to nativized phonology since Cebuano Visayan is a phonetic language, spelled as pronounced, and by adding native affixes. Therefore, the study proved that Hispanic words borrowed in Cebuano Visayan are acculturated through lexical nativization. Thus, it was recommended that a parallel lexical investigation be conducted in different genres of mass media, literary textualities, communicative verbal transactions and other documents across the varied Philippine Languages. Moreover, a monograph on nativized Hispanic borrowed words may be constructed.

*Keywords: Hispanic borrowed words, lexical nativization, linguistic borrowing, Cebuano Visayan, lexical analysis*

## INTRODUCTION

Human language evolution has been a topic of increasing interest in the scientific community that entails interdisciplinary competencies in order to cope with the complexity of this linguistic phenomenon.

As a matter of fact, one of the interesting topics of language evolution is intercultural contact and communication which resulted in the set of loanwords that is imported into the vocabulary of each language involved. The field of cultures and languages in contact (Weinreich, 1953; cited in Hoffer, 2005) has grown a great deal over the past fifty years. Hence, language borrowing has been an interest to various fields of linguistics for some time (Whitney 1875, deSaussure 1915, Sapir 1921, Pedersen 1931, Haugen 1950, Lehmann

1962, Hockett 1979, Anttila 1989; cited in Hoffer, 2005).

In addition, Haspelmath (2009), stressed that better knowledge of lexical borrowability will be important for further progress in historical-comparative linguistics especially that in less well-researched languages and language families, and at older stages of history, it is often unclear whether a word is a loanword or a native word that is cognate with its putative source.

Evidently, lexical borrowing has been shown to be the result of wide-ranging process of intercultural contact and communication through a large amount of previous research on the said phenomenon by linguistic scholars all over the world.

In the Philippines, linguists have been investigating about the linguistic phenomenon of word borrowing in the country, given its history of in-

tercultural contact and communication. Hence, there is a need to study about how Hispanic borrowed words are acculturated in Cebuano Visayan through lexical nativization.

Cebuano, which has long borrowed words from the Spanish language during the period of colonialism from 1565 to 1898, is a member of the Malayo-Polynesian sub-group of the Austro-nesian languages. It is generally classified as one of the five primary branches of the Visayan languages, part of the wider genus of Philippine languages (Zorc, 1977). Spoken in the Philippines, mainly in the Central Visayas by the Bisaya people, and in northeastern parts of Negros Occidental province, in southern parts of Masbate, in most of Leyte and Southern Leyte, in western portions of Guimaras, in parts of Samar, Bohol, Luzon, the Biliran islands, and in most parts of Mindanao (omniglot.com), Cebuano Visayan is the lingua franca of the Central Visayas, Western parts of Eastern Visayas, some parts of Palawan and most parts of Mindanao.

## **OBJECTIVE OF THE STUDY**

This study aimed to investigate the linguistic borrowing phenomenon by Philippine languages through a lexical analysis of a prototype print media article written in Cebuano-Visayan.

## **REVIEW OF RELATED LITERATURE**

This study assumed that Hispanic words borrowed in Cebuano Visayan were acculturated through lexical nativization. This assumption was supported by the Theory of Phylogenetic Change focusing on linguistic borrowing (Hockett, 1958).

The Theory of Phylogenetic Change by Hockett (1958) posited that certain lexical items in a foreign language are nativized by the borrower language. In face-to-face communication, either the speaker may imitate some feature of the other's speech; when the contact is indirect, the influence can of course pass only in one direction. The feature that is imitated is called the model; the language in which the model occurs is called the donor; the language which acquires something new in the process of borrowing is the borrowing language. That which is borrowed does not have to be paid back; the donor makes no sacrifice and does not have to be asked for permission. Indeed, nothing changes hands: the donor goes on speak-

ing as before, and only the borrower's speech is altered (Hockett, 1958).

The study was also anchored on the acculturation model, developed by Schumann, which is based on social and psychological factors. Acculturation is defined as the social and psychological taxonomy of factors which are believed to be important in the process of SLA in natural contexts. The major claim of the model is that acculturation, which is a cluster of social-psychological factors, is the major cause of SLA (Schumann, 1978, 1990; cited in Barjesteh & Vaseghi, 2012). Schumann (1986), as cited in Barjesteh & Vaseghi (2012), proposed that "acculturation as a remote cause brings the learner into contact with TL-speakers and verbal interaction with those speakers as a proximate cause brings about the negotiation of appropriate input which then operates as the immediate cause of language acquisition".

Grant (2014) stressed that lexical borrowing refers to the transmission from one language to another of a label with which to name a concept and it constitutes the commonest form of contact-induced linguistic change. Lexical borrowings can be the first step by which a language acquires new structural features, in which, word boundaries within the donor language are not always recognized by speakers of the recipient language and incorporation of borrowings depends upon the structure of the borrowing language (Grant, 2014). There is much more to contact-induced language change than this alone, as is obvious when one examines more detailed studies of the effects of contact between pairs of languages (Sasse, 1985; cited in Grant, 2014).

Nativization is the process through which in the virtual absence of native speakers, a language undergoes new phonological, morphological, syntactical, semantic and stylistic changes, and gains new native speakers (Lowenber, 1986).

Moreover, as the study was focused on lexical nativization, it, therefore, analyzed the borrowed words by examining if lexical changes occur in such words or not. According to Dworkin (2010), lexical change encompasses two distinct phenomena. The first involves changes in the semantic structure or meaning of the signifier, the area traditionally known as semantic change. Lexical change also includes the demise of lexical items with the passage of time, as well as the addition and incorporation of new vocabulary into the lexicon.

This study, which aimed to investigate the linguistic borrowing phenomenon by Cebuano Visayan through a lexical analysis of a prototype print media article, is practically needed in linguistic scholarly works.

## METHODOLOGY

### Linguistic Research Method Used

This paper used a descriptive analysis method of research by utilizing lexical analysis as its tool in analyzing and interpreting the data. It mainly focused on the language description through lexical analysis which refers to the association of meaning with explicitly specified textual strings, referred to as lexical terms. In the study, the lexical terms were the Cebuano Visayan Hispanic borrowed words, which were obtained from the texts by a process called term extraction. The study employed homogeneous sampling of 2 select print media articles, which were written in Cebuano-Visayan.

### Sources of Verbal Data

The data of this study were collected from the select print media articles written in Cebuano-Visayan, "DILG: Mipahimangno Batuk Extortion Activity sa mga Teroristang Grupo" and Women's Month Celebration, Gibuksan". The news articles were extracted from Chronicle of Dipolog Zamboanga del Norte, Volume no. 36, March 10-16, 2019, pages 4 and 5, with the permission sought from the author and the company.

The scope of the study was focused on the linguistic borrowing phenomenon by Visayan language of the words found in the select news articles. The analytical limitation was fixed on acculturation through lexical nativization an assumption supported by the Theory of Phylogenetic Change focusing on linguistic borrowing (Hockett, 1958).

### Data Generating Process

The data of this study were generated in five phases: phase one- ideation of raw data; phase two- lexical analysis; phase three; tabulation of data; phase four- data analysis, interpretation, and discussion; phase five- drawing of conclusions and recommendations.

## FINDINGS

The article DILG: Mipahimangno Batuk Extortion Activity sa mga Teroristang Grupo has seven paragraphs.

Paragraph one has two sentences of sixty words.

Paragraph two has one long sentence of eighty-two words.

Paragraph three has one sentence of forty-eight words.

Paragraph four has one sentence of forty-one words.

Paragraph five has one sentence of fifty-one words

Paragraph six has one sentence of forty-five words

Paragraph seven has one sentence of thirty-eight words.

The article Women's Month Celebration, Gibuksan" has eight paragraphs.

Paragraph one has one sentence of forty-nine words.

Paragraph two has one long sentence of thirty-six words.

Paragraph three has one sentence of fifty-eight words.

Paragraph four has one sentence of forty-one words.

Paragraph five has one sentence of sixty-five words

Paragraph six has one sentence of twenty-five words

Paragraph seven has one sentence of nineteen words.

Paragraph eight has one sentence with thirteen words.

The Hispanic borrowed words found in the texts were eighteen nouns, six verbs, and nine adjectives, which were analyzed using separate descriptive matrices. No Hispanic borrowed adverb was used in the articles.

### 1. NOUNS BORROWED FROM SPANISH

Nouns	English	Root	Spanish	Native Affixes
Grupo	Group	Grupo	Grupo	
Terorista	Terrorist	Terrorista	Terrorista	
Opisyal	Official	Opisyal	Oficial	
Lokal	Local	Local	Local	
Ahensiya	Agency	Ahensiya	Agencia	
Kandidato	Candidate	Kandidato	Candidato	
Teritoryo	Territory	Teritoryo	Territorio	
Particular	Particular	Particular	Particular	

Pondo	Fund	Pondo	Fondo	
Demokrasya	Democracy	Demokrasya	Democracia	
Partido	Party	Partido	Partido	
Lokalidad	Locality	Lokalidad	Localidad	
Asembliya	Assembly	Asembliya	Asamblea	
Hepe Ehekutibo	Chief executive	Heje Ejekutibo	Jefe Ejecutivo	
Kaso	Case	Kaso	Caso	
Kodigo pinal	Penal code	Kodigo pinal	Codigo final	
Selebrasyon	Celebration	Selebrasyon	Celebración	
semento	Cement	semento	Cemento	

Of the eighteen Hispanic borrowed nouns, three retained their Spanish spelling:

Grupo (Spanish GRUPO, English GROUP) retained its Spanish spelling;

Particular (Spanish PARTICULAR, English PARTICULAR), retained its Spanish spelling;

Partido (Spanish PARTIDO, English PARTY), retained its Spanish spelling.

The following 15 Hispanic borrowed nouns revealed the linguistic acculturation of orthographic nativization:

Terorista (Spanish TERRORISTA, English TERRORIST) changed rr to r;

Opisyal (Spanish OFICIAL, English OFFICIAL) changed f to p, c to s, and i to y;

Lokal (Spanish LOCAL, English LOCAL), changed c to k;

Ahensiya (Spanish AGENCIA, English AGENCY), changed g to h, c to s, and ia to iya;

Kandidato (Spanish KANDIDATO, English CANDIDATE), changed c to k;

Teritoryo (Spanish TERRITORIO, English TERRITORY), changed rr to r and io to yo;

Pondo (Spanish FONDO, English FUND), changed f to p;

Demokrasya (Spanish DEMOCRACIA, English DEMOCRACY), changed c to k, and cia to sya.

Lokalidad (Spanish LOCALIDAD, English LOCALITY), changed c to k;

Asembliya (Spanish ASAMBLEA, English ASSEMBLY), changed a to e and ea to iya;

Hepe Ehekutibo (Spanish JEFE EJECUTIVO, English CHIEF EXECUTIVE), changed j to h,

f to p, c to k and v to b;

Kaso (Spanish Caso, English CASE), changed c to k;

Kodigo pinal (Spanish CODIGO FINAL, English PENAL CODE), changed c to k, and f to p;

Selebrasyon (Spanish CELEBRACIÓN, English CELEBRATION), changed c to s, i to y, ó to o;

Semento (Spanish CEMENTO, English CEMENT), changed c to s.

## 2. VERBS BORROWED FROM SPANISH

Nouns	English	Root	Spanish	Native Affixes
Maka-kampanya	To campaign	Kampanya	Puadan hacer campaña	Maka-
Pagseguro	To secure	Seguro	Asegurarse	Pag-
Pag-diskwalipika	To disqualify	Diskwalipika	La descalificar	Pag-
Mo-koordinar	To coordinate	Koordinar	Se coordinar	Mo-
Mo-ukopar	To occupy	Okupar	Ocupar	Mo-
Pagselebrar	To celebrate	Selebrar	Celebrar	Pag-

The six verbs borrowed from Spanish changed their orthography and added native Cebuano Visayan affixes, as revealed in:

MAKA-KAMPANYA added prefix MAG- to the root KAMPANYA, a nativized respelling of the Spanish CAMPAÑA (English CAMPAIGN).

PAGSEGURO added the prefix PAG- to the root SEGURO, a nativized respelling of the Spanish ASEGURARSE

PAG-DISKWALIPIKA added the prefix PAG- to the root DISKWALIPIKA, a nativized respelling of the Spanish DESCALIFICAR.

MO-KOORDINAR added the prefix MO- to the root KOORDINAR, a nativized respelling of the Spanish COORDINAR.

MO-UKOPAR added the prefix MO- to the root UKOPAR, a nativized respelling of the Spanish OCUPAR.

PAGSELEBRAR added the prefix PAG- to the root SELEBRAR, a nativized respelling of the Spanish CELEBRAR.

## 3. ADJECTIVES BORROWED FROM SPANISH

Nouns	English	Root	Spanish	Native Affixes
Teroristang	terrorist	terrorista	terrorista	-ng
Politikanhong	political	politika	política	-n, -hong
Demokratiko	Democratic	Demokratiko	democrático	
Eksklusibo	Exclusive	Eksklusibo	exclusivo	
Engrande	Grandiose	Engrande	engrandé	
Kargado	Loaded	Kargado	cargado	
Kompidensyal	Confidential	Kompidensyal	confidencial	
Klaro	Clear	Klaro	Claro	
Mistryoso	Mysterious	Mistryoso	Misterioso	
Relihiyoso	Religious	Relihiyoso	Religioso	

Of the nine Hispanic borrowed adjectives, two nativized their spelling and added nativized affixes:

TERORISTANG added the suffix –ng to the root TERORISTA, with a nativized respelling of rr to r

POLITIKANHONG added the suffix –n and –hong to the root word POLITIKA, with a nativized respelling of í to i and c to k.

Of the nine Hispanic borrowed adjectives, seven nativized their orthography:

Demokratiko from Spanish DEMOCRÁTICO (English DEMOCRATIC), changing c to k and á to a;

Eksklusibo from Spanish EXCLUSIVO (English EXCLUSIVE) changing xc to eks and v to b;

Engrande from Spanish ENGRANDÉ (English GRANDIOSE), changing è to e;

Kargado from Spanish CARGADO (English LOADED), changing c to k;

Konpidensyal from Spanish CONFIDENCIAL (English CONFIDENTIAL), changing c to k, f to p and -tial to –syal;

Klaro from Spanish CLARO (English CLEAR), changing c to k;

Mistryoso from Spanish MISTERIOSO (English MYSTERIOUS), changing iosio to yoso.

There was no Hispanic borrowed adverb used in the two articles.

## CONCLUSIONS

Based on the findings of the study, which aimed to investigate the linguistic borrowing phenomenon by Cebuano Visayan through a lexical analysis of a textual data, the following conclusions were drawn.

1. The Hispanic borrowed words found in the texts composed of nouns, verbs, and adjectives. No Hispanic borrowed adverb was used in the articles.
2. Some Hispanic borrowed words simply retained their Spanish spelling.
3. Some Hispanic borrowed words in Cebuano Visayan are acculturated by generally nativizing their orthography, which definitely corresponds to nativized phonology, since Cebuano Visayan is a phonetic language, which means spelled as pronounced, and by adding native affixes, which is a clear process of lexical nativization.

4. Hispanic words borrowed in Cebuano Visayan are acculturated through lexical nativization.

## RECOMMENDATIONS

Based on the result of the study, the following recommendations were offered.

1. A parallel lexical investigation may be conducted in different genres of mass media, literary textualities, and communicative verbal translations as well as documents across the varied Philippine languages, to support the result of this study.
2. A monograph on nativized Hispanic borrowed words may be constructed.

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## REFERENCES

- Barjesteh, H. & Vaseghi, R. (2012). *Acculturation Model for L2 Acquisition: Review and Evaluation*. *Advances in Asian Social Science*, 2(4), 579-584.
- Cebuano (Binisaya). *Omniglot*. <https://www.omniglot.com/writing/cebuano.htm>.
- DILG: *Mipahimangno Batuk Extortion Activity sa mga Teroristang Grupo*. Chronicle of Dipolog Zamboanga del Norte, Volume no. 36, March 10-16, 2019, 4.
- Dworkin, S. (2010). *LEXICAL CHANGE*. In M. Maiden, J. Smith, & A. Ledgeway (Eds.), *The Cambridge History of the Romance Languages*, 585-605. Cambridge: Cambridge University Press. doi:10.1017/CHOL9780521800723.014
- Grant, A. (2014). *Lexical Borrowing*. *The Oxford Handbook of the Word*. DOI: 10.1093/oxfordhb/9780199641604.013.029.
- Haspelmath, M. (2009). *Lexical Borrowing: Concept and Issues*. Loanwords in the World's Languages. De Gruyter Mouton. <https://doi.org/10.1515/9783110218442.35>.

Hockett, C. (1958). *A Course in Modern Linguistics*. Mohan Primlani, Oxford and IBH Publishing Co.

Hoffer, B. (2005). *Language Borrowing Language Borrowing and the Indices of Adaptability and Receptivity*. Intercultural Communication Studies, XIV: 2. <https://web.uri.edu/iaics/files/05-Bates-L.-Hoffer.pdf>

*Women's Month Celebration, Gibuksan*. Chronicle of Dipolog Zamboanga del Norte, Volume no. 36, March 10-16, 2019, 4.

Zorc, David Paul (1977). *The Bisayan Dialects of the Philippines: Subgrouping and Reconstruction*. Pacific Linguistics Series C - No. 44. Canberra, Australia: Dept. of Linguistics, Research School of Pacific Studies, Australian National University. doi:10.15144/PL-C44. hdl:1885/146594. ISBN 0858831570.

# ASSOCIATION OF HEALTH LITERACY AND SELF-MEDICATION OF OVER-THE-COUNTER DRUGS AMONG FILIPINO PARENTS AGED 18-50 IN METRO MANILA, PHILIPPINES

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## ABSTRACT

The general objective of this study was to determine the association of health literacy levels and frequency of over-the-counter (OTC) drug self-medication among Filipino parents aged 18-50 years old in Metro Manila, Philippines. A quantitative descriptive research design was employed through an adapted online survey questionnaire for the data gathering process and IBM SPSS Statistics V26 as the main tool to perform descriptive statistics and Pearson's Correlation Coefficient. Out of the 285 Filipino parents who participated, 34 (11.9%) had inadequate, 45 (15.8%) had problematic, and 206 (72%) had sufficient health literacy levels. Results show that the participants sometimes take OTC drugs without a physician's prescription (169; 59.3%), confirm the practice of self-medication (169; 59.3%), and use different OTC drugs when self-medicating (173; 60.7%), while they never change the dosage during self-medication (180; 63.2%) and always check the expiration date (187; 65.6%) and instructions (173; 60.7%) of the OTC drugs before usage. The Pearson's Correlation Coefficient of -0.33 and p-value of 0.03 indicate a significant inverse relationship between the health literacy levels and frequency of OTC drug self-medication among the participants. Based on the results, the respondents who had sufficient health literacy levels were less likely to practice self-medication. Conversely, the respondents who had inadequate health literacy levels were more likely to perform self-medication. The enhancement of public health campaigns to provide more accessible and comprehensible health information, considering the health literacy level of individuals, particularly Filipino parents, is recommended to combat the increasing problem of self-medication of OTC drugs.

*Keywords: health literacy, over-the-counter drugs, self-medication, parents, Metro Manila, Philippines*

## INTRODUCTION

Self-medication has been a common practice to relieve illnesses and improve overall well-being. It encompasses the intake of drugs, supplements, and other forms of nutritional medication that can be acquired without the prescription of a physician (Lee, Chang, Hsu, Chi, Huang, & Yeh, 2017). However, unrestricted availability of these nonprescription drugs accounts for their misuse,

especially in cases influenced by inadequate knowledge and lack of exposure to correct information (Tesfamariam et al., 2019). Lower health literacy increases the prospect of compromised health status (Erdei, Barth, Fedor, & Takács, 2018). Thus, the increasing self-medication issue, particularly using over-the-counter (OTC) drugs, has become a public health problem worldwide (Helal & Abou-ElWafa, 2017). Factors such as advertisements on television or other media forms

used for pharmaceutical marketing promote these drugs, which mainly consist of pain relievers, cough suppressants, and antihistamines. Some of the promotional advertising in accessible media may be falsely interpreted by people, particularly those with low health literacy levels. Uneducated interpretation of these online or offline publications often leads people to assume that they can personally cure their illnesses at the confines of their homes by acquiring these drugs from the nearest drugstore or pharmacy without consulting a physician beforehand (Lazareva & Ogadyarova, 2015).

Over-the-counter (OTC) medicine or nonprescription medicine are drugs that can be obtained from a local pharmacy without requiring any prescription from a physician. They are regulated by the Food and Drug Administration (FDA) for their safety and efficacy before being released to the public market (Katzung, 2017). These OTC medications are considered safe given that the user has no allergies from a specific chemical or component in the drug. Proper directions are required to be followed from the FDA-approved label that is generally indicated on the packaging. Although they are labeled as safe by the FDA, various adverse effects may still occur. Melatonin is an OTC medication that is considered a sleep aid. This drug may give the user adverse effects such as dizziness, fatigue, and headaches the following day of waking up, even if proper instructions from the label were followed (Katzung, 2017).

Overdose is an excessive intake of a substance that may lead to lethal or toxic effects on the body. According to Catlin, Pechmann, & Brass (2015), novice consumers tend to risk overdosing on OTC medication due to their naive belief that they are relatively risk-free. These consumers often overlook the active ingredients contained in the drug and are commonly after its brand, cost, and effect before purchasing and consuming. An example of OTC medication misuse was the one that occurred in Nigeria involving a cough syrup containing codeine, a widely-used opiate in the country. A study conducted by Akande-Sholabi, Adisa, Ilesanmi, and Bello (2019) discovered that 11.0% of students studying medicine and pharmacy use cough syrup for recreational use, getting intoxicated instead of their intended purposes. This case shows that overdosing on OTC medication may lead to adverse effects.

According to Talbott Recovery (2020), the most current and commonly abused OTC drugs

include (1) cough and cold medicines (Dextromethorphan), (2) painkillers (Ibuprofen, Acetaminophen, etc.), (3) nasal decongestants (Pseudoephedrine), (4) motion sickness pills (Dimenhydrinate, Diphenhydramine, etc.), (5) caffeine pills, (6) laxatives, and (7) diet pills. These drugs are conveniently bought to initially bring temporary comfort to one's well-being. When misused in unusually high doses, these drugs may cause adverse effects that can be detrimental to one's health. Therefore, self-medication can be associated with the lack of health literacy regarding drug safety, frequency of usage, and dosage.

Parents are selected as respondents in this study as they are the ones who give their family, especially their children, medications when they fall ill at home (Mande, Tebandite, Marini, & Alworonga, 2018). According to Gohar, Khubaib, and Mehmood (2017), self-medication practiced by parents had high prevalence rates. Their data showed that the developed, developing, and underdeveloped countries experience significant levels of self-medication prevalence among parents.

## OBJECTIVES

This descriptive quantitative study generally aimed at determining the association of health literacy and self-medication of over-the-counter (OTC) drugs among Filipino parents aged 18-50 in Metro Manila, Philippines. Specifically, it sought to:

1. Find out the sociodemographic characteristics of Filipino parents aged 18-50 in Metro Manila, Philippines;
2. Ascertain the frequency of OTC drugs self-medication among Filipino parents aged 18-50 in Metro Manila, Philippines;
3. Evaluate the level of health literacy among Filipino parents aged 18-50 in Metro Manila, Philippines;
4. Assess the attitudes of Filipino parents aged 18-50 towards OTC drugs; and
5. Determine the correlation between the frequency of OTC drugs self-medication and health literacy levels among Filipino parents aged 18-50 in Metro Manila, Philippines.



## Hypotheses

**Null hypothesis:** There is no significant correlation between the level of health literacy and self-medication of over-the-counter (OTC) drugs among Filipino parents aged 18-50 in Metro Manila, Philippines.

**Alternative hypothesis:** There is a significant correlation between the level of health literacy and self-medication of over-the-counter (OTC) drugs among Filipino parents aged 18-50 in Metro Manila, Philippines.

## REVIEW OF RELATED LITERATURE

### Over-the-Counter Drugs

There is a required criterion to make medicines available to be purchased over the counter based on the patient's diagnosis and the drug's efficacy and safety (Aronson, 2004). In the diagnosis, the patient must have an educated idea of what illness they are experiencing. Otherwise, the patient can seek the counsel of the pharmacist available for their knowledge of over-the-counter (OTC) drugs. Efficacy, which refers to the drugs' capacity to produce the intended effect or outcome, is essential in making OTC drugs. However, countries like the United Kingdom continue to allow some medications to be sold over the counter without considering the drug's efficacy if it is deemed safe to use. Aronson justified that the lack of efficacy will defy the drug's purpose no matter how safe it is. As for safety, it was determined that medicines that can cause severe or life-threatening adverse effects must not be made readily available for purchase over the counter. For over-the-counter drugs, little to no adverse effects must be produced as people can easily obtain them without a physician's prescription. Thus, the benefits of these drugs must supersede their potential harm.

### The Practice of Self-Medication

Self-medication is the treatment of self-diagnosed diseases at the patient's discretion (World Health Organization, 2000). Responsible self-medication practices are observed by accurately determining symptoms, choosing the appropriate medication for the treatment and its regimen, and monitoring consistently for the emergence of any side effects. Other factors to be considered would be the medical history, existing comorbidities, and other medications with ongoing intake. These responsible practices lead to benefits such as providing direct and swift access

to a wider variety of treatment, encouraging patient accountability in health management, reducing work absences due to minor symptoms, and limiting wastage of medical resources on treating minor diseases or conditions.

Consequently, Ruiz (2010) noted that improper self-medication practices had begun to emerge and pose risks. Such risks may result in erroneous self-diagnosis, postponement in check-ups from medical practitioners, severe adverse reactions, drug dependency or addiction, a cover-up of an underlying undiagnosed illness, and incorrect administration and dosage of treatment.

An increase in improper self-medication worldwide has significantly raised international concerns and impacted developing nations. Shaghagi, Asadi, and Allahverdipour (2014) examined the prevalence and increasing burden of self-medication practices from India, Iran, Malaysia, Nigeria, Palestine, Ethiopia, and Mexico. Studies from developing countries were analyzed and compared. Most of them reported choosing to self-medicate due to mild ailments and costly doctor visits. Moreover, it was noted that analgesics and anti-infection drugs were the two most used for self-medication.

### Foreign Misuse of OTC Medication

Several factors involving the misuse of OTC medication like pain relievers and cough or cold medicines were recognized by the American Academy of Family Physicians (AAFP). The participation and possible collaboration of factors, namely (1) overestimating the safety of OTC drugs and setting aside of their adverse effects, (2) lacking knowledge and comprehension regarding the intake of combination medications, (3) misreading or misunderstanding labels indicated on drug packaging and miscalculating the recommended dose, (4) keeping the information of taking OTC drugs to physicians during consultations, and (5) self-diagnosing inaccurately can build up to the misuse of OTC drugs (Pineles & Parente, 2013).

An example of OTC medication misuse involving codeine-based products is seen in Akande-Sholabi, Adisa, Ilesanmi, and Bello's (2019) cross-sectional study, consisting of 520 medical and pharmacy students in Nigeria. They concluded that the participants who used codeine-based products for non-medical uses had insufficient knowledge on the perception of risks in this product and were influenced by peer pressure.

In a study by Lee, Chang, Hsu, Chi, Huang, and Yeh (2017) on Taiwanese adolescents, results

showed that about half of the respondents had been exposed to the concepts revolving around self-medication, while one-third had been inappropriately practicing it. The authors stated that it is critical to assist consumers in making informed decisions, especially those who lack proper knowledge. These people may be guided by supplemental aids that are easily understandable, like pamphlets and infographics. Moreover, discussing medication practices at home with healthcare providers may also be a step to improve medication knowledge.

### **Health Literacy and Self-Medication of Over-the-Counter Drugs in the Philippines**

The advancements in technology had permitted the easy accessibility of information concerning health and medication. However, fully understanding and discerning its contents may pose difficulties for many individuals, requiring a certain level of knowledge, thus becoming a hindrance (Jeon & Lee, 2020).

In Bulario et al.'s (2018) study, the adverse effects and drug interactions are often rooted in the practice of self-medication, wherein 42.05% of their respondents prevalently used drugs at their own pace. Among them, majority of the sociodemographic factors include mothers. The most common reason for mothers to administer drugs obtained from their relatives and community pharmacies to their children was due to coughing. Their increased misuse of drugs was due to their lower health literacy compared to healthcare professionals. This is attributed to the limited understanding of pharmacological mechanisms, the basic morphology and mode of action of pathologic microorganisms, and the side effects linked on a short or long-term basis.

The crisis of drug misuse not only burdens physicians and healthcare workers such as medical technologists, but it is shared with the whole Filipino society. The burden is influenced by cultural preferences and beliefs, such as finding a specific remedy from a self-limiting symptom, factoring in the assumption that the more expensive the drug, the more effective it is, and the inconsistency of drug use when symptoms start to subside (Dy, n.d.). Moreover, there is the widespread Filipino concept of *hiyang* or being accustomed to certain drugs that affects people's perceived efficacy of the medicine and leads to their repeated use (Lorenzo et al., 2019).

## **THEORETICAL FRAMEWORK**

This study is based on the socioecological model and the principles of socioecology and critical pedagogy for health promotion health literacy interventions by Dawkins-Moultin, McDonald, and McKyer (2016), which describes that various health environments such as individual, interpersonal, community, or societal can influence health literacy. This model explains how agencies mediate health literacy and health outcomes that might be factoring in this relation.

Another model based on the social-ecological model for social sciences by McCormack, Thomas, Lewis, and Rudd (2017) describes that health environment is divided into five ecological levels: individual, interpersonal, organizational, community, and macroeconomic policy. All levels contain determinants that might affect health literacy and patient engagement, which views these as two integrated constructs.

## **METHODOLOGY**

### **Research Design**

A quantitative descriptive research design was employed in this study that primarily describes the association of health literacy and self-medication of over-the-counter drugs among Filipino parents aged 18-50 in Metro Manila, Philippines.

A pilot testing applying the research instrument or survey questionnaire was done before the actual data gathering procedure. It involved 15 participants that met the inclusion criteria of this study to test the internal consistency or reliability of the scale, particularly for the European Health Literacy Survey Questionnaire (HLS-EU-Q16). This questionnaire's reliability involving the 15 respondents results in a Cronbach's Alpha of 0.90, which indicates a very good level of reliability (Ursachi, Horodnic, & Zait, 2015).

### **Subjects and Study Site**

In this study, the correlation between the frequency of OTC drug self-medication and health literacy levels was sought throughout the sixteen (16) cities and one (1) municipality of Metro Manila, Philippines, namely the cities of Caloocan, Las Piñas, Makati, Malabon, Mandaluyong, Manila, Muntinlupa, Marikina, Navotas, Parañaque, Pasay, Pasig, Quezon City, San Juan, Taguig, and Valenzuela, and the municipality of Pateros.

The sociodemographic and geographic characteristics of the participants were the key factors in forming the inclusion criteria for this study. The inclusion criteria include (1) the target respondents must be Filipino parents within the age range of 18-50 years old, (2) they should be permanently residing in Metro Manila, Philippines, (3) they must have access to the internet and other social media platforms for data gathering, and that (4) they have read, understood, and signed the informed consent form given by the researchers before the actual data gathering process. Contrarily, the target respondents were opted to withdraw or be excluded from the study if at least one (1) inclusion criterion was not met.

The sample size for this study was determined based on the 12,787,669-household population of Metro Manila in 2015, which was the most recent data to date. (Philippine Statistics Authority, 2016). Using the Sample Size Calculator by Raosoft, Inc., the researchers first used a 5% margin of error, 95% confidence level, 12,787,669 population size, and 50% response distribution, which generated a recommended minimum sample size of 385. Due to time constraints and low reach of targeted online respondents, the margin of error was adjusted to 6% while maintaining the confidence level and response distribution to garner a minimum of 267 respondents.

This study made use of purposive sampling to select its participants. This technique was chosen because the respondents must first meet the inclusion criteria before participating in the survey. Since the purposive sampling has no formula that can allocate an equal division of representative samples for each target locations, the formula for stratified random sampling [sample size of subgroup = (total sample size/total population size) x population of subgroups] was used for this sole purpose. After the sample per city was computed and rounded off, the total sample size was adjusted to 268. The target sample size per city used in this study is shown below.

**Table 1. Sample Size Per City of Metro Manila, Philippines**

City Subgroups from Metro Manila Household Population		
City	Household Population	Sample Size Per City
Caloocan	1,581,025	33
Las Piñas	587,675	12
Makati	579,433	12
Malabon	364,283	8
Mandaluyong	377,850	8
Manila	1,763,348	37
Muntinlupa	481,762	10
Marikina	448,893	9

Navotas	249,176	5
Parañaque	663,733	14
Pasay	412,497	9
Pasig	753,030	16
Quezon City	2,919,657	61
San Juan	121,197	3
Taguig	801,143	17
Valenzuela	619,324	13
Municipality of Pateros	63,643	1
<b>Total</b>	<b>12,787,669</b>	<b>268</b>

### Data Measure/Instrumentation

This study utilized three (3) survey questionnaire forms that were combined and adapted as its main research instrument in gathering data pertaining to the participants' health literacy and self-medication practices.

The primary questionnaire used, the Rational Use of Drugs (RUD) Questionnaire, was based on a study conducted by Abacigil, Turan, Adana, Okyay, and Demirci (2019) entitled "Rational Use of Drugs Among Inpatients and its Association with Health Literacy." This instrument containing 20 questions established how drugs were used according to the patients' health literacy levels.

The HLS-EU-Q16 questionnaire regarding health literacy was based on a study conducted by Juvinyà-Canal, Suñer-Soler, Boixadós Porquet, Vernay, Blanchard, and Bertran-Noguer (2020) entitled "Health literacy among Health and Social Care University Students." This questionnaire containing 16 questions answered through an ordinal scale ranging from "very easy" to "very difficult" was used to quantify the respondents' health literacy levels into rankings. Participants were ranked based on their scores from this assessment. The responses were dichotomized and scored into 1 for every "very easy" to "easy" answer and 0 for each "difficult" to "very difficult" answer. Scores of 0-8 were marked inadequate, 9-12 were labeled problematic, and 13-16 meant that the respondents had sufficient health literacy. This instrument was validated using Cronbach's Alpha to measure the internal consistency between the items in the scale. The resulting Cronbach's Alpha is 0.864, indicating a very good reliability level (Ursachi, Horodnic, & Zait, 2015).

The Health Literacy Instrument for Adults (HELIA) questionnaire regarding self-medication practices was based on a study conducted by Mousaeipour, Jaber, and Negahban (2018) entitled "The Association Between Health Literacy and Self-Medication Behaviors Among Women Referred to Comprehensive Health Care Centers in Sirjan, Iran, in 2017." This questionnaire was used to identify the relationship between self-

medication habits and the respondents' health literacy in accordance with other influencing factors. Open-ended questions were also provided to determine the causes of self-medication.

### **Data Gathering Procedure**

The recruitment process of participants was voluntary and done through online means, particularly by posting the call for respondents that included the link to the online survey questionnaire on social media sites, as it was the most appropriate method in the circumstances of the COVID-19 pandemic. The link included the inclusion and exclusion criteria and informed consent form that the participants must read, understand, and agree on to ensure data confidentiality and the accuracy and reliability of the results.

This method offered flexibility in which respondents answered at their own pace. The answered forms were then saved and archived in a restricted Google Drive for confidentiality, backup storage, and data analysis purposes.

### **Ethical Consideration**

The Intellectual Property Rights of the owners of the adapted research tools were respected, and the terms and conditions stated by the rightful owners were duly followed.

The participants of this study firstly agreed on the informed consent form presented to them that included the inclusion and exclusion criteria, risks, benefits, privacy and confidentiality, and their utmost voluntariness to participate in the study before proceeding with the survey. The participants' identities were kept confidential alongside their personal data and profiles. The data were available only to the researchers and the statistician for review, verification, and data analysis. The data of the respondents will then be permanently deleted after five years of storage.

The study was submitted and ethically approved by the University of Santo Tomas' Faculty of Pharmacy Research Ethics Committee.

### **Data Analysis**

The data gathered were analyzed through IBM SPSS Statistics V26. For the sociodemographic characteristics, descriptive statistics, particularly the measures of frequency (e.g., frequency and percent), were used to describe and significantly sum up the data to observe possible patterns that may surface from the collated data. The results of the descriptive statistics were represented through tables and graphs. This type of statistics was only limited to describing the collected

data and did not allow the generation of conclusions. Thus, inferential statistics were used to support the data of this study. These statistics allowed the creation of generalizations or conclusions regarding the target population. In this study, the Pearson's Correlation Coefficient and p-value were used to determine the association of OTC drug self-medication and health literacy levels of Filipino parents aged 18-50 in Metro Manila, Philippines.

## **RESULTS AND DISCUSSION**

### **Sociodemographic Characteristics of Filipino Parents Aged 18-50 in Metro Manila, Philippines**

Table 2 shows the summary of the sociodemographic characteristics of the participants. One hundred twenty-four respondents (43.51%) were 42-50 years old, 73 (25.62%) were 34-41 years old, 62 (21.75%) were 26-33 years old, and 26 (9.12%) were 18-25 years old. Out of the 285 respondents, most were females, which made up 231 (81.05%), while males comprised 54 (18.95%). This is associated with Bulario et al.'s (2018) study, wherein they indicated that in Manila, most of the sociodemographic factors include mothers. It may be deduced that the health literacy of the parents, especially mothers, plays a critical role in perceiving self-medication of over-the-counter drugs.

Most of the respondents (217; 76.14%) were married, 38 (13.33%) were single parents, 16 (5.61%) had split-up, and 14 (4.91%) were widowed. According to Trivedi, Sareen, and Dhyani (2009), those who had split up and were widowed are prone to suffer from various psychological stressors, therefore lacking motivation regarding health literacy and need close attention upon their health literacy interventions.

Most of the respondents had one child (111; 38.95%), 103 (36.14%) had two children, 53 (18.60%) had three children, and 18 (6.32%) had four or more children.

A great part of the respondents resided in Manila City (60; 21.05%), while only 1 (0.35%) lived in the Municipality of Pateros.

Two hundred fourteen (75.09%) were college graduates, 29 (10.18%) pursued a post-baccalaureate degree, 26 (9.12%) were college undergraduates, 10 (3.51%) were high school graduates, 4 (1.40%) were high school undergraduates, and 2 (0.70%) were elementary graduates. In conjunction with the results, a study conducted

by Jansen, Rademakers, Waverjin, Verheji, Osborne, and Heijmans (2018) on the association of health literacy to educational attainment showed that individuals who scored higher on the health literacy questionnaire had high educational attainment levels in terms of comprehending health information.

Majority of the respondents (191; 67.02%) were employed, 60 (21.05%) were self-employed, 28 (9.82%) were unemployed, and 6 (2.11%) answered others, which consisted of other employment statuses aside from the choices given. Based on the study of Svendsen, Damgaard, Bak, Bøggild, Svendsen, and Berg-Beckhoff (2021), unemployed status has higher odds of inadequate health literacy competencies.

One hundred sixteen (40.70%) respondents had a monthly income of Php. 23,001 - Php. 47,000. This income range is indicative of a lower middle income, which is between 2 and 4 times the poverty line, according to the 2018 Family Income and Expenditure Survey (FIES). The lower-middle-income class solely spends on health for only about 2.4% of their monthly income, pushing them to purchase a more affordable alternative of self-medication without proper knowledge, review, and literacy of its effectiveness (Albert, Abrigo, Quimba, & Vizmanos, 2020).

**Table 2. Sociodemographic Characteristics of the Target Respondents**

Variables	Frequency (n = 285)	Percentage (100%)
<b>Age Range</b>		
18 to 25 years old	26	9.12%
26 to 33 years old	62	21.75%
34 to 41 years old	73	25.62%
42 to 50 years old	124	43.51%
<b>Sex</b>		
Female	231	81.05%
Male	54	18.95%
<b>Civil Status</b>		
Single	38	13.33%
Married	217	76.14%
Split-up	16	5.61%
Widowed	14	4.91%
<b>Number of Children</b>		
One	111	38.95%
Two	103	36.14%
Three	53	18.60%
Four or more	18	6.32%
<b>Permanent Home Location</b>		
Caloocan	35	12.28%
Las Piñas	22	7.72%
Makati	16	5.61%
Malabon	5	1.75%
Mandaluyong	6	2.11%
Manila	60	21.05%
Muntinlupa	9	3.16%

Marikina	8	2.81%
Navotas	8	2.81%
Parañaque	20	7.02%
Pasay	7	2.46%
Pasig	10	3.51%
Quezon City	56	19.65%
San Juan	4	1.40%
Taguig	14	4.91%
Valenzuela	4	1.40%
Municipality of Pateros	1	0.35%
<b>Educational Attainment</b>		
Elementary Graduate	2	0.70%
High School Undergraduate	4	1.40%
High School Graduate	10	3.51%
College Undergraduate	26	9.12%
College Graduate	214	75.09%
Post-Baccalaureate	29	10.18%
<b>Employment Status</b>		
Unemployed	28	9.82%
Employed	191	67.02%
Self-Employed	60	21.05%
Others	6	2.11%
<b>Monthly Income</b>		
Less than Php. 11,000	33	11.58%
Php. 11,000 - Php. 23,000	23	8.07%
Php. 23,001 - Php. 47,000	116	40.70%
Php. 47,001 - Php. 82,000	71	24.91%
Php. 82,001 - Php. 140,000	25	8.77%
Php. 140,001 - Php. 230,000	8	2.81%
More than Php. 230,001	9	3.16%

### Frequency of Over-the-Counter Drugs Self-Medication Among Filipino Parents Aged 18-50 in Metro Manila, Philippines

Table 3 shows the frequency of OTC drug self-medication of the participants. Results show that they sometimes take OTC medications without the physician's prescription (169; 59.3%), practice self-medication using OTC drugs (169; 59.3%), and use different OTC drugs when they self-medicate (173; 60.7%). However, when they self-medicate, they answered that they never change the dosage of the OTC medication (180; 63.2%). Sufficient knowledge is needed when using OTC medication, especially its dosage, to prevent serious side effects such as antibiotic resistance, hypersensitivity, skin problems, and allergy (Bennadi, 2013).

Regarding good attitudes about handling OTC drugs, the participants always check the expiration date (187; 65.6%) and read the instructions indicated on the drug's packaging before they self-medicate (173; 60.7%). Expiry dates on the medications are a conservative estimate by the manufacturers to ensure the quality and pharmacological efficacy of the drugs. According to Swaroop and Varun (2011), the expiration date does not indicate a medication's loss of potency and is no longer effective, becoming harmful. It is simply a date required by law set at two to three years after

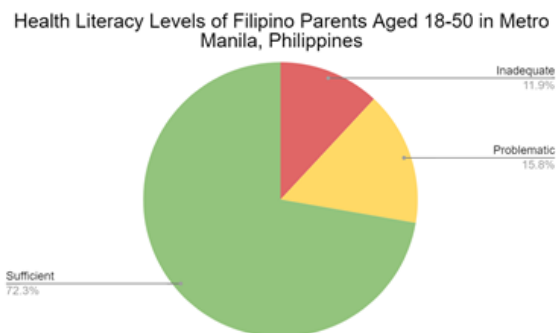
the manufacture date of new medicines. When stored under proper conditions, many drugs retain 90% of their potency for at least five years after the label's expiration date; sometimes, longer. Specific instructions in the form of a label on the bottle or handout inside the medication packet are required to be followed for safe self-medication.

**Table 3. Frequency of OTC drugs Self-Medication Among Filipino Parents Aged 18-50 in Metro Manila, Philippines**

Variables	Response	Frequency (n = 285)	Percentage (100%)
1. Do you take OTC medication without the prescription of your doctor?	Always	17	6.0%
	Mostly	73	25.6%
	Sometimes	169	59.3%
	Never	26	9.1%
2. Do you confirm that you are practicing self-medication using OTC drugs?	Always	13	4.6%
	Mostly	73	25.6%
	Sometimes	169	59.3%
	Never	30	10.5%
3. Do you use different OTC medications or drugs when you self-medicate?	Always	8	2.8%
	Mostly	26	9.1%
	Sometimes	173	60.7%
	Never	78	27.4%
4. Do you change the dosage of OTC medication when you self-medicate?	Always	18	6.3%
	Mostly	18	6.3%
	Sometimes	69	24.2%
	Never	180	63.2%
5. Do you check for the expiring date of the OTC medications you use when you self-medicate?	Always	187	65.6%
	Mostly	57	20.0%
	Sometimes	26	9.1%
	Never	15	5.3%
6. Do you look through the instructions written on the packaging of the OTC medication/drug when you self-medicate?	Always	173	60.7%
	Mostly	63	22.1%
	Sometimes	35	12.3%
	Never	14	4.9%

### Level of Health Literacy Among Filipino Parents Aged 18-50 in Metro Manila, Philippines

Based on the 285 respondents, 34 (11.9%) had inadequate, 45 (15.8%) had problematic, and 206 (72.3%) had sufficient health literacy levels.



**Figure 1. Health Literacy Levels of Filipino Parents Aged 18-50 in Metro Manila, Philippines**

The health literacy levels were determined using the HLS-EU-Q16 questionnaire. The values per question were dichotomized and scored into 1 for every “very easy” to “easy” answer and 0 for each “difficult” to “very difficult” answer. Sums that range from 0-8 are interpreted as inadequate, 9-12 as problematic, and 13-16 as sufficient health literacy levels (Juvinyà-Canal, Suñer-Soler, Boixadós Porquet, Vernay, Blanchard, & Bertran-Noguer, 2020). In conjunction with the results, a study conducted by Muflih, Bashir, Khader, and Karasneh (2020) on how self-medication is influenced by health literacy showed that inappropriate practices of self-medication were lowered when the health literacy levels increased.

### The Attitudes of Filipino Parents Aged 18-50 in Metro Manila, Philippines Towards Over-the-Counter Drugs

Table 4 shows the attitude of the respondents towards OTC drugs. Two hundred seventy-five (96.49%) stash drugs for future use. Two hundred fifty-six (89.82%) had none or 1 to 5 packages of leftover medications at home. One hundred sixty-one (56.49%) had no unopened medication containers that expired in their home. Two hundred fifty (87.72%) stored their drugs that do not have specific instructions for storage at a room temperature of 37°C in a dry and sanitary place. Two hundred seventy-nine (97.89%) stored their drugs that do not have specific instructions for storage at cold temperatures in a refrigerator. Two hundred eighty (98.25%) checked the expiration date and therapeutic effects to combat illness. This is in line with Dy's (n.d.) study that proper health authorities are commonly the ones being relied on to prevent any detrimental effects such as resistance to the drugs.

Two hundred nine (73.33%) considered a physician/medical doctor as a source of information in case a leftover drug has been used at home. One hundred ninety-four (68.07%) did not ask for nonprescription drugs even at the absence of illness. One hundred sixty (56.14%) asked for nonprescription drugs based on the advice of family members and friends. It can then be inferred that social factors play a significant role in the parents' view of OTC drugs, as they tend to rely on recommendations from family, friends, and even neighbors (Rahmawati & Bajorek, 2017). This can also be correlated with Lorenzo et al.'s (2019) study wherein the concept of *hiyang* or being accustomed in Filipino culture is evident in terms of recommending and using such drugs.

Two hundred seven (72.63%) tended to buy doctor-prescribed drugs from pharmacies. Two hundred seventeen (76.14%) asked a physician/medical doctor first regarding their health problems. One hundred sixty-three (57.19%) promoted the drugs they intake to individuals with similar complaints. Two hundred fifty-four (89.12) told their physician about health ailments and past medication. Two hundred fifty-eight (90.53%) consumed their prescribed medications on the duration that the physicians instructed. Two hundred fourteen (75.09%) practiced self-treatment of diseases or complications through available drugs at their homes. Two hundred seven (72.63%) took vitamins/mineral supplements daily. One hundred seventy-one (60.00%) experienced no or other side effects aside from inflammation when taking medicines. One hundred seventy-eight (62.46%) had used commercially advertised medical products to treat existing complications and illnesses. This reinforces Lazareva and Ogadyarova's (2015) study wherein factors such as television commercials and pharmaceutical marketing influences a parent's decision-making.

Two hundred thirty-six (82.81%) disclosed information about food and drug allergies to health professionals. Lastly, two hundred four (71.58%) had taken drugs without any medical examinations.

**Table 4. Distribution of the Attitudes of the Respondents Towards Over-the-Counter Drugs**

Variables		Frequency (n = 285)	Percentage (100%)
1. What do you do with leftover drugs from prior medication?	Handing the drugs over to a healthcare facility*	10	3.51%
	Stashing drugs for use in the future when needed	275	96.49%
2. How many leftover medications do you have in your home?	None or 1-5 packages*	256	89.82%
	6 packages and above	29	10.18%
3. How many unopened medication containers are expired in your home?	None*	161	56.49%
	At least one or more	124	43.51%
4. Where do you store drugs that do not have specific instructions for storage temperature?	At room temperature or 37° C in a dry and sanitary place*	250	87.72%
	Refrigerator or freezer	35	12.28%
5. Where do you store drugs that have specific instructions for storage at cold temperatures?	Freezer	6	2.11%
	Refrigerator*	279	97.89%

6. What are the factors you consider when using leftover medications at home?	Checking the expiration date and therapeutic effects to combat illness*	280	98.25%
	Disregard and continue intake	5	1.75%
7. What are your sources of information in case of a leftover drug having been used at home?	Physician/medical doctor*	209	73.33%
	Non-physician/medical doctor (e.g., family members, social media, etc.)	76	26.67%
8. Do you ask for non-prescription drugs even in the absence of illness?	Yes	91	31.93%
	No*	194	68.07%
9. Do you ask for non-prescription drugs based on the advice of family members and friends?	Yes	160	56.14%
	No*	125	43.86%
10. Do you tend to not buy doctor-prescribed drugs from pharmacies?	Yes	78	27.37%
	No*	207	72.63%
11. Who is the first person you consult for health problems?	Physician/medical doctor*	217	76.14%
	Others	68	23.86%
12. Do you promote the drugs you intake to individuals who have similar complaints?	Yes	163	57.19%
	No*	122	42.81%
13. Do you tell your physician about health ailments and past medication?	Yes*	254	89.12%
	No	31	10.88%
14. Until when do you use the prescribed medications?	As instructed by the physician*	258	90.53%
	Until discomfort or symptoms go away	27	9.47%
15. Do you practice self-treatment of diseases/complications using the available drugs at your home?	Always	41	14.39%
	Sometimes	214	75.09%
	Never*	30	10.53%
16. How often do you take vitamins/mineral supplements?	Never	33	11.58%
	Daily*	207	72.63%
	Weekly	33	11.58%
	Monthly	12	4.21%
17. Where does the inflammation for medication use and side effects appear on your body? (If applicable)	Face	81	28.42%
	Extremities	33	11.58%
	Others	171	60.00%
18. Have you ever used commercially advertised medical products to treat existing complications and illnesses?	Yes	178	62.46%
	No*	107	37.54%
19. Do you disclose any information about certain food and drug allergies to health professionals?	Yes*	236	82.81%
	No	49	17.19%
20. Have you ever taken drugs without any medical examinations?	Yes	204	71.58%
	No*	81	28.42%

Note: \*Refer to positive attitudes about rational use of over-the-counter drugs

### The Correlation Between the Frequency of Over-The-Counter Drugs Self-Medication and Health Literacy Among Filipino Parents Aged 18-50 in Metro Manila, Philippines

Table 5 shows the association of the respondents' frequency of OTC drug self-medication with their health literacy levels. The Pearson's correlation indicates the association between the two variables. A correlation of -0.33 indicates a negative or inverse correlation, which means that if one variable increases, the other decreases. A p-value of 0.03, which is less than 0.05, shows a significant relationship between the two variables. The values convey a weak negative relationship between the frequency of OTC drug self-medication to the health literacy levels of the respondents. Generally, if the respondents had sufficient or high health literacy levels, they were less likely to self-medicate. However, if the respondents had inadequate or low health literacy levels, they were more likely to practice self-medication.

It was also observed that most of the respondents had sufficient health literacy levels and were able to obtain information about OTC drugs through consulting a physician. Most of them were also able to identify and follow the instructions and dosage indicated on the packaging. In conjunction with these results, a study conducted by Rao, Velhal, and Khismatrao (2016) entitled "Patient's Comprehension of Prescriptions at Municipal Urban Health Centre, Mumbai" stated that those with higher levels of health literacy understood the appropriate dosage levels.

**Table 5. Correlation of the Respondents' Frequency of OTC Drug Self-Medication and Health Literacy Levels**

Computed Value	P-value	Result	Interpretation
-0.33	0.03	Significant	There is a significant relationship between the two.

Table 5.1 and the succeeding parts state the descriptive analysis supporting the findings in Table 5. Table 5.1 shows the relationship between the frequency of self-medication and the health literacy levels of the respondents. The majority of the three levels of health literacy, inadequate (16; 47.2%), problematic (27; 60.0%), and sufficient (126; 61.2%), had answered that they sometimes take medication without the doctor's prescription. They also admit to sometimes practicing self-medication with frequencies of 16 (47.1%), 30 (66.7%), and 123 (59.7%), respectively. When they self-medicate, they also sometimes use different medications with frequencies of 21

(61.8%), 28 (62.2%), and 124 (60.2%), respectively. In changing dosages when self-medicating, most of the respondents responded that they never practice this. As for checking the expiration dates and reading the instructions when self-medicating, most of them answered that they always do these practices.

**Table 5.1. Relationship Between Self-Medication Behaviors and Health Literacy Levels of Filipino Parents Aged 18-50 in Metro Manila, Philippine**

Variables	Response	Health Literacy Levels		
		Inadequate (n = 34; 11.9%)	Problematic (n = 45;	Sufficient (n = 206; 72.3%)
1. Do you take OTC medication without the prescription of your doctor?	Always	6 (17.6%)	2 (4.4%)	9 (4.4%)
	Mostly	6 (17.6%)	13 (28.9%)	54 (26.2%)
	Sometimes	16 (47.2%)	27 (60.0%)	126 (61.2%)
	Never	6 (17.6%)	3 (6.7%)	17 (8.2%)
2. Do you confirm that you are practicing self-medication using OTC drugs?	Always	4 (11.8%)	0 (0.0%)	9 (4.4%)
	Mostly	8 (23.5%)	12 (26.7%)	53 (25.7%)
	Sometimes	16 (47.1%)	30 (66.7%)	123 (59.7%)
	Never	6 (17.6%)	3 (6.6%)	21 (10.2%)
3. Do you use different OTC medications or drugs when you self-medicate?	Always	1 (2.9%)	1 (2.2%)	6 (2.9%)
	Mostly	2 (5.9%)	5 (11.1%)	19 (9.2%)
	Sometimes	21 (61.8%)	28 (62.2%)	124 (60.2%)
	Never	10 (29.4%)	11 (24.5%)	57 (27.7%)
4. Do you change the dosage of OTC medication when you self-medicate?	Always	1 (2.9%)	6 (13.3%)	11 (5.3%)
	Mostly	2 (5.9%)	3 (6.7%)	13 (6.3%)
	Sometimes	12 (35.3%)	16 (35.6%)	41 (20.0%)
	Never	19 (55.9%)	20 (44.4%)	141 (68.4%)
5. Do you check for the expiring date of the OTC medications you use when you self-medicate?	Always	21 (61.8%)	33 (73.3%)	133 (64.5%)
	Mostly	6 (17.6%)	9 (20.0%)	42 (20.4%)
	Sometimes	3 (8.8%)	1 (2.2%)	22 (10.7%)
	Never	4 (11.8%)	2 (4.5%)	9 (4.4%)
6. Do you look through the instructions written on the packaging of the OTC medication/drug when you self-	Always	19 (55.9%)	28 (62.2%)	126 (61.2%)
	Mostly	8 (23.5%)	8 (17.8%)	47 (22.8%)
	Sometimes	3 (8.8%)	8 (17.8%)	24 (11.6%)
	Never	4 (11.8%)	1 (2.2%)	9 (4.4%)

Table 5.2 shows the cross-tabulation on how the respondents identify the medication dosage when they self-medicate when grouped according to their health literacy levels. The majority of the respondents who had inadequate, problematic, and sufficient health literacy levels were likely to follow the instructions on the packaging of the medication as their dosage when they self-medicate with frequencies of 25 (73.5%), 35 (77.8%), and 156 (75.7%), respectively.



**Table 5.2. Cross Tabulation on the Respondents' Identification of the Medication's Dosage and Their Health Literacy Levels**

Variables	Response	Health Literacy Levels		
		Inadequate (n = 34; 11.9%)	Problematic (n = 45; 15.8%)	Sufficient (n = 206; 72.3%)
How do you identify the dosage of the medication when you self-medicate?	Follow the instructions on the packaging of the medication	25 (73.5%)	35 (77.8%)	156 (75.7%)
	Ask the pharmacist	7 (20.6%)	5 (11.1%)	42 (20.4%)
	Ask family members and friends	2 (5.9%)	1 (2.2%)	3 (1.5%)
	Experiment on your own based from past experiences	0 (0.0%)	4 (8.9%)	5 (2.4%)

Table 5.3 shows the cross-tabulation on where the respondents get the information on how to store self-medicating drugs in their homes when grouped according to their health literacy levels. Most of the respondents who had inadequate, problematic, and sufficient health literacy levels were likely to follow the instructions on the packaging of the medication on how to store self-medicating drugs in their homes, with frequencies of 25 (73.5%), 29 (64.4%), and 150 (72.8%), respectively.

**Table 5.3. Cross Tabulation on Where the Respondents Get the Information on How to Store Self-Medicating Drugs in Their Home and Their Health Literacy Levels**

Variables	Response	Health Literacy Levels		
		Inadequate (n = 34; 11.9%)	Problematic (n = 45; 15.8%)	Sufficient (n = 206; 72.3%)
Where do you get your information about how to store self-medicating drugs in your home?	Follow the instructions on the packaging of the medication	25 (73.5%)	29 (64.4%)	150 (72.8%)
	Ask the pharmacist	8 (23.5%)	8 (17.8%)	40 (19.4%)
	Ask family members and friends	1 (3.0%)	1 (2.2%)	6 (2.9%)
	Experiment on your own based from past experiences	0 (0.0%)	7 (15.6%)	10 (4.9%)

Table 5.4 shows the cross-tabulation on what made the respondent change their dosage of medication/drugs during their self-medication when grouped according to their health literacy levels.

Most of the respondents from the three health literacy levels had improvement of symptoms as the reason why they change their dosage of medication/drugs that they use during their self-medication with frequencies of 20 (58.8%), 23 (51.1%), and 114 (55.3%), respectively.

**Table 5.4. Cross Tabulation on what Made the Respondent Change Their Dosage of Medication/Drugs that They Use During Their Self-Medication and Their Accessibility to Health Literacy**

Variables	Response	Health Literacy Levels		
		Inadequate (n = 34; 11.9%)	Problematic (n = 45; 15.8%)	Sufficient (n = 206; 72.3%)
What made you change the dosage of your medication/drugs that you use to self-medicate?	Worsening of symptoms	7 (20.6%)	5 (11.1%)	16 (7.8%)
	Improvement of symptoms	20 (58.8%)	23 (51.1%)	114 (55.3%)
	Complications were reduced	5 (14.7%)	9 (20.0%)	43 (20.9%)
	Others	2 (5.9%)	8 (17.8%)	33 (16.0%)

## CONCLUSIONS

The research questions were addressed methodically and descriptively alongside the generation of the following conclusions:

1. A large proportion of Filipino parent participants in this study were 42-50 years old (125; 43.51%), females (231; 81.05%), married (217; 76.14%), had one child (111; 38.95%), resided in Manila City (60; 21.05%), college graduates (214; 75.09%), employed (191; 67.02%), and had a monthly income of Php. 23,001 - Php. 47,000 (116; 40.70%).
2. Majority of Filipino parents sometimes take OTC drugs without a physician's prescription (169; 59.3%), confirm the practice of self-medication (169; 59.3%), and use different OTC drugs when self-medicating (173; 60.7%), while they never change the dosage during self-medication (180; 63.2%) and always check the expiration date (187; 65.6%) and instructions (173; 60.7%) of the OTC drugs before usage.
3. Out of the 285 respondents, 34 (11.9%) had inadequate, 45 (15.8%) had problematic, and 206 (72.3%) had sufficient health literacy levels.
4. The attitudes of the respondents towards OTC drugs show that out of the 19 questions that have a definite correct answer regarding the positive attitudes of rational use of OTC drugs,

excluding the subjective question about inflammation on number 17 of the RUD questionnaire, most of them were able to agree and practice 13 of them out of 19. This indicates good overall use of OTC drugs.

5. Based on the Pearson's Correlation Coefficient and p-value of -0.33 and 0.03, respectively, there is a significant relationship between the frequency of OTC drug self-medication and the individual's health literacy level such that those who had sufficient or higher health literacy levels were less likely to perform self-medication. In contrast, individuals who had lower or inadequate health literacy levels were more likely to practice self-medication.

## RECOMMENDATIONS

After reviewing the findings and analysis of the data, the following recommendations were formulated for future studies:

1. This study can be a basis for further studies by integrating more research methodologies such as conducting a personal or online interview and actual experimentation or observation of the participants.
2. Expanding the target respondents to a larger, more representative sample of the population for broader and more conclusive research is recommended.
3. The items in the questionnaires are advised to be made more specific, such as indicating whether the OTC medication stated is in a tablet or syrup form to provide a more definite and detailed conclusion.
4. The questionnaires that will be used in future studies must be validated first by a physician or pharmacist before deployment or data gathering.
5. In the data analysis, running a correlation between multiple factors such as age, sex, civil status, number of children, location, educational attainment, employment status, and income in relation to health literacy levels can help in adding more insightful data and conclusions.
6. The Health Literacy Survey European Questionnaire 47 (HLS-EU-Q47) used in Osborne, Batterham, Elsworth, Hawkins, and Buchbinder's (2013) study entitled "The grounded psychometric development and initial validation of the Health Literacy Questionnaire (HLQ)" is recommended to be used as another

reliable and more detailed data gathering instrument.

7. After conducting a similar study, correct information regarding health literacy and proper self-medication of OTC drugs from journals or other reliable sources is recommended to be sent and disseminated to the target participants and be posted on different platforms not limited to the ones online.

The following recommendations were proposed for the public health and medical sciences community:

1. The methodology used in the study can be used as a basis to interpret the level of knowledge regarding self-medication, considering the limitations and the target respondents, to propose a public health plan that is effective in each community.
2. Other mediating factors such as poor health outcomes, healthcare costs, motivational level in reaching an individual's standard of good health, health beliefs, and media exposure are recommended as expansions of health literacy to develop a working and more comprehensive framework.
3. The government and accredited medical regulators can use this data to spread awareness and relevance to the community.
4. The enhancement of public health campaigns to provide more accessible and comprehensible health information, considering the health literacy level of individuals such as Filipino parents, is recommended to combat the increasing problem of self-medication of OTC drugs.

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## REFERENCES

- Abacigil, F. & Turan, S. & Adana, F. & Okyay, P. & Demirci, B. (2019). Rational Use of Drugs Among Inpatients and Its Association with Health Literacy. 2019. 64-73. 10.4274/meandros.galenos.2018.35119.
- Akande-Sholabi, W., Adisa R., Ilesanm, O. S., Bello, A. E. (2019). *Extent of misuse and dependence of codeine-containing products among medical and pharmacy students in a Nigerian University*. <https://bmcpublihealth.biomedcentral.com/track/pdf/10.1186/s12889-019-8074-5>
- Albert, J. R., Abrigo, M. R., Quimba, F. M., & Vizmanos, J. F. (2020, August). *Poverty, the Middle Class, and Income distribution amid COVID-19*. <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps2022.pdf>
- Aronson J. K. (2004). Over-the-counter medicines. *British journal of clinical pharmacology*, 58(3), 231–234. <https://doi.org/10.1111/j..2004.02191.x>
- Bennadi D. (2013). Self-medication: A current challenge. *Journal of basic and clinical pharmacy*, 5(1), 19–23. <https://doi.org/10.4103/0976-0105.128253>
- Bulario, J. et al. (2018). *Factors associated with parental self-medication of antibiotics in health centers of Manila*. <https://knepublishing.com/index.php/KnE-Social/article/view/2427/5331>
- Catlin, J. R., Pechmann C., Brass E. P. (2015). *Dangerous Double Dosing: How Naive Beliefs Can Contribute to Unintentional Overdose with Over-the-Counter Drugs*. <https://doi.org/10.1509/jppm.14.061>
- Dy, E. (n.d.). *Inappropriate antibiotic use in the Philippines*. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.515.416&rep=rep1&type=pdf>
- Erdei R., Barth A., Fedor A., & Takács P., (2018, October 16). Measuring the factors affecting health literacy in East Hungary – Health literacy in the adult population of Nyíregyháza city. *Kontakt*, 20(4), e375-e380. <https://doi.org/10.1016/j.kontakt.2018.08.007>.
- Gohar, U., Khubaib, S., & Mehmood, A. (2017). Self-Medication Trends in Children by Their Parents. *Journal of Developing Drugs*. 06. 10.4172/2329-6631.1000173.
- Helal, R. & Abou-ElWafa, H. (2017). Self-Medication in University Students from the City of Mansoura, Egypt, *Journal of Environmental and Public Health*, vol. 2017, Article ID 9145193, 7 pages. <https://doi.org/10.1155/2017/9145193>
- Jansen, T., Rademakers, J., Waverjin, G., Verheji, R., Osborne, R., & Heijmans, M. (2018, May 31). *The role of health literacy in explaining the association between educational attainment and the use of out-of-hours primary care services in chronically ill people: A survey study*. BMC Health Services Research. <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-018-3197-4>
- Jeon, J.H. & Lee, I. S. (2020). Health Literacy, Drug Knowledge, and Drug Misuse Behaviors Among North Korean Refugees. *Journal of Forensic Nursing*, 16(1), p E3-E11. doi:10.1097/JFN.0000000000000280
- Juvinyà-Canal, D., Suñer-Soler, R., Boixadós Porquet, A., Vernay, M., Blanchard, H., & Bertran-Noguer, C. (2020). Health Literacy among Health and Social Care University Students. *International journal of environmental research and public health*, 17(7), 2273. <https://doi.org/10.3390/ijerph17072273>
- Katzung, B. G. (Eds.). (2017). *Basic & Clinical Pharmacology 14th Edition*. United States of America: McGraw Hill Professional.
- Lazareva, A. & Ogadyarova, O. (2015). The influence of advertising of drugs on the level of self – medication. *International Student's Journal of Medicine*, 1 (1), 29-32. <https://cyberleninka.ru/article/n/the-influence-of-advertising-of-drugs-on-the-level-of-self-medication>
- Lorenzo, P.J., Manzanilla, D.R., Cortel, D.K. et al. Community perceptions of mass drug administration for soil-transmitted helminthiasis and schistosomiasis in selected schools in the Philippines. *Infect Dis Poverty* 8, 87 (2019).

- <https://doi.org/10.1186/s40249-019-0595-8>
- Lee, C. H., Chang, F. C., Hsu, S. D., Chi, H. Y., Huang, L. J., & Yeh, M. K. (2017). Inappropriate self-medication among adolescents and its association with lower medication literacy and substance use. *PloS one*, *12*(12), e0189199. <https://doi.org/10.1371/journal.pone.0189199>
- Mande, B. & Tebandite, K. & Marini, R.D. & Alworonga, O. (2018). Determinants of Self-medication of Children by Their Parents at Kisangani. *Asian Journal of Research in Medical and Pharmaceutical Sciences*. 4. 1-8. 10.9734/AJRIMPS/2018/41206.
- Mousaeipour, S. & Jaber, A. & Negahban, T. (2018). The association between health literacy and self-medication behaviors among women referred to comprehensive health care centers in Sirjan, Iran, in 2017. *Journal of Occupational Health and Epidemiology*. 7. 103-111. 10.29252/johe.7.2.103.
- Muflih, S. M., Bashir, H. N., Khader, Y. S., & Karasneh, R. A. (2020). The impact of health literacy on self-medication: a cross-sectional outpatient study. *Journal of public health (Oxford, England)*, fdaa188. Advance online publication. <https://doi.org/10.1093/pubmed/fdaa188>
- Osborne, R. H., Batterham, R. W., Elsworth, G. R., Hawkins, M., & Buchbinder, R. (2013). The grounded psychometric development and initial validation of the Health Literacy Questionnaire (HLQ). *BMC public health*, *13*, 658. <https://doi.org/10.1186/1471-2458-13-658>
- Philippine Statistics Authority. (2016). *Births in the Philippines, 2016*. <https://psa.gov.ph/content/births-philippines-2016#:~:text=The%20median%20age%20of%20mothers,fathers%20was%2029%20years%20old>
- Pineles, L. L., & Parente, R. (2013). Using the theory of planned behavior to predict self-medication with over-the-counter analgesics. *Journal of Health Psychology*, *18*(12), 1540–1549. <https://doi.org/10.1177/1359105312465912>
- Rao, A. P., Velhal, G. D., & Khismatrao, D. S. (2016, March 10). *Patient's comprehension of prescriptions at municipal urban health centre, Mumbai*. PubMed Central (PMC). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4843289/>
- Rahmawati, R., Bajorek, B. (2017). *Self-medication among people living with hypertension: a review*. <https://academic.oup.com/fampra/article/34/2/147/2949263>
- Ruiz, M. (2010). Risks of self-medication practices. PubMed. <https://pubmed.ncbi.nlm.nih.gov/20615179/>
- Shaghagi, A., Asadi, M., & Allahverdi-pour, H. (2014, February). Predictors of self-medication behavior: A systematic review. PubMed. <https://pubmed.ncbi.nlm.nih.gov/26060736/>
- Svendson, I. & Damgaard, M. & Bak, C. & Bøggild, H. & Svendsen, M. & Berg-Beckhoff, G. (2021). Employment Status and Health Literacy in Denmark: A Population-Based Study. *International Journal of Public Health*. 66. 10.3389/ijph.2021.598083.
- Swaroop, A. P. & Varun D. (2011). A Glimpse on Expiry Date of Pharmaceutical Dosage. [https://pharmanest.net/journal\\_pharmanest/uploads/1/479\\_pdf.pdf](https://pharmanest.net/journal_pharmanest/uploads/1/479_pdf.pdf)
- Talbott Recovery (2020). *Commonly Abused Over-The-Counter Drugs*. <https://talbotcampus.com/addiction-rehab-programs/prescription-drug-abuse/over-the-counter-drugs/>
- Tesfamariam, S., Anand, I. S., Kaleab, G., Berhane, S., Woldai, B., Habte, E., & Russom, M. (2019). Self-medication with over-the-counter drugs, prevalence of risky practice and its associated factors in pharmacy outlets of Asmara, Eritrea. *BMC Public Health*, *19* (1). <https://doi.org/10.1186/s12889-019-6470-5>
- Trivedi, J. K., Sareen, H., & Dhyani, M. (2009). Psychological aspects of widowhood and divorce. *Mens sana monographs*, *7*(1), 37–49. <https://doi.org/10.4103/0973-1229.40648>
- Ursachi, G. & Zait, A. & Horodnic, I. (2015). How Reliable are Measurement Scales? External Factors with Indirect Influence on Reliability Estimators. *Procedia Economics and Finance*. 20. 679-686. 10.1016/S2212-5671(15)00123-9.
- World Health Organization. (2000). Guidelines for the regulatory assessment of medicinal products for use in self-medication. World Health Organization. <https://apps.who.int/iris/handle/10665/66154>

# MILLENNIAL AND OLDER GENERATION'S COMMUNICATION GAP: A GROUNDED THEORY

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## ABSTRACT

The development of a conceptual model to generate theory on bridging the millennial and older generation's communication gap is a response to address the challenge of parenting and teaching style for the millennial. Likewise, it aimed to find out the millennial's profile as guide to reveal the most common causes of conflict between the millennial with their parents or teachers and the ways of resolving such conflict from both parties. Moreover, it unveiled with the millennial's thoughts or feelings towards the persons they in conflict with. It employed qualitative grounded theory through in-depth interview and focus group discussion (fgd) to discover the responses of the 14 students from Bohol Island State University (BISU) and ten community youth who were purposely chosen as informants. A thematic approach was utilized to analyze the data. Findings revealed that the most common causes of the millennial's conflict with their parents were not doing the household chores, conflict from different beliefs and not sharing or talking their personal concern or problem. While for their teachers, they were making noise and not cleaning their dirty classroom. Moreover, direct conversation with or without a mediator is the best way to resolve the millennial's conflict. Lastly, saying "sorry" and "thank you" are the millennial's compromising words towards the persons they in conflict with. Thus, the study concluded that millennial and older generation's communication gap was due to millennial's imprudence and can be resolved through direct conversation with or without a mediator using the compromised words to the concern person/s. It is therefore recommended that parents may constantly emphasize their children's house roles and establish open communication. Further, teachers may implement clear students' class rules. Finally, older generation may encourage the millennial to continually be prudent in their words and actions.

*Keywords: communication gap, compromised words, imprudent, mediator, millennial*

## INTRODUCTION

Communication is a two-way process of reaching mutual understanding of people not only in exchange of information, news, ideas and feelings but also to create and share meaning. (Business Dictionary.com). It is the way of sending and receiving information from one person to another both in verbal and non-verbal process.

Markman (1981) expressed that communication involves the ability to pay attention to what others are thinking and feeling. In other words, an important part of communication is not just talking, but listening to what others have to say. It is a key to successful family functioning of communication. Such that, open and frequent communication is a basic characteristic of a strong and healthy family.

Likewise, effective communication is an important element for a strong a harmonious family relationship. In contrast, a poor communication is usually found in unhealthy family relationship. Families that communicate in healthy ways are more capable of problem-solving and tends to be more satisfied with their communication process. Thus, communication is an essential building block for a strong marital, parent-child and sibling relationships.

In this case, it is very important for parents to be able to communicate openly with their children. Open and effective communication benefits not only with their children, but also to every member of the family. Solten and Long (2006) expressed that effective and open communication entails a lot of hard work and practice. This is also supported by Peterson (1993) that family commu-

nication is the way verbal and non-verbal information is exchanged between family members. So, effective and efficient communication must be constantly practiced among family members to become a family culture.

Moreover, teachers as second parents play also an important role in the lives of their students especially to the new generation learners like the millennial. Neval (2011) explained that millennial process information in different ways than the earlier generation. They use their intellectual intuition in different strategies to process information. So, instructors must adapt the new classroom teaching style to be relevant and meet the learning needs of the millennial and they must be equipped with varied teaching skills in the learning process to help their students become more effective learners.

With this phenomenon, there is a need to bridge the communication gap between the older generation to the millennial era. Hence, the development of a conceptual model to generate theory on bridging the millennial and older generation's communication gap is the main purpose of then study. Likewise, it aimed to find out the millennial's profile as guide to reveal the most common causes of conflict between the millennial with their parents or teachers and find the ways of resolving such conflict from both parties. Moreover, it unveiled with the millennial thoughts or feelings towards the persons they in conflict with. This study employed qualitative grounded theory through in-depth interview and focus group discussion (fgd) in order to discover the responses of the fourteen (14) students from Bohol Island State University (BISU) and ten (10) community youth who were purposely chosen as informants.

For this, the researcher as part of the older generation, a mother of the millennial siblings and a professor among the new generation learners would like to find out the millennial's characteristics in order to bridge the communication gap between the older generation with the millennial and to understand the millennial's feelings or thoughts to solve the generational gap for effective communication.

## **REVIEW OF RELATED LITERATURE**

The millennial generation (born from 1980-2000) is the largest age group to emerge the baby boomer generation (born from 1946 – 1964), according to Venter (1992) and this group grow significantly as a proportion of the workforce over

the next 20 years. Likewise, Heng and Yaz (2013) mentioned that generational differences cannot be changed, but members of different generations can try to understand each other and validate each other's values. Thus, understanding, respect and openmindedness will lead to meaningful communication with each other and bring out the best of themselves.

Moreover, Neval (2011), emphasized that millennial are Internet-surfing, Ipadding, Googling, Facebooking, and IMing generation. They have come of age during a time of dramatic technological changes in our country. For many of them, texting and instant messaging have become the chosen methods of communication. Perhaps most of all, they have been plugged into one or another electronic device since they were toddlers. Thus, they must be given an eye sight of the older generation to bridge this generational gap of digital exposure and experiences.

The Filipino Millennial or "Fillennial" from the Philippine Primer Journal (2016) described "Fillennial" as social media-dependent and "selfie" generation as they usually seen spending time on line, watching you tube videos. Besides, Google Trends as cited in Google Philippines (2017) supported that Filipino millennial are taking advantage of smart phone technology and internet access as they take on their journey to reaching their full potential. Their data revealed that seventy-five percent (75%) go on line to look for information, sixty-six percent (66%) from decisions on line by using search and fiftyseven percent (57%) watch on line videos to learn something new. They are thrifts as they spend luxury goods which leave their bank account shaken as they also called "broke". They are upbeat, lazy, materialistic, self-expressive, fun-loving, liberal and narcissist for they known as the "Me, Me, Me Generation". However, there are also good attitudes which millennial possess as being politically and socially engaged for they have their say about issues which are more involved in politics.

Such characteristics of Fillennial is also supported by Cornelio (2016) that Filipino millennial are characterized as young people who are educated, tech-savvy, well travelled and cosmopolitan with their choices in life. However, they too reinforce the stereotype that they are highly mobile and readily willing to transfer from one job to another. Although their disposition is thoroughly individualistic, they are not necessarily egocentric. So, older people might find them selfish because as study show, millennial especially in the West "want it all" and they "want it now". Nev-

ertheless, they are not self-seeking. They want occupation that give them meaning. Passion is the tangible virtue for them. And in many cases, their passion is about making a positive difference in the world. That's why they have many passion projects for they believe that After all, "You Only Live Once" (YOLO).

Another characterization of the millennial revealed in the findings of the study of Moreno (2017) that millennial are highly attractive market as they have grown up in an environment where technology provides a platform for personalization and immediate gratification in all aspects of life. So, the buying process for them is a time of enjoyment, where loyalty to the brands they purchase is relative to the price. They are more attractive by virtual advertising as coupons or discounts.

In contrary, Yee (2019) from Far Eastern University, expressed that millennial are just a care-free lot with a high sense of self-entitlement, a study conducted by Manila-based university found that age group tend to adhere to home-grown, conservative values yet are raring to take flight and work overseas for a better life. Such situation is supported by Cabalza (2010) concluded that Philippine has a unique history which influence and shape the attitudes, beliefs, preferences and value systems of the Filipino millennial. Nevertheless, they differ from other millennial in a sense that their personalities are still affected and shaped by Philippine culture and society. This is the reason why millennial are sometimes misinterpreted by the older generation in their paradigm of decision-making and interaction with other persons.

In this condition, parents play as positive role model among the millennial. This is supported by Eustice (2000), in her study on aggressive, parental and sibling communication that children use verbal aggressive communication displayed by parents. So, communication is an essential factor for a responsible parent and child relationship. The study of Mahmud et.al. (2011) in Malaysia supported that family communication, sibling position and adolescent's sense of responsibility are important elements in inculcating the sense of responsibility among the adolescents. Thus, parent and children communication in the family must be given importance for a harmonious effective and responsible family relationship.

It is in this regard, Kohlberg (1969) theorized that parents are important in instilling the moral foundation of their children, but their influence in the moral development decreased as their children

enter into adulthood. This is supported by the study of Mackay (1997) as cited by Stephens (2009) that millennial relied on their parents more than any other previous generation, even into their college life.

However, the findings of Stephens' study (2009) disagree Kohlberg's theory as the study did not show an overall influence of parental attachment on the moral development millennial generation college graduates. Likewise, the result of Alba's survey as cited in Manila Standard Lifestyle newspaper (2019) spearheaded by Far Eastern University Policy Center underpinned that the aspirations and goals of the millennial have shown their opinions, beliefs and values may be correlated to their profiles in the environment they live in, economic status, family background, high school education and their own circle of influences. Additionally, Cecere (2017) stressed that the introduction and influence of social, political and technological changes over the past few decades have structured millennial to become unique. Thus, the uniqueness of the millennial must be embraced by the older generation for them to bridge the generational gap of both parties.

Furthermore, teachers can also be good contributors in bridging the communication gap between the millennial and the older generation as Monaco and Martin (2007) expressed that millennial need assistance in developing independent decision-making. Teaching styles that work with millennial students involve the instruction as facilitator of learning. Such idea is supported by the article from The National Communication Association (2014) emphasized that millennial students expect a classroom environment that is emotionally supportive since according to a study, teachers should consider adapting their teaching styles around students' expectation in order to enhance students' learning. Thus, Allan (2007), found out the result of his case study in New Zealand that students' perception in the use of Information Communication Technology (ICT) is greatly needed in their studies and it gave implication for teachers' way of teaching to be relevant in handling education in the millennium.

At the end, bridging the communication gap between the Generation Y or the millennial and the Baby Boomer Generation or the older generation is very essential for a harmonious functional relationship. This is supported by Venter (2013) as he concluded that in today's world, this seems to become more difficult due to lack of time and space for real face-to-face communication seems to be more probable over weekend and holidays

as people have learned to use digital media to meet some of their relational needs and to enhance meaningful relations between generations. More so, Artburn (2017) added that parents play a big role in helping the millennial children to become adult by letting their millennial children to take responsibility for their own lives not the parents to always rescue them. Since, the more parents rescue their children, the harder it will be for their children to grow up. This is strongly supported from the article entitled “What Family Dynamics Can Teach You About managing Millennial” in Bridge Works (2017) emphasized that teaching persons on managing millennial in the family dynamics, there’s no need for anyone to become millennial in order to teach the millennial but recognizing one’s own generational strengths as well as the potentials pitfalls can help ease the difficulties which arise in pursuing millennial management excellence. Thus, the older generation are encouraged to know better the millennial’s attributes for bridging the generational communication gap.

## METHODOLOGY

A qualitative grounded theory using Glasserian approach was used in the study to find out the millennial’s communication gap from the older generation.

There were fourteen (14) undergraduate millennial students who belong to the age bracket from 18- 28 years old of Bohol Island State University Main Campus (BISU MC) particularly from the College of Teacher Education (CTE) were the informants of the study. In order to reach the point of saturation, another ten (10) selected community millennial youth were purposively chosen as other set of informants.

A written letter of consent was given to all informants for research ethical consideration. Then, the informants were briefed for the recorded and documented in-depth interview and Focus Group Discussion (FGD) as the data gathering process of the study. After gathering the data, these were coded and categorized for constant comparison in order to get the pattern to create the themes for the theory generation. Thus, a conceptual model was developed to show the bridge of the communication gap between the millennial and the older generation.

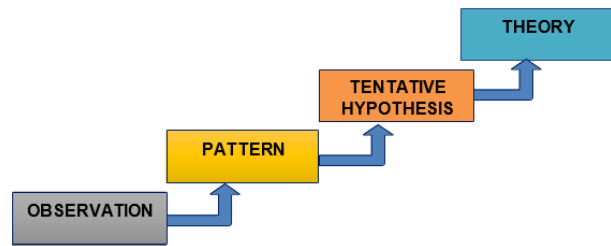


Figure 1. Research Process Model for Theory Generation

## RESULTS AND DISCUSSION

### Demographic Information of the Participant

The age bracket ranges from 18 years to 28 years old so as millennial are born in 1980-2000. There are sixteen (16) females and eight (8) males. Majority of the participants’ religion is Roman Catholic. The range of the number of children in the family is from 2-10 children and the middle child got the highest rank in the family.

Furthermore, “farming” is the common father’s occupation with whom majority of them are elementary, high school and college level. On the other hand, the common mother’s occupation is “housekeeping” among the parents’ participants with whom some of the mothers are college graduate but prefer to work at home for the welfare of the children and the entire family. Nevertheless, there are seven (7) fathers and eleven (11) mothers who graduated in college degree and considered as the highest degree attained among the parents of the participants.

### Summary of Causes, Resolution, Confidant of Millennial’s Conflict and Feelings with their Parents and Teachers

Filipino millennial as supported by Cornelio (2016) are characterized as young people who are educated, tech-savvy, well travelled and cosmopolitan with their choices in life.

This study presents the summary of the participants’ responses in the in-depth interview and Focus Group Discussion (FGD) about the causes and resolution of communication gap between the millennial and the older generation. The table below presents the four (4) themes characterized the participants’ utterances on their causes and resolution of the communication gap with their parents and teachers.



**Table 1. Summary of Causes, Resolution, Confidant of Millennial's Conflict and Feelings with Their Parents and Teachers**

Themes	Participants' Vignettes
<b>Causes of Millennial's Conflict</b>	
Not Doing the Household Chores	Participant 5: "She is not doing the household chores instead will keep on using gadget at home."  Participant 23: "I had misunderstanding with my Mom for not doing the household chores like forgetting to water the plants, helping to arrange things in the bedroom and other related household chores."
Did not talk or share personal concern/ problem	Participant 19: "I have conflict of communication with my parents especially to my Mom since my Dad is always away from us being an OFW so it is my Mom who will get mad as I will not talk or share my personal concern to her since I understand that she still have lot of things to look into for our family."  Participant 21: "I had misunderstanding with my parents especially to my Mom as I will not share or talk about my opinion which triggered my Mom to be upset with me."
Making noise and not cleaning in the classroom	Participant 4: "We were very noisy in the classroom and not cleaning our dirty classroom, so our teacher was angry at us."  Participant 13: "We were noisy in the classroom and our teacher thought that I was the one who made the noise so she always deduct the points of my DLP and I was worried why she made that to me in fact I stopped making noise in the classroom."
<b>Resolution of Millennial's Conflict</b>	
Personal talk or dialogue to the concern person/s	Participant 15: "I talked to my parents through the advice of my college classmate who was also my close friend after we chat in the messenger then parents gave me more time to research for my career choice and to pray for God's guidance."  Participant 18: "Well, I directly talked with my teacher and explained to her the reasons of making the class noisy."
Saying "sorry" to the concern person/s	Participant 14: "Saying sorry to my mother for getting pregnant at an early age through the strength from God when I prayed before I talked to my mother."  Participant 3: "Saying sorry, giving acceptance of my fault and promise to follow the class rules and regulations to my teacher for a renewed relationship."

<b>Confidant of Millennial's Conflict</b>	
Close/bestfriend and girl/boyfriend as mediator	Participant 10: "Through patience and understanding the situation through the help of my close friend and my prayer too."  Participant 19: "I talked to my parents and teachers that we have to clarify the issue/ concern through the help of my boyfriend..."
By my own self without a mediator	Participant 5: "I talked straight to my parent about the issue as she can give pieces of advice on how to resolve our problem."  Participant 11: "I personally approached my teacher as we had argumentation but that argumentation was a great help as it resolve the conflict with my teacher."
<b>Thought or Feeling of Millennial with their Parents and Teachers</b>	
Feel sorry towards their parents and teachers	Participant 15: "...then I asked apology to my parents and explained to them that I want to give them my "BEST" for "ME" and they also felt "RELIEVED" as after two days, we had bridge the communication gap through listening with one another and the issue was resolved."  Participant 7: "... Sir, I am sorry for not behaving and not doing the right action in side the classroom with my classmates."
Feel thankful of the situation	Participant 2: "...my parents thank you because you made me realized that I spent more time on my gadgets than doing my tasks and I realized that it is not easy to secure money so I should properly budget my allowance."  Participant 13: "I truly thankful Maam for your advice to be responsible student in the class and not to dwell more on "barkadas" as it took much of my time that's why I failed to do my performance tasks in most my subjects."

Table 1 exhibits the overall causes, resolution, confidant of the millennial's conflict and their thoughts or feeling with their parents and teachers after a conflict happens. It depicts that the causes of millennial's conflict got the highest with four (4) themes while resolution, confidant and thoughts or feelings of the millennial with their parents and teachers got the same number of two (2) themes. This implies that the older generation may focus more attention to find solution of the causes of conflict in order to respond to the needs of the millennial. Moreover, parents and teachers

may emphasize to the millennial their roles in the house and the importance of classroom rules implementation. Lastly, the older generation may constantly encourage the millennial to use compromising words like sorry and thank you to have facile and quick resolution of conflict for a renewed harmonious day to day communication.

This investigation came into birth with the aim to unveil the causes, resolution and confidant of the millennial's conflict and their thought or feelings towards their parents and teachers after the conflict happens. The discussion below shows the answers to the purpose of the investigation.

### **Causes of Millennial's Conflict**

Parents play a great role in the lives of their millennial siblings. This is supported by Artburn (2017) that parents play a big role in helping the millennial children to become adult and letting them to take responsibility for their own lives not the parents to rescue them as the more parents rescue their children, the harder it will be for their children to grow up. This implies that there's no need for parents to change their children nor parents become millennial but only to recognize their children's strengths and potential will help the difficulties in managing millennial to reach their excellence.

Moreover, teachers can also be a good contributor in bridging the communication gap between the millennial and the older generation as Monaco and martin (2007) expressed that millennial need assistance in developing independent decision-making. Teaching styles that work with millennial students involve the instructor as the facilitator of learning. This means that teachers scaffold their students and serve as model in doing the right action and decision in and out of the classroom.

### **Resolution of Millennial's Conflict**

Effective communication is an important characteristics of a strong and healthy family relationship. Likewise, it is very important for parents to be able to communicate openly with their millennial siblings. As Solten and Long (2006) pointed out that effective and open communication entails a lot of hard work and practice. This implies that constant dialogue is essential when conflict happens and accepting of one's mistakes is one key to find way in resolving the communication generational gap between the millennial and the older generation.

### **Confidant of Millennial's Conflict**

Bridging the communication gaps between the Generation Y or the millennial and the Baby Boomer Generation or the older generation really needs ample time in a specific place in this present scenario. As Venter (2013) concluded that today's world seems to become more difficult due to lack of time and space for a face-to-face communication even over weekends and holidays as people learned to use digital to meet some of their relational needs and to enhance meaningful relations between generations. This indicates that millennial have their own languages and ways of expressing their thought and feelings which the older generation don't have. Thus, sometimes they tend to open up their concern or problem to their co-millennial not to their parents.

Further, culture and society affect millennial's personality that makes them different from one another. This is supported by Cecere (2027) stressed that the introduction and influence of social, political and technological changes over the past few decades have structured millennial to become unique. This indicates that Filipino millennial has the ability to open up directly his/her thoughts or feelings to others when conflict happens in varied ways or means whether with or without the presence of a mediator.

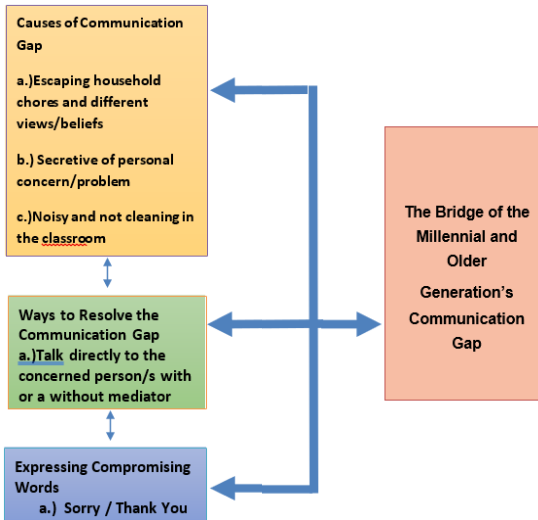
### **Thoughts or Feelings of the Millennial with their Parents and Teachers**

The Filipino millennial or "Fillennial" were described by Cabalza (2010) when he concluded his study that Philippine has unique history which influence and shape the attitudes, beliefs, preferences and value systems among millennial. Thus, parents and teachers play an important role in the moral foundation of the millennial. This signifies that teaching millennial to use the compromised words like sorry and thank you especially after conflict happens is an element for an effective and efficient parenting and teaching style in this highly digital generation.

## **CONCLUSION**

The millennial and older generation's communication gap can be resolved by talking directly to the concern person/s with or without a mediator using compromising words to both parties for a facile and fast renewed healing relationship.

## Ocana's Conceptual Model to Bridge the Communication Gap Between the Millennial and Older Generation



**Figure 2. Ocana's Conceptual Model on Bridging the Millennial and Older Generation Communication Gap**

The Ocana's conceptual model shows the bridge of the communication gap between the millennial and older generation. The causes of millennial's communication gap with their parents were due to millennial's failure to do the household chores, having different opinions/beliefs in life's situation and secretive of their personal concern/problems. While for their teachers, they were making noise inside the classroom and not cleaning their messy place. However, the facile and quick resolution of the conflict or misunderstanding is to talk directly or have a dialogue to the concern person/s by with or without a mediator. Furthermore, using compromising words like sorry and thank you can help bridge the gap between the two conflicting parties to have a fast healing process of the broken relationships into a renewed harmonious day to day interaction.

## RECOMMENDATIONS

Based from Ocana's conceptual model on bridging the millennial and older generation communication gap, the following are recommended:

1. Immediate open conversation or dialogue when conflict happens.
2. A mediator like close/bestfriend or boy/girlfriend can be with the concern person/s to facilitate the conversation or dialogue.

3. Use compromising words to both parties for facile and fast healing process in a renewed relationship.

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## REFERENCES

- Allan, M. (2007). *Millennial teachers: Student are users of Information and Communication. A New Zealand Case Study*. ijedict.dec.uwi.edu.
- Artburn, S. (2017). *Do's and Dont's of Helping Your Millennial Child to Learn Adult* https:// www.crosswalk.com
- BridgeWork.(2017). *What Family Dynamics Can Teach You About Managing Millennial* www.generation.com
- Cabalza, C. (2010). *Understanding the Filipino Millennial Generation*. https://www. academia.edu
- Cecere, D.M.(2017). *The Millennial Generation: Common Experience Guiding Them into Adulthood*. Educational Resource Information Center (ERIC) https:// www.science.gov
- Cornelio, J. (2016). *The Filipino Millennial* https:// www.rappler.com
- Crabtree C. (2006). *Qualitative research guidelines project*. http://www.qualres.org/HomeGrou-3589.html
- Eustice, K. (2000). *Aggressive Parental and Sibling Communication* https://the.Keep.eiu.edu.
- Gilbert, J. (2011). *The Millennial: A new generation of employees, a new set of engagement Policies*. https://roybusinessjournal.com
- Google Philippine. (2017). *Filipino Millennials' Search Behavior*. https://adobomagazine.com.
- Holton, J. (2010). *The coding process and its challenges. Issue 1. Vol. 09*. www. groundedtheoryreview.com/2010/04/02/the-coding-process-and-its-challenges
- Mahmud et.al.(2011). *Family Communication, siblings position and adolescent's sense of responsibility*.https://pdfs.semanticscholar.org
- Lacerna, A. (2016). *Understanding the Digital Youth: Implications to Higher Education* https://ejournal.ph
- Manila Standard Lifestyle Newspaper. (2019). *Understanding Filipino Millennial* www.manilastandard.net
- Monaco and Martin. (2007). *The millennial student: A new generation of learners* https://natajournals.org.
- Moreno, F. (2017). *The Characterization of the Millennial and Their Buying Behavior. International Journal of Marlatir Studies. Canadian Gatts of Science and Education*. https:// www.researchgate.net
- Natividad, N. (2016). *Truth about the youth: The difference of the Filipino Millennial* https://www.rappler.com
- Neilson, L. (2010). *Teaching the Millennial Generations*. Retrieved from: tom-prof.stanford.edu
- Nevial, J. (2011). *Teaching the Millennial Journal in Association for Psychology Science* https:// www.psychologicalscience.org
- Philippine Primer Journal. (2016). *Millennial in the Philippine: Who are they and what do they do?* primer.com.ph
- Quigley, M.W.(2016). *Keeping the Lines of Communication Open with Millennial* https://www.aarp.org.
- Stain, J.(2013). *Millennial: The Me, Me, Me Generation*. time.com
- Stephens, D.G. (2009). *A Correlational Study of Parental Attachment and Moral Judgment Competence of Millennial Generation College Students* digitalcommons.uni.edu.
- The National Communication Association. (2014). *Are millennial generation students changing the roles of teachers?* www.sciencedaily.com
- Venter, E. (2013). *Bridging the Communication Gap Between Generation Y and the Baby Boomer Generation*. https://www.tandfonline.com
- Yee, J. (2019). *The Filipino Millennial: FEU Study can make you ☺ or ☹* www.manilastandard.net

# FILIPINO TEACHERS' PRACTICE, PROBLEMS AND REMEDIAL MEASURES TO STRENGTHEN FILIPINO TEACHING

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## ABSTRACT

This descriptive-normative study assessed the practices and problems experienced by the 100 Filipino teachers in Roxas West District, Isabela and the remedial measures to strengthen teachers in teaching Filipino subject. A researcher-made questionnaire was used which was patterned from the different published and unpublished materials study, it contained the respondent's profile; practices and problems encountered by the teachers; and the possible solutions to address the identified problems. Frequency count, percentage, weighted mean, Likert scale and content analysis were used in interpreting the gathered data. Data analysis showed that 1) DepEd Filipino teachers in Roxas West District were dominated by females. Both the male and female teachers were educationally qualified and acquired several years of teaching experiences, passed the appropriate licenses/eligibility and had proven their loyalty and commitment to DepEd as an institution; 2) the practices/problems experienced by Filipino teachers with their students were found serious and their experiences in curriculum materials and the school itself found moderately serious; and 3) remedial measures on the serious experiences and problems among Filipino teachers such as subscribing to educational magazines; assessing students' progress; administering test at regular basis; attending seminars/trainings in Filipino; stimulating students' interest; giving assignment; conducting school level seminars; conducting remedial class in Filipino; providing additional references, instructional materials, guides and textbooks; and administer diagnostic test at the beginning of the school year helped strengthened the teachers in teaching the Filipino subject. The study recommends that teacher should be encouraged to use varied teaching technologies and techniques and teaching aids and devices to make their lessons in Filipino more interesting and challenging and teachers should conduct remedial teaching for their students who cannot cope with their lessons in Filipino and provide enrichment lessons and activities/exercises in Filipino.

*Keywords: Practices, problems, experiences, remedial measures, Filipino*

## INTRODUCTION

The secondary Education Curriculum of the DepEd covers Filipino as a basic subject. Such becomes a very important tool in every living and it is a system of thinking and a method of inquiry. In the educational system, the success of the secondary Filipino program depends to a great extent upon the Filipino teacher. He must be resourceful to become an effective Filipino teacher. To be resourceful, he builds up confidence in himself by looking up additional references in Filipino and discover techniques that reduces uncertainties encountered by the students so that they would not

be grouping in the dark. If a learner cannot fully understand the concept of the Filipino, then he will be disappointed throughout his life and tends to develop a negative attitude towards it and so Filipino teachers are called upon to be aware and must know the underlying principles behind the different instructional approaches and strategies, and must develop in the learner the proper use of Filipino concepts and the other aspects because this is much needed in our everyday living and life nowadays is a modern era of technological development.

As Filipino teachers, Teacher Training Institution (TTI) in the country play a vital role in

providing future Filipino teachers with high technological aspiration in the world of Filipino language. The training institutions train future Filipino teachers in order to have an in-depth appraisal on how Filipino as a subject is taught in the public secondary schools. The Filipino teacher is supposedly familiar with the latest information technology and all modern day gadgets in teaching the subject and must possess the mastery of Filipino language in the 21st century.

Effective teaching in Philippine schools connotes utmost commitment to enable the learners to acquire knowledge, develop Filipino skills and imbibe values and attitudes. In as much as the teaching of Filipino encompasses these dimensions, it must be directed towards an overriding goal where the learners mind and heart are molded. In general, Filipino teachers must possess solid background knowledge of Filipino, equipped with competencies in teaching the subject and the use of the appropriate teaching strategies and methodologists.

Today, the competencies of Filipino teachers can be affected by certain factors which is one of the basic components of the teaching and learning process. These are: teaching guides/manuals; educational qualifications of teachers; school equipment and facilities; attitudes of learners; study habits of learners and many more.

In the field of education, there appears three major goals of the modern secondary Filipino teacher and learner, namely; to learn how to read, that is to get and interpret information acquired through the senses from printed page, the radio, the T.V screen, and the world of mouth. Learners should therefore learn how to read correctly, that is to learn the fundamental concepts that are basic to the understanding of the subject. They must learn to express these concepts in words and later in symbols. They must come to grasp that these fundamental ideas will permit the learners to construct for himself the fundamental operational facts in Filipino subject. All the knowledge as referred to are the “why” as in Filipino or the understanding of what Filipino is or why it works the way it does or what ideas means; to acquire the ability to use information to solve problems to gain new knowledge, and to determine responsible action. By this, the learner must be able to speak fluently in Filipino. The second goal is to develop skill in Filipino and concepts so as to obtain mature performance. These skills are tools to which they are thoroughly understood so as to free the mind from routine work and to permit it to concentrate on new meanings; to develop the

ability to solve communication problems. All new learnings can be taught of as problem-solving. A problem is a situation in which a desired outcome is known but the intellectual means to the goal are unknown to the child. The child must bring to a situation 1) all the concepts and skills he has already learned, 2) an awareness of the new elements in the situation, and 3) an organizational ability so that he can use his knowledge to solve this problem.

The aforementioned goals and practices in teaching Filipino serve as guide to the instructional skills of Filipino teachers and would be a basis for them to make their teachings in Filipino effective and successful.

## **STATEMENT OF THE PROBLEM**

This research study aimed to assess the practices and problems experienced by Filipino teachers in Roxas West District, Isabela and remedial measures to strengthen them.

Furthermore, the study sought to answer the following problems:

1. What are the problems experienced by Filipino Teachers in Filipino Teaching along the following:
  - 1.1 student factors;
  - 1.2 curriculum materials factors; and
  - 1.3 school factors?
2. What are the possible solution/ remedial measures to strengthen teachers in teaching Filipino subject?

## **REVIEW OF THE RELATED LITERATURE**

The teaching in the classroom has at his disposal a large of factors to organize as part of his classroom teaching as a system to undertake effective teaching. The interaction that he expected to undertake between the students and himself depends on the nature of this organization of the teaching components. Broadly speaking, he has four different components at his disposal: 1) the language which functions as the medium, 2) the content material that is to be put across, 3) the classroom techniques which he employs, and 4) the teaching materials which are at his creative resources to coordinate these components of the system in such a way that his work emerges as most productive.

Teaching or instructional materials as these have often been called provide the basis, the starting point, and the points of references for the students, and the teacher's teaching-learning activities in the classroom. These teaching materials consist of a) language materials and, b) instructional aids. Language materials that the teacher depends on consists of the textbook and other non-detailed, supplementary books prescribed as part of the official syllabus. Instructional (teaching) aids are all those materials that the teacher brings into the classroom from time to time facilitate and to make the work more creative and effective. These are generally known as teaching aids. Each of these functions as a component of the overall system of classroom teaching.

Instruction aids that help the teacher as resourceful devised in his classroom practices can be conveniently grouped under the following categories: 1) Visual aids; 2) Audio-model aids; 3) Audio-visual aids. Visual aids are those instructional aids which function through their auditory stimuli. And audio-visual provides the instructional stimuli through both visual and auditory modalities. These three components of the sub-system of instructional aids have the full coverage of whatever materials the teacher may introduce into the class from time to time.

The following may be considered the role that instructional aids play in classroom teaching: instructional aids help the teacher add a new and concrete dimension to classroom teaching. His dependence on the materials in the textbook and supplementary books can easily lead to stereotyped mode of teaching. Introducing aids to the classroom helps him add a new dimension to his teaching; instructional aids make language teaching a practical affair having brought down the abstract categories of language to perceptible reality in the classroom. The teaching of formal grammar as well as of functional grammar can be made a down-to-earth affair by the use of instructional aids; instructional aids help content specific teaching have orientation and direction that would otherwise tax the imagination of the students while assimilating the content-matter of a particular unit. A geography or a science classroom depends on instructional aids by the very nature of those disciplines and they require demonstrative illustrations.

Mumby (2007) before deciding what to teach the learner, a teacher wants to know his requirements in terms of communicative mode and activities. In this aspect, one has to consider the specification of communication requirement or needs

prior to the selection of speech functions or communicative to be taught and by drawing up a profile of communication needs of the learners one can move validity specify the particular forms to be taught.

Ferguson (2004) affirms that while people that ever before are learning foreign languages in public and private institutions, there are three striking sources inefficiency in modern teaching. First, while language provides a means of saying and doing things, teaching is generally divorced from the use we make in language. We teach on unapplied system that they need to do through language. Secondly, language is a social tool used by thinking, social individuals, nevertheless, we teach students to do so and say things with language which are insignificant to them as persons, and consequently, they say things impersonally. A third great source of inefficiency is one to effect to teach all students in a group at the same rate.

Curtis (2005) asserts that it is not possible to develop language competencies in any other way by actually speaking, listening, reading and writing because English is a holistic subject. It works out only once in these areas and will have a technical bearing on the other.

The study of Mina (1999) described the current problems in the teaching of Filipinos in Ilocos Norte. The finding revealed that: in terms of qualifications, the teachers were non-tagalog, native Ilocano speakers, had no opportunity to use Filipino outside of class; materials and library facilities were inadequate and there was no grade word list in Filipino; pupils have difficulty in expression, pronunciation and inflection, have no opportunity to practice what they learned; teachers have other teaching assignments besides Filipino where they use English; the teachers were better in English communication than in Filipino.

Gonzaga (1999) conducted a study on the implementation of Filipino as medium of instruction in the Bilingual Education in Ramon District. The findings disclosed the following salient points: all respondents earned undergraduates units in Filipino; the respondents have attended seminars at various non-national level; teachers used different materials and devices in teaching Filipino and used magazines, supplementary readers; and any books available in the library. Problems encountered were pronunciation, lack of teaching aids, facilities and materials; 5.75 percent do not have wide knowledge of Filipino, and 6.83 percent are not native speakers of Filipino.

Somera (1992) conducted a study on the status of the implementation of the Bilingual Education in non-Tagalog division. The results of the study showed that: few seminars and in-service training sessions were held on the use of the Bilingual policy; materials and textbooks in were inadequate; there were barely enough assistance from administrators; the respondents agreed on the soundness of using Filipino for the subjects designated; problems were inadequate training, insufficient teaching material, poor facilities, and little supervisory assistance. The implementation, although people were academically prepared in terms of degrees misunderstood the bilingual policy in matters of instruction.

The study of Rodriguez (1994) described the status of the implementation of the Bilingual Education Program in the High Schools in the province of Tarlac. It revealed the following: the teachers were educationally qualified to teach at the secondary level but they have minimal or no units in Filipino other than those required by their bachelor's degree; the use of Filipino was welcome; the use of Filipino greatly improved students' ability to understand concepts and to express their ideas better. The researcher recommended that teachers should continue to upgrade their skills in teaching Filipino. Likewise, school administrator should also improve their competencies in the use of Filipino so that they will be competent in supervising Filipino classes or subjects where the medium of instruction is Filipino.

The study of Lozada (1996) described the problems of the implementation of the Bilingual Education Policy in one non-Tagalog division. The findings were: problems encountered were insufficient instructional materials; difficulty in speaking Filipino; poor comprehension in Filipino; confusion in translating technical terms from English into Filipino.

Dangwa (1990) described the implementation of the Bilingual Education Program in the elementary schools of La Trinidad District. The finding of the study were: 40 percent of the teachers were BSEE degree holders with the basic units in Filipino; methods used are varied through the most common are the second language method, inductive method and role playing; the materials (guide, textbooks) and references especially for Filipino were lacking. Dangwa recommended the increase in the number of textbooks in Filipino and the textbooks in Social Studies, Music, Arts and Physical Education should be written in Filipino.

## METHODOLOGY

The researcher employed the descriptive-normative survey method to assess the practices and problems experienced by Filipino teachers in Roxas West District, Isabela. This method is used to organize, analyze, interpret and report the present status of a group. It deals with a cross section of the present duration sufficient for the examination. A total of 100 Filipino teachers assigned in Roxas West District, Isabela served as the respondents of this study, they were selected through convenient sampling.

The teachers' age, there were 25 or 25% whose ages are in between 21-30 years old; there were 46 or 46% whose ages range from 31-40 years old; 20 or 20% were 41 – 50 years old; and 9 or 9% were 51 years old and above. A scrutiny of the data gathered showed that teachers in the locality of this study were considered young in the teaching profession and have the passion of teaching especially Filipino subject.

As to their civil status, there were 14 or 14% among the respondents involved in the study who were single and 86 or 86% were married. Analysis of the data revealed that there were more married teachers in Roxas West District during the period of the study.

As to their educational attainment, 3 or 3% finished their Master of Arts in Education; 18 or 18% finished academic requirements in their MAEd; 51 or 51% graduated Bachelor of Secondary Education with advance units leading to the Masteral Degree and 28 or 28% graduated Bachelor of Elementary Education. It can be deduced from the data gathered that majority of the respondents involved in the study had advance units in Master's Degree in Education. Further, analysis of the data revealed that the respondents had met the appropriate educational qualifications for the secondary level.

As to civil service eligibility, there were 26 or 26% who passed the Professional Board Examination for Teachers; and 74 or 74% percent hurdled the Licensure Examination for Teachers. The data implied that all the teachers passed the appropriate civil service eligibility for the teaching profession. Such eligibility/license serves as the passport of the teachers to enter government service. The finding on the teachers who passed the PBET proves and supports the teachers whose age is 51 years old and above.

As to the number of teaching, there were 30 or 30% teachers who are actively teaching for not more than 10 years as Filipino teachers in the sec-



ondary schools in Roxas West district; 26 or 26% are teaching for 11-20 years; 21 or 21% are active in teaching for 21 to 30 years; and 23 or 23% teachers are actively teaching for 31 years and above. The data implied that the respondents had acquired several years of teaching experiences in the public secondary schools. Said years of teaching experiences described at large the loyalty and commitment of the Filipino teachers to the teaching profession.

Finally, as to the trainings attended, there were 68 or 68% of the Filipino teachers attended the division level of in-service trainings in Filipino. There were 72 or 72% who attended the district level in-service trainings in Filipino; 85 or 85% attended school level in-service trainings; and 62 or 62% attended regional level seminar in Filipino. An analysis of the data gathered showed that there were few number of in-service trainings in Filipino attended by the teachers in division level and nobody among the teachers were given the chance to attend the in-service trainings in Filipino in the Regional and National levels, as well.

## RESEARCH INSTRUMENT

A researcher-made questionnaire was used and patterned from the different published and unpublished materials study which contained the respondent's profile; practices; and possible problems/solutions.

**Pre-Testing the Questionnaire.** The questionnaire was pre-tested to a nearby district in Roxas with the teachers as the respondents. The suggestions and comments derived from the pre-testing, as well as the suggestion of some supervisors and administrators were all incorporated in the final draft of the questionnaire. After which the final questionnaire was made and multiplied for distribution.

**Unstructured interview.** This was used to supplement and to expand the findings of the questionnaire. Respondents were arbitrary selected at random during the interview. A face-to-face dialogue was then conducted.

**Documentary analysis.** Test materials in Filipino filed in the District Office were scrutinized and appraised by the researcher to supplement the findings of the questionnaire as well as to validate the information derived from the unstructured interview conducted on weekends which took place every Saturdays and Sundays.

## STATISTICAL TOOLS

The researcher used the frequency count, percentage, and weighted mean in interpreting the data collected.

The 5-point Likert Scale was used to determine the extent of seriousness of the experiences/problems met by the teachers and remedial measures given regarding the teaching of Filipino.

Ranges	Description
4.20 – 5.00	Very Serious (VS)/Very Necessary (VN)
3.40 – 4.19	Serious (S)/Necessary (N)
2.60 – 3.39	Moderately Serious (MS)/Sometimes Necessary (SN)
1.80 – 2.59	Slightly Serious (SS)/Not Necessary (NN)
1.00 - 1.79	Not a Problem (NAP)/Doubtful (D)

## FINDINGS

**Table 1. Problems Experienced by Filipino Teachers in Filipino Teaching along Student Factor**

Student Factor	WM	Description
1. lack of mastery of the lesson preparations	3.70	S
2. Difficulty in identifying the hidden questions.	3.86	S
3. Difficulty in estimating answers.	3.20	MS
4. Lack of power to analyze and thinks critically.	3.45	S
5. Lack of understanding the lesson.	3.20	MS
6. Poor analysis in Filipino	3.70	S
7. Difficulty in identifying what is asked for.	3.46	S
8. Some students are inattentive and restless.	3.40	S
9. Don't work on their assignments and come to school unprepared	3.38	MS
10. Cannot write correctly and legibly.	3.45	S
11. Poor background in Filipino.	3.70	S
12. Inadequate background in Filipino.	3.25	MS
13. Errors which causes problems could not be identified.	3.00	MS
14. Carelessness in reading and interpreting problems.	3.15	MS
15. Inability to use the correct grammar.	3.44	S
16. Poor reading ability.	3.45	S
17. Poor writing ability.	3.47	S
18. Inability to apply correct grammar.	3.47	S
19. Inability to verify the answers to the problems in Filipino	3.38	MS
20. Lack of ability to interpret the implication on meaning of the clue.	3.25	S
<b>Average Weighted Mean</b>	<b>3.40</b>	<b>S</b>

4.20 – 5.00 Very Serious (VS) 3.40 – 4.19 Serious (S)  
2.60 – 3.39 Moderately Serious (MS) 1.80 – 2.59 Slightly Serious (SS)  
1.00 - 1.79 Not a Problem (NAP)

Table 1 reveals the problems experienced by Filipino teachers in Filipino teaching along with student factors. The practices/problems experienced by Filipino teachers with their students were found moderately serious as supported by the computed average weighted mean of 3.40.

In particular, Filipino teachers experienced serious problem with their students in difficulty in identifying the hidden questions with the highest mean (3.86) among the problems which seriously encountered. However, among the moderately encountered problems, errors which cause problems could not be identified has the lowest mean of 3.00.

**Table 2. Problems Experienced by Filipino Teachers in Filipino Teaching along Curriculum Materials**

Curriculum Materials	WM	Description
1. Students do not study their lessons due to lack of textbooks	3.05	MS
2. Lack of teaching guides and other curriculum materials.	3.07	MS
3. Sufficient teaching but lack the skills on how to enrich the suggested Activities.	3.10	MS
4. Difficulties in formulating appropriate objectives for the daily activities.	2.75	MS
<b>Average Weighted Mean</b>	<b>2.99</b>	<b>MS</b>

4.20 – 5.00 Very Serious (VS) 3.40 – 4.19 Serious (S)  
2.60 – 3.39 Moderately Serious (MS) 1.80 – 2.59 Slightly Serious (SS)  
1.00 – 1.79 Not a Problem (NAP)

As gleaned from the data gathered, the four (4) practices/problems encountered by the teachers teaching Filipino in curriculum materials revealed as moderately serious as reflected in the average weighted mean of 2.99. In particular, problems such as insufficiency and lack of skills on how to enrich the suggested activities; lack of teaching guides and other curriculum materials; students who do not study their lessons due to lack of textbooks; and difficulties in formulating appropriate objectives for the daily activities were encountered moderately serious by Filipino teachers.

**Table 3. Problems Experienced by Filipino Teachers in Filipino Teaching along School Factor**

School Factor	WM	Description
1. How to conduct with classes with maximum students participation.	3.00	MS
2. How to provide various activities to meet the level needs of the fast slow Learners.	3.10	MS
3. How to maximize the use of time allotment.	2.64	MS
4. How to make students interested through challenging and exciting activities	2.75	MS
5. How to provide learning situation where students can develop communication skills.	3.30	MS
6. How to construct valid and reliable test for evaluation.	3.05	MS
7. How to interpret test results properly.	3.10	MS
8. How to use test results for remedial purpose and enrichment.	3.40	MS
9. How to minimize to much talking on part of the teacher.	3.20	MS
<b>Average Weighted Mean</b>	<b>3.06</b>	<b>MS</b>

4.20 – 5.00 Very Serious (VS) 3.40 – 4.19 Serious (S)  
2.60 – 3.39 Moderately Serious (MS) 1.80 – 2.59 Slightly Serious (SS)  
1.00 – 1.79 Not a Problem (NAP)

Table 3 reflects the practices/problems experienced by the Filipino teachers teaching Filipino along school factor. There were nine (9) practices/problems being identified by the teachers under this aspect with varying computed weighted means. The highest computed weighted mean was obtained by item number 8, “how to use the results for remedial teaching and enrichment” with 3.40; followed by item number 5, “how to provide learning situation where students can develop skills in communication” with a computed mean.

The least computed weighted means were obtained by items 3 and 4, “how to maximize the use of time allotment (2.64)” and “how to make students interested through challenging and exciting activities 2.75”. The rest of the practices/problems encountered by the teacher obtained their computed weighted means from 3.00 to 3.20.

An analysis of the data gathered showed that the practices/problems experienced by the teachers with school factor were found as moderately serious as confirmed by the total computed average mean of 3.06.

The findings implied that the teachers’ problem on school factors were not much felt by them so serious in teaching Filipino subject.

**Table 4. Possible Solution/Remedial Measures to Strengthen Teachers in Teaching Filipino Subject**

Possible Solutions	Computed WM	Description
1. Administer diagnostic test at the beginning of the school year	4.61	VN
2. Give assignments to suit needs and interest.	4.85	VN
3. Assess students’ progress by administering test at a regular interval to determine their weakness and development.	4.90	VN
4. Stimulate students’ interest by making use of appropriate teaching aids and devices.	4.85	VN
5. Conduct remedial class in Filipino.	4.80	VN
6. Write down instructions and explain fully and well.	4.02	N
7. Fives award/incentive to students who excel in Filipino.	3.90	N
8. Teachers should attend seminar/ In-service trainings in Filipino.	4.85	VN
9. Conduct school level seminars.	4.80	VN
10. Teachers should subscribe educational magazines.	4.95	VN
11. Provisions for additional references, instructional materials, guides and textbooks.	4.70	VN
<b>Average Weighted Mean</b>	<b>4.71</b>	<b>VN</b>

4.20 – 5.00 Very Necessary (VN) 3.40 – 4.19 Necessary (N)  
2.60 – 3.39 Sometimes Necessary (SN) 1.80 – 2.59 Not Necessary (SS)  
1.00 – 1.79 Not a Problem (NAP)

In table 4, there were eleven (11) identified remedial measures given by the teachers to strengthen the teaching of Filipino subject in the secondary level.

Based on the data in table 5, the following were listed remedial measures to strengthen the teaching of Filipino in the field as very necessary: teachers should subscribe to educational magazines; assess students' progress administering test at regular interval to determine their weaknesses and development; teacher should attend seminars/trainings in Filipino; stimulate students' interest by making use of appropriate teaching aids and devices; give assignment to suit the needs and interest of students; conduct school level seminars; conduct remedial class in Filipino; provisions for additional references, instructional materials, guides and textbooks; and administer diagnostic test at the beginning of the school year. On the other hand, write down instructions and explain fully and well and giving award/incentive to students who excel in Filipino are necessary.

### CONCLUSIONS

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

1. The DepEd Filipino teachers in Roxas West District were dominated by females. Both the male and female teachers were educationally qualified and acquired several years of teaching experiences. This indicated their loyalty and commitment as educators of the DepEd. It is also noticed that all the Filipino teachers passed the appropriate licenses/eligibility and had proven their loyalty and commitment to DepEd as an institution.
2. The practices/problems experienced by Filipino teachers with their students were found serious and their experiences in curriculum materials and the school itself found moderately serious.
3. Remedial measure on the serious experiences and problems among Filipino teachers such as subscribing to educational magazines; assessing students' progress; administering test at regular basis; attending seminars/trainings in Filipino; stimulating students' interest; giving assignment; conducting school level seminars; conducting remedial class in Filipino; providing additional references, instructional materials, guides and textbooks; and administer diagnostic test at the beginning of the

school year helped strengthened the teachers in teaching the Filipino subject

### RECOMMENDATIONS

On the basis of the findings and conclusions the following recommendations were offered:

1. Teachers who have finished the academic requirements of their Masteral degree should be encouraged to continue their schooling by requiring them to enroll during weekends and those who have started be further motivated to finish the graduate course program leading to Master of Arts in Education.
2. There should be more in-service trainings in the regional and national levels and Filipino teachers should be given the chance to attend
3. There should be more demonstration teaching in Filipino in the district and school level.
4. DepEd school administrators and supervisors should periodically supervise/observe their Filipino teachers.
5. Filipino instruction program should be periodically evaluated to assess whether the subject is being taught effective or not in the school.
6. That teacher should be encouraged to used varied teaching technologies and techniques and teaching aids and devices to make their lessons in Filipino interesting and challenging.
7. That teacher should conduct remedial teaching for their students who cannot cope with their lessons in Filipino and provide enrichment lessons and activities/exercises in Filipino.
8. That a similar study should be conducted along the field in order to arrive at a more conclusive result of findings.

### REFERENCES

- Curtis, D. (2005). *Teaching Secondary Language*. Philadelphia: Open University Press. pp, 123-125.
- Dangwa, OC. (1990). *The Bilingual Education Program: Its implementation in the Elementary Schools of La Trinidad District*. Unpublished Masteral Thesis, Baguio Central University, Baguio City, Philippines.
- Ferguson, N. (2004). *Language by Objectives*. London: Ivand Brothers, Ltd. p. 34.
- Gonzaga, A. (1999). *The Implementation of Filipino as Medium of Instruction in the Bilingual Education Program in*

- Ramon District. Unpublished Masteral Thesis, Northeastern Collage, Santiago City, Philippines.
- Mina, P. (1999). Current Problems in the Teaching of Filipino in Ilocos Norte. Unpublished Masteral Thesis, Arellano University, Manila. p. 103.
- Mumby, J. (2007). Communication Syllabus Design. Great Britain: Cambridge University Press. p. 15.
- Rodriguez, FC. (1994). Filipino in the Bilingual Education Program: Its Implementation in the Secondary Level of Schools in Tarlac. Unpublished Masteral Thesis, National Teachers College. p. 170.
- Somera, CS. (1992). The Status of Implementation of the Bilingual Education Program (Filipino) in the National High Schools of the Division of South Koronadal, South Cotabato. p. 96

# PROBLEM-BASED LEARNING, SELF-EFFICACY, PROBLEM-SOLVING SKILLS AND PROBLEM- SOLVING PERFORMANCE

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## ABSTRACT

Most of the students find difficulty in solving problems due to poor comprehension and lack of application of Mathematical problems in real-life situations. Thus, this study was conducted to determine the effect of problem-based learning on students' self-efficacy, problem-solving skills, and problem-solving performance. This study made use of a quantitative research design that employs the pre-test post-test match pairing equivalent research design. Sixty (60) first-year Bachelor of Science in Agriculture (BSA) students were selected through the pairing of scores in pre-test wherein they are divided into the experimental and control group. The experimental group was exposed to a problem-based learning approach while the control group was exposed to the conventional method of teaching for 6 weeks. The study utilized three sets of instruments, namely: Self-Efficacy Questionnaire, Mathematical Problem Solving Skills Inventory (MPSSI), and Problem-Solving Performance. Results reveal that respondents in the experimental group have high self-efficacy, positive problem-solving skills, and proficient problem-solving performance after exposure to a problem-based learning approach compared to the respondents in the control group. Differences are revealed in the self-efficacy, problem-solving, and problem-solving performance during the pre-test and post-test of the experimental group. In the same manner, an increase in self-efficacy, problem-solving skills, and performance of the respondents shows the positive effect of problem-based learning. Furthermore, with the positive correlations among the variables, it is encouraged to integrate a problem-based learning approach in any topic and to devise an instructional material in the teachers' chosen subject area.

*Keywords: problem-based learning, self-efficacy, problem-solving skills, problem-solving performance, experimental*

## INTRODUCTION

Most of the students find difficulty in solving problems due to their poor comprehension and lack of application of Mathematical problems in real-life situations (Plantinos, 2018). According to Macmath, et al. (2009), Mathematics teachers must teach students not only to solve problems but also to learn about Mathematics through problem-solving. One of the many ways to help students become confident and competent problem solvers is by offering them opportunities to practice key problem-solving skills and, importantly, to talk about the skills in context (Woodham, 2014 as cited by Gare, 2018).

According to Preciado (2016), students' lack of basic concepts and problem-solving skills re-

sulted in low self-efficacy, thus affecting their performance in Mathematics. So, in order to address the low performance in Math and develop students' mathematical problem-solving skills, teachers should use teaching strategies that promote higher-order thinking skills. Students educated in the world of the 21st century must develop habits of thinking, researching, and problem-solving to succeed in a rapidly changing world (O'Brien et al., 2011).

Indeed, the subject Mathematics in the Modern World talks about Mathematics in a broader and deeper meaning in the life of the K-12 learners. Problem-solving is also one of the skills that a 21st-century learner must possess. Thus, a problem-based learning approach to test its effectiveness on students' self-efficacy, and problem-

solving performance of the first-year college students is being conceptualized.

### FRAMEWORK OF THE STUDY

This present investigation is anchored on the Constructivism Theory of Dewey, which states that learning is an active and constructive process. He believed that a person actively constructs or creates their own subjective representations of the problems in reality. For a student to learn best, he/she should have a direct experience, make errors, and look for solutions that are believed to be vital for the assimilation and accommodation of information (Laluma, 2013). It is further explained by the Constructivist Theory of Piaget which states that “learning should be whole, authentic and real”. Both Dewey and Piaget emphasized that for learning to occur, students must interact in meaningful ways with the world around them. Furthermore, according to the Discovery Learning Theory of Bruner, as cited by Lucas, et al. (2014), teaching should involve getting opportunities for learners to explore and discover. In addition, learning should be facilitated by social interaction through cooperation and collaboration to solve problems and discover things to increase their self-confidence and develop skills in problem-solving.

A necessity of introducing Mathematics subjects to students through problem-based learning will also develop not just their skills but also their perception and performance towards the subject. Thus, the importance of introducing Mathematics subject in real-life problems aims to improve students’ ability and problem-solving performance.

The relationship among the variables used in this study is shown below.

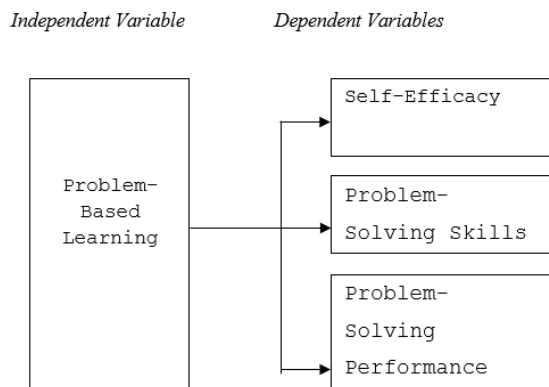


Figure 1 Relationship between the dependent and independent variables

### STATEMENT OF THE PROBLEM

This study was conducted to determine the effect of problem-based learning on students’ self-efficacy and problem-solving performance of the first-year college students of the Iloilo State College of Fisheries-Dingle Campus.

Specifically, it sought to answer the following questions: 1.) What is the level of self-efficacy, problem-solving skills, and problem-solving performance of the experimental and control groups in the pretest and posttest? 2.) Are there significant differences in the pretest and posttest scores of the experimental and control group in their self-efficacy, problem-solving skills and problem-solving performance? 3.) Are there significant differences between the experimental and control groups’ pretest and posttest scores in their self-efficacy, problem-solving skills and problem-solving performance? 4.) Are there significant differences in the mean gain scores of the experimental and control group in their self-efficacy, problem-solving skills as a whole and problem-solving performance? 5.) Are there significant relationships between students’ self-efficacy and problem-solving skills, self-efficacy and problem-solving performance and problem-solving and problem-solving performance?

### METHODOLOGY

#### RESEARCH DESIGN

The study employed the quantitative research design; that is, using the pre-test post test match pairing equivalent research design. The quantitative method was used to determine the effect in the self-efficacy, problem-solving skills and performance of the students after exposure to problem-based learning approach. Furthermore, the researcher also looked into the relationship of the problem-solving skills and self-efficacy of the students on their problem-solving performance

#### PARTICIPANTS OF THE STUDY

The research participants were the sixty (60) first year Bachelor of Science in Agriculture (BSA) students of Iloilo State College of Fisheries-Dingle Campus enrolled in the first semester for A.Y. 2018-2019. These participants were selected through the match-pairing of scores in their pretest wherein 30 students were in the experimental group and 30 students were in the control group.

## **INSTRUMENTATION**

The 25-item test which was made by the researcher was used to measure the students' problem-solving performance in Statistics. A table of specification was constructed to serve as guide in preparing the test items that covered the topics in Statistics. The questionnaire underwent face and content validation by the panel of jurors who are majors in Math. The questionnaire was pilot tested to the first year Bachelor of Science in Agriculture students of Iloilo State College of Fisheries-San Enrique Campus. The result was tested for reliability using Cronbach's coefficient alpha and found to be highly reliable (25 items,  $\alpha = 0.993$ ). The test that was given in the pre-evaluation was the same test given in the post evaluation.

On the other hand, the Mathematical Problem-Solving Skills Inventory (MPSSI) was adapted from Chirinda (2013) and was used to determine the level of students' problem-solving skills before and after they are exposed to problem-based learning activities and conventional method.

The 13-item test was adopted from the Self-Efficacy Questionnaire by Research Collaboration (<http://ResearchCollaboration.org>, 2016 Version) as cited from the study of Delideli (2018) which was used as the assessment survey for the level of self-efficacy of the respondents.

Administration of the Pre-Test and Post-Test. The adopted questionnaires and researcher-made test were administered in August and October 2018.

Permission to conduct the study was secured from the OIC-Campus Administrator of Iloilo State College of Fisheries-Dingle Campus. The researcher personally administered the instruments. The questionnaires about self-efficacy, problem-solving skills and problem-solving performance were given to the students before and after the conduct of problem-based learning approach.

The participants in experimental group were taught using problem-based learning for the period of 6 weeks while the participants in the control group were taught using the conventional method or lecture method.

## **STATISTICAL TECHNIQUES**

The descriptive statistical tests applied were frequency, mean, and standard deviation.

As to the inferential statistical test, T-TEST Dependent and Independent Samples, One-way Analysis of Variance (One-way ANOVA) and Pearson Product Moment Coefficient of Correlation (Pearson r) were applied.

The 0.05 alpha level of significance was used as criterion for the acceptance or rejection of the null hypothesis. All the gathered data were computer processed using the Statistical Package for Social Sciences (SPSS) software.

In rejecting or accepting the null hypotheses, a significance value of  $< .001$  was declared very highly significant,  $< .01$  was declared highly significant (\*\*), and  $< .05$  was declared as significant (\*).

## **FINDINGS**

### **DESCRIPTIVE DATA ANALYSIS**

Level of Self-Efficacy, Problem-Solving Skills and Problem-Solving Performance of the Experimental and Control Groups

The level of self-efficacy of the experimental group both in pre-test and post-test is "high" with means of 3.45, Sd = 0.54 and 4.02, Sd = 0.45, respectively. In the same manner, the level of self-efficacy of the control group in pre-test and post-test is also "high" with means of 3.46 and 3.51.

The level of problem-solving skills of the experimental group in the pre-test and post-test ranges from "moderately positive" to "positive". On the other hand, the level of problem-solving skills of the control group in the pre-test and post-test are "moderately positive".

Both levels of problem-solving performance of experimental and control groups in the pre-test are "developing" with means of 8.37 and 8.50, respectively. Likewise, differences are revealed in the levels of problem-solving performance when the posttest was conducted. The level of problem-solving performance of the experimental group is "proficient" with a mean rating of 14.77 while a level of "approaching proficiency" is shown in the control group with a mean of 12.23. The result seems to suggest that the students do not possess the skills intended for a K-12 graduate as a problem-solver. According to Plantinos (2018), students do not develop their ability to solve problems and provide solutions to different multifaceted problems given to them. In the same vein, the studies of Delideli (2018) and Laird, et al., (2018) showed that students who have been exposed in an intervention exhibit a big increase in mean difference with regard to their problem-solving performance.

**Table 1. Level of Self-Efficacy, Problem-Solving Skills and Problem-Solving Performance of the Experimental and Control Groups in Pre-Test and Post-Test**

Category	Mean	Sd	Description
<b>A. Self-Efficacy</b>			
Experimental			
Pre-Test	3.45	0.544	High
Post-Test	4.02	0.446	High
Control			
Pre-Test	3.46	0.369	High
Post-Test	3.51	0.385	High
<b>B. Problem-Solving Skills</b>			
Experimental			
Pre-Test	3.12	0.343	Moderately Positive
Post-Test	3.57	0.373	Moderately Positive
Control			
Pre-Test	3.07	0.348	Moderately Positive
Post-Test	3.15	0.353	Moderately Positive
<b>C. Problem-Solving Performance</b>			
Experimental			
Pre-Test	8.37	2.580	Developing
Post-Test	14.77	2.800	Proficient
Control			
Pre-Test	8.50	3.190	Developing
Post-Test	12.23	4.620	Approaching Proficiency

**Inferential Data Analysis**

Differences in the Pre-Test and Post-Test of the Experimental and Control Groups in Self-Efficacy, Problem-Solving Skills and Problem-Solving Performance

The result shows that there is a significant difference in the pre-test and post-test results in the self-efficacy and problem-solving skills of the experimental group with a p-value of .000 which is less than the .001 level of significance.

On the other hand, no significant difference was noted in the level of self-efficacy of the control group in their pre-test and post-test. This is shown by the results with a t-value of 1.116 and a p-value of .274 which is greater than the 0.05 level of significance. While the results of the pre-test and post-test in problem-solving skills of the control group show a significant difference with a significant value of .026 which is less than a .05 level of significance.

The result also shows that there are significant differences existing between the pre-test and post-test in the problem-solving performance of both experimental and control groups with significant values of .000 and .001, respectively.

The results are consistent with the findings of De Witte and Rogge (2016), Downing, et al., (2011) and Gijbels, et al (2005), that there is a significant difference in the metacognitive development and perception on the classroom learning environment of the respondents when exposed to problem-based learning than those respondents

taught in a conventional method. The results of their studies further indicate the positive effect of problem-based learning (PBL) in terms of increasing the knowledge, skills and class atmosphere of the higher education students.

**Table 2. Differences in the Pre-Test and Post-Test of the Experimental and Control Group in Self-Efficacy, Problem-Solving Skills and Problem-Solving Performance**

Category	Mean	Sd	df	t-value	Sig.(2-tailed)
<b>A. Self-Efficacy</b>					
Experimental					
Pre-Test	3.45	0.544	29	5.331***	.000
Post-Test	4.02	0.446			
Control					
Pre-Test	3.46	0.369	29	1.116	.274
Post-Test	3.51	0.385			
<b>B. Problem-Solving Skills</b>					
Experimental					
Pre-Test	3.12	0.343	29	5.094***	.000
Post-Test	3.57	0.373			
Control					
Pre-Test	3.07	0.348	29	2.349*	.026
Post-Test	3.15	0.358			
<b>C. Problem-Solving Performance</b>					
Experimental					
Pre-Test	8.37	2.580	29	11.680**	.000
Post-Test	14.77	2.800			
Control					
Pre-Test	8.50	3.192	29	3.547	.001
Post-Test	12.23	4.621			

\*\*\*p ≤ .001, \*\*p < .01, \*p < .05

**Differences Between the Experimental and Control Groups' Pre-Test and Post-Test in Self-Efficacy, Problem-Solving Skills and Problem-Solving Performance**

Results show that there are no significant differences between the pre-test scores of the two groups of respondents in their self-efficacy, problem-solving skills and problem-solving performance with p-values which are greater than 0.05 level of significance.

On the other hand, significant differences are noted in the self-efficacy, problem-solving and problem-solving performance of the respondents in the experimental and control group when post-tests were given.

This finding agrees with the result of the study conducted by Antonia Scholkman & Bianca Roters' (2009) which shows that the use of an inductive method, such as PBL, has a positive influence on Grade IX students' self-assessment abilities and performance. Furthermore, Uygun, et al (2014) shows that the use of the Problem-Based Learning Approach has a positive influence on students' attitudes, achievement and retention in learning.



### Differences in the Mean Gain Scores of the Experimental and Control Group in Self-Efficacy, Problem-Solving Skills and Problem-Solving Performance

The results reveal that there are significant differences in the mean gain scores of the experimental and control group in self-efficacy, problem-solving skills and problem-solving performance because the significant values are less than the 0.001, 0.01 and .05 levels of significance.

The results reveal that the self-efficacy, problem-solving skills and problem-solving performance of the experimental group in the pre-test and post-test increase significantly compared to the control group.

According to Pagander, et al., (2014) and Masik, et al (2014) , the use of inductive methods of teaching such as problem-based learning has an impact on students' attitudes and performance. Thus, students' knowledge must be useful and have a connection to real life. Students should be engaged in the assignment, real facts, and they must come up with their own ideas on how to solve the problem.

**Table 3. Differences in the Mean Gain Scores of the Experimental and Control Group in Self-Efficacy, Problem-Solving Skills and Problem-Solving Performance**

Category	Mean Gain	Sd	df	t-value	Sig.(2-tailed)
<b>A. Self-Efficacy</b>					
Experimental	0.58	0.592	58	4.468***	.000
Control	0.05	0.252			
<b>B. Problem-Solving Skills</b>					
Experimental	0.44	0.478	58	3.909***	.000
Control	0.08	0.184			
<b>C. Problem-Solving Performance</b>					
Experimental	6.27	3.12	58	2.094*	.041
Control	3.87	5.45			

\*\*\* $p \leq .001$ , \*\* $p < .01$ , \* $p < .05$

### Relationship between Self-Efficacy, Problem-Solving Skills and Problem-Solving Performance

Results of the study reveal that there is a weak relationship between self-efficacy and problem-solving skills ( $r = .335$ ,  $p = .070$ ). It can be inferred that the student's self-esteem is not likely related to their ability to solve a certain problem. When they are in Mathematics class, their self-confidence is not enough to increase their mathematical problem-solving skills. This idea is likewise supported by Surya, et al., (2017) in their study which shows that students' capability of solving mathematical problems is not closely related to high self-confidence.

On the other hand, the overall self-efficacy of the students is significantly related to problem-solving performance with ( $r = .515$ ,  $p = .004$ ). Likewise, the degree of positive correlation is moderately strong.

The findings imply that as the self-efficacy of the students towards Mathematics increases, their problem-solving performance increases as well. The result is in accordance with the study conducted by Hemmings and Kay (2010) which states that "perceived mathematical confidence was a good predictor of mathematical achievement. The more positive the attitude a student holds towards executing mathematical tasks, the better the achievement on those tasks and vice versa" (p. 43). It is further explained by the study of Winheller et al. (2013) in which he identified self-efficacy as an important predictor of academic performance and that "Mathematics performance was predicted primarily by self-efficacy ratings".

Furthermore, the results reveal that there is a high positive correlation between students' problem-solving skills and their problem-solving performance ( $r = .51$ ), which is based on the significant value of .004, which is less than 0.01 level of significance.

The results are in accordance with the study conducted by Delideli (2018) and Downing, et al., (2011) which state that the attitude, willingness, perseverance and self-confidence of the students greatly affect their academic achievement. This is further supported by the research findings of Chirinda (2013) in which students' mathematical problem-solving skills had a positive impact on their performance in Mathematics.

## CONCLUSIONS

In view of the findings, the following conclusions are drawn:

1. The students have a high level of self-efficacy before and after the intervention which implies that the respondents in both groups have a high belief in their own capabilities.
2. The intervention towards the problem-solving skills and problem-solving performance of the respondents in the experimental group has a positive effect. Thus, the effect of the problem-based learning activities on the respondents in the experimental group has a significant impact on the increase of their problem-solving skills and performance than the respondents in the control group.

3. Since there are significant differences in the pre-test and post-test of the experimental group, the researcher concludes that problem-based learning (PBL) has a significant effect on the respondents' increase of self-efficacy, problem-solving skills and problem-solving performance.
4. The self-efficacy, problem-solving skills, and problem-solving performance among BSA students are significantly correlated with each other. This means that their belief to achieve, do something, and solve problems greatly affects their problem-solving performance and achievement in school. If a student has a low level of interest in problem-solving, then he/she will experience poor performance in school also. Moreover, his/her attitude towards studying reflects his/her performance during classroom discussions and examinations.

### **RECOMMENDATIONS**

On the basis of the aforementioned conclusions derived from the findings of the study, the following recommendations are advanced:

1. Since the use of a problem-based learning approach is a significant factor in increasing students' knowledge and self-efficacy, school administrators should conduct seminar-workshop on problem-based learning in all subject teachers to achieve the target learning outcomes as part of the outcome-based education (OBE) needed in each field of specialization. Teachers should be encouraged to integrate a problem-based learning approach in any topic and to devise instructional material in their chosen subject area.
2. Mathematics instructors and professors are encouraged to make their own strategy in teaching which can be applied to both male and female groups, wherein the techniques should include realistic experiences of the two groups. Mathematics teachers should provide interesting and realistic activities in order to motivate students to learn. Having activities like games and drills in Mathematics, and problem-based learning activities give improvement to the performance of the students.
3. Since problem-based learning activities are indeed significant in improving students' self-efficacy, problem-solving skills and performance, it is incumbent upon Mathematics teachers and researchers alike to implement

innovative strategies such as the Problem-based Learning Approach and to study the efficacy of these strategies with the ultimate goal of improving instruction in Mathematics. Mathematics teachers are suggested that they should think of better techniques wherein students will be able to feel excited, relate and maintain their interest throughout the period. Finally, it is clear that teachers need to ensure that problem solving is the focus of their Mathematics programs so that students are always working mathematically.

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## REFERENCES

- Albanese, M. A., & Mitchell, S. (1993). Problem-based learning: A review of literature on its outcomes and implementation issues. In *Academic Medicine*. <https://doi.org/10.1097/00001888-199301000-00012>
- Chirinda, B. (2013). The development of mathematical problem solving skills of Grade 8 learners in a problem-centered teaching and learning environment at a secondary school in Gauteng. University of South Africa, Pretoria. <http://hdl.handle.net/10500/11876>.
- Delideli, J. A. (2018). Paraphrasing Strategy on the Mathematical Problem-Solving Skills and Mathematics Performance and their Relationship. Unpublished Undergraduate thesis, Iloilo State College of Fisheries-Dingle Campus, Dingle, Iloilo.
- De Witte, K. & Rogge, N. (2016). Problem-based learning in secondary education: Evaluation by an experiment, *Education Economics*, 24:1, 58–82. <https://doi.org/10.1080/09645292.2014.966061>.
- Downing, K., Ning, F. & Sin, K. (2011). Impact of Problem-Based Learning on Student Experience and Metacognitive Development. *Multicultural Education & Technology Journal*, Vol.5 Issue: 1, pp.55-69, <https://doi.org/10.1108/17504971111121929>.
- Gare, F. C. (2018). Mind Mapping on the Mathematical Reasoning Ability and Mathematics Performance. Unpublished Undergraduate thesis, Iloilo State College of Fisheries-Dingle Campus, Dingle, Iloilo.
- Hemmings, B., & Kay, R. (2010). Prior achievement, effort, and mathematics attitude as predictors of current achievement. *The Australian Educational Researcher*, 37(2), 41–58. <http://doi.org/10.1007/BF03216921>.
- Laird, B.K. et al (2018). The effects of monitoring environment on problem-solving performance. *Arkansas State University Soc Psychol.* 2018;158(2):215-219. [doi:10.1080/00224545.2017.1324396](https://doi.org/10.1080/00224545.2017.1324396).
- O'Brien, T. C.; Wallach, C.; and Mash-Duncan, C. (2011). "Problem-Based Learning in Mathematics," *The Mathematics Enthusiast*: Vol. 8 : No. 1 , Article 7. <https://scholarworks.umt.edu/tme/vol8/iss1/7>.
- MacMath, S., et al (2009). Problem-Based Learning in Mathematics: A Tool for Developing Students' Conceptual Knowledge. Ontario Institute for Studies in Education of the University of Toronto.
- Masik, A. B. and Yamin, S. (2014). A Comparative Study of the Effect of Problem Based Learning and Traditional Learning Approaches on Students' Knowledge Acquisition. *International Journal of Engineering Education*. <https://www.researchgate.net/publication/259873856>.
- Pagander, L. & Read, J. (2014). Is Problem-Based Learning (PBL): An Effective Teaching Method? A study based on existing research. Institution for Culture and Communication. Linköping University.
- Plantinos, R. (2016). Perceptions and Computational Skills in Mathematics. Unpublished Master thesis, Iloilo State College of Fisheries -Tiwi Campus, Nuevo, Iloilo.
- Preciado, C. (2016), "Indicators of Future Mathematics Proficiency: Literature Review & Synthesis" *Electronic Theses, Projects, and Dissertations*. Paper 412.
- Scholkmann, A., & Roters, B. (2009). Measuring the effects of problem-based learning progress in the development of a scale to rate the acquisition of professional knowledge through PBL. ECER, 2009. Theory and Evidence in European Educational Research. Vienna, Austria: Technische Universität von Dortmund.
- Surya, E., et al (2017). Improving mathematical problem-solving ability and self-confidence of high school students through contextual learning model. *State University of Medan*. <https://doi.org/10.22342/jme.8.1.3324.85-94>. Retrieved May 15, 2018.
- Uygun, N., & Işık Tertemiz, N. (2014). Effects of Problem-Based Learning on Student Attitudes, Achievement and Retention of Learning in Math Course. *TED EĞİTİM VE BİLİM*. <https://doi.org/10.15390/eb.2014.1975>
- Winheller, S., Hattie, J. A., & Brown, G. T. L. (2013). Factors influencing early adolescents' mathematics achievement: High-quality teaching rather than relationships. *Learning Environments Research*, 16(1), 49–69. <http://doi.org/10.1007/s10984-012-9106-6>

# ON-THE-JOB TRAINING PERFORMANCE OF BS ELECTRICAL TECHNOLOGY STUDENTS OF BISU BALILIHAN CAMPUS

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## ABSTRACT

This study was conducted to assess the performance of the BS Electrical students of Bohol Island State University Balilihan Campus in their On-the-Job Training as perceived by the students themselves and by their supervisors of the cooperating agency. Likewise, it assessed the students' preparedness to undergo On-the-Job Training program as perceived by the OJT students and their academic instructors, the satisfaction level of the employers and co-workers of the OJT and the relationship between the perceptions of the groups of respondents. This study utilized the descriptive survey method and utilized purpose sampling to determine respondent groups consist of the OJT, Supervisor, Co-workers and Academic Instructors. The findings showed that the students from BISU Balilihan have Very Good work performance, rated highest in attitude followed by skills and technical knowledge. The study revealed that the OJT are Highly Prepared to undergo training and were rated Very Satisfactory for their work performance. The study revealed further that there is no significant difference in the responses between the OJT and Supervisors in the assessment of OJT Performance; perception of Supervisors and Academic Instructors for students' preparedness to undergo OJT; and Supervisor, OJT, and Co-workers' satisfaction to OJT Performance.

*Keywords: Performance, Satisfaction, Electrical Students, On-the-Job Training*

## INTRODUCTION

The success and development of the country greatly depend on the productivity of its human resource. As embedded in the institution's vision and mission Bohol Island State University (BISU), as a higher learning institution, is mandated to perform its four-fold functions along with its mission of providing Quality Education for sustainable development. To ensure the delivery of standards of excellence, an innovative instruction is practiced in the pursuit of molding competitive and responsive graduates to the needs of industry. Hence, industries are the usual recipients of academe's products.

In the interest of achieving its mission, BISU students are sent to On-the-Job Training (OJT), to its industrial linkages for them to get acquainted in the present technological set-up and requirements in the industry, enhance their knowledge and skills and put into practice the theories they

have acquired/learned in school. Furthermore, as the most effective method to develop the competence and skills of the students, on-the-job training, as a process will guarantee them to quality performance.

According to Furco (2006) On-the-Job-Training programme are defined as programme engaging students in service activities primarily for the purpose of providing them with hands-on experience that enhances their learning or understanding of issues relevant to a particular area of study. On the other hand, McMahon and Quinn (2005) noted that On-the-Job-Training programmes are supervised work experiences whereby students leave their institutions and get engaged in work related venture. On-the-Job-Training programme are therefore carefully monitored piece of work or service experience in which an individual has intentional learning goals and reflects actively on what she or he is learning throughout the experience.

According to Taladtd, et al (2011) to have a good and competent manpower resources, quality education and intensive training is necessary for the students to become skilled and productive workers when they become part of labor force. Further, he stressed that education is primarily concerned with the opening out to the world of students so that he can choose his interests and mode of living, and his career.

A person who finished his studies should be equipped not only with the critical skills, knowledge of his specialization but with values, right attitudes, and work ethics (Restificar, 2003) which significantly affects his performance and productivity in worlds of work and in society as a whole. In the light of fast-changing technology nowadays, technical, professional, instructor and manpower, should adopt the trends and practices in the emerging working environment.

Furthermore, the student-traineeship program contributes significantly and positively towards enhancing the knowledge base and motivational level of students (Beard, 2003). The best outside classroom learning activities are through a student-traineeship attachment (Burnett, 2003). For these reasons, the researchers were motivated to conduct this study in order to assess the performance of BSElectrical Technology-OJT as an essential instrument for the development of students and serve as an avenue in molding graduates to be equipped with knowledge, skills and work attitude needed in the industry. This assessment also aims to help how to plan and execute the OJT properly in order to train and orient students about the work, reality in working and their future career.

## Literature Review

On-the-job training is one of the course requirements for graduation. A college student has to undergo On-the-job training in an industry that directly relates to the postsecondary goal of the student. Learners are trained in actual work environments such as workshops offices and laboratories in which their prior training is relevant. Through On-the-job training, the students are exposed to and become familiar with work-related environment related to their field of specialization to enhance their competence. Specifically, the students are able to gain relevant and practical industrial skills under the guidance of industry experts and workers, appropriate the importance and application of the principles and theories taught in school, enhance their technical knowledge and skills, enrich their skills in communications and human relations and develop

good work habits, attitudes, appreciation, and respect for work. These prepare them to meet the needs and challenges of employment or higher education after graduation.

Likewise, our country nowadays develops more programs to ensure that learners are being trained to obtain competencies, work ethic and values relevant to pursuing further education and joining the world of work. On-the-job training (OJT) is part of it. It is a strategy in teaching the skills, knowledge and competencies that are needed for employees to perform a specific job within the workplace and in their working environment. Employees learn in an environment in which they need to practice the knowledge and skills taught in their field of specialization.

Student's exposure to "on-the-job training" focuses on the acquisition of skills within the work environment generally under working conditions. The exposure to on-the-job training allows the students to apply the theories learned at school into practical applications in the work-world. The Theory of Trace Decay by Edward Thorndike states that:

"Learning leaves a mark (trace) on the brain. With the passage of time this trace decays when it is not rehearsed, and once decay has occurred, memory "dies out" or "fades away." (Eysenck, 2005)

In connection to the study, the theory further elaborates the learning gained from school should not be only limited inside the four walls of the classroom but it should be applied for everyday life, since the real aim of education is to prepare individuals and to equip learners with knowledge, skills and values useful in their field of profession or even in daily life. Hence, what the students have assimilated at school must be used into practice to supplement learning. Moreover, through on-the-job training, students acquire both general skills that can be applicable to different jobs and the specific and technical skills that are unique to their field of specialization.

In addition, Bandura explained in his *Social Learning Theory*

"Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action."

The performance of a trainee depends on his social relationship to his coworkers and supervisor in the workplace. Good working attitude and personality affect his performance.

Kumar (2018), states that the effectiveness of training is a measurement of learning. If learning and experience can be achieved through behavior, and learning measures the effectiveness of training, therefore good personality and behavior is required.

In entirety, Social Learning Theory can be explained by the three concepts:

First, people can learn through observation. Observational learning does not necessarily require watching another person engage in an activity. Hearing verbal instructions can lead to learning.

Second, mental states are important to learning. Just observing someone else's actions does not always lead to learning. This means that the individual's own mental state and motivation play an important role in determining whether a behavior is learned or not. Though external reinforcements are recognized to support learning, Bandura suggests that reinforcement does not always come from outside sources. This could be in a form of internal reward, such as pride, satisfaction, and a sense of accomplishment. This emphasis on internal thoughts and cognitions helps connect learning theories to cognitive developmental theories. Hence in this study, students were asked to rate their own performance.

Third, learning does not necessarily mean change in behavior. While behaviorists believed that learning led to a permanent change in behavior, observational learning demonstrates that people can learn new information without demonstrating new behaviors. Based on a research conducted by *Burning Glass Technologies*,

Furthermore, Vygotsky in his Zone of Proximal Development as cited by McLeod (2012) states that skills too difficult for a child to master on his or her own, but that can be done with guidance and encouragement from a knowledgeable person. Vygotsky believed that when a student in ZPD for a particular task, providing the appropriate assistance will give the student enough of a boost to achieve the task. This would allow the child to develop skills to use on his or her own to develop higher mental functions.

Just like in On The Job Training, a trainee still needs the guidance of the On The Job Partner Institution Supervisor to guide him in his training. A trainee needs to know what a real job scenario is like. It takes time for the trainee to be more fa-

miliar with his job. There is still a long way to go, but the guidance and encouragement of the mentors will help the trainee develop his skills over time. In this way, when the trainee becomes familiar with the job experience, it will not be too hard for him to achieve his task.

In line with these, An Act Providing For A Revised National Apprenticeship Program, Clarifying The Standards For Training And Engagement Of Apprentices And Accreditation Of Apprenticeship Programs, Repealing For The Purpose Chapters I And Ii Of Title Ii, Book Ii Of Presidential Decree No. 442, As Amended, Otherwise Known As The Labor Code Of The Philippines, And For Other Purposes Senate Bill No. 1392 Chapter I, Section 3 stated that:

“(d) Enhance existing standards for the training, development and employability of apprentices;(e) Recognize the indispensable role of private enterprises in training and development;(f) Strengthen advocacy of the apprenticeship training program to encourage enterprise and young workers’ participation; (g) Increase productivity and competitiveness of enterprises by ensuring availability of skilled human resource. (Lopez, 2016).

By the time learners reach college, they would have already acquired almost all the competencies and skills that would prepare them for the curriculum exits (higher education, employment, and skills development). On-the-Job Training provides them with an avenue to test them and apply what they have learned in a non-school scenario. In an On-the-Job Training, learners are not only able to apply their previous training but are also able to experience the social interactions in a work environment. Their experiences during the On-the-Job Training will develop many skills and values that would help them as they transition college to real life.

Managers want to have satisfied employees who feel good in their workplace; they prefer to work with people to who have a positive view of the job. Workers who have a high level of job satisfaction generally love their job give; they feel justice in an environment in which they work; and they feel that their job gives them some positive features such as variety, challenge, good pay and security, autonomy, and pleasant coworkers, etc. workers who are happy at work even devote private time to their work activities. They will be creative and committed, they will seek away to cross any obstacle which might exist in the realization on their jobs, and they will assist their col-

leagues and superiors. These workers will have extraordinary performance, and the companies in these kinds of workers will be successful.

From the theories and studies stated, the researchers are motivated to conduct a study in order to identify the job performance of the students. The researchers want to reveal the nature of the trainees' performance by evaluating the hypothetical statements made by the evaluation of agencies. Through this, a program can be constructed towards addressing industry skills matching with entrants.

## OBJECTIVES

This study was conducted to find out the performance of the BS Electrical students in their On-the-Job Training program as basis for enhancement. Specifically, it aims:

1. To determine the profile of the cooperating agencies in terms of:
  - 1.1 Type of Institution
  - 1.2 Nature of Business
  - 1.3 Years of Existence
  - 1.4 Work Availability for OJT
  - 1.5 Skills Requirement for OJT
2. To assess the performance of the fourth year BS Electrical students in their OJT program as perceived by the students themselves and by their supervisors of the cooperating agency in each of the following aspects:
  - 2.1 Technical knowledge
  - 2.2 Skills
  - 2.3 Attitude
3. To determine the students' preparedness to undergo On-the-Job Training program as perceived by the OJT students and their academic instructors.
4. To identify the satisfaction level of the employers and co-workers of the OJT.
5. To determine the relationship between the perception of the respondent groups as to:
  - 5.1 Performance
  - 5.2 Preparedness
  - 5.3 Level of Satisfaction

### Statement of Null Hypothesis:

There is no significant difference between Supervisors' and OJT's assessment on OJT Performance.

## METHODOLOGY

### Design

The study utilized the descriptive survey method in order to evaluate the overall performance of the students who undergone On-the-Job Training. The method is designed for the researcher to gather information on the performance of On-Job-Trainees in terms of technical knowledge, skills, and attitude.

### Environment and Participants

The study was conducted at the 11 identified cooperating agencies in Bohol and Cebu. The participants were conveniently selected thirty (30) fourth year students of BS Electrical Technology who undergone On-the-Job Training for the school year 2017-2018. They were evaluated by 11 direct supervisors from the agencies they undergone their training and 30 co-workers chosen through purposive sampling, 10 instructors from BISU Balilihan who have handled the students were asked to provide their perception on students' preparedness to undergo OJT.

### Instruments

Researchers' made questionnaires were formulated as instrument for collection of data. Four sets of questionnaires were prepared for the Supervisors, On-the-Job Trainees, Co-workers and Instructors respectively.

### Statistical Treatment

This study used percentage and weighted mean as statistical tools for the treatment of data. To further analyze the results, T-test for independent mean and One-Way Analysis of Variance.

## Results and Discussion

**Table 1. Profile of Cooperating Agency  
Type of Institution  
N=11**

Type of Institution	Number	Percentage
Government	0	0%
Non-Government	11	100%

**Type of Institution.** Eleven (11) institutions within and neighboring the Province of Bohol were identified cooperating agencies of BISU Balilihan Campus, accommodating the OJT for BS Electrical Technology. 100% of the agencies were recognized as Non-Government.

**Table 2. Nature of Business**  
N=11

Nature of Business	Number	Percentage
Commercial	4	36.36%
Industrial	4	36.36%
Health Care	1	9.09%
Merchandizing	1	9.09%
Utility	1	9.09%

**Nature of Business.** The Nature of Business of the cooperating agencies determines the required skills and training opportunity for the On-the-Job Trainees, Table 2 reflects the nature of the cooperating agencies. The 11 cooperating agencies comprised of 4 Commercial Institution, 4 Industrial Institution, Health Care, Merchandizing Enterprise and Utility.

**Table 3. Information of Internship**  
N=1

	Number	Percentage
Paid	6	54.54%
Non-Paid	3	27.27%
Allowance	2	18.18%

**Information of Internship.** The results reveal that 54.54% of the cooperating agencies pays the OJT, while 27.27% do not pay the OJT and 18.18% provides allowance for the trainees.

**Table 4. Work Availability for OJT**

Types of Work	Frequency	Rank
Maintenance	9	1
Installation	9	1
Troubleshooting	8	2
Repairing	7	3
Operation Monitoring	4	4
Machine and Air-conditioning	2	5
Electrical Works	1	6

**Work Availability for OJT.** It is the responsibility of the cooperating agencies to ensure that the works available for the OJT are relevant and will enhance their skills to be productive and competent. As reflected in table 4, maintenance and installation are the works that are mostly available for the OJT, followed by troubleshooting, repairing and minimal for operation monitoring. Three (3) agencies specified other works available such as machine and air-conditioning and electrical works.

**Table 5. Skills Requirement for OJT**

Nature of Business	Number	Percentage
Good Communication Skill	6	2
Computer Skills	3	5
Mechanical Ability	4	4
Problem Solving Skills	5	3
Aptitude in Mathematics	1	7
Technical Skills	11	1
Others:		
Basic Knowledge on	3	6

**Skills Requirement for OJT.** On a research conducted by Burning Glass Technologies, it was found out that employers are being a lot more specific about the skills they expect from interns. As revealed in Table 5, all 11 cooperating agencies requires Technical Skills for OJT and half requires Good Communication Skills and Problem Skills. Aptitude in Mathematics got the lowest rank. This means that employers give more importance to technical skills than soft skills.

**Table 6. Assessment of OJT Performance in Terms of Technical Knowledge**

Item No.	Technical Knowledge	Supervisors n=11		Students n=30	
		WM	Description	WM	Description
1	Knows basic electrical terms and its units (voltage, current, re-	3.64	Very Good	3.67	Very Good
2	Identifies basic electrical tools and its uses.	3.73	Very Good	3.03	Good
3	Understands and follows safety precautions.	3.27	Good	3.63	Very Good
4	Classifies electrical measuring instruments and its uses.	3.27	Good	3.6	Very Good
5	Identify sizes of wires/cables.	3.27	Good	3.6	Very Good
6	Knows alternating current (AC) from direct current (DC)	3.64	Very Good	3.53	Very Good
7	Interprets series, parallel and complex circuits.	3.20	Good	3.46	Very Good
8	Understands diagrams, instructions/ machine manuals.	3.4	Very Good	3.26	Good
9	Recognizes local ordinances and national electrical codes.	3.0	Good	3.40	Very Good
10	Understands standards national and international safety rules and regulation.	3.0	Good	3.36	Very Good
11	Interprets motor control diagrams.	2.8	Good	3.33	Very Good
12	Recognizes three phase and single phase electric motors.	3.55	Very Good	3.5	Very Good
13	Identify motor controller devices.	3.0	Good	3.36	Very Good
14	Others				
	<b>AWM</b>	<b>3.0</b>	<b>Good</b>	<b>3.44</b>	<b>3.44</b>



**OJT Performance in Terms of Technical Knowledge.** Table 6 shows the comparison of the perceptions of the supervisors and trainees on the OJT Performance in terms of technical knowledge. The supervisors gave highest rating of 3.73 or Very Good for item 2, “Identifying tools and their uses” which on the other hand, got the lowest rating from the OJT with weighted mean, 3.03 or Good. Supervisors gave the lowest rating of 2.8 or Good on OJT’s ability to interpret motor control diagrams. In general, results revealed that OJT gave higher rating on their Technical Knowledge as revealed in the Average Weighted Mean of 3.44 interpreted as Very Good, while the supervisors’ assessment got an Average Weighted Mean of 3.0 interpreted as Good. This means that the OJT has high level of confidence on their technical knowledge.

**Table 7. Assessment of OJT Performance in Terms of Skills**

Item No.	Skills	Supervisors N=11		Students N=30	
		WM	Description	WM	Description
1	Can read electrical terms and its units. (voltage, current, resistance)	3.64	Very Good	3.5	Very Good
2	Knows how to use basic electrical tools.	3.55	Very Good	3.73	Very Good
3	Classifies and knows how to use electrical measuring instruments.	3.45	Very Good	3.53	Very Good
4	Can follow instructions/ machine manuals in operating machines and electrical devices.	3.18	Good	3.67	Very Good
5	Able to splice cables and actual connection from power supply.	3.73	Very Good	3.73	Very Good
6	Capable of installing electrical lightings, convenience outlet and other devices.	3.82	Very Good	3.66	Very Good
7	Designs and assembles motor control circuit. (start-stop, wye-delta, forward-reverse)	2.5	Good	3.2	Good
8	Troubleshoots and repairs electric appliances/machines (transformer, heater, motor)	3.0	Good	3.33	Very Good
9	Good in written and oral communication	2.8	Good	3.3	Very Good
10	Be able to work independently or in teams of diverse people.	3.0	Good	3.56	Very Good
11	Be able to choose good/best idea or solution.	3.09	Good	3.4	Very Good
12	Solves related work problems logically.	2.82	Good	3.33	Very Good
13	Computer literate.	2.36	Fair	3.36	Very Good
	<b>Weighted Mean</b>	<b>3.15</b>	<b>Good</b>	<b>3.48</b>	<b>Very Good</b>

**OJT Performance in terms of Skills.** As reflected in Table 7, the supervisors gave Very Good ratings on 5 of 13 items, Good on 7 out of 13 items and gave a lowest rating on 2.36 or Fair

for computer literacy. Meanwhile, the students gave Very Good ratings to the Skills, except for “design and assembly of motor control circuit” which got the lowest rating of 3.2 or Good. In general, the results revealed that OJT gave higher rating for their performance in terms of skills which got 3.48 Average Weighted Mean interpreted as Very Good while Supervisors gave a Good rating with an Average Weighted Mean of 3.15.

**Table 8. Assessment of OJT Performance in Terms of Attitude**

Item No.	Attitudes	Supervisors N=11		Students N=30	
		WM	Description	WM	Description
1	Motivated and interested to learn new ideas	3.73	Very Good	3.66	Very Good
2	Withstands stress and pressure on the job.	3.55	Very Good	3.36	Very Good
3	Flexible, willing to be assigned in different areas/ department. Willing to work in shifting	3.91	Very Good	3.56	Very Good
4	Tolerance or can control frustration.	3.27	Good	3.23	Good
5	Self-confidence, self-reliance in doing related works.	3.45	Very Good	3.76	Very Good
6	Demonstrates work ethics and proper etiquettes.	3.18	Good	3.46	Very Good
7	Displays respects to his/ her supervisors/heads and fellow workers.	3.55	Very Good	3.73	Very Good
8	Dedicated/enthusiasm to his/her works assignments.	3.55	Very Good	3.56	Very Good
9	Asks proper permission ahead of time when taking leave or absent.	3.55	Very Good	3.73	Very Good
10	Displays professionalism.	3.55	Very Good	3.5	Very Good
11	Regular and punctual in work attendance and proper observation of break periods.	3.18	Good	2.2	Fair
12	Manageable and can work on teams.	3.36	Very Good	3.5	Very Good
13	Personal grooming and pleasant disposition.	3.45	Very Good	3.63	Very Good
14	Cooperates as good follower.	3.45	Very Good	3.56	Very Good
15	Works beyond office hours when necessary.	3.5	Very Good	3.5	Very Good
16	Accepts additional responsibilities with commitment.	3.55	Very Good	3.43	Very Good
17	Exhibits open-mindedness on criticisms.	3.45	Very Good	3.46	Very Good
	<b>Weighted Mean</b>	<b>3.48</b>	<b>Very Good</b>	<b>3.46</b>	<b>Very Good</b>

**OJT Performance in Terms of Attitude.** When an employee reports to work, his attitude affects his work performance and can have an impact on the morale of the employees around him. As compared in table 8, both the Supervisors and OJT gave Very Good rating for OJT Per-

formance in terms of attitude. The supervisors gave highest rating of 3.91 or Very Good for Flexibility and rated Good for Tolerance, Demonstration of Work Ethics, and Attendance and Punctuality. Meanwhile, the OJT gave highest rating of 3.76 or Very Good for Self-confidence, Good for Tolerance and gave lowest rating of 2.2 or Fair for punctuality and attendance.

**Table 9. Preparedness of Students to undergo OJT**

Item No	PREPAREDNESS TO UNDERGO OJT	Supervisors N=11		Instructors N=30	
		WM	Description	WM	Description
1	Equipped with enough knowledge, skills and work ethics in the field of specialization.	3.63	Highly Prepared	3.3	Highly Prepared
2	Capable of accomplishing prescribed task, quantity and quality of assigned task.	3.53	Highly Prepared	3.3	Highly Prepared
3	Have the abilities that match with the job requirements.	3.46	Highly Prepared	3.3	Highly Prepared
4	Competent and effective in assigned job.	3.7	Highly Prepared	3.2	Moderately Prepared
5	Can be relied upon on the assigned tasks and can follow instructions.	3.53	Highly Prepared	3.4	Highly Prepared
6	Can work effectively with team or with higher authority to accomplish the organizations goal.	3.6	Highly Prepared	3.4	Highly Prepared
7	Diligent in performing works.	3.56	Highly Prepared	3.6	Highly Prepared
8	Can work with minimum supervision.	3.53	Highly Prepared	3.3	Highly Prepared
9	Can easily adjust to the new job assignment	3.53	Highly Prepared	3.1	Moderately Prepared
10	Perform housekeeping regularly.	3.6	Highly Prepared	3.4	Highly Prepared
11	Taught to work safely and have quality output.	3.66	Highly Prepared	3.5	Highly Prepared
12	Enthusiastic to observe and learn the present set-up in industry.	3.63	Highly Prepared	3.6	Highly Prepared
13	Have self-confidence as a trainee.	3.53	Highly Prepared	3.4	Highly Prepared
14	Ready and interested to undergo OJT.	3.8	Highly Prepared	3.7	Highly Prepared
<b>Weighted Mean</b>		<b>3.59</b>	<b>Highly Prepared</b>	<b>3.39</b>	<b>Highly Prepared</b>

**Preparedness of Students to undergo OJT.**

While both the Supervisors and Instructors rated the On-the-Job Trainees as Highly Prepared to undergo OJT, table 9 reflects the comparison among the ratings of the two groups. The Instructors rated Moderately Prepared for Competence in Assigned Job, and Ability to Adjust to new job assignments, employers consistently rated Highly Prepared to all aspects and gave the highest rating of 3.8 on Readiness and Interest to undergo OJT. In addition, during the interviews conducted with the employers, positive feedbacks were testified.

**Table 10. Level of Satisfaction on OJT Performance**

	WORK PERFORMANCE	Supervisors		OJT		Co-workers	
		WM	Description	WM	Description	WM	Description
1	are equipped with enough knowledge, skills and good working attitudes.	3.45	Very Satisfactory	3.7	Very Satisfactory	3.41	Very Satisfactory
2	will help the company in choosing the right people to join their labor force in the future because of their work performances.	3.36	Very Satisfactory	3.7	Very Satisfactory	3.46	Very Satisfactory
3	are competent and effective in their assigned jobs	3.36	Very Satisfactory	3.6	Very Satisfactory	3.53	Very Satisfactory
4	help in achieving company's performance targets.	3.36	Very Satisfactory	3.5	Very Satisfactory	3.46	Very Satisfactory
5	increase the company's operations.	3.36	Very Satisfactory	3.6	Very Satisfactory	3.43	Very Satisfactory
6	Performs his given assignments / duties sincerely.	3.6	Very Satisfactory	3.5	Very Satisfactory	3.53	Very Satisfactory
7	Competent and effective in his assigned job.	2.82	Satisfactory	3.53	Very Satisfactory	3.43	Very Satisfactory
8	Possess knowledge, skills and work ethics in his field of specialization (Electrical)	3.55	Very Satisfactory	3.03	Satisfactory	3.47	Very Satisfactory
9	Values his/her job	3.36	Very Satisfactory	3.7	Very Satisfactory	3.38	Very Satisfactory
10	Has quality of work output	3.09	Satisfactory	3.5	Very Satisfactory	3.22	Satisfactory
11	Works well with everyone, a good team worker	3.45	Very Satisfactory	3.73	Very Satisfactory	3.56	Very Satisfactory
12	Able to complete work within the allotted time	3.27	Satisfactory	3.5	Very Satisfactory	3.33	Very Satisfactory
13	Has the ability to work with minimum amount of supervision	3.27	Satisfactory	3.43	Very Satisfactory	3.33	Very Satisfactory
<b>Weighted Mean</b>		<b>3.33</b>	<b>Very Satisfactory</b>	<b>3.54</b>	<b>Very Satisfactory</b>	<b>3.43</b>	<b>Very Satisfactory</b>

**Satisfaction on OJT Performance.** Table 10 reflects the perceptions of the Supervisors, On-the-Job Trainees and Co-Workers on their Satisfaction to OJT Performance. The supervisors gave highest rating of 3.45 or Very Satisfactory to "Equipped with enough knowledge, skills and good working attitudes". "Ability to work well with others" got the highest weighted mean from all three groups. On the other hand, lowest mark for employers is on "OJT's ability to work within allotted time and with minimum supervision", for OJT gave lowest rate on "Possess knowledge, skills and work ethics relevant to Electrical Technology" while "Quality of Work output" got the lowest rate from the co-workers. As a whole, the

performance of the OJT is Very Satisfactory for the three respondent groups.

**Table 11. Difference between Supervisors' and OJT's Assessment on OJT Performance**

Difference	t-computed value	t-tabular value	Description	Interpretation
	at 0.05 level of significance, df=24			
Technical Knowledge	-0.1723846	±1.71	Not significant	Accept Null hypothesis
Skills	-0.3312682		Not significant	Accept Null hypothesis
Attitude	0.02707721		Significant	Reject Null hypothesis

Through the use of appropriate statistical test, the researchers found out that there is no significant difference between the Supervisor and OJT's assessment on OJT Performance. Since the computed value is less than the tabular value, then the decision is to accept null hypothesis.

**Table 12. Difference between Supervisor and Instructor on Students' Preparedness to Undergo OJT**

Difference	t-computed value	t-tabular value	Description	Interpretation
	at 0.05 level of significance, df=24			
Students' Preparedness to Undergo OJT	0.23509657	±1.71	Not significant	Accept Null hypothesis

Since the computed value 0.235 is less than the tabular value ±1.71, at degrees of freedom 24, then the decision is to accept null hypothesis. This means that there is no significant difference in between the perception of the Supervisor and OJT on the students' preparedness to undergo OJT.

**Table 13. Difference between Supervisors', OJT and Co-worker's Satisfaction to OJT Performance**

	computed F-Value	Tabular value	Description	Interpretation
	at 0.05 level of significance,			
Satisfaction to OJT Performance	0.9854	3.86	Not significant	Accept Null hypothesis

As reflected in table 13, the computed F-value 0.9854 is less than the tabular value 3.86. Hence, there is decision is to accept the null hypothesis which means that there is no significant difference between and among the responses of the three groups.

## FINDINGS

Eight of the eleven Non-Government Cooperating agencies were Commercial and Industrial Institutions. The most available work for the OJT include installation and maintenance followed by troubleshooting. Results revealed that Technical Skills is the most important skill requirement for OJT and least requires aptitude in mathematics.

The trainees themselves gave Very Good Rating for their Work Performance in terms of Technical Knowledge and Skills, while the employers gave them Good rating but is still considerably high. OJT Performance in terms of Attitude was rated as Very Good by both groups. Data also revealed that both employers and academic instructors assessed the OJT as Highly Prepared to undergo training.

It was found out that there is no significant difference in the perceptions of the respondent groups in terms of Work Performance, Preparedness to undergo On-the-Job Training and Satisfaction to Job Performance.

## CONCLUSIONS

On-the-Job trainees of BISU Balilihan have good work performance, rated highest in terms of attitude followed by skills and technical knowledge. The students are highly prepared to undergo On-the-Job training and supervisors and co-workers are very satisfied on the OJT's performance.

## RECOMMENDATIONS

The researchers recommend that there must have additional seminars before the students undergo On-the-Job Training to maintain what has been shown in the findings. This will help the BS Electrical Technology students to be more knowledgeable and confident in their field of expertise. Although the results are good enough in terms of the students' performance in technical knowledge, skills and attitudes aspects as reflected in the tables, the institution should enhance more the teaching strategies to be provided to the students in order to improve their capabilities. Aside from that, additional trainings are needed in order to improve the communication skills of the students to boost their confidence especially if they are already in their field of expertise. The academic instructors and OJT coordinator or adviser and the

employers should have a close supervision and monitoring of the OJT students in their daily, weekly and monthly performance and accomplishments and make comments and suggestions to improve their skills. It is also highly recommended that problems encountered during OJT program must be included in the future study.

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### REFERENCES

- Bill of the Apprenticeship Training System Act of 2017 <https://www.aseanlip.com/philippines/general/legislation/bill-of-the-apprenticeship-training-system-act-of-2017/AL14227>
- Cherry, Kendra. (2018) How Social Learning Theory Works <https://www.verywellmind.com/social-learning-theory-2795074>
- Eysenck, M. (2005) Psychology for AS Level – page 65 – Google Books Result <https://books.google.com.ph/books?isbn=1841693782>
- Felicien, Rasa, Sumanga, Buted (2014) Internship Performance of Tourism and Hospitality Students: Inputs to Improve Internship Program. *International Journal of Academic Research in Business and Social Sciences*. Vol. 4, No. 6, 2014. [https://www.researchgate.net/publication/287696286\\_Internship\\_Performance\\_of\\_Tourism\\_and\\_Hospitality\\_Students\\_Inputs\\_to\\_Improve\\_Internship\\_Program/amp](https://www.researchgate.net/publication/287696286_Internship_Performance_of_Tourism_and_Hospitality_Students_Inputs_to_Improve_Internship_Program/amp)
- Rothwell and Kazanas (2004) *Improving On-the-Job Training: How to Establish and Operate a Comprehensive OJT Program*.
- Shabani, Karim. (2010) Vygotsky's Zone of Proximal Development: Instructional Implications and Teacher's Professional Development. Vol 3 No. 4. *English Language Teaching* <https://files.eric.ed.gov/fulltext/EJ1081990.pdf>

# THE SAVINGS AND INVESTMENTS BEHAVIOR OF SELECTED FISHERFOLKS IN THE MUNICIPALITY OF ROSARIO, CAVITE

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## ABSTRACT

This study aimed to determine the savings and investments behavior of selected fisherfolks of Rosario, Cavite to understand the status quo and potentially contribute to the rationale of policy platform and decision-making processes in the local government of Rosario, Cavite. The research study was focused in the five major coastal barangays in the Municipality of Rosario, Cavite, represented by 100 participants each barangay. The author used descriptive research design to determine socio-economic background and the descriptions of savings and investments behavior of the participants. Moreover, the proponent used inferential design through regression modeling to determine the conditioning effects of the observed variables. Researcher-made questionnaires was constructed, distributed and collected from the participants to gather primary data. The questionnaire used personal-constructed likert-type scaling to identify the degree of behavior of fisherfolks towards investments and savings. Finally, the researcher used descriptive statistics and selected regression tests to augment statistical and analytical analyses of the study. The study showed that age, educational attainment, years in fishing, and income influence savings propensities of fisherfolks. Considerably, importance of investing does not significantly influenced investment activities. Fisherfolks of the municipality of Rosario tend to save but have low investment behavior due to the high risk perceived by the fisherfolks.

*Keywords: Cavite, Philippines, descriptive-inferential designs, fisherfolks, savings and investment behavior, Philippines*

## INTRODUCTION

The United Nations (UN) crafted the Social Development Goals (SDGs) to foster global cooperation towards strategic, inclusive growth across the member nations. It is the modification for the previously Millennium Development Goals (MDGs) to address the pressing issues of modern day. One of the SGDs is the reduction of inequalities among the citizens of the world. It is a goal that encompasses the equal access towards different sectors of livelihood, rights and opportunities to improve respective standard of living. This gives pathway to various programs across the globe including the Association of Southeast Asian Nations (ASEAN). The ASEAN as an economic community targets the agriculture and aquaculture resources and uses SDG-enabled strategies to promote development and reduce the ine-

quality and promote wider opportunities for growth especially in fisheries were most of the member nations rely such as Thailand, Indonesia, Brunei, Vietnam, Malaysia and the Philippines (Jani, 2014 and Nalzar, 2013).

Fisheries play an important aspect of human livelihood internationally. In fact, 2/3 of the economy world relies on the output of the fisheries sector in aggregate manner. The produce of fisheries contributed for about 2 Trillion US dollars in 2010 alone and forecasted to increase by 20 percent per year holding the normal trend in demand constant (The Economist, 2010). Hence various undertaking to understand the fisheries through exploring the situation of fishers around the globe was addressed to improve their production and status quo.

Rosario also known as Salinas, is a coastal first-class municipality in Cavite. The municipali-

ty has only 768 hectares of land area and currently considered as the most densely populated municipality in the province. Rosario produced crops such as palay, corns and some vegetables until the late 70s. Fisheries boomed in the early 80s due to technological progress in the industry. Today, the municipality is one of the major fish ports in Cavite. Fishing is one of the main source of livelihood and income of the people of Rosario. Fishery plays an important role in the local economy of Rosario, Cavite. Majority of its people depend on the sea for living. In fact, fishery is considered as one of the primary sources of livelihood and income in the municipality ([www.psa.gov.ph](http://www.psa.gov.ph) retrieved December 2018 and [www.rosariocavite.com.ph](http://www.rosariocavite.com.ph) retrieved December 2018). Thus, the researcher took an undertaking that will understand savings and investment behavior of fisherfolks in the coastal community of Rosario, Cavite to serve as a baseline study of various interventions that the university and local government unit can provide in the community.

## REVIEW OF LITERATURE

In Nigeria, Adeleke (2013) pointed out the fisherfolks were characterized with low education and widening lack of opportunities in various social services in their community. Fisherfolks were one of the poorest sectors of their community. Bluwey (2015) revealed various measures of poverty among fisherfolks in Ghana. The study utilized income, savings, and household conditions among others. The author have identified that these measures were predominantly evident among the fisherfolks and are significant measures.

Considerably, according to Arthur (2017) understanding this current situation towards the fisherfolks should be utilized to undertake policies that will address their challenges and thereby providing opportunities the lives of fisherfolks better. The same nature of study validated these findings as revealed by Oladimeji et.al. (2015) that in Nigeria, consumptions of fisherfolks were influenced by the rural poverty factors. Another study dealt with the socio-economic analysis of fisherfolks on the same country revealed that fisherfolks were one of the societal segments who are economically challenged (Olaoye, et.al, 2012). In India, various economic related studies was undertaken to understand the status quo of fisherfolks in Kanchipuram districts, Tuticorin and Tamilnadu. The studies revealed that the respective

fisherfolks were characterized with poverty with some of the participants have engagements in savings and have passive incomes. In general, these fisherfolks prioritize personal savings though in small amount as part of their spending and saving patterns (Ramaratnam, 2016), (Rameshkumar et.al., 2011) and (Swathi, 2011).

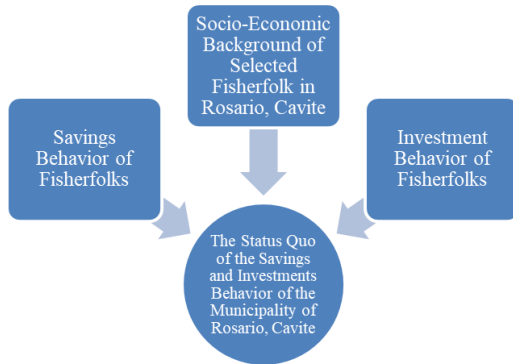
In Malaysia, a fishing dependent country fisherfolks were earning below their country's average income. Small scale fishers were categorized with in and below poverty perceptions as their current condition (Jani, 2014). The article written by Conserva (2015) about fisherfolks in Western Visayas were still challenged though starting to cope up despite of supports from the various sector after the Yolanda catastrophe. Nalzarro (2013) studied the organizational memberships of some fishing villages in Palawan, he found out that these fisherfolks find support through collective movements and crafting strategies for their welfare. Hence, increasing and expanding their respective social and economic sources. The Philippines, a developing country has many challenges especially in income inequalities especially among farmers and fishers (PIDS, 2010) should address and understand the fisherfolks current situation to craft well-targeted strategies for their welfare.

Savings play a vital role in the welfare of people. It provides opportunities for individual to expand purchasing power and investment injections. Theoretically, under certain economic assumptions that as income increases savings also increases and as savings increases so as investments (Blanchard, 2003), (Dornbusch, et.al., 2008 and Handa, 2004). As economic growth spurs in the municipality, disposable income of residences, under assumption, expands. Thus this study aimed to determine the savings and investments behavior of selected fisherfolks of Rosario, Cavite to understand the status quo and potentially contribute to the rationale of policy platform and policy-making processes in the local government of Rosario, Cavite.

## FRAMEWORK

The study utilized the responses of the participants to identify the savings and investments behavior of the selected fisherfolks in Rosario, Cavite. Furthermore, the researchers used various data sets, including primary and secondary data from questionnaires and other academic-based, government, and non-government institutions such as

agencies, libraries and internet resources. The status quo of the savings and investments behavior of the selected fisherfolks in Rosario, Cavite is the main output of this research study.



## OBJECTIVES OF THE STUDY

The author generally aimed to determine the savings and investments behavior of selected fisherfolks in Rosario, Cavite.

Specifically, the researcher aimed to,

1. determine the socio-economic profile of the participants in terms of;
  - a. age
  - b. civil status
  - c. educational attainment
  - d. average gross income
2. determine the savings behavior of the selected fisherfolks,
3. determine the investments behavior of the selected fisherfolks,
4. determine how age, gender, years of being a fisherfolks and income conditions average, propensity to save; and
5. determine how perceived importance to invest and investment risk-taking behavior conditions likeness to invest.

## METHODOLOGY

### Research Design

The researcher used descriptive-causal research design in the conduct of the study. Specifically, the author used descriptive research design to determine socio-economic background and the descriptions of savings and investments behavior of the participants. Moreover, the proponent used inferential design through regression modeling to determine the conditioning effects of the observed variables.

### Participants

The researcher used 500 participants in this study through convenience sampling. It was composed of 100 fisherfolks representing each sampling area in Rosario, Cavite. The study used the five barangays in Rosario, Cavite namely: Barangay Wawa I, Barangay Sapa II, Barangay Muzon I, Barangay Kanluran, and Barangay Ligton I as the sampling area.

### Research Instrument

Researcher-made questionnaires was constructed, validated, distributed and collected from the participants to gather primary data. The questionnaire used likert-type scaling to identify the degree of behavior of fisherfolks towards investments and savings. More so, the researcher collected literatures, numerical references and notes as references for secondary data. Finally, the researcher used descriptive statistics and selected regression tests to augment statistical and analytical analyses of the study.

### Statistical Treatment

The study utilized two cross-sectional regression models to determine how identified variables conditions average propensity to save and likeness to save.

### Regression Model 1:

$$APS = \beta_1 + \beta_2 AGE + \beta_3 EDUC + \beta_4 YEARS + \beta_5 INCOME + \delta$$

Whereas:

APS = Average Propensity to Save  
 AGE = Age of the Fisherfolk  
 EDUC = Educational Attainment of the Fisherfolk  
 YEARS = Length of being a Fisherfolk  
 INCOME = Daily Income of the Fisherfolk (Gross)  
 $\beta_1$  = Intercept/Constant  
 $\beta_1 \beta_3 \beta_4 \beta_5$  = parameters  
 $\delta$  = error term

### Regression Model 2:

$$LtInvest = \beta_1 + \beta_2 IMPORTANCE + \beta_3 RISK + \delta$$

Whereas:

LtInvest = Likeness to Invest  
 IMPORTANCE = Perceived Importance to Invest  
 RISK = Investment Risk-Taking  
 $\beta_1$  = Intercept/Constant  
 $\beta_1 \beta_3 \beta_4 \beta_5$  = parameters  
 $\delta$  = error term

## RESULTS AND DISCUSSION

### Profile of the participants

After the data have been collected, gathered and modeled the data showed that the average age of fisherfolks in Rosario, Cavite is 43 years old. Considerably the youngest is 20 years old and the oldest is 79 years old. Moreover 64% of the total participants are in their late 30s and late 70s. Married fisherfolk dominates the participants having 55% of the total responses and only 1% of the participants were either widowed or separated. The data shows that 48% of the fisherfolk that participated in the study were elementary graduate while only 5% were college graduate. The average gross income of fisherfolk in Rosario, Cavite is Php 395 a day, 26% of the responses have gross income of Php 500 and only 1% of the participants were earning Php 275, Php 400, Php 650, Php 750 and above. Sixty percent of the fisherfolk are fishing for more than 6 years, while 8 years is the average length of fishing of fisherfolk in Rosario, Cavite.

Sixty three percent of the fisherfolks have no savings while only 37% have savings. The data reveals the average propensity to save of the fisherfolk of Rosario, Cavite. Specifically, 62% of the fisher folk have 0 APC, only 38% of the participants have 2% to 25% APC. This shows that the fisherfolk have zero to low levels of APC. The fisherfolks who have savings mentioned that their family is their main reason to save with 55% of the total responses. Interestingly, fisherfolks' averaged perceived importance to save is 4.24 which tantamount to highly important. However, their likeness to save is on the descriptive bracket of somehow likely. These scenarios are the same as studies conducted in Nigeria: Adeleke (2013), Oladimejl et.al. (2015), (Olaoye, et.al, 2012) and in Ghana; Bluwey (2015) and Arthur (2017) that mostly fisherfolks have low socio-economic status.

Ninety three percent of the participants have no investments and 7% of the fisherfolks have investments. Investments vary from capitalization of sari-sari store, pagtutuyo and pagdadaing. Eighty nine percent of the fisherfolk responded that they do not invest in business or other enterprise-related activity because they have no money. Considerably, 5% of the investing-fisherfolks answered that they invest because of their family. Noticeably, the descriptive value of fisherfolks' likeness to invest is least with a mean value of 2.62 and the risk-taking attitude towards business is also least with a mean score of 2.01. However,

the perceived importance of investing is highly important with a mean score of 4.23.

### Regression Function/Model 1

$$APS = -0.803 - 0.065AGE + 2.33EDUC + 0.451YEARS + 0.007 INCOME + \delta$$

<i>t-test</i>	6.42	3.33	4.08	4.07	6.47
<i>p-value</i>	0.00	0.00	0.00	0.00	0.00

<i>F-test</i>	30.74	<i>Significance</i>	0.0000
<i>R<sup>2</sup></i>	0.587		

The first regression model showed how age, educational attainment, years of being a fisherfolks and income conditions and influence the average propensity to save (APS). The R-square value or the coefficient of determination of the regression model is .587. This means that 58.70% of the variability of the independent variables explains the changes of the APS, the remaining 41.30% is caused by the other economic factors that is not covered in the study. The F-Test of the Analysis of Variance of the regression model is 30.75 with a probability value of 0.0000. This means that the whole regression model is valid and accepted furthermore, the fitness of the whole model is statistically valid because of the 0.0000 p-value which is less than the 0.05 critical accepted values.

The t-stat of all the independent variables was significant with a p-value that is below the critical accepted value of 0.05. Age is inversely related to APS as far as fisherfolks are concerned. An additional year-old can possibly decrease the fisherfolks' APS by 0.065, *ceteris paribus*. Considerably, educational attainment positively influences the APS with a coefficient value of 2.33. All other things equal, a unit increase in the educational attainment of fishers increases the APS by 2.33 units. Income also influences the APS positively with a coefficient value of .007, specifically; a unit change in income can increase the APS by .007, *ceteris paribus*. Finally, the length of fishing positively influences the APS with a coefficient value of .451. Therefore, the null hypothesis that age does not significantly conditions APS is **rejected**; the null hypothesis that educational attainment does not significantly conditions APS is **rejected**; the null hypothesis that income does not significantly conditions APS is **rejected**; and the null hypothesis that the length of being a fisherfolk does not significantly influence the APS is **rejected**. Hence, fisherfolks tend to save more if they are older, have higher educational attainment and has a higher income.



## Regression Function/Model 2

$$LtInvest = 1.24 - 0.033IMPORTANCE + 0.752 RISK + \delta$$

<i>t-test</i>	5.35	0.657	19.85
<i>p-value</i>	0.00	0.512	0.00

*F-test* 200.342    *Significance* 0.0000  
*R<sup>2</sup>* 0.668

The second regression model showed how perceived importance to invest and investment risk-taking condition likeness to invest. The coefficient of determination or R-squared shows the goodness of fit of the model. The R-square value is .668 which means that 66.80 percent of the variability of the independent variables explains the changes of the likeness to invest; the remaining 33.20% is caused by the other economic factors that are not covered in the study. The F-test of the regression model is significant because the probability value of the model is 0.0000 which is below the critical acceptable value of 0.05. Furthermore, this means that the regression model as whole is valid, accepted and significant.

The individual significance of the investment risk-taking is significant meeting the critical significant value of 0.05. However, the perceived importance to invest is insignificant with a probability value of .512 which is greater than the 0.05 critical accepted value. The investment risk-taking positively influences likeness to invest, as a unit change occurs to the dependent variable, .752 unit change will adjust to the likeness to invest. The perceived importance to invest is negatively related to the likeness to invest. Therefore, the null hypothesis that there is no significant conditioning of perceived importance to invest to the likeness to invest is **accepted** and the null hypothesis that the investment risk-taking does not significantly conditions the likeness to invest is **rejected**.

Hence, fisherfolks tend to invest regardless of the level of perceived importance to invest however increases as they are open for risk in investment related activities

## CONCLUSIONS

The researcher found out that the respective profiles of the fisherfolks belong to below middle age group, mostly married, and graduated in elementary schools, lives on the average of 395 pesos with an average of 8 years in fishing. Moreover, the study found out that most of the fisherfolks have no savings and has low levels of pro-

pensity to save but considerable perceived of importance to save and likeness to save. Additionally, the author found out that the almost all the fisherfolks have neither investments nor business activities. The investments behavior of the fisherfolks was noted with least intent to invest but with a perceived importance to invest. Finally the regression results of the two models revealed that age, educational attainment, years of being a fisher and income significantly influences the fisherfolks' average propensity to save and for the likeness to invest is only influenced by the investment risk-taking behavior of the fisherfolks.

## RECOMMENDATION

The author recommends that the local government can strengthen financial literacy to somehow augment the education among fisherfolks through coordination and linkages in various agencies such as universities, national government agencies and non-government institutions. Considerably, the local government of Rosario may initiate to have programs of entrepreneurial support to address the mindset crafting of savings and investment activities through innovation of the product value of the harvest which can increase the value added of products which can directly influence the income of respective fisherfolks. Finally, through the fishers organization of Rosario, Cavite, and the author recommends to include entrepreneurial and financial literacy activities in their platform for the development of their members.

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## LITERATURE CITED

Adeleke, M. L. (2013). The Socio-economic characteristics of the artisanal fisher-folks in the coastal region of Ondo State, Nigeria. *Journal of Economics and Sustainable development*, 4 (2), 133-139.

- Arthur, T. (2017). Poverty alleviation strategies employed by fisher Folks in Elmina in the Komenda-Edina-Eguafo-Abrem (KEEA) Municipality (Doctoral dissertation, University of Cape coast).
- Blanchard, Olivier. (2003). *Macroeconomics*, Third Edition. Place of Publication: Pearson Education (Asia) PTE LTD.
- Bluwey, F. A. Measures of Poverty among Fisher-Folks and Crop-Based Farming Households in Komenda Edina Eguafo Abriem (KEEA) Municipality of the Central Region, Ghana.
- Conserva, L. H. (2015). WV fisherfolks recover two years after Yolanda-BFAR. *The Daily Guardian*, 2.
- Dornbusch, Rudiger, Fischer, Stanley and Startz, Richard (2008). *Macroeconomics*, Tenth Edition. Place of Publication: McGraw-Hill/ Irwin.
- Handa, Jagdish. (2004). *Monetary Economics*. Routledge New York
- Jani, J. M. (2014). The perceptions of poverty among small-scale fisher-folks in Terengganu, Malaysia. *Dynamiques Internationales*, 22.
- Nalzar, O. G. (2013). Organizational membership of fisherfolks in fishing villages in Palawan, Philippines. *Asian Journal of Business & Governance*, 3, 124-140.
- Oladimeji, Y. U., Abdulsalam, Z., Ajao, A. M., & Adepoju, S. A. (2015). Determinant of rural household poverty nexus fuel consumption among Fisherfolks in Kwara State, Nigeria. *Journal of Scientific Research and Reports*, 185-194.
- Olaoye, O. J., Idowu, A. A., Omoyinmi, G. A. K., Akintayo, I. A., Odebiyi, O. C., & Fasina, A. O. (2012). Socio-economic analysis of artisanal Fisher folks in Ogun water-side local government areas of Ogun state, Nigeria. *Global Journal of Science Frontier Research Agriculture & Biology*, 12(4), 9-22.
- PIDS working Paper series 2010: Human Capital and Development in the Philippines.
- Ramaratnam, M. S., & Jayaraman, R. (2016). A study on savings pattern of rural households in the select clusters of Kanchipuram districts. *International Journal of Engineering and Management Research (IJEMR)*, 6(2), 608-615.
- Rameshkumar, S., Excelce, A. J., Parvathy, G. P., & Priyanka, T. (2011). Income and expenditure pattern of fisherfolk in selected rural coastal villages of Tuticorin in Tamil Nadu. *Indian Journal of Fisheries*, 58(3), 153-155.
- Swathi Lekshmi, P. S. (2011). Livelihood and level of aspiration of coastal fisherfolk of Tamilnadu. *Indian Journal of Social Research*, 52(1), 31-54.
- The Economist .2010. What Gotten in to the Policies? May 2010 V.4 Issue No.2  
www.psa.gov.ph last accessed December 2018  
www.rosariocavite.com.ph. last accessed December 2018

# SELF-EFFICACY AND DIFFICULTIES IN MATHEMATICS OF ELEMENTARY LEARNERS IN THE SCHOOLS DIVISION OF ISABELA

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## ABSTRACT

This descriptive-comparative study aimed to find out the effect of self-efficacy on the difficulties in mathematics of the 367 grade 6 elementary pupils in the Schools Division of Isabela during the school year 2018 – 2019. The instruments used in this study was the Self-Efficacy Questionnaire for Children (SEQ-C) adopted from Bandura (1994). The following were concluded: (1) the academic self-efficacy, social and emotional self-efficacy of the respondents were moderate; (2) male and female learners did not differ significantly in their level of academic, emotional and emotional self-efficacy. However male learners were significantly better in becoming friendly with other children than the female learners as to self-efficacy; and (3) male and female respondents' difficulty in elementary mathematics ranged from high to very high. They had very high difficulty in all three content strands, except in geometry in which there was a little lower difficulty which is still high. Moreover, male respondents had a significantly higher difficulty in learning geometry, measurement and in elementary mathematics as a whole. Self-efficacy significantly lower the level of difficulty in elementary mathematics experienced by the learners particularly in number and number sense; geometry; patterns, functions and algebra; measurement; and data analysis and probability. The study recommends that the following strategies may be employed: use moderately difficult tasks; use peer models; teach specific learning strategies; capitalize on students' interests; allow students to make their own choices; encourage students to try; give frequent, focused feedback; and encourage accurate attributions to improve self-efficacy for students.

*Keywords: Self-efficacy, academic efficacy, social efficacy, difficulties, mathematics*

## INTRODUCTION

Mathematics, along with reading and writing, is one of the three main content areas that the pupils are expected to master during the elementary grades. The ultimate goals of mathematics instruction are students understanding the material presented, applying the skills, and recalling the concepts in the future. The key to effective mathematics learning lies not only in the solution of isolated facts but in the ability to reason with and use what is learned, that is, in understanding the concepts. One aspect of mathematics is for the learners to know how to solve problems that were never encountered before by applying what they know and using logic and reasoning to find a solution. The world is full of challenging and com-

plex problems and situations that the learners will not know how to solve, thus providing them with opportunities to practice the skills and strategies they will need to tackle will give them an invaluable chance to develop necessary life skills.

The place of mathematics as a subject in the school curriculum in the Philippines has always been valued and the need for improvement in its content and pedagogy has been emphasized by various educators. For the past decades, various reforms have been made to upgrade the basic education in the Philippine educational system. The start of the twenty-first century's second decade saw a major change in the Philippine education system. In 2011, the Department of Education started to implement the new K-12 educational

system, which also included a new curriculum for all schools nationwide.

In the K-12 educational system, the new curriculum for all schools nationwide was implemented in S.Y 2011-2012. As stipulated in the Mathematics Framework for Philippine Basic Education, the goal of mathematics education is to develop a mathematically empowered citizenry. For Filipino students, the goal of Mathematical Empowerment focuses on developing critical and analytical thinking skills among all Filipino students. Critical and analytical thinking encompass the following skills as well: Problem Solving, Communicating Mathematically, Reasoning and Making Mathematical Connections. The vision is to achieve the focus goal through the teaching of a solid mathematical content, the development of strong cognitive skills and the promotion of desirable cognitive values to all Filipino students no matter their background or circumstance ([www.sei.dost.gov.ph/](http://www.sei.dost.gov.ph/)).

Students who struggle with mathematics learning regardless of their motivation, past instruction, and mathematical knowledge prior to starting school demonstrate slow or inaccurate recall of basic arithmetic facts, answer problems impulsively, without inhibition, have difficulty representing mathematical concepts mentally, have poorly developed number sense, and have difficulty keeping information in their working memory (<https://www.nctm.org>).

In an effort to improve students cognitive and affective outcomes in mathematics and/or school learning, educational psychologists and mathematics educators have continued to search for variables (personal and environmental) that could influence academic gains especially in the subject mathematics due to students' disposition, low enrolment and poor performance in the subject. Self-efficacy is one among the personal variables that have been the object of interest of most researchers.

Self-efficacy research evolved from the works of Bandura (1977), who theorized that one's beliefs about his/her capabilities are strongly related to the way he/she behaves and learns. According to Bandura's (1986) Social Cognitive Theory, self-efficacy beliefs play a major role in human development. Self-efficacy influences people's motivation, the efforts they are willing to exert, and the degree to which one may persist or persevere when carrying out tasks. In fact, self-efficacy has also been shown to affect one's self-concept and self-esteem.

Self-efficacy in mathematics indicates students' self-belief in their ability to overcome difficulties or obstacles to solving mathematics problems. Such a belief has been shown to be important to motivation because confidence that one will be able to solve a problem is a precursor to investing the time and effort needed to tackle it.

Today's mathematics teachers are experiencing major changes not only in the mathematics content they teach, but also in the way they teach. Now teachers are called on to teach new, more challenging mathematics to a very diverse audience using active learning approaches designed to develop understanding. The primary responsibility of mathematics teachers to their students is to know and understand very well the mathematics content that they are assigned to teach, and more. Mathematics teachers at the K-6 grade levels should display the right amount of knowledge and competencies in the areas of numbers and number sense, measurement, geometry, patterns, functions and algebra, and data analysis and probability.

Some pupils tend to enjoy or appreciate math, others find mathematics intimidating, difficult to understand, and most difficult to master. It is a common knowledge that most Filipinos tend to hate math, even claiming it is not one of their favorite subjects in school. This negative attitude of pupils towards mathematics can bring about failure not only on the part of the pupils but also elementary educators who should strive to demonstrate to their students that math can be useful, exciting, engaging, and fun in order to inspire the world's next generation of logical thinkers and problem solvers. It is clear that we live in an ever increasingly scientific and technological world. Hence, changing demands from society and the continual development in the field of technology have led to a radical change in the aims and objectives of school mathematics since the beginning of 21st century.

Based on the above discussion, it seems reasonable that self-efficacy may play a role in mathematics achievement. Examining the potential impact of self-efficacy in terms of academic, social and emotional aspects on the difficulties in mathematics has practical significance for mathematics teachers, parents or guardians, and school administrators in the Public Elementary Schools in the Schools Division of Isabela. If the three aspects of self-efficacy found to be significant factors affecting pupils mathematics learning difficulty in this study, such results would be useful to the whole education community and could be used to promote and reinforce the important role

that self-efficacy is playing in the mathematics achievement of the elementary students. Because of these, this study attempted to find out if there is indeed an association between self-efficacy and the mathematics learning difficulties in the four contents strands, particularly in the Number and Number Sense; Measurement; Geometry; Patterns, Functions and Algebra; and Data Analysis and Probability and if it could lead to a higher mathematics performance of the elementary students. The results of the study could answer global and national concerns about poor performance of students in mathematics.

### **STATEMENT OF THE PROBLEM**

This study aimed to find out the effects of self-efficacy on the difficulties in mathematics of the elementary pupils in the schools division of Isabela.

Specifically, it sought to answer the following questions:

1. What is the extent of self-efficacy of the male and female respondents based on the three domains:
  - a. Academic;
  - b. Social; and
  - c. Emotional?
2. How do the male and female learners' self-efficacy differ in the three domains:
  - a. Academic;
  - b. Social; and
  - c. Emotional?
3. What are the difficulties in mathematics of male and female respondents on the following content strands:
  - a. Number and Number Sense;
  - b. Measurement;
  - c. Geometry;
  - d. Patterns, Functions and Algebra; and
  - e. Data Analysis and Probability?

### **REVIEW OF RELATED LITERATURE**

The rapid evolution of technology drives educators to empower the next generation to view their world in a much broader sense, as members of a global community. Teachers of the twenty-first century must act as facilitators who teach students how to be responsible users of technology. Twenty-first century teaching begins with classroom resource availability to students, such as: internet, video, print, media and television. It

begins with the implementation of technology in the classroom because technological literacy is necessary to become successful members of society, in the twenty-first century. It should allow opportunities for peer interaction and constructive problem solving in order to produce the next generation of technologically literate, productive and responsible members of the global community.

Creativity, innovation, critical thinking, problem solving, communication, and collaboration are all a part of a 21st century math learning experience. Twenty first century math classrooms are not defined with program adoptions, learning resources and online tools, but rather are defined by how the learning experience is brought to life. Understanding how instruction can be designed to develop 21st century knowledge and skills requires an understanding of the differences between "push and pull" learning (Khron, 2015).

As stipulated in the Mathematics Framework for Philippine Basic Education, students today require stronger mathematical knowledge, skills and values to pursue higher education, to compete and be part of the technologically oriented workforce and to be informed citizens. They must gain an understanding of the fundamental ideas of numbers and number concepts, measurement, geometry, probability, data analysis, patterns, functions and algebra. They must be proficient in computing, problem solving, representing ideas and concepts and in connecting mathematics to other areas in life. Students must learn to use a variety of methods and tools to compute, including paper and pencil, mental arithmetic, estimation, calculators and computers. The use of technology and other hands-on tools must be an integral part of learning mathematics. However, technology alone shall not be regarded as a substitute for all pedagogies, particularly if these have been proven effective in developing students' mathematical understanding and proficiency in solving and computing.

The framework clearly defined the contents of mathematics in the elementary level. The contents of mathematics were organized into the following strands: Numbers and Number Sense; Measurement; Geometry; Patterns, Functions and Algebra and Data, Analysis and Probability.

The term self-efficacy was coined around 40 years ago by Albert Bandura (1977a). Since then, research in this area has been growing steadily and focuses mainly on the concept of self-efficacy which is considered as "one of the most theoretically, heuristically and practically useful concepts formulated in modern psychology" (Betz et al.,

1996). Self-efficacy is not the same as ability or motivation, but they are strongly related (Kozlowski & Salas, 2010). Indeed, self-efficacy is the personal determination of one's own ability to deal with a certain task.

Bandura (1986, 1994, 1995, 2001) emphasized how people's behavior could often be better predicted by the beliefs they hold about their own capabilities than by what they were really capable of accomplishing. In his conceptualization, self-efficacy is a mechanism to explain and predict one's thought, emotion and action and to organize and execute courses of action to attain designated goals. It is less concerned with what skills and abilities individuals possess. It considers as more important what individuals believe they can do with whatever skills and abilities they may possess. He also suggested that self-efficacy made a difference in how people feel, think and act. In all, self-efficacy serves a self-regulatory function by providing individuals with the capability to influence their own cognitive processes and actions and thus alter their environments. In addition to this, he stressed further that self-efficacy beliefs determine how people feel, think, motivate themselves and behave. Self-efficacy beliefs provide the foundation for human motivation, well-being and personal accomplishment. This is because unless people believe that their actions can produce the outcomes they deserve, they have little incentive to act or to persevere in the face of difficulties. Many empirical evidences support Bandura's contention that self-efficacy beliefs touch virtually, every aspect of people's lives – whether they think productively, self-debilitating, pessimistically or optimistically, how well they motivate themselves, their vulnerability to stress and depression and the life choices they make.

Furthermore, self-efficacy is believed to be situational in nature rather than being viewed as a stable trait (Linnenbrink and Pintrich, 2002a). Lastly, self-efficacy is a task-specific evaluation and should not be confused with self-esteem or self-concept, which reflect more general affective evaluations of self (Linnenbrink & Pintrich, 2002a).

Social self-efficacy research in college and adult populations has relied heavily on Sherer et al.'s (1982) social subscale of the Self-Efficacy Scale. In an effort to create a more complete, theoretically based (as opposed to factor analytic) measure, Smith and Betz (2000) created the Scale of Perceived Social Self-Efficacy. This scale measures perceived confidence in a variety of social situations, including such areas as assertive-

ness and social influence as well as general social ability. The valid data demonstrates a correlation between social self-efficacy and the constructs of social anxiety, shyness, and social efficacy in career settings. In subsequent studies, this scale has proven to be a reliable and valid measure of social self-efficacy (Smith and Betz, 2002).

Zimmerman and Cleary (2006), comment that self-efficacy is context-specific and varies across several dimensions, such as level, generality, and strength. The level of self-efficacy refers to its dependence on the difficulty level of a particular task (such as math addition problems of increasing difficulty); while generality of self-efficacy belief refers to the transferability of one's efficacy judgments across different tasks or activities; and strength of efficacy judgment pertains to the certainty with which one can perform a specific task.

According to Sharma and Nasa (2014), self-efficacy is receiving increasing recognition as a predictor of educational performances. Academic self-efficacy describes "a person's confidence in their abilities to organize, execute and regulate performance to attain designated types of performances". It functions at a multilevel and multifaceted set of beliefs that influence how people feel, think, motivate themselves, and behave during various educational tasks. Self-efficacy view point can be built up on four bases of knowledge, vicarious experiences, and enactive mastery as well as physical and emotional states. Self-efficacy development is closely intertwined with a person's experiences, competencies and developmental tasks in different domains at different stages in life. Self-efficacy beliefs should be relevant for understanding educational outcomes because self-efficacy leads to specific behaviors and motivations that can encourage or discourage effective performance.

## METHODOLOGY

The study employed descriptive-comparative research design to illustrate the level of self-efficiency and its effect on the mathematics learning difficulties of the Grade 6 learners. It was used to determine the contribution of self-efficacy and mathematics learning difficulties. The respondents were the Grade 6 elementary learners in the Schools Division of Isabela during the school year 2018 – 2019. There were 367 respondents of the study which was determined at 95% confidence level at 5% margin of error.

### The Instrument of the Study

The primary instruments used in this study was the Self-Efficacy Questionnaire for Children (SEQ-C) adopted from Bandura (1994). Twenty four (24) items that are hypothesized to represent three domains of self-efficacy: (1) social self-efficacy that has to do with the perceived capability for peer relationships and assertiveness; (2) academic self-efficacy that is concerned with the perceived capability to manage one's own learning behavior, to master academic subjects, and to fulfill academic expectations; and (3) emotional self-efficacy that pertains to the perceived capability of coping with negative emotions.

### Statistical Tools

The data were computer processed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics using frequency, mean, and percentage were used to describe the data. The differences in the self-efficacy mathematics learning difficulties of the male female respondents were analyzed using Mann-U-Whitney test.

## FINDINGS

### EXTENT OF SELF-EFFICACY OF MALE AND FEMALE RESPONDENTS

It can be noted from Table 1 that both male and female respondents had moderate self-efficacy as to academic, social and emotional domains as indicated by the means of 3.20 to 3.43 with an overall level of 3.33 among the males and 3.13 to 3.44 with an overall mean of 3.29 among the females, respectively. Hence, in general, they have modest beliefs in their ability to accomplish a task and understanding that actions they take will influence a task's outcome.

More specifically, as to their academic self-efficacy, male and female respondents' conviction that they can successfully achieve at a designated level on an academic task or attain specific academic goals which are particularly important for success in the school is moderate. Likewise, their social self-efficacy is also moderate which means that they have enough confidence in their ability to engage in social interactional tasks necessary to initiate and maintain interpersonal relationships. Lastly, their emotional self-efficacy was also moderate, that is, their ability to manage emotions internally, rather than externally was reasonable. They can express their emotions in a manner that is socially acceptable and appropriate to any given circumstance.

It further reveals that the Z-scores of 0.05, 0.57, and 1.08 with significance levels greater than 0.05 which are an indication of no significant difference. Thus, the academic, social and emotional self-efficacy of the male and female respondents were comparable. However, considering their overall self-efficacy, the Z-score of 2.74 with 0.01 significance level clearly indicated that the male respondents had a significantly higher level of self-efficacy than the females. They believe more in their ability to accomplish a task and understand better that actions they take will influence a task's outcome.

Yazachew Alemu Tenaw (2013) affirmed that the students' level of self-efficacy is medium (50.08). On the other hand, he inferred that there is no significant difference in their self-efficacy between sexes.

The result of the present study does not conform to Sawari et al. (2013) who found out that regarding the comparison level of general self-efficacy between male and female, his study showed that there are no significant differences for both genders.

**Table 1. Difference between the Extent of Self-Efficacy of Male and Female Respondents**

Domain	Male n=137		Female n= 230		Grand Mean	Level	Z	Sig.
	Mean	Level	Mean	Level				
	Academic	3.35	MOD	3.29				
Social	3.43	MOD	3.44	MOD	3.43	MOD	0.57 <sup>ns</sup>	0.57
Emotional	3.20	MOD	3.13	MOD	3.16	MOD	1.08 <sup>ns</sup>	0.28
Overall Level	3.33	MOD	3.29	MOD	3.31	MOD	2.74*	0.01

\*Significant ns Not Significant MOD = Moderate

### DIFFERENCE BETWEEN THE EXTENTS OF ACADEMIC SELF-EFFICACY OF MALE AND FEMALE LEARNERS

As gleaned from table 2, the mean ratings from 2.96 to 3.45 indicated that both male and female learners had the same moderate academic self-efficacy. They can effectively get teachers to help them when they get stuck on schoolwork, study when there are other interesting things to do and succeed in finishing all their homework every day. Likewise, both of them can adequately succeed in understanding all subjects in school, on satisfying their parents with their schoolwork and in passing a test. It can be noted further that both male and female learners can study a chapter for a test very effectively as indicated by the mean ratings of 3.83 and 3.78. However, as far as their ability to pay attention during every class is con-

cerned, males were more effective than the females as revealed by the mean ratings of 3.53 and 3.45, respectively.

The grand means from 3.03 to 3.49 revealed that their level of self-efficacy is generally moderate, except on one particular aspect, that is the grand mean of 3.81 revealed that they had high efficacy as far as their ability to study a chapter for a test is concerned.

The Z-scores from 0.01 to 0.53 with significance levels greater than 0.05 implied that the male and female learners did not differ significantly in their level of academic self-efficacy. Hence, they have a comparable belief (conviction) that they can successfully achieve at a designated level on an academic task or attain a specific academic goal (Bandura, 1997; Eccles & Wigfield, 2002; Linnenbrink & Pintrich, 2002a). Their ability to perform an academic task that are particularly important for success in school are the same.

**Table 2. Difference between Extents of Academic Self-Efficacy of Male and Female Learners**

Efficacy Scale	Male		Female		Grand Mean	Level	Z	Sig.
	137 (37.33%)		230 (62.67%)					
	Mean	Level	Mean	Level				
How well can you get teachers to help you when you get stuck on schoolwork?	3.41	MOD	3.41	MOD	3.41	MOD	0.01 <sup>ns</sup>	0.99
How well can you study when there are other interesting things to do?	3.35	MOD	3.33	MOD	3.34	MOD	0.01 <sup>ns</sup>	0.99
How well can you study a chapter for a test?	3.83	H	3.78	H	3.81	H	0.53 <sup>ns</sup>	0.60
How well do you succeed in finishing all your homework every day?	3.07	MOD	3.00	MOD	3.04	MOD	0.35 <sup>ns</sup>	0.72
How well can you pay attention during every class?	3.53	H	3.45	MOD	3.49	MOD	0.38 <sup>ns</sup>	0.71
How well do you succeed in understanding all subjects in school?	3.11	MOD	2.96	MOD	3.03	MOD	1.26 <sup>ns</sup>	0.21
How well do you succeed in satisfying your parents with your schoolwork?	3.24	MOD	3.28	MOD	3.26	MOD	0.49 <sup>ns</sup>	0.62
How well do you succeed in passing a test?	3.25	MOD	3.16	MOD	3.20	MOD	0.99 <sup>ns</sup>	0.32

<sup>ns</sup> Not Significant    H - High    MOD = Moderate

Table 3 shows mean ratings of 3.56 from the male learners and 3.63 from the females which revealed that they can be highly effective in telling other children that they are doing something that they do not like. The mean ratings from 3.20 to 3.49 further revealed that both male and female learners had the same moderate social self-efficacy in five out of the eight indicators. More specifically, the result showed that male and female learners can effectually express their opinions when other classmates disagree with them, can become friends with other children and can effectually chat with an unfamiliar person. In like manner, they can also discreetly tell a funny event to a group of children and succeed in preventing quarrels with other children.

The mean rating of 3.53 from the females showed that they can work very efficiently and in harmony with their classmates. The males had a lesser mean rating of 3.40 which means that they can only do this in moderation. In like manner, as far as the success in staying friends with other children is concerned, it was noted that males gave a higher rating of 3.52 which means they were highly effective in this aspect. The females had a rating of 3.47 indicating that they can also do it but only on a reasonable level.

Summing up, the grand mean of 3.60 further revealed that learners very effectively tell other children that they are doing something that they do not like. On the other hand, the grand means of 3.32 to 3.49 indicated that, in general, learners can reasonably express their opinions when other classmates disagree with them, become friends with other children, chat with an unfamiliar person, tell a funny event to a group of children, stay friends with other children and can also prevent quarrels with other children, and work in harmony with their classmates.

Finally, it can be noted that male and female learners did not differ significantly in their level of social self-efficacy, except in one aspect only. The Z-score of 1.99 with 0.05 significance level clearly implied that male learners were significantly better in becoming friends with other children than the female learners.

The findings revealed that both male and female learners had an adequate ability to engage in social interactional tasks necessary to initiate and maintain interpersonal relationships.



**Table 3. Difference between Extents of Social Self-Efficacy of Male and Female Learners**

Efficacy Scale	Male 137 (37.33%)		Female 230 (62.67%)		Grand Mean	Level	Z	Sig.
	Mean	Level	Mean	Level				
	How well can you express your opinions when other classmates disagree with you?	3.29	MO	3.37				
How well can you become friends with other children?	3.44	MO	3.20	MO	3.32	MO	1.99 <sup>*</sup>	0.05
How well can you have a chat with an unfamiliar person?	3.34	MO	3.43	MO	3.38	MO	0.72 <sup>ns</sup>	0.47
How well can you work in harmony with your classmates?	3.40	MO	3.53	H	3.46	MO	0.88 <sup>ns</sup>	0.38
How well can you tell other children that they are doing something that you don't like?	3.56	H	3.63	H	3.60	H	0.45 <sup>ns</sup>	0.65
How well can you tell a funny event to a group of children?	3.45	MO	3.39	MO	3.42	MO	0.88 <sup>ns</sup>	0.38
How well do you succeed in staying friends with other children?	3.52	H	3.47	MO	3.49	MO	0.59 <sup>ns</sup>	0.56
How well do you succeed in preventing quarrels with other children?	3.48	MO	3.49	MO	3.49	MO	0.24 <sup>ns</sup>	0.81

\*Significant <sup>ns</sup> Not Significant H - High MO = Moderate

Table 4 revealed mean ratings from 2.66 to 3.40 under the male and female learners which resulted to grand means from 2.63 to 3.39 revealed that the emotional self-efficacy of both learners. They can cheer up themselves when an unpleasant event has happened, and effectually become calm again when they were very scared and they can prevent themselves to become nervous. Occasionally, they can control their feelings, give themselves a pep-talk when they feel low and can tell a friend that they do not feel well. Also, they can succeed in suppressing unpleasant thoughts and in not worrying about things that might happen.

The Z-scores from 0.06 to 1.86 with significance levels greater than 0.05 implied that the male and female learners did not differ significantly

in their level of emotional self-efficacy. They have a comparable ability to manage emotions internally, rather than externally. They can express emotions in a manner that is socially acceptable and appropriate to the circumstance.

**Table 4. Difference between Extent of Emotional Self-Efficacy of Male and Female Learners**

Efficacy Scale	Male 137 (37.33%)		Female 230 (62.67%)		Grand Mean	Level	Z	Sig.
	Mean	Level	Mean	Level				
	How well do you succeed in cheering yourself up when an unpleasant event has happened?	3.02	MOD	3.06				
How well do you succeed in becoming calm again when you are very scared?	3.40	MOD	3.39	MOD	3.39	MOD	0.06 <sup>ns</sup>	0.95
How well can you prevent to become nervous?	2.66	MOD	2.59	MOD	2.63	MOD	0.59 <sup>ns</sup>	0.56
How well can you control your feelings?	3.37	MOD	3.27	MOD	3.32	MOD	0.82 <sup>ns</sup>	0.41
How well can you give yourself a pep-talk when you feel low?	3.17	MOD	3.03	MOD	3.10	MOD	0.96 <sup>ns</sup>	0.34
How well can you tell a friend that you don't feel well?	3.40	MOD	3.20	MOD	3.30	MOD	1.86 <sup>ns</sup>	0.06
How well do you succeed in suppressing unpleasant thoughts?	3.35	MOD	3.39	MOD	3.37	MOD	0.19 <sup>ns</sup>	0.85
How well do you succeed in not worrying about things that might happen?	3.19	MOD	3.11	MOD	3.15	MOD	0.77 <sup>ns</sup>	0.44

\*Significant <sup>ns</sup> Not Significant H - High MO = Moderate

## DIFFICULTIES IN MATHEMATICS OF MALE AND FEMALE RESPONDENTS

Table 5 shows the extent of difficulties of the respondents based on their performance in their in their Elementary Mathematics. It further revealed that the male and female respondents had very high difficulty in the three strands, namely number and number sense patterns, functions and algebra data analysis and probability. This was revealed by the mean scores from 6.40 to 39.75 with grand means of 6.44, 38.24 and 32.93, respectively. The Z-scores from 0.62 to 1.63 with significance levels greater than 0.05 further indi-

cated that their level of difficulty in these strands were significantly the same.

As to geometry, it can also be noted that the male and female respondents had a high difficulty with scores of 42.76 and 50.11, respectively resulting to a grand mean of 46.44. However, it can be noted that the Z-score of 3.12 had 0.00 significance levels which implied that the male respondents encountered a significantly higher difficulty as compared to the females in this strand.

The table also showed that in Measurement, the males had very high difficulty with a score of 35.97 while the females had high difficulty with a score of 41.68. Furthermore, the Z-score of 2.28 had a 0.02 significance levels which confirmed that the male respondents encountered a significantly higher difficulty in this strand.

These findings conformed to Capate and Lapinid (2015) who conducted a study which sought to determine the performance and the difficulties of the Grade 8 students during the first conduct of the new K to 12 Mathematics. Results of this study served as basis for enhancing instruction and aligning the Grade 8 Mathematics competencies to instruction and assessment. Students' scores in the Formative Tests (FT) and the Mathematics Achievement Test (MAT) measured their mathematics performance while interpretation of their mistakes in the least mastered contents of the new K to 12 Mathematics identified their difficulties. Results indicate that most of the Grade 8 students were in the Beginning level of achievement only. Moreover, half of the tested contents were least-mastered. Incorrectly applying the formulas, properties, theorems, and/or laws and incompletely solving the problem despite correctly doing the initial procedure are their common difficulties. The general recommendation to align the Grade 8 Mathematics Competencies to instruction and assessment was to include the missed instructional objectives during the past instruction in the next curriculum planning. The recommended strategies to improve instruction included needs assessment, more practice for automation, conduct review classes for mastery and retention, explicit instruction, and peer-assisted mathematics instruction.

However, considering their overall difficulty, the males had very high difficulty with a score of 39.49 while the females had high difficulty with a score of 44.35. Furthermore, the Z-score of 2.45 with a 0.01 significance level confirmed that the male respondents encountered a significantly higher difficulty in Mathematics.

Table 5. Difference between Difficulties in Mathematics of Male and Female Respondents.

Strad	Male		Female		Grand Mean	Level	Z	Sig.
	n=137		n=230					
	Mean	Level	Mean	Level				
Number and Number Sense	6.49	VHD	6.40	VHD	6.44	VHD	0.62 <sup>ns</sup>	0.53
Geometry	42.76	HD	50.11	HD	46.44	HD	3.12*	0.00
Patterns, Functions and Algebra	36.74	VHD	39.75	VHD	38.24	VHD	1.42 <sup>ns</sup>	0.16
Measurement	35.97	VHD	41.68	HD	38.83	VHD	2.28*	0.02
Data Analysis and Probability	31.14	VHD	34.71	VHD	32.93	VHD	1.63 <sup>ns</sup>	0.10
Overall Difficulty	39.49	VHD	44.35	HD	32.58	VHD	2.45*	0.01

\*Significant <sup>ns</sup> Not Significant VHD = Very high difficulty  
HD = High difficulty

## CONCLUSION

Based from the findings, the following conclusions were drawn:

1. The academic self-efficacy, social and emotional self-efficacy of the respondents were moderate
2. Male and female learners did not differ significantly in their level of academic, emotional and emotional self-efficacy. However male learners were significantly better in becoming friends with other children than the female learners as to self-efficacy.
3. Male and female respondents' difficulty in elementary mathematics ranged from high to very high. They had very high difficulty in all three content strands, except in geometry in which there was a little lower difficulty which is still high. Specifically, it can be noted that male respondents had a significantly higher difficulty in learning geometry, measurement and in elementary mathematics as a whole. The contribution of self-efficacy in terms of the three domains: academic, social and emotional, on the level of difficulty in Elementary Mathematics is significant. Hence, they can serve as predictors to determine the level of difficulty in elementary mathematics in general as well as to content strands particularly in number and number sense; geometry; patterns, functions and algebra; measurement; and data analysis and probability.

## RECOMMENDATIONS

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

1. To improve self-efficacy for students, the following strategies may be employed: use moderately difficult tasks; use peer models; teach specific learning strategies; capitalize on students' interests; allow students to make their own choices; encourage students to try; give frequent, focused feedback; and encourage accurate attributions.
2. Female learners should improve their self-efficacy under the social domain particularly in becoming friendly with other children.
3. Self-efficacy which were rated moderate by the learners should be given more attention by teachers to at least improve it and become high.
4. Benchmark assessments may be undertaken to identify students with learning difficulty and then provide them with some intervention programs such as Cognitive and Metacognitive Instruction, Schema-Based Instruction, and Conceptual Model-Based Instruction.
5. A study may be conducted to examine the comparative effectiveness of a range of interventions for students with mathematical learning difficulties (MLD) in improving mathematical performance.

## REFERENCES

- Bandura A. (1977a). *Social Learning Theory*. Englewood Cliffs, New Jersey: Prentice Hall.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1994). "Self-efficacy," in *Encyclopedia of Human Behavior*, Vol. 14, ed. V. S. Ramachandran (New York: Academic Press), 71–81.
- Bandura, A. (2001). *Social Cognitive Theory. Annual Agentive Perspective*. *Annual Review of Psychology*, 52, 1-26.
- Betz, N.E. & Klein, K. & Taylor, K. (1996). Evaluation of a short form of the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment*, 4, 47-57. doi: 10.1177/106907279600400103
- Capate, RNA., and Lapinid, MRC. (2014). *Assessing the Mathematics Performance of Grade 8 Students as Basis for Enhancing Instruction and Aligning with K to 12 Curriculum*. DLSU Research Congress 2015. March 2-4, 2015. De La Salle University, Manila, Philippines.
- Eccles, J. S., & Wigfield, A. (2002). *Motivational Beliefs, Values, and Goals*. *Annual Review of Psychology*, 53, 109-132.
- Kozlowski, S. W. J., & Salas, E. (Eds.). (2010). *Learning, training, and development in organizations*. New York, NY: Taylor and Francis Group, LLC.
- Krohn, Ryan E. (2015). *Mathematics in the 21st century classroom: the power of pulled learning*. *Partnership for 21st Century learning*, 21 April 28, 2015, Volume 2, Issue 6, Number 1. Retrived September 1, 2018 at <http://www.p21.org/news-events/p21blog/>.
- Linnenbrink, E. A., & Pintrich, P. R. (2002a). *Motivation as an enabler for academic success*. *School Psychology Review*, 31(3), 313-327.
- Sharma, Hemant Lata and Rohtak. Gunjan Nasa (2014). *Academic self-efficacy: a reliable predictor of educational performances*. *British Journal of Education Vol.2, No.3*, pp. 57-64, July 2014 Published by European Centre for Research Training and Development UK ([www.ea-journals.org](http://www.ea-journals.org)).
- Sherer, Mark & Maddux, James & Mercandante, Blaise & PRENTICE-DUNN, STEVEN & Jacobs, Beth & W. Rogers, Ronald. (1982). *The Self-Efficacy Scale: Construction and Validation*. *Psychological reports*. 51. 663-671. 10.2466/pr0.1982.51.2.663.
- Smith HM, Betz NE. *Development and validation of a scale of perceived social self-efficacy*. *J Career Assess*. 2000;8(3):283–301
- Zimmerman, B. J., and Cleary, T. J. (2006). "Adolescents' development of personal agency," in *The Role of Self-Efficacy Belief and Self-Regulatory Skill* (Greenwich, CT: Information Age Publishing), 45. Available at: <http://www.des.emory.edu/mfp/ZimmermanClearyAdoEd5.pdf> (Accessed: June 24, 2016).

# MALASA (MALUNGGAY (MORINGA) AND KALABASA (SQUASH) MACAROONS

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## ABSTRACT

Macaroon is rich in historical background and one of the favorite dessert in the Philippines. The utilization of grated squash and powdered malunggay leaves which are nutrient-rich and readily available in the locality could enhanced the given variable of macaroons. The objectives of this study were to determine the level of sensory qualities of malunggay kalabasa macaroons (Squash Moringa Macaroons) in terms of appearance, aroma, color, taste, texture, and general acceptability. To determine the significant differences among treatments in terms of appearance, aroma, color, taste, texture, and general acceptability. The squash was boiled and grated while, malunggay leaves were air-dried and powdered. Treatment A was the control with no mixture added and the experimental groups were Treatment B, C, D, and E contains varying amounts of squash and malunggay leaves mixture replicated 3 times. The evaluators were composed of five faculty from food service management and five faculty from hospitality management department whom conducted sensory evaluation of macaroons using score card with nine-point Hedonic scale. Result of the study revealed that product in Treatment A was the best as to sensory attributes, followed by product in Treatment D which is nearly comparable to Treatment A. Significant differences were recorded for sensory characteristics such as appearance, aroma, color, taste, texture, and general acceptability among treatments. Food expert/developer may utilized vegetables such as malunggay and kalabasa available in the locality that gives nutritive value to the food/product. Malunggay and kalabasa macaroons have the potential for marketability especially for health conscious consumer.

*Keywords: macaroons, kalabasa (squash), malunggay (moringa), acceptability, and sensory qualities*

## INTRODUCTION

One of the Filipino's specialties is to prepare nutritious dessert because they put premium on nutritional value in order to furnish their body with adequate nourishment for growth, maintaining & repairing cells and tissues. A dessert that is rich in historical background – that is macaroons. The Filipino version is a lot easier to prepare. It is considered as the easiest dessert ever made in the Philippines. The essential for good health is an outweighing factor in the selection of nutritionally adequate diet (Lutong Filipino in Dessert Recipes (2015).

Today, macaroons can be flavored with various ingredients such as chocolate, maraschino cherries or orange peel and is typically cream-filled (Pinoyentre, 2015). Philippines is abundant with varieties of vegetables. Squash, in Filipino, kalabasa, is a valuable source of vitamin A, C, as

well as calcium and iron. Possessing very low calories, it becomes essential to be a component in one's diet plan. It is a nourishing and healthful food emphasizing that it is a permissible part of nearly everyone's diet and can be safely consumed on a regular basis.

Moringa locally known as malunggay, is native to subtropical regions in the world where it has been used as a low-cost solution to under nourishment, as well as remedy to common ailments of the locals. The leaves have the highest amount of calcium and phosphorous among vegetables. Known to be rich in source of Vitamin C, B-vitamins, potassium and iron (Manaois et al, 2013).

The utilization of grated squash and powdered malunggay leaves, which are readily available in and beyond the backyard of most Filipino family homes, could enhances the given variables of a macaroons. To use easily available and nutritive

produce means to develop and enrich a product is the chief purpose of the study.

### STATEMENT OF THE PROBLEM

This study was conducted to determine the acceptability of Malasa (Malunggay and kalabasa) Macaroons. Specifically, it sought to answer the following questions:

1. How may the sensory qualities of malunggay kalabasa macaroons in terms of appearance, aroma, color, taste, texture, and general acceptability be described?
2. Is there a significant difference among treatments in terms of appearance, aroma, color, taste, texture, and general acceptability?

### Hypothesis

1. There is no significant difference among treatments in terms of appearance, aroma, color, taste, texture, and general acceptability.

### METHODOLOGY

This study utilized the experimental research to determine the acceptability level of malunggay kalabasa macaroons among respondents as to general acceptability, appearance, color, odor, taste, and texture.

The experimental design used in the study was the single factor experiment with Completely Randomized Design (CRD) in which grated kalabasa and powdered malunggay leaves were studied. In this study, the grated kalabasa and powdered malunggay leaves were added in different proportions; Treatment A – no mixture added, Treatment B – 100g squash and 10g powdered malunggay leaves, Treatment C – 75g squash and 7.5g malunggay leaves, Treatment D – 50g squash and 5g malunggay leaves, Treatment E – 25g squash and 2.5g malunggay leaves.

The following were the procedure in preparing grated kalabasa. First, the squash was washed and peeled thoroughly, boiled for about five minutes, set aside to cool, grated using a grater, and weighed. Procedure in preparing powdered malunggay leaves were the following, first, the fresh malunggay leaves were air-dried for about a week, powdered, then grounded using a grinder and weighed. Procedure in making the product. The needed tools, equipment, and materials were prepared. The sifted 114g cake flour was mixed with 3g baking powder, set aside. The creamed

112g butter was gradually added by 90 g sugar, an egg was added one at a time, beating well after each addition. The flour mixture was added by a 200 g desiccated coconut and 380g condensed milk. This procedure was repeated with the variations of adding different proportions of grated kalabasa and powdered malunggay leaves mixture in Treatment B, C, D, and E. Finally, the mixture was poured in a macaroon molder and bake for about 15-20 minutes.

The arithmetic mean and Analysis of Variance (ANOVA) were the statistical tools used in analyzing and interpreting the data. SPSS for data processing and analysis was used. The mean was used to determine the appearance, aroma, color, taste and texture of the product. The ANOVA set at 0.01 alpha level was used to determine the significant differences on the sensory qualities of the products among treatments.

The study used a scorecard as a research instrument. It looked into the five sensory qualities such as appearance, color, odor, taste, and texture as the variables. These five sensory qualities determined the general acceptability of malunggay kalabasa macaroons which was the dependent variable.

The scorecard employed a Nine-point Hedonic Scale wherein the food service management and hospitality management faculty-respondents were asked to rate each treatment classified into five categories. These categories were used in determining the sensory qualities of the produced macaroons. Each quality was assigned with adjectival description and it was assigned with qualitative description such as 9 – Liked Extremely, 8 – Liked Very much, 7 – Liked Moderately, 6 – Liked Slightly, 5 – Neither Liked nor Disliked, 4 – Disliked Slightly, 3 – Disliked Moderately, 2 – Disliked Very Much, 1 – Disliked Extremely.

### RESULTS AND DISCUSSIONS

#### Sensory Qualities of Malasa Macaroons

As seen in table 1, the data on the result of the sensory evaluation of the Malasa macaroons in terms of appearance, aroma, color, taste, texture, and general acceptability.

For appearance of the product, result showed that product from Treatment A got the highest mean of 8.09 with the adjectival description of “liked very much” followed by the product in Treatment D (M=6.89), Treatment B (M= 6.77) and Treatment C (M=6,64) all interpreted as “liked moderately” and finally in Treatment E

(M=6.60) with verbal interpretation of “liked slightly”.

In terms of aroma, data showed that product from Treatment A has “extremely pleasant” aroma as supported by its mean of 8.44. It was followed by Treatment D (M=7.04), Treatment E (M=6.67), Treatment C (M=6.63) and treatment B (M=6.48) all interpreted as “very pleasant”.

For color, it was revealed that product from Treatment A got the highest mean of 8.19 “extremely authentic” followed by Treatment D, Treatment C, and Treatment E got the mean of 6.96, 6.48, and 6.44 interpreted as “very authentic” and finally Treatment B (M=6.26) with verbal interpretation of “slightly authentic”.

In terms of taste, it was reflected that product in Treatment A got the highest mean of 8.22 interpreted as “extremely delicious”; Treatment E (M=6.81), Treatment C and D (M=6.74), and treatment B (M=6.70) all with an adjectival description of “very delicious”.

For the texture of the product, it was prevailed that Treatment A interpreted as “very much firm” as supported by its mean of 7.81, followed by Treatment C,D, and E with the mean of 6.59 interpreted as “very firm” and Treatment B (M=6.44) as “very firm” also.

In terms of general acceptability, it was revealed that product from Treatment A got the highest mean of 8.07 “liked very much” followed by product in Treatment D (M=6.89), Treatment B (M=6.74), Treatment C (M=6.63) “liked moderately and Treatment E (M=6.59) with adjectival description of “liked slightly”.

It was revealed that Treatment A got the highest mean score in all sensory qualities. It was followed by Treatment D in terms of appearance, aroma, color and texture. Considering their means, it can be said that product in Treatment D is comparable to Treatment A and has a potential for marketability.

**Table 1. Sensory qualities of Malasa macaroons**

Sensory Qualities	Treatment A		Treatment B		Treatment C		Treatment D		Treatment E	
	Mean	AD	Mean	AD	Mean	AD	Mean	AD	Mean	AD
Appearance	8.09	LVM	6.77	LM	6.64	LM	6.89	LM	6.60	LS
Aroma	8.44	EP	6.48	VP	6.63	VP	7.04	VP	6.67	VP
Color	8.19	EA	6.26	SA	6.48	VA	6.96	VA	6.44	VA
Taste	8.22	ED	6.70	VD	6.74	VD	6.74	VD	6.81	VD
Texture	7.81	VMF	6.44	VF	6.59	VF	6.59	VF	6.59	VF
Gen. Accep	8.07	LVM	6.74	LM	6.63	LM	6.89	LM	6.59	LS

Legend: Adjectival Interpretation

LVM – liked very much  
 LM - Liked much  
 EP - Extremely Pleasant  
 VP - Very Pleasant  
 EA - Extremely Authentic  
 SA - Slightly Authentic  
 VA - Very Authentic  
 ED - Extremely Delicious  
 VD - Very Delicious  
 VMF – Very much firm  
 VF - very firm

## Difference among treatments in terms of Sensory Qualities

Table 2 presents the difference among treatments in terms of sensory qualities. The findings revealed that there is significant difference between the control and the experimental groups in terms of appearance (F=11.92; p < 0.01). It implies that product in Treatment A was more appealing than its counterpart. It can be noted that the experimental group contains powdered malunggay leaves and according to the result of the study of Kinki (2020), moringa has poor sensory appeal.

Further revealed that there is significant difference between the control and the experimental groups in terms of aroma (F=12.90; p<0.01). Since the experimental group contains varying amount of grated squash and powdered malunggay leaves, the aroma of the product was affected.

Data showed that there is significant difference in the product among treatments in terms of color (F=36.50; p<0.01). Treatment A which the control has more authentic color than the other Treatment. It can be said that Treatment A had no added mixture while, the experimental groups have varying proportion of mixture added. Hence, color of the product was highly affected.

Furthermore, there is significant difference in the product among treatments in terms of taste (F=12.79; p< 0.01). Treatment A had a taste of real macaroon which is the control while the other Treatments have inclusion of grated squash and powdered malunggay leaves making it somewhat compromising the taste. This result was in consonance to the result of the study of Evivie et al. (2016) states that taste of soy meatballs decreased with moringa oleifera leaves powder inclusion and differ significantly.

As shown from the table that there is significant difference in the product among treatments in terms of texture (F=6.58; p< 0.01). The product in the control group found to be very much firm than the experimental groups which found to be very firm based on the result of its sensory evaluation. This result supports the findings of Aathira (2015) in her study Effect of pumpkin flour incorporation in the quality of muffins that mature pumpkin contents 8.84% fiber attributes to her product change in texture and hardness.

Finally revealed that there is significant difference between the control and the experimental groups in terms of general acceptability (F=12.49; p<0.01). Based on the result of sensory evaluation, Treatment A was highly accepted among treatments. The sensory attributes of the products

in experimental groups become moderately accepted due to the inclusion of grated squash and powdered malunggay leaves.

4. Product in different treatments varies in terms in appearance, aroma, color, taste, texture, and general acceptability.

**Table 2. Differences in the sensory qualities of the Malasa macaroons**

Variables	Source of Variation	Sum of Squares	Df	Mean Square	F value	P value	Remarks
Appearance	Between Groups	4.6703	4	1.1676	11.92	.0008	S
	Within Groups	0.9794	10	0.0979			
	Total	5.6498	14				
Aroma	Between Groups	7.7745	4	1.9436	12.90	.0006	S
	Within Groups	1.5062	10	0.1506			
	Total	9.2807	14				
Color	Between Groups	7.3300	4	1.8325	36.50	.0000	S
	Within Groups	0.5021	10	0.0502			
	Total	7.8321	14				
Taste	Between Groups	5.2214	4	1.3053	12.79	.0006	S
	Within Groups	1.0206	10	0.1021			
	Total	6.2420	14				
Texture	Between Groups	3.8551	4	0.9638	6.58	.0073	S
	Within Groups	1.4650	10	0.1465			
	Total	5.3202	14				
General Acceptability	Between Groups	4.6058	4	1.1514	12.49	.0007	S
	Within Groups	0.9218	10	0.0922			
	Total	5.5276	14				

Legend:  
S – Significant at 1%

## CONCLUSIONS

Based on the findings of the study, the following conclusion were forwarded:

1. Grated squash and powdered malunggay leaves can be used as an ingredients that uplift the nutrient content of macaroons.
2. Product from Treatment A had the best result as to sensory attributes over the other Treatments in terms of appearance, aroma, color, taste, texture, and general acceptability.
3. Product from Treatment D had the good result and said to be nearly comparable to product in Treatment A.

## RECOMMENDATIONS

The following are the recommendation based on the conclusions of the study:

1. Food expert/developer may utilized vegetables available in the locality that gives nutritive value to the food/product.
2. Malunggay and kalabasa macaroons have the potential for marketability especially for health conscious consumer.
3. Data of the research can be used as inputs for future researchers similar in nature with the current research and may include variable not included in the research.

## REFERENCES

- Aathira, P. (2015) Effect of Pumpkin Flour Incorporation on the Quality of Muffins. <http://ir.cftri.res.in/11915/>
- Evivie, S., Ebahamiegbebho, P., Imaren, J., & Igene, J. (2016). Evaluating the organoleptic properties of soy meatballs with varying levels of moringa oliefera leaves powder. *Journal of Applied Science and Environmental Management*. 4 (19), 649-656
- Kinki, A. (2020). Antiozidant-sensory properties of herbal teas formulated from dried moringa and stevia leaves. *Food Science and Quality Management*. 102, 1-11
- Lutong Filipino. (February 13, 2015). Lutong Filipino in Dessert Recipes. <http://lutongfilipino.com/dessert-recipes/>
- Manaois, R., Morales, A. & Abilgos-Ramos, R. (2013). Acceptability, shelf-life and nutritional quality of moringa supplemented rice crackers. *Philippine Journal of Crop Science (PJCS)*. 38 (2):1-8
- Pinoyentre (2015). How to make squash macaroons. <https://www.pinoyentre,news.com/2010/03/08/how-to-make-squash-macaroons/>

# STREET HARASSMENT EXPERIENCE AMONG PRE-SERVICE TEACHERS

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## ABSTRACT

The study was conducted to determine the frequency, types, factors affecting street harassment on the level of self-objectification among the 267 selected female pre-service teachers as respondents of the College of Education, Isabela State University – Echague Campus. A descriptive correlational technique was utilized in this study, with an e-questionnaire serving as the primary instrument. In addition, statistical tools such as frequency count and percentage distribution, mean, and Spearman's correlation were used in the study. According to the data, most of the respondents had frequently experienced street harassment, and the most prevalent types they experienced were wolf-whistling, winking, and cat-calling. The result also revealed that the majority of the respondents use public transportation and walking (transportation); experience being street harassed when they go out with their friends and going to school (place); experience harassment when they are with their friends/classmates and when alone (companion); and experience harassment regardless of the clothes they wear (attire). Lastly, the respondents had an average level of body consciousness, and there was no significant relationship between the frequency of street harassment and the respondents' level of self-objectification.

*Keywords: cat-calling, pre-service teachers, self-objectification, street harassment, wolf-whistling*

## INTRODUCTION

Street harassment pertains to the unpleasant words, gestures, and behaviours aimed towards a stranger in a public place without their consent and based on their actual or perceived sex, gender, gender expression, or sexual orientation (Stop Street Harassment, n.d.). In addition, it is a form of sexual harassment that can impact psychological health, physical well-being, and career development (Center for Victim Advocacy & Violence Prevention, 2010).

Studies also showed that street harassment among women affects their level of self-objectification. According to Sullivan (2011), encounters of harassment made ladies feel furious or become anxious as a response to street harassment. As a result, they might feel disgraced

around their bodies; they become more conscious and less comfortable in public.

In the Philippines, physical forms of sexual harassment occur primarily in and around public transport, wherein 58% of the incidents happen on the streets, major roads, and eskinitas. Such events mainly happen in schools, public washrooms, and other public spaces, according to the survey conducted by the Social Weather Station (2016), as cited in Rodriguez (2016).

As stated in one of the works published by Manila Bulletin, a Social Weather Stations (SWS) survey concluded that 60% of the women in the country (80% of them are 18 to 24 years old) have been victims of sexual harassment in public places at least once in their lives. One out of two (2) women declared that after being harassed, they did nothing. Their fundamental reason, with 39% of agreement, was that those acts were just minor.



Moreover, 20 percent believed they might put their lives at risk if they took activity against the harassment. Over 80% of the women said they might be urged to report if the sanction on sexual harassment was stricter. Meanwhile, 70% of the admitted men accepted that stronger disciplines might stop them from committing sexual harassment (Terrazola, 2016).

In 2019, Republic Act 11313, known as the "Safe Spaces Act," became law in the Philippines to punish misogynistic acts, sexist slurs, wolf-whistling, cat-calling, intrusive gazing, cursing, and persistent telling of sexual jokes in public or online. Before that, the Anti-Sexual Harassment Act of 1995 and the Anti-VAWC Act of 2004 were already legislated. However, despite these laws, street harassment seemed to have not been eradicated, and many women still experience this problem (Cabral, 2017).

In the Isabela State University, particularly in the College of Education, the majority of the students are female. Also, the majority of them use public transportation such as buses, public utility vans, and tricycles as a means of going to University. Furthermore, in their fourth year, they will be required to go to different cooperating secondary and elementary schools for their Practice Teaching or On-the-Job Training, making them more prone to street harassment. Moreover, there have been no studies conducted in the University about street harassment experienced by the students. This may be because street harassment among women has always been treated differently and less seriously than other crimes (Ancheta, 2018). Thus, this study would serve as a vehicle for disseminating relevant information on this social issue.

As a result, this research aimed to determine the effect of street harassment on the pre-service teachers' self-objectification and to create awareness about the critical issues of street harassment, which need to be tackled on a priority basis.

Researches conducted by Johnson (2011), Kearl (2010), Kearl (2014), Brekke (2014), National Stop Street Harassment Report (2014), and ActionAid (2016) showed that street harassment is a common occurrence among women across the world and throughout time. Although the exact percentages of street harassment differed from study to study, they consistently showed that most women experienced street harassment and that women were targets of street harassment more frequently than men. This gender discrepancy could be best understood in the context of gender inequality. Additionally, Fairchild and Rudman

(2010) claimed that the most frequent forms of street harassment experienced by college students were cat-calling, wolf-whistling, or being stared at. Some women reported being forcefully fondled or grabbed at least once a month. Additionally, studies conducted in the Philippines by Ancheta (2018), Terrazola (2016), Rodriguez (2016), and SWS 2016 Survey showed a widespread street harassment among women.

Moreover, Springer (2010) elucidated that women who witnessed and encountered street harassment had experienced and felt negative emotions towards men. Similarly, Fairchild (2010) showed that those women who ignored harassment had accounted for higher rates of self-objectification as contrasted with those who responded to the harasser, accounted for him, or discussed the experience with friends. Furthermore, most women felt that street harassment constructed them to feel objectified and sexualized. Hence, those with low self-esteem felt that road harassers expressed mockery for their appearance (Jackson, 2015).

Also, street harassment negatively affected women's level of self-objectification and self-esteem. As a result of street harassment, women modify their behaviour by wearing headphones, changing how they dress, walking a different path, or even altering their modes of transportation (Nielsen, 2000, as cited in Santhanam, 2014). Moreover, street harassment is directly related to the preoccupation with physical appearance and body shame (Akter, 2015). Consequently, encounters of harassment made ladies feel less agreeable in their environment, more furious and depressed, and less confident. This finding might not have been particular to the experience of being harassed on the street; however, several scholars have looked at how street harassment creates a negative impact on women's mental wellness (Sullivan, 2011). Also, the street harassment experience made women feel disgraced around their bodies, made them more conscious and less comfortable in public, and less confident (Jackson, 2015).

About how women dress, research shows that regardless of the type of clothing women wear; they still experience street harassment. Therefore, provocative dresses should not be a justification for cat-calling women (Chhun, 2011). On the topic of victim-blaming, a higher percentage was accounted for the notion that regardless of the women's manner of dressing, they still experience street harassment. However, the numbers are still significant enough to show that victim-blaming

exists. More women blame themselves or fellow women for sexual harassment, and that this may also be why street sexual harassment goes unreported.

To this end, most of the available literature about street harassment was conducted in urban areas, and no similar studies were conducted in the province and the University. Our society has laws to prohibit street harassment; yet, crimes against women have historically been regarded differently and less seriously than other crimes. This can also be seen in how cat-calling has always been dismissed as trivial, both by law and academic research (Ancheta, 2018).

Thus, the exact percentages of street harassment varied from study to study, but several pieces of research had consistently shown that most women experienced street harassment and that women were targets of street harassment more frequently than men.

## STATEMENT OF THE PROBLEMS

This study aimed to determine the frequency, types, and factors affecting street harassment on the level of self-objectification of female pre-service teachers of the College of Education, Isabel State University, Echague Campus.

Specifically, it answered the following questions:

1. How often have the respondents experienced street harassment?
2. What types of harassment are usually experienced by the respondents?
3. What are the contributory factors of street harassment in terms of place, transportation, companion, and attire?
4. What is the level of self-objectification of the respondents?
5. What is the relationship between the frequency of street harassment and the level of self-objectification of the respondents?

## METHODOLOGY

The descriptive correlational technique was utilized in this study, with an e-questionnaire serving as the primary instrument. In addition, statistical tools such as frequency count and percentage distribution, mean, and Spearman's correlation were used in the study.

The researcher used a survey questionnaire as an instrument of the study, which was adopted

from Manalo et al. (2016). The research instrument was composed of the respondents street harassment experience and 24-item Objectified Body Consciousness Scale.

The respondents of the study were female students of the College of Education who were enrolled in the 1st Semester of the School Year 2020-2021. The sample size of 267 respondents was determined using the Cochran formula with a 95% confidence level and a margin of error of 5%. Stratified random sampling was utilized as the sampling technique.

## FINDINGS

**Table 1. Frequency of Street Harassment**

Items	Frequency (N= 267)	Percent
Frequently	192	71.9
Occasionally	58	21.7
Seldom	17	6.4

Table 1 shows how often the pre-service teacher respondents experience street harassment as measured by the street harassment scale. Based on the data, most of the respondents, comprising 192 or 71%, experience street harassment frequently. Meanwhile, 58 or 21.7% of them are being harassed occasionally on the street. On the other hand, the lowest frequency exhibits that only 17 or 6.4% of the respondents seldom experience street harassment. This only proves that street harassment is prevalent among the female students of the College of Education. This coincides with the findings of Sullivan (2010) that in public places such as schools, women experienced being harassed by male perpetrators once in their lifetime and as much as every day.

**Table 2. Types of Harassment Experienced by the Pre-Service Teachers**

Types of Harassment	Frequency (N=267)	Percent
Catcalling (the act of shouting, harassing, and often sexually suggestive, threatening, or derisive comments at someone publicly)	90	33.7
Wolf-whistling (a distinctive 2-toned whistle sounded to express approval of another person's appearance)	176	65.9
Asking for the woman's number	148	55.4
Touching	27	10.1
Pinching or brushing up against the body	10	3.7
Exhibitionism (public masturbation or showing one's private parts)	1	0.3
Stalking	33	12.4
Winking	143	53.6

Table 2 presents the types of street harassment experienced by the respondents. Based on the table, it can be gleaned that the most prevalent types of street harassment are wolf-whistling which is experienced by 176 or 65.9% of the respondents, followed by asking for woman's number, which was encountered by 148 or 55.4% of them. Winking, on the other hand, was experienced by 143 or 53.6% of the respondents, while cat-calling was encountered by 90 or 33.7% of them.

These forms of street harassment are the most prevalent because these are the easiest and/or fastest ways for the perpetrators to harass women on the street or in public as compared to exhibitionism which was just experienced by 1 or 0.3% of the respondents.

This coincides with the study conducted by the SWS in 2016 in barangays Payatas and Bagong Silangan in Quezon City, which showed that 88% of women (18 to 24 years old) experienced sexual harassment at least once. Across all ages, from 12 to 55 years old and above, wolf-whistling and cat-calling are the most common forms.

**Table 3. Contributory Factors of Street Harassment in Terms of Place**

Items	Frequency (N= 267)	Percent
Going to school	154	57.7
Going out with friends	190	71.2
Doing extracurricular activities	85	31.8
Others	25	9.3

Based on Table 3, the most predominant place where respondents experience street harassment is when they go out with their friends, followed by going to school, which accounts for 190 or 71.2% and 154 or 57.7%, respectively. This is because going to school is the respondents' daily routine, and most of the days of the week, they are with their friends. On the other hand, others (25 or 9.3%) experienced street harassment when they are going home, and going to the market.

This concurs with the findings of Sullivan (2010) that in public places such as schools, women experience being harassed by male perpetrators once in their lifetime and as much as every day. Furthermore, street harassment mainly occurs in schools, public washrooms, and other public spaces, according to the survey conducted by the Social Weather Station (2016), as cited in Rodriguez (2016).

**Table 4. Contributory Factors of Street Harassment in Terms of Attire**

Attire	Frequency (267)	Percent
T-shirt and pants	245	91.8
Skimpy clothes (revealing clothes)	15	5.6
Uniform	182	68.2
Others	10	3.7

Based on Table 4, most of the respondents, consisting of 245 or 91.8%, experience street harassment when they wear T-shirts and pants, while 182 or 68.2% of them wear uniforms but still experience street harassment. Thus, these are the most prevalent contributory factors of street harassment in terms of attire. In fact, only a few of them wear skimpy clothes (15 or 5.6%), while others say they wear a blouse and knee level skirt (10 or 3.7%) when they experience street harassment. This is contrary to the belief that women are being street harassed because of wearing provocative or revealing clothes. Consequently, women are still harassed regardless of the clothes they wear.

A supporting study regarding this result was the social experiment published in Glamour magazine (2010), as cited in Chhun (2011), which tested the theory that women's choice of wardrobe may explain why they are cat-called. It was believed that women who wear such skimpy clothes were "asking for it," which perpetuates the stereotype that men cannot control themselves. They asked seven women to walk into the street wearing different types of clothing in which some were provocative, and some were conservative, but they found that out all the women were subsequently cat-called or harassed. Additionally, Southgate and Russell (2019) reported that even though the girls were in school uniform or traveling around school time, this did not appear to stop men from harassing them. With regard to how women dress, research shows that regardless of the type of clothing women wear; they still experience street harassment. Therefore, provocative dresses should not be a justification for cat-calling women (Chhun, 2011).

**Table 5. Respondents Level of Self-objectification**

Level of self-objectification	Frequency	Percentage
Low (24-38)	0	0
Moderately Low (39-53)	56	20.97
Average (54-68)	208	77.9
Moderately High (69-83)	3	1.12
High (84-96)	0	0

Table 5 shows the level of self-objectification of the respondents. Based on the data, most of the respondents, constituting 208 or 77.9%, have an average level of self-objectification.

According to the findings of this study, the average level of body consciousness means that most of the respondents become conscious about their physical appearance and sometimes feel ashamed when they have not made an effort to look at their best, think about how they look many times in a day and worry about whether the clothes they are wearing make them look good.

Having an average level of body consciousness can be inferred to be normal for women, especially for college students to be self-conscious (Manalo et al., 2016). This would mean that these women actually care about what other people see on them, but they still believe that they have control over their appearance. Hence, they do worry, but things would probably not go out of hand.

It can also be noted that none of the respondents has a high level of self-objectification. This means that none of the respondents is too concerned about themselves and significantly affects what others say about them and how others see them. Similarly, none of them has a low level of self-objectification. Hence, this means that none of them is concerned and is not anxious about how their bodies look.

On the other hand, Calogero (2012a) stated that women with a high level of self-objectification tend to have a higher rate of body shame and appearance and safety anxiety as opposed to women with a lower level of self-objectification. This is because they are too concerned to the extent that some of them lose their identity because of attempting to exceed other people's expectations (Manalo et al., 2016).

**Table 6. Relationship between the Frequency of Street Harassment and Level of Self-Objectification among the Female Pre-Service Teachers**

	<b>Correlation Coefficient</b>	<b>Sig.</b>
Frequency of Street Harassment & Level of Self-objectification	0.0681 <sup>ns</sup>	0.267 4

\* - significant      <sup>ns</sup> – not significant

Table 6 shows the relationship between the frequency of street harassment and levels of self-objectification of the respondents. Based on the table, there is not enough evidence to conclude a

relationship between the two variables. This means that although the respondents frequently experience street harassment, this does not affect their self-objectification.

This contradicts certain studies showing that street harassment negatively affected women's level of self-objectification (Santhanam, 2014). Also, it disputes the research result of Jackson (2015) that 7 out of 10 members felt that street harassment constructed them to feel objectified and sexualized.

## CONCLUSION

The majority of the respondents frequently experienced street harassment when they go out with friends and classmates, when they are alone, when they go to school, in public transportation, and/or while walking. The most prevalent types of street harassment they experience are wolf-whistling, winking, and cat-calling. In addition, regardless of the type of clothing they wear, they still experience street harassment.

Although the respondents experience street harassment frequently, this does not affect their level of self-objectification.

## RECOMMENDATION

The college and the campus may also strategically disseminating information on street harassment to increase the students' awareness.

The College of Education should continue to educate female pre-service teachers on how to take care of themselves so that they are not harassed on the streets.

Further studies may be conducted along the same line taking into consideration any of the following:

- a. Street harassment among men as victims or perpetrators;
- b. Effects of street harassment on the self-esteem and academic achievement of the students; and
- c. If possible, involve assessment on the local law enforcement on the issue for a holistic view of street harassment in the community.

## REFERENCES

- ActionAid. (2016). *Women's rights organizations key to ending violence against women and girls in our rapidly urbanizing world*. [www.actionaid.org.uk](http://www.actionaid.org.uk)
- Ancheta, A. C. (2018). No place for harassment: construing street harassment as gender-based sexual violence and providing remedies therefore. *Ateneo Law Journal*, 63:539. <http://ateneolawjournal.com/Media/uploads/cd557fff563ddf33a7f842ebd40b6667.pdf>
- Brekke, K. (2014). *Study confirms what it's like to walk down the street while female* | HuffPost. [https://www.huffpost.com/entry/street-harassment-survey\\_n\\_5445956](https://www.huffpost.com/entry/street-harassment-survey_n_5445956)
- Cabral, A. (2017, March 28). *The invisible ways we experience sexual harassment*. CNN Philippines. <https://cnnphilippines.com/life/culture/2017/03/28/sexual-harassment-policies.html>
- Calogero, R. (2012). Objectification theory, self-objectification, and body image. *Elsevier Inc.*, 2, 574–580. <https://doi.org/10.1016/B978-0-12-384925-0.00091-2>
- Center for Victim Advocacy and Violence Prevention. (2010). *Sexual harassment What is sexual harassment?* <http://www.9to5.org/>
- Chhun, B. (2011). Cat-calls: Protected speech or fighting words? *Thomas Jefferson Law Review*, 33(2). [https://www.actionaid.org.uk/sites/default/files/publications/safe\\_cities\\_for\\_women\\_may\\_2016.pdf](https://www.actionaid.org.uk/sites/default/files/publications/safe_cities_for_women_may_2016.pdf)
- Fairchild, K. (2010). Context effects on women's perceptions of stranger harassment. *Springer*. <https://doi.org/10.1007/s12119-010-9070-1>
- Jackson, Y. (2015). *How does street harassment affect the self-esteem of victims*. <https://prezi.com/siyglhmp1169/how-does-street-harassment-effect-the-self-esteem-of-victims/>
- Johnson, T. (2011). "Smashing the masher:" The early women's movement against street harassment in America. *Clayman Institute for Gender and Research*. <https://www.scribd.com/document/96759302/Smashing-the-Masher-the-early-women-s-movement-against-street-harassment-in-America>
- Kearl, H. (2014). *Unsafe and harassed in public spaces: A national street harassment report*. <https://www.stopstreetharassment.org/wp-content/uploads/2012/08/2014-National-SSH-Street-Harassment-Report.pdf>
- Kearl, Holly. (2010). Stop street harassment: making public places safe and welcoming for women. In *Greenwood Publishing Group*.
- Manalo, J. G. S., Mercado, I. U., Perez, A. D., Rivera, M. C. C. C., & Salangang, S. A. (2016). *Street harassment as a determinant of self-esteem and self-objectification among selected female students*. <http://www.stopstreetharassment.org/wp-content/uploads/2011/04/Manila-Thesis-Street-Harassment.pdf>
- Rodriguez, F. (2016, March 8). The Streets that haunt filipino women. *Rappler*. <https://www.rappler.com/move-ph/124993-sexual-harassment-women-streets>
- Santhanam, L. (2014, October 31). *Why street harassment happens, and why most people just ignore it*. PBS NewsHour. <https://www.pbs.org/newshour/nation/compels-people-engage-street-harassment-combat>
- Southgate, J., & Russell, L. (2019). *It's not ok girls' experiences and views*.
- Springer. (2010). *Sexism: cat-calls are detrimental to everyone*. ScienceDaily. <https://www.sciencedaily.com/releases/2010/03/100318093303.htm>
- Stop Street Harassment*. (n.d.). *Definiton of street harassment*. <http://www.stopstreetharassment.org/resources/definitions/>
- Sullivan, H. (2011). "Hey lady, you're hot!" *Emotional and cognitive effects of gender-based street harassment on women*. Indiana University of Pennsylvania. <https://www.scribd.com/document/428002468/Hey-lady-you-are-hot>
- Terrazola, V. E. (2016). Poll Says 3 of 5 PH Women, Victims of Street Harassment. *Manila Bulletin*. <https://www.pressreader.com/>

# WORK VALUES OF SECONDARY SCHOOL TEACHERS IN THE PROVINCE OF ISABELA

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## ABSTRACT

This descriptive-correlation study primarily aimed to determine the work values of the selected 319 secondary school teachers in the province of Isabela. Specifically, it sought to: (1) determine the profile of the secondary school teachers in Isabela based on their age, sex, civil status, highest educational attainment, and number of years in teaching; (2) determine the perceived work values of the secondary school teachers in Isabela as to their professional growth, interpersonal relationship, and social environment; and (3) analyze the relationship between the profile of the secondary school teachers in Isabela to their perceived work values. The work values instrument was adapted from the study of Recobo, Jr. (2017). Frequency counts, percentage, mean, and Pearson  $r$  were used in treating the gathered data. The following conclusions were derived (1) the respondents were dominated by teachers who are in their middle age and most of them are female, married, enrolled in their advanced education, and they are in their teaching career for 16-20 years; (2) the secondary school teachers in the province of Isabela mostly believe that work values in terms of their interpersonal relationship, professional growth, and social environment are either most or very important within the workplace; and (3) the civil status, highest educational attainment, and number of years in teaching of the secondary school teachers in Isabela made a significant impact on most of the teacher's work values. However, their age and sex as related to their work values were noted as two of their profile statuses that bear no significant relationship with most of the teachers work values. Based from these findings, the study recommends teachers are advised to enroll and pursue advanced education as it provides more positive work values in their workplace and the organization where they belong. Likewise, single teachers and neophytes in the teaching profession should make some adjustments to accept and embrace the work culture and beliefs of being a knowledge bearer and skill provider; teachers are recommended to continue working on the areas which need more output for continuous improvement of the schools' performance and other school mechanisms; school heads may spearheaded activities or programs that may further enhance the performance of the work values of their teachers; and future researchers may replicate this study, the profile other than those used in this study like recognitions and number of seminars attended of the respondents may be used to better understand its relationship to the work values of teachers.

*Keywords: work values, interpersonal relationship, professional growth, social environment, secondary school teachers*

## INTRODUCTION

Values as social standards are fundamental beliefs that help people distinguish between right or wrong. Adding balance and meaning in life, values enable individuals to live together within a society. Values are not innate; however, they are

learned and transmitted through observation and interaction, which puts forward the responsibility of schools for values education (Turkkahraman, 2014).

Values have been defined as desirable goals which serve as guiding principles in people's life, and influence people's perceptions, feelings, and

behaviors (Roccas & Sagiv, 2010). Values vary from person to person as they depend on personal judgment, upbringing, culture and traditions. Values are of extreme importance as they stir and shape most of the things around them such as relationships, behavior, choices and personal identity are all affected by a person's values. When actions and words are aligned with values, people feel contented, happy, confident and satisfied. But when behaviors do not match with values, they begin to sense uneasiness that will grow inside them which create negative energy. A person's life becomes less stressful and more productive, when acknowledging their personal values – and then make the attempt to live by and honor these values regardless of the circumstances the client will encounter (Kropp, 2015).

Work values serve as an evaluative standard relating to work or the work environment by which individuals discern what is right or assess the importance of preferences (Pryce, 2014). Work values are aspects of individuals' working lives which are important and relevant to them. It is agreed that work values are a subset of general human values and argued that work values are hierarchically ordered in individuals' minds according to their importance to the individual.

Work values influence perceptions regarding what occurs in the work environment, in particular, in highly uncertain contexts. They also act as an influence on behavioral decisions. Work values act as motivational elements in that they indicate which behaviors are more desirable to perform than others from an ideal perspective, either because the behavior itself is valued, or because the behavior moves the actor toward a valued object or event. Acting on values may or may not fulfill innate needs.

Organizations and institutions in the Philippines recognize the value of their employee in the success of the organization. This is why they take in account the culture, work values and practices of their employees. The Philippine national culture is identified as a collective culture, indicated by close family and community ties in the society. Filipino professionals like teachers can easily integrate and work together in groups, and do not mind working for the extra mile as long as their time and efforts is well-rewarded and appreciated by their employees. Organizations can consider these unique work values in working with teachers in designing engagement programs, and strategies for motivating their employees.

All organizations are unique, practicing different work values within the organization. Work

values have a significant impact on the employees' values. Work values can be a good indicator in personnel management and organizational productivity. Leaders who have good leadership management and styles could help in improving employees' performances, and employees' devotion to their work or job (Lin et al., 2015).

From the viewpoints and observations of the researchers as an educator, this study was conceptualized to determine the most and least dominant work values, and its importance to the secondary school teacher in Isabela. The result of this study will serve as basis in strengthening teachers' development program through enhancing the work environment and organizational performance of the teachers to attain high level of performance through strong development of unified work values resulting into a healthy working environment among teachers in the educational institutions.

## STATEMENT OF THE PROBLEM

Generally, this study aimed to determine the work values of the secondary school teachers in the province of Isabela.

Specifically, it sought to answer the following questions:

1. What is the profile of the secondary school teachers in Isabela based on the following:
  - a. age;
  - b. sex;
  - c. civil status;
  - d. highest educational attainment; and
  - e. number of years in teaching
2. What is the work values of the secondary school teachers in Isabela as to the following aspects:
  - a. Professional Growth;
  - b. Interpersonal Relationship; and
  - c. Social Environment
3. What is the relationship between the profile of the secondary school teachers in Isabela and their perceived work values?

## RELATED LITERATURE

Over the years, a great deal of research has been devoted to the study of values in relation to work. The fact that work has attracted relatively more research attention than other life domains, such as family, leisure, community and religion, can be explained by the key role that work plays in social life, not only as the primary source of

income, but also as a base for social participation, social status, consumption, health, family life, and so on.

Values play an important role in individual's life as well as among employees in the organization. Values are related to the human needs and desire towards any situation that happen in their life. It also involves the concepts and beliefs that will affect emotions and attitudes, any situation and guiding the selection and assessment of human behavior (Ali & Panatik, 2013).

Work values are the awareness, affective desires, individual needs or wants of people which guide their behavior (Pandey & Sharma, 2012) toward work. It makes a set of goals that an individual sought from an environment which plays a vital role in one's professional growth and career development (Liu & Lei, 2012). It is the satisfactory outcomes that individuals expect to achieve or should be attained through their engagement, involvement and active participation in work activities. It also drives the motivation of people to pursue certain task and contribute to the achievement of vision and mission of an organization (Aguado et al., 2017).

In an organization, work values play an important role to enhance work attitudes and performance among employees. In terms of academician, the implement of work values can help to increase academician's level of satisfaction and also producing excellent achievement that fits with current globalization of technology. Previous studies stated that there are two common types of work values in organization which are terminal and instrumental values. Terminal and instrumental work values among academician helps organization enhance productivity. Hence, work values become a good contributor in achieving the goals of organization and increase the level of job satisfaction among academicians.

In addition, employees in both public and private sectors have differences in terms of their work values. Previous research in work values has found that the employees in public and private sectors have their own perceptions, needs, and desires towards the value of their work. Generally, private sector employees focus more on external factors in work values, such as good payment and salary (Kumar & Koh, 2011), while public sector employees focus more on internal factors in work values, such as motivation and job security (Makhbul, Rahid & Hasun, 2011).

Liao et al. (2012), studied the relations among work values, work attitude including job involvement and organizational commitment and job per-

formance, and explore how the director's leadership may be a moderator between the work values and work attitude of green industry employees in Taiwan. They found out that there is a positive correlation between work values and job attitude (including job involvement and organizational commitment). A mediated effect was shown in work attitude and job involvement toward work value and job performance. Directors with a supportive and directive leadership style had a moderate effect on the relations between work values and work attitude (including job involvement and organizational commitment).

Based on the study of Sortheix et al. (2015), career development has shown that work values play a key motivational role in job selection and career development. In the context of the current economic crisis, it is of particular relevance to examine the role of work values for employment in the transition from school to work. They also examine the role of intrinsic (perceived importance of having a job that is interesting and matches one's own competences), rewards (having a good salary and high chance for promotion), and security (having a stable job) work values on subsequent employment status and person-job fit (how an individual's job matches one's own characteristics such as education and job preferences). Intrinsic work values predicted a higher degree of person-job fit two years later. Rewards work values predicted lower chances of being unemployed; and security work values predicted higher chances of being unemployed later on, and family socio-economic status was not related to employment outcomes.

Furthermore, Susa (2018), also examined the relationship of work values and teaching performance of early childhood educators in Tuguegarao City, Cagayan. Her study revealed that there is no significant difference in the work values of the teachers when grouped according to profile variables, implying that early childhood educators have comparable work values. Moreover, correlation indicated that generally, work value patterns of the respondents do not affect their teaching performance. Only the "teaching learning process" as a dimension of teaching performance is significantly associated to the work values of the respondents.

Moreover, Recobo, Jr. (2017), studied the work values and teaching performance of junior high school teachers in Alicia, Isabela. He revealed in his study that a good number of the teacher-respondents were females, married, young as to chronological age and teaching experience



and have attained higher level of educational background. Majority of them had a very satisfactory level of performance. Considered most important to the respondents were work values having freedom in their own work area, following safety precautions and procedures, helping others, forming friendship with their fellow employees, trying out new ideas and suggestions, the need to be mentally alert, contributing new ideas, and having opportunity to learn new things. There were significant differences in the work values of the respondents in relation to physical facilities, professional growth, interpersonal relationship, social environment and personal gratification, except on new challenges. As a general observation, the work values in relation to professional growth were considered very important to the respondents. Work values in relationship to interpersonal relationship and social environment showed significant difference with the performance level of the respondents. There is no significant relationship between the respondents work values and their profile.

Also, Simbran (2020), studied the work values and teaching performance of senior high school teachers of Legislative District III in the Schools Division of Isabela. It was revealed in his study that there is a significant relationship between the work values of the respondents and their profile. There is also a significant relationship between the respondents' work values and their teaching performance. Considered most important to the respondents were work values looking forward to changes in their job and having a close working relationship with a group. Work values recognized for quality of work in some variable or public way was considered as least important by the respondents.

## METHODOLOGY

The descriptive-correlation method of research was utilized to determine the work values of the 319 secondary school teachers in the province of Isabela. The respondents were chosen using probability sampling with a 95% level of confidence at 5% margin of error. The respondents per district were proportionally allocated.

### The Instrument of the Study

The research instrument was adapted from the study of Recobo, Jr. (2017) which consist of three areas of investigation. It is made up of two parts. Part I covers the profile of the respondents while

Part II focuses on the work values statements which includes Professional Growth, Interpersonal Relationship, and Social Environment.

### Statistical Tools

Frequency counts, percentage and means were used to describe the profile and the work values of the respondents. Pearson r was used to determine the relationship between the work values and the respondents' profile.

## FINDINGS

### PROFILE OF THE TEACHER-RESPONDENTS

As to age, it can be noticed that most of the respondents are in their middle and senior age already. The study was participated by 106 or 33.23% secondary school teachers whose age is from 31 – 38. Also, there were 95 or 29.78% of the respondents are belonging to the age bracket from 39 – 46. Moreover, there were 68 or 21.32% of the respondents of the study belong to the age bracket of 23 – 30. Furthermore, 50 or 15.67% of the respondents are belonging to the age bracket of 47 – 54.

As to sex, the study was dominated by female respondents. There were 227 or 71.16% who are female teachers. On the other hand, there were 79 or 24.76% male secondary school teachers who participated in the study. As to educational attainment, the table reveals that most of the respondents are geared towards masters and doctorate degrees. The study was participated by 134 or 42.01% of respondents who are bachelor's degree holders and having units in their master's degree. Also, 89 or 27.90% of the respondents are the holders of master's degrees. There were 46 or 14.42% of the respondents are bachelor's degree holders. On the other hand, 27 or 8.46% of the respondents are master's degree holders with units in a doctoral course while 23 or 7.21% of the respondents are doctorate holders.

The number of years in the teaching of the teacher-respondents is also presented in the table. Based on the table, 101 or 31.66% of the respondents were in the teaching profession for 16 – 20 years already. The 79 or 24.76% of the respondents were staying in their profession for 6 – 10 years already. Further, the study was participated by 72 or 22.57% of the respondents who been teaching for 11 – 15 years already. In addition, 10 or 3.13% of the respondents are teachers for 21 – 25 years already.

**Table 1. Profile of Teacher-Respondents**

PROFILE	Frequency	Percent
	(n = 319)	100.00
<b>Age</b>		
23 – 30	68	21.32
31 – 38	106	33.23
39 – 46	95	29.78
47 – 54	50	15.67
<b>Sex</b>		
Male	92	28.84
Female	227	71.16
<b>Civil Status</b>		
Single	79	24.76
Married	218	68.34
Widow/er	22	6.90
<b>Highest Educational Attainment</b>		
Bachelor's Degree	46	14.42
Bachelor's Degree w/ units in Masters	134	42.01
Masters Degree	89	27.90
Masters with units in Doctoral	27	8.46
Doctoral Degree	23	7.21
<b>Number of Years as Teacher</b>		
1 - 5	57	17.87
6 – 10	79	24.76
11 -15	72	22.57
16 – 20	101	31.66
21 – 25	10	3.13

**PERCEPTION OF THE WORK VALUES OF THE SECONDARY SCHOOL TEACHERS IN ISABELA**

As reflected in table 2 it is disclosed that as of professional growth the following statements: “feel that their work is contributing to a set of moral standards that they feel is very important”; know their job will last; and use leadership abilities were perceived most important by the secondary school-teachers. On the other hand, gaining prestige, needing to have artistic ability, having the power to set policy and determine course of action, and looking forward to change in job were perceive very important.

In addition, as to interpersonal relationship, secondary school teachers perceived that helping others, and having good contacts with fellow workers as most important. However, adding to the well-being of other people, helping another person’s, planning and organizing the work of others, having lots of daily contact with people, and having authority with others were perceived very important.

Finally, as to social environment, seven statement-indicators were perceived most important by the secondary school teachers. On the other hand, five statement-indicators were perceived very important such as recognizing the work of others in the organization, deciding for themselves what kind of work they will do, recognizing the quality

of their work in public way, having job/duties that are largely predictable and not likely to change over long periods of time, and comparing their abilities against others.

**Table 2. Perception of the work values of the secondary school teachers in Isabela**

WORK VALUES	Mean	Desc.
<b>Professional Growth</b>		
<i>Work in which teachers...</i>		
gain prestige in their field	4.46	VI
look forward to changes in their job	4.40	VI
know their job will last	4.57	MI
use leadership abilities	4.57	MI
need to have artistic ability	4.45	VI
have the power to set policy and determine a course of action	4.45	VI
feel that their work is contributing to a set of moral standards that they feel is very important	4.62	MI
<b>Interpersonal Relationship</b>		
<i>Work in which teachers...</i>		
help others	4.68	MI
have authority over others	3.84	VI
add to the well-being of other people	4.46	VI
have good contacts with fellow workers	4.56	MI
plan and organize the work of others	4.33	VI
fell they have helped another person	4.43	VI
have lots of daily contact with people	4.27	VI
<b>Social Environment</b>		
<i>Work in which teachers...</i>		
can be the kind of person they would like to be	4.58	MI
have a boss who is reasonable/considerate	4.55	MI
form friendship with their fellow employees	4.61	MI
know what others consider their work important	4.53	MI
contribute to the betterment of the place they live in	4.57	MI
help others directly, either individually or in group	4.56	MI
compare their abilities against others	3.57	VI
recognized as a member of an organization whose type of work is important to them	4.34	VI
have job/duties that are largely predictable and not likely to change over long periods of time	4.13	VI
recognized for the quality of their work in some visible or public way	4.16	VI
decide for themselves what kind of work they will do and how they will go about it, not have to do what others tell them to do	4.20	VI

MI = Most Important VI = Very Important

**RELATIONSHIP BETWEEN THE PERCEIVED SECONDARY SCHOOL TEACHERS’ WORK VALUES AS TO PROFESSIONAL GROWTH AND THEIR PROFILE**

Table 3 presents the relationship between the perceived secondary school teachers’ work values as to professional growth and their profile. It can be seen from the table that the respondents’ age has no significant relationship in any of the statements related to the perceived professional growth of the secondary school teachers in Isa-

bela. Hence, the null hypothesis of the study is hereby accepted.

It can also be deduced from the table that the respondents' sex has a significant and positive relationship with one (1) statement about the perceived professional growth of the secondary school teachers in Isabela. This significant and positive relationship is based on its correlational value of 0.14 and significant level of 0.01. This only means that between the male and female secondary school teachers in Isabela, it's the female respondents who have a more positive perception about their job which will last.

The civil status of the secondary school teachers in Isabela and its relationship to their perceived professional growth is also presented in the table. The table shows that five (5) statements have a significant and positive relationship with the secondary school teachers' civil status. This is based on the correlational value from 0.11 to 0.13 and the significant level from 0.01 to 0.05. This only means that the unmarried respondents have a more positive perception about their professional growth as secondary school teachers specifically on gaining prestige in the field of teaching, looking forward to changes in their job, using their leadership abilities, having the power to set policy and determine a course of action, and to feel that their work is contributing to a set of moral standards that they feel very important.

Further, the table presents the relationship between the secondary school teachers' highest educational attainment and their perceived work values as to professional growth. It can be seen from the table that five (5) statements show a significant but negative relationship with the secondary school teachers' highest educational attainment. This is based on the correlational value from -0.10 to -0.16 and significant level from 0.00 to 0.05. This only means that as the secondary school teachers gain higher educational attainment they perceived gain lesser prestige in their field, they see fewer changes in their jobs and that their job will be less likely to last. Also, as secondary school teachers climb the ladder of educational achievement, they perceived of lesser need for their artistic ability, and they feel less about the contribution of their work to a set of moral standards which they feel is very important. The secondary school teachers' shows also a significant but negative relationship with one (1) statement under professional growth. This is based on its correlational value of -0.12 and a significant level of 0.01. This only means that as the secondary school teachers earn their experiences as

teachers they perceived that their job will less likely to last.

**Table 3. Relationship between the Perceived Secondary School Teachers' Work Values as to Professional Growth and their Profile**

WORK VALUES	AGE		SEX		CIVIL STATUS		HIGHEST EDUCATIONAL ATTAINMENT		NUMBER OF YEARS AS TEACHER	
	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.
<i>Work in which teachers...</i>										
gain prestige in their field	-0.09 <sup>ns</sup>	0.07	0.03 <sup>ns</sup>	0.60	0.11*	0.05	-0.16*	0.00	-0.05 <sup>ns</sup>	0.28
look forward to changes in their job	-0.06 <sup>ns</sup>	0.20	0.05 <sup>ns</sup>	0.39	0.13*	0.02	-0.13*	0.01	-0.06 <sup>ns</sup>	0.25
know their job will last	-0.09 <sup>ns</sup>	0.08	0.14*	0.01	0.10 <sup>ns</sup>	0.07	-0.13*	0.01	-0.12*	0.01
use leadership abilities	-0.03 <sup>ns</sup>	0.62	-0.10 <sup>ns</sup>	0.07	0.11*	0.05	-0.10 <sup>ns</sup>	0.06	0.03 <sup>ns</sup>	0.50
need to have artistic ability	-0.09 <sup>ns</sup>	0.07	0.02 <sup>ns</sup>	0.73	0.09 <sup>ns</sup>	0.11	-0.12*	0.02	-0.06 <sup>ns</sup>	0.26
have the power to set policy and determine a course of action	-0.09 <sup>ns</sup>	0.07	-0.04 <sup>ns</sup>	0.43	0.12*	0.03	-0.08 <sup>ns</sup>	0.10	-0.07 <sup>ns</sup>	0.14
feel that their work is contributing to a set of moral standards that they feel is very important	-0.03 <sup>ns</sup>	0.60	-0.01 <sup>ns</sup>	0.86	0.13*	0.01	-0.10*	0.05	-0.01 <sup>ns</sup>	0.89

\*Significant <sup>ns</sup> Not Significant

### RELATIONSHIP BETWEEN THE PERCEIVED SECONDARY SCHOOL TEACHERS' WORK VALUES AS TO INTERPERSONAL RELATIONSHIP AND THEIR PROFILE

Table 4 presents the relationship between the perceived secondary school teachers' work values as to the interpersonal relationship and their profile. It can be deduced from the table that the secondary school teachers' age shows a significant but negative relationship with one (1) statement under the perceived interpersonal relationship of the secondary school teachers. This is based on the result of its correlational value of -0.12 and significance level of 0.01. This result implies that as the secondary school teachers get older, they likely to lessen planning and organizing the works of others. The result of the present study contradicts the findings of Hallam et al. (2012), who found out that experienced teachers should be engaged in shared professional learning.

The secondary school teachers' sex shows a significant and positive relationship with one (1) statement under their perceived interpersonal rela-

tionship. This is based on the correlational value of 0.16 and a level of significance of 0.00. This only means that there is a higher tendency that the female secondary school teachers have a more positive perception of their work in which they are required by their supervisors to work within their deadlines and with high-quality outputs.

Furthermore, the relationship between the secondary school teachers' civil status and their perceived interpersonal relationship revealed that 13 out of 15 statements show a significant and positive relationship with the secondary school teachers' civil status. This is based on the correlational value from 0.10 to 0.18 and the significant level from 0.00 to 0.05. This only means that between the secondary school teachers, there is a higher tendency that the married secondary school teachers have a more positive perception about helping others, adding to the well-being of other people, having good contacts with fellow workers, planning and organizing the work of others, the feeling that they have helped another person, and having lots of daily contact with people. Also, this may imply that the married secondary school teachers have a higher tendency of having close working relationships with a group, working in a situation where deadlines and high quality of works are required by their superior, controlling other people's work activities, be in a position to change people's attitudes and opinion, seeking knowledge, truth, and understanding to others, regarded by others as an expert or a person of intellectual achievement, and having a job in which they guide other people in their work.

Moreover, the highest educational attainment of the secondary school teachers and their perceived work values as to interpersonal relationships disclosed that five (5) statements show significant but indirect relationships. This is based on the correlational value from -0.12 to -0.21 and the level of significance which is not higher than 0.02. This result implies that there is a higher possibility that as the secondary school teachers are pursuing higher education their perception about becoming less in helping others, having less good contacts with fellow workers, that they feel that they have helped others, less in close working relationships with a group, and less in seeking knowledge, truth, and understanding to others. The result of this study is in consonance with the findings of Unos (2017) on correlates of work values among secondary school teachers, in his study, he found out that teachers with higher educational attainment tend to become more self-centered.

Finally, the number of years of teaching of the secondary school teachers shows a significant but indirect relationship with one (1) statement under their perceived interpersonal relationship. This is based on its correlational value of -0.14 and significance level of 0.01. This significant but indirect relationship implies that there is a higher opportunity that as the secondary school teachers earn their teaching experience they become less in planning and organizing the work of others.

**Table 4. Relationship between the Perceived Secondary School Teachers' Work Values as to Interpersonal Relationship and their Profile**

WORK VALUES	AGE		SEX		CIVIL STATUS		HIGHEST EDUCATIONAL ATTAINMENT		NUMBER OF YEARS AS TEACHER	
	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.
<i>Work in which teachers...</i>										
help others	-0.08 <sup>ns</sup>	0.11	-0.10 <sup>ns</sup>	0.07	0.14*	0.01	-0.16*	0.00	-0.04 <sup>ns</sup>	0.49
have authority over others	0.07 <sup>ns</sup>	0.13	0.04 <sup>ns</sup>	0.41	-0.06 <sup>ns</sup>	0.24	0.06 <sup>ns</sup>	0.17	0.01 <sup>ns</sup>	0.81
add to the well-being of other people	0.04 <sup>ns</sup>	0.47	0.01 <sup>ns</sup>	0.91	0.14*	0.01	-0.07 <sup>ns</sup>	0.18	-0.01 <sup>ns</sup>	0.89
have good contacts with fellow workers	-0.06 <sup>ns</sup>	0.22	0.04 <sup>ns</sup>	0.45	0.15*	0.01	-0.15*	0.00	-0.09 <sup>ns</sup>	0.06
plan and organize the work of others	-0.12*	0.01	-0.09 <sup>ns</sup>	0.11	0.10*	0.05	-0.06 <sup>ns</sup>	0.19	-0.14*	0.01
feel they have helped another person	0.00 <sup>ns</sup>	0.97	0.02 <sup>ns</sup>	0.71	0.14*	0.01	-0.12*	0.02	-0.03 <sup>ns</sup>	0.52
have lots of daily contact with people	-0.02 <sup>ns</sup>	0.67	-0.03 <sup>ns</sup>	0.59	0.13*	0.02	-0.06 <sup>ns</sup>	0.24	-0.01 <sup>ns</sup>	0.88
have close working relationships with a group	-0.08 <sup>ns</sup>	0.14	0.05 <sup>ns</sup>	0.34	0.16*	0.00	-0.21*	0.00	-0.08 <sup>ns</sup>	0.12
work in a situation where deadlines and high quality of works are required by their superior	-0.01 <sup>ns</sup>	0.81	0.16*	0.00	0.12*	0.02	-0.09 <sup>ns</sup>	0.06	-0.02 <sup>ns</sup>	0.63
control other people's work activities	0.08 <sup>ns</sup>	0.09	0.02 <sup>ns</sup>	0.74	0.10*	0.05	0.05 <sup>ns</sup>	0.27	0.09 <sup>ns</sup>	0.06
be in a position to change people's attitudes and opinion	0.05 <sup>ns</sup>	0.30	0.09 <sup>ns</sup>	0.09	0.10*	0.05	0.01 <sup>ns</sup>	0.86	0.03 <sup>ns</sup>	0.46
seek knowledge, truth, and understanding to others	-0.06 <sup>ns</sup>	0.25	0.08 <sup>ns</sup>	0.16	0.11*	0.05	-0.19*	0.00	-0.07 <sup>ns</sup>	0.19
be regarded by others as an expert or a person of intellectual achievement	0.06 <sup>ns</sup>	0.22	-0.06 <sup>ns</sup>	0.25	0.16*	0.00	0.02 <sup>ns</sup>	0.66	0.01 <sup>ns</sup>	0.77
do work that allows little tolerance for error	0.03 <sup>ns</sup>	0.58	0.02 <sup>ns</sup>	0.67	0.08 <sup>ns</sup>	0.12	0.02 <sup>ns</sup>	0.66	0.05 <sup>ns</sup>	0.28
have a job in which they guide other people in their work	0.06 <sup>ns</sup>	0.26	0.01 <sup>ns</sup>	0.85	0.18*	0.00	-0.07 <sup>ns</sup>	0.15	0.02 <sup>ns</sup>	0.62

\*Significant <sup>ns</sup>Not Significant

## RELATIONSHIP BETWEEN THE PERCEIVED SECONDARY SCHOOL TEACHERS' WORK VALUES AS TO SOCIAL ENVIRONMENT AND THEIR PROFILE

Table 5 presents the relationship between the secondary school teachers' profile and their perceived work values as to the social environment. The table reveals that the secondary school teachers' age, sex, and highest educational attainment have no significant relationship with the perceived work values as to the social environment of the secondary school in Isabela. Hence, the null hypothesis of the study is hereby accepted.

**Table 5. Relationship between the Perceived Secondary School Teachers' Work Values as to Social Environment and their Profile.**

WORK VALUES	AGE		SEX		CIVIL STATUS		HIGHEST EDUCATIONAL ATTAINMENT		NUMBER OF YEARS AS TEACHER	
	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.	Corr.	Sig.
<i>Work in which teachers...</i>										
can be the kind of person they would like to be	0.04 <sup>ns</sup>	0.47	-0.06 <sup>ns</sup>	0.30	0.20*	0.00	-0.07 <sup>ns</sup>	0.16	0.05 <sup>ns</sup>	0.36
have a boss who is reasonable/considerate	0.10 <sup>ns</sup>	0.06	-0.11 <sup>ns</sup>	0.04	0.14*	0.01	-0.05 <sup>ns</sup>	0.34	0.12*	0.02
form friendship with their fellow employees	0.04 <sup>ns</sup>	0.49	-0.04 <sup>ns</sup>	0.51	0.21*	0.00	-0.10 <sup>ns</sup>	0.06	0.05 <sup>ns</sup>	0.29
know what others consider their work important	0.08 <sup>ns</sup>	0.13	0.01 <sup>ns</sup>	0.91	0.16*	0.00	-0.05 <sup>ns</sup>	0.32	0.05 <sup>ns</sup>	0.27
contribute to the betterment of the place they live in	0.04 <sup>ns</sup>	0.46	-0.05 <sup>ns</sup>	0.33	0.17*	0.00	-0.09 <sup>ns</sup>	0.08	0.08 <sup>ns</sup>	0.11
help others directly, either individually or in group	0.02 <sup>ns</sup>	0.72	-0.06 <sup>ns</sup>	0.26	0.15*	0.00	-0.08 <sup>ns</sup>	0.11	0.06 <sup>ns</sup>	0.24
compare their abilities against others	0.06 <sup>ns</sup>	0.18	-0.01 <sup>ns</sup>	0.88	0.08 <sup>ns</sup>	0.13	0.09 <sup>ns</sup>	0.06	0.11*	0.02
recognized as a member of an organization whose type of work is important to them	0.01 <sup>ns</sup>	0.84	-0.05 <sup>ns</sup>	0.36	0.12*	0.03	-0.03 <sup>ns</sup>	0.51	0.05 <sup>ns</sup>	0.28
have job/duties that are largely predictable and not likely to change over long periods of time	0.06 <sup>ns</sup>	0.25	-0.05 <sup>ns</sup>	0.32	0.15*	0.00	0.04 <sup>ns</sup>	0.38	0.16*	0.00
recognized for the quality of their work in some visible or public way	0.03 <sup>ns</sup>	0.57	-0.04 <sup>ns</sup>	0.43	0.09 <sup>ns</sup>	0.09	0.07 <sup>ns</sup>	0.18	0.07 <sup>ns</sup>	0.18
decide for themselves what kind of work they will do and how they will go about it, not have to do what others tell them to do	-0.06 <sup>ns</sup>	0.25	-0.09 <sup>ns</sup>	0.08	0.12*	0.02	-0.04 <sup>ns</sup>	0.36	0.02 <sup>ns</sup>	0.74

\*Significant <sup>ns</sup> Not Significant

The relationship between the perceived work values as to the social environment and the secondary school teachers' civil status observed that nine (9) statements show a significant and positive relationship with the secondary school teachers' civil status. The significant and positive relationship is based on the correlation value from 0.12 to 0.21 and the significance level which is not higher than 0.03. This implies that there is a higher possibility that they have a more positive perception about working in which they can be the kind of person they would like to be, that they have a boss who is reasonable/considerate, that they can form a friendship with their fellow employees, that they know what others consider their work important. This is supported by the study of Nasermodeli et al. (2012), mentioned that social environment is related to the emotional experience, wherein personal encounter among teachers create effective values that build a friendly atmosphere of professional growth. Furthermore, there is also a higher possibility that the secondary school teachers have a more positive perception about their work which contributes to the betterment of the place they live in, helps others directly, either individually or in a group, that they are recognized as a member of an organization whose type of work is important to them, that they have job/duties that are largely predictable and not likely to change over long periods of time, and that they can decide for themselves what kind of work they will do and how they will go about it, not have to do what others tell them to do.

The relationship between the secondary school teachers' number of years as teachers and their perceived work values as to social environment is disclosed that three (3) statements show a significant and positive relationship with the secondary school teachers' number of years as a teacher. This is based on the correlational value from 0.11 to 0.16 and the level of significance which is not higher than 0.02. This means that as the secondary school teachers in Isabela earn their teaching experience, their perception becomes more positive about their work in which they can have a boss who is reasonable/considerate, that they can compare their abilities against others, and that they have job/duties that are largely predictable and not likely to change over long periods of time. The result of the present study goes with the findings of the study of Ayap et al. (2016), who found out that length of service is highly related to working values in relation to the field of works.

## CONCLUSIONS

Based on the result of the study, the following conclusions were created:

1. The respondents were dominated by teachers who are in their middle age and most of them are female, married, enrolled in their advanced education, and they are in their teaching career for 16-20 years.
2. The secondary school teachers in the province of Isabela mostly believe that work values in terms of their interpersonal relationship, professional growth, and social environment are either most or very important within the workplace.
3. The civil status, highest educational attainment, and number of years in teaching of the secondary school teachers in Isabela made a significant impact on most of the teachers' work values. However, their age and sex as related to their work values were noted as two of their profile statuses that bear no significant relationship with most of the teachers work values.

## RECOMMENDATIONS

Based on the findings of the study, the following are highly recommended:

1. Teachers are advised to enroll and pursue advanced education as it provides more positive work values in their workplace and the organization where they belong. Likewise, single teachers and neophytes in the teaching profession should make some adjustments to accept and embrace the work culture and beliefs of being a knowledge bearer and skill provider.
2. The teachers are recommended to continue working on the areas which need more output for continuous improvement of the schools' performance and other school mechanisms.
3. School heads may spearhead activities or programs that may further enhance the performance of the work values of their teachers.
4. Future researchers may replicate this study, the profile other than those used in this study like recognitions and number of seminars attended of the respondents may be used to better understand its relationship to the work values of teachers.

## REFERENCES

- Ali, N. A. M. & Panatik, S. A. (2013). The relationships between work values and work-related attitude: The role of social support as moderator. *Journal of Social and Development Sciences*, 4(8).
- Aguado, C. L, Garcia, O. B., Laguador, J. M., Deligero, J. C. (2015). Teaching performance and extent of work values among faculty members in one Asian Maritime Academy. *International Journal of Management Sciences*, 5(12).
- Kropp, R. (2015). Research Paper: The Importance of Values and Alignment in Working Life.
- Liao, S. W., Lu, C. Y., Huang, C. K. & Chiang, T. L. (2012). Work values, work attitude and job performance of green energy industry employees in Taiwan. *African Journal of Business Management*, 6(15).
- Lin, J., Shen, P. F., & Hsu, Y. (2015). Effects of employees' work values and organizational management on corporate performance for Chinese and Taiwanese construction enterprises. Academic Editors: Adam Jabłoński and Giuseppe Ioppolo.
- Liu, Y. & Lei, Y. (2012). The connotation of work values: A preliminary review. *Canadian Center of Science and Education. Asian Social Science*, 8(1).
- Makhbul, Z. M., Rahid, M. R., & Hasun, F. M. (2011). What made they go? *Journal of Global Management*, 1(1).
- Pandey, A. & Sharma, A. K., (2012). *Industrial Psychology*. Global Academic Publishers and Distributors, New Delhi, India.
- Pryce, J. (2014). Work values: A formidable domain within the context of people's lives. James Cook University. Value, Translulation and Globalization Special Issue.
- Recobo, F. Jr. A. (2017). Work values and teaching performance of Junior High School Teachers of Alicia, Isabela. Unpublished Master Thesis. Isabela State University, Echague, Isabela.
- Roccas S. & Sagiv L. (2010). Personal values and behavior: taking the cultural context into account. *Soc. Pers. Compass*, 4.
- Simbran, R. M. (2020). Work values and teaching performance of Senior High School Teachers of Legislative District III in the Division of Isabela. Unpublished Master Thesis. Isabela State University, Echague, Isabela.

- Sortheix, F. M., Chow, A., & Salmela-Aro, K. (2015). Work values and the transition to work life: A longitudinal study. *Journal of Vocational Behavior*, 89(171).
- Susa, M. C. (2018). Work values and teaching performance of Early Childhood Educators in Tuguegarao City, Philippines. *Asia Pacific Journal of Multidisciplinary Research*, 6(1).
- Turkkahraman, M. (2014). Social Values and Value Education. 5<sup>th</sup> World Conference on Educational Sciences – WCES 2013. *Procedia – Social and Behavioral Sciences*, 116.

# POSTHARVEST BEHAVIOR AND CHARACTERISTICS OF 'CARABAO' MANGO (*Mangifera indica L.*) FRUITS HARVESTED AT DIFFERENT LOCATIONS AND MATURITY

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## ABSTRACT

The study aimed to investigate the postharvest behavior and characteristics of Guimaras grown 'Carabao' mango (*Mangifera indica L.*) fruits harvested at different locations and maturity. Fruits were harvested from coastal and inland location at the age of 105-, 110- and 115-days after flower induction (DAFI) and were subjected for daily weight, peel color rating, incidence of postharvest diseases such as anthracnose (*Colletotrichum gloeosporioides*) and diplodia-stem-end rot (*Lasiodiplodia theobromae*), internal and external quality evaluations. Postharvest evaluation revealed that the initial and final weight of 'Carabao' mango fruits were heavier in inland location when harvested at 110 and 115 DAFI. Weight of peel and length of seed was higher in coastal location at 115 days of maturity and with the highest total soluble solids and percent edible portion. Location and ages of maturity did not influence the number of days the 'Carabao' mango fruits reached the peel color index of 6 (full yellow). Anthracnose disease that reduces fruit quality was present in fruits harvested in inland location regardless of ages of fruits at harvest. This study demonstrates better quality of production at coastal location that lessens the application of mango disease management strategies.

*Keywords: coastal, inland, mango, maturity, postharvest behavior, postharvest disease*

## INTRODUCTION

Mango (*Mangifera indica L.*) is considered as the national fruit of the Philippines and is one of the important high value commercial fruit crops grown in the country. It is known internationally as "Philippine Super Mango" and one of the world's best varieties. Mango ranked 3rd among the most important fruit crop, next to banana and pineapple in terms of area planted and volume of production. The mango industry of the country supports about 2.5 million farmers and contributes 17.91 billion pesos to GVA in agriculture with a domestic and export value of 41.60 billion pesos and 31 million US dollars for fresh mango production and 29.7 million US dollars for processed products. In 2010, the area planted to mango is about 189,436 hectares with 8,526,816 bearing trees and production of 825,676 metric tons of fresh fruits (Bureau of Agricultural Statistics, 2011).

The mango industry however, is beset with problems of decreasing production volume due to

postharvest losses. Contributory factors to these losses include damage caused by insect pests and diseases and inefficient postharvest handling system (Marañon, 1997). The shelf-life of mango after harvest ranges from 8 to 12 days only depending on the maturity of fruits. Maturity at harvest is the most significant component that determines storage life and fruit quality. Harvested fruits are more likely to shrivel and are inferior in quality when ripened and over ripe fruits are likely to become soft and mealy, soon after harvest. In contrast, mature fruits, ensure better physical appearance and high quality (Golez, 2002). Mango should reach the market during these critical time before decomposition happens. Shelf life decreases if the fruit becomes infected with diseases such as anthracnose (*Colletotrichum gloeosporioides*) and diplodia stem end rot (*Lasiodiplodia theobromae*) that will cause rapid spoilage of the commodity. Postharvest diseases are considered as the major cause for the drop in the quality of exported mangoes (Lizada, 1994).



Guimaras Island is one of the mango production areas of the country, located in one of the provinces of Western Visayas (Region VI). The province is about 20 minutes by boat from Iloilo City. There are five municipalities in Guimaras with a total land area of 60,465 hectares. It has a total mango population of 259,500 owing to the presence of three multinationals engaged in mango production and export, namely: ATLAS Fertilizer Agribusiness Corporation (AFC), Oro Verde Holdings and Development Corporation and the Guimaras Southern Orchard now being managed by the Dole Philippines.

Prominent mango traders in different areas of the country have identified Guimaras mango as the best in the country. Aside from its excellent taste, it's the only province that can presently ship its mango to the US and Australian markets. However, there are traders and growers who claims that the quality of the fruits varies depending on the locations (inland and coastal) of the growing area. Growers from the inland barangays of the municipality of Jordan claims that mangoes in their areas are usually infected with anthracnose (locally called lupok-lupok) which are not claimed by farmers in Nueva Valencia town (personal communication). Mangoes in Guimaras are harvested at different ages of maturity depending on the choice of growers and buyers from 105 to 130 days after flower induction (DAFI). Days from induction to harvesting may affect quality of the fruits aside from environmental, physiological and edaphic factors.

It is therefore of interest to look into the post-harvest behavior of Guimaras grown 'Carabao' mangoes towards ripening as influenced by different locations (inland and coastal) and different ages of maturity at harvest.

### OBJECTIVES OF THE STUDY

This study was conducted to determine the effects of location and maturity on the postharvest behavior and characteristics of Guimaras grown 'Carabao' mangoes. Specifically, the study sought to answer the following:

1. Evaluate the influence of locations and maturity on the external and internal quality of mango fruits.
2. Determine the influences of locations (inland and coastal) and maturity on the susceptibility of Guimaras grown 'Carabao' mango fruit to postharvest diseases (Diplodia stem-end rot and anthracnose)

3. Compare the interaction effect of locations and maturity on the postharvest behavior and characteristics of Guimaras grown 'Carabao' mango fruits.

### METHODOLOGY

The study utilized a 2 x 3 factorial research design which delved into the evaluation of the postharvest behavior and characteristics of 'Carabao' mango fruits harvested at different locations and maturity. One hundred twenty (120) fruits were randomly taken from each location (coastal and inland) at 105, 110 and 115 days after flower induction (DAFI) having a total of two hundred forty (240) fruit samples. The towns of Nueva Valencia specifically Barangay San Antonio (coastal) and the municipality of Buenavista at Barangay Old Poblacion (inland) were the two municipalities that served as the sampling areas of the study.

Factor A — Location	X	Factor B — Maturity
A <sub>1</sub> B <sub>1</sub>	-	Inland, 105 DAFI
A <sub>1</sub> B <sub>2</sub>	-	Inland, 110 DAFI
A <sub>1</sub> B <sub>3</sub>	-	Inland, 115 DAFI
A <sub>2</sub> B <sub>1</sub>	-	Coastal, 105 DAFI
A <sub>2</sub> B <sub>2</sub>	-	Coastal, 110 DAFI

Fruits were harvested at 9 o'clock in the morning and were brought to laboratory for evaluation. Data on initial weight was gathered right after harvest. Parameters such as peel color, occurrence of anthracnose and diplodia stem-end rot were gathered every day until the fruits have reached the peel color index of 6 which is full yellow. Fruits' final evaluation included parameters on final weight; percent weight loss; thickness and weight of peel, seed weight, length and thickness; flesh weight, total soluble solids; and percent edible portion. Descriptive evaluation on the internal and external qualities were done which includes fruit size and shape, peel color and thickness while internal qualities includes flesh color, flesh texture, juiciness, flesh aroma, fiber in flesh, percent edible portion and stone thickness. The whole evaluation period was done at the Bureau of Plant Industry-National Mango Research and Development Center laboratory room.

Data were analyzed using mean, averages and totals. Analysis of variance for equal replication in a Randomized Complete Block Design (RCBD) was used to analyze the differences in

initial and final weights, percent weight loss, peel thickness and weight, seed total weight, length and thickness of seeds, flesh weight, total soluble solids, % edible portion, anthracnose and diplodia stem-end rot infection among different locations and ages of maturity.

## RESULTS

Based on the results of the study, the different locations (coastal and inland) and ages of maturity (105, 110, 115 DAFI) have no significant effects on the percent weight loss, peel thickness, thickness of seeds and flesh weight of 'Carabao' mango fruits.

Location factor was found to influence the initial and final weight of the fruits to which inland location at 110 and 115 DAFI were significantly heavier than in coastal location. The coastal location however, exhibits heavier weight of peel at 115 ages of maturity.

Total seed weight was not influenced by location or ages of maturity. The seeds however, were significantly longer in coastal at 110 and 115 DAFI than those harvested in inland location.

Total soluble solids (TSS) on the other hand were significantly influenced by the coastal location at 115 ages of maturity. Likewise, the highest percent edible portion was significantly higher at 115 DAFI in coastal location.

Observations on the number of days the fruits have reached the peel color index rating of 6 (full yellow) show no distinctions among fruits harvested at different ages of maturity and locations.

Incidence of anthracnose disease was higher in fruits harvested at inland location regardless of ages of maturity.

The development of diplodia stem-end rot was not visibly observed since only 1% infection was noticed during the 7th and 8th day of evaluation periods.

**Table 1. Anthracnose Infection Scale Rating of 'Carabao' Mango Fruits harvested at Different Locations and Maturity**

Maturity	Location	Evaluation Days							
		1	2	3	4	5	6	7	8
	Inland	Anthracnose Infection Scale Rating							
105 DAFI		1	1	1	1.3	1	4.85	6.1	8.05
110 DAFI		1	1	1	1.65	1	5.85	6	-
115 DAFI		1	1	1	1	1	3.3	4.95	-
105 DAFI	Coastal	1	1	1	1	1	1	1	1.1
110 DAFI		1	1	1	1	1	1.6	1	-
115 DAFI		1	1	1	1	1	1	1	-

Table 3 shows that mango fruits harvested at coastal location were less infected with anthracnose disease.

Fruits harvested at 105 DAFI has no infection at all except for a minimal infection of 20% or a scale rating of 4 at 105 and 110 DAFI fruits which was observed at 6 and 8 days of evaluation period.

**Table 2. Percent Diplodia Stem-End Rot Infection of 'Carabao' Mango Fruits harvested at Different Locations and Ages of Maturity Evaluated at Different Dates**

Maturity	Location	Evaluation Days							
		1	2	3	4	5	6	7	8
	Coastal	Diplodia Stem-End Rot Infection Scale Rating							
105 DAFI		1	1	1	1	1	1.2	1.4	1.4
110 DAFI		1	1	1	1	1	1	1	-
115 DAFI		1	1	1	1	1	1	1	-
105 DAFI	Inland	1	1	1	1	1	1	1	1.1
110 DAFI		1	1	1	1	1	1	1	-
115 DAFI		1	1	1	1	1	1	1	-

Results shows that fruits harvested at coastal location were not infected with DESR except only to a very low percentage of infection of 1-5% and was rated as 2 during the last day of evaluation which was on its 8th day. Fruits harvested at inland location at 105 DAFI got a rating of 2 (1-5% infection) during the last day of evaluation (Day 8). The 110 and 115 DAFI harvested fruits at inland location got no infection at all.

## CONCLUSIONS

Based on the foregoing findings, the following conclusions were drawn:

1. The initial and final weight of 'carabao' mango fruits were heavier in inland location at 110 and 115 ages of maturity.
2. Weight of peel and length of seed was higher at coastal location at 115 age of maturity.
3. Seed total weight was significantly influenced by inland location but was not affected by ages of maturity.
4. Highest total soluble solids and percent edible portion were observed to fruits harvested at 115 DAFI in coastal location indicating that fruits must be harvested at this age to maximize the utilization of the fruits.
5. The number of days the 'carabao' mango fruits reached the peel color index of 6 (full yellow) presented no further distinction.
6. Highest percentage of anthracnose was observed to fruits harvested in inland location

regardless of ages of maturity confirming previous observations of traders and growers.

7. The development of diplodia stem-end rot was only observed at fruits harvested at 105 DAFI inland location at day 6 and 7 (final evaluation).

### RECOMMENDATIONS

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

1. For mango farmers and other would-be planters/growers, traders the idea of harvesting mangoes near the coastal or in the coastal areas and 115 age of maturity of fruits during harvesting would be better for obtaining quality fruits and increase profits. The consumers will also maximize the utilization of the edible portion of the fruits. However, this finding needs to be validated by conducting a study in several locations with the same production practices particularly on disease management.
2. Postharvest disease such as anthracnose is not apparent when harvesting of 'Carabao' mango fruits in coastal location.
3. For agriculture students and extension workers, the findings of this study may serve as reference in disseminating information in their extension work in mango production, cultural management practices after validation of the results in several locations.
4. For other researchers, similar studies should further be conducted during off season to compare the behavior of 'Carabao' mango fruits during high rainfall incidence on the same two different locations and ages of maturity.
5. Further research to determine the specific cause of higher anthracnose infection in inland area is needed to find appropriate mitigating measures to prevent or control the disease.

### ACKNOWLEDGMENT

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### REFERENCES

- BAS, 2011. The Philippine Mango Industry.
- Golez, H. 2002. The Philippine Research Development and Extension Agenda for Mango. [http://bpi.da.gov.ph/bpi/images/Production\\_guide/pdf/Mango.pdf](http://bpi.da.gov.ph/bpi/images/Production_guide/pdf/Mango.pdf)
- Lizada, W.G. 1994. The Philippine mango industry, 1994. Philippine Agricultural yearbook. 72pp.
- Marañon, R. 1997. Influence of location and pre-harvest Season on the response of 'Carabao' Mango (*Mangifera indica L.*) fruits to heat treatments. Master's Degree Thesis. UPLB.
- The-Philippines-in-the-Mango-Global-Value-Chain.pdf (industry.gov.ph)

# UTILIZING STUDENT-CENTERED CLASS ACTIVITIES AMONG BUSINESS MANAGEMENT STUDENTS IN THE NEW NORM OF LEARNING

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## ABSTRACT

The Department of Management Studies' Bachelor of Science in Business Management (BSBM) program envisioned continual progress in teaching-learning delivery and faculty practices, particularly in the use of Learning Management System. The researchers attempted to explore the implementation of student-centered activities in discussion-delivery proper through G-Suite (Workspace) LMS in order to improve the transfer of knowledge and skills to the students. This action research also serves as a catalyst to the enhancement in the strategies of every faculty of higher education institutions. The study utilized mixed research designs in the conduct of the study. The researchers implemented student-centered strategies and evaluated against traditional teacher-centered lecture type of activity. The study revealed that there are insignificant differences among variables between interventions. Moreover, challenges were identified such as restricted time and learning environment among others. The researchers crafted recommendations for the enhancement of learning experience of business management learners.

*Keywords: Cavite State University; instructional delivery; learning experience; mixed research designs; student-centered activity;*

## INTRODUCTION

Cavite State University (CvSU) – Cavite College of Arts and Trades moves forward with outcome-based education (OBE) as a forefront strategy in addressing instruction and curriculum designs for various programs it offers. Moreover, the university geared its operation to address the status quo of educational format amidst the prevailing pandemic for the reason that it has mobi-

lized its resources and yielded to a flexible approach in instruction delivery, in which the utilization of a Learning Management System (LMS) was adopted. Noting that the existence of making the teaching process more interactive and vibrant for the students becomes challenging in the utilization of LMS (Abug, Mendoza, and Tadeo, 2021).

The Department of Management Studies' Bachelor of Science in Business Management

(BSBM) program envisioned continual progress in teaching-learning delivery and faculty practices, particularly in the use of LMS. This drives the researchers' desire to investigate the many facets possible through the LMS in order to improve students' motivation and engagement, as well as their recall of concepts and ideas, using the teacher's current intervention and facilitation.

Thus, the researchers attempted to explore the implementation of student-centered activities in discussion-delivery proper through G-Suite LMS in order to improve the transfer of knowledge and skills to the students. This action research also serves as a catalyst for the enhancement of the strategies of every faculty member of a higher education institution.

### **ACTION RESEARCH OBJECTIVES**

Generally, this action research aimed to determine the effect of student-centered teaching and learning activities in instructional delivery process among BSBM students of CvSU – CCAT.

Specifically the researchers aimed to:

1. design and implement student-centered teaching and learning activities in instructional delivery process using LMS;
2. evaluate the implemented student-centered teaching and learning activities in instructional delivery process using LMS in terms of;
  - a. cognitive domain;
  - b. affective domain;
  - c. psychomotor domain; and
3. identify challenges in the implementation of student-centered teaching and learning activities using LMS; and
4. craft possible action plan to address the challenges encountered in the conduct of learning intervention.

### **LITERATURE REVIEW**

Online learning is becoming the most advantageous educational alternative among higher education learners nowadays. As this becomes popular to students as well as faculty, implementation moves faster beyond preparation. Studies uncovered several issues that could avert the effectiveness of online learning among stakeholders. And though designing an effective online course is necessary, preparation and focusing on engaging instruction is likewise important. Understanding the principles behind effective teacher and student

engagement is required to improve the online learning environment among stakeholders in higher educational institutions (Abernathy and Thornburg, 2020). Moreover, in facilitating an online class, the role of instructional strategies serve as a vital tool. Multiple factors such as getting students' feedback, having flexible teaching and evaluation of policies help to improve remote learning. Furthermore, providing resources prior to the class creates an avenue for interactive online classes (Mahmood, 2020).

Researchers recognize the instructional gap between the teacher and the students in open and distance learning (ODL). It is indeed true that online facilitation of teachers is still a vital component of ODL as it provides meaningful interaction between lecturers and students. This was investigated in the study of Adesina (2020), as the facilitators have a strategic role in content development and delivery in an ODL. The study found that lecturers have a high level of acceptance and perceived ease of use of online facilitation, which implies that it should be integrated into ODL. More so, facilitators considered the platform an easy channel to engage students in instructional delivery. This supports the study of Onyema, Deborah, Alsayed, Naveed, and Sanober (2019), who found that the application of online discussion forums is effective in student-teacher interactions, communication, and assimilating information related to school activities. Moreover, the role of the teacher is to facilitate and stimulate class participation and attract attention, which is literally important. Some factors that provide limitations to the success of online discussion forums are poor power supply, teacher and student commitment, abusive posts, delayed feedbacks, poor internet connectivity, and time constraints.

The potential impact of students' participation in multiple learning styles on their academic performance was studied by Baragash and Al-Samarraie (2018). The study specifically focused on the effects of involving students in three learning modes: face-to-face learning (F2F), learning management systems (LMS), and online learning (WBL). Experienced college students assessed their views on these three models. Results showed that students participating in the F2F model have a significant positive impact on their participation in the LMS and WBL models. Findings also revealed that the LMS has a positive impact on student performance. Moreover, LMS time and tool utilization had a positive impact on students' learning performance in the blended learning environment. Hence, the study proved that the dif-

ferent teaching methods are effective in the development of college students' learning. Furthermore, Olelewe and Okwor (2017) explored studying at a higher education institution in Enugu State, Nigeria. The study focused on teachers' perceptions of interactive whiteboards adapted in their instructional delivery. The findings revealed that the majority of teachers thought interactive whiteboards were an important information and communication technology (ICT) tool that should be used in higher education. However, the study found that due to a lack of institutional support and insufficient energy supply, the ICT technology required for effective use of the interactive whiteboard is very insufficient, which is the main obstacle for teachers to using ICT. As a result, students in most courses have poor academic performance. More so, teachers need to be retrained to familiarize them with the techniques and basic skills required to effectively use interactive whiteboards in Nigerian teaching practice.

Education and learning experiences are dynamic and should address the needs of both industry and academic competence; students' learning experiences should be addressed and developed on a continuous basis (Abug et al., 2021). Thus, the studies and research conducted by the mentioned authors provide a pathway to formulate and explore student-centered teaching learning activities to further enhance the learning experiences of business management learners at CvSU-CCAT to provide avenues of improvement and a platform for meaningful strategies in instruction delivery.

## OPERATIONAL FRAMEWORK

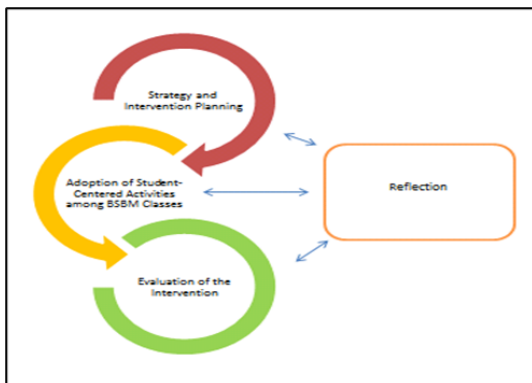


Figure 1a: Framework of the Study

This action research has utilized the action-reflective framework to conduct class intervention and assess its effect in the BSBM classes of Cavi-

te State University-CCAT Campus. The faculty researchers brainstormed the intervention and laid assumptions that will be used. The conduct of intervention followed the planning phase were instruments and various tools for a quasi-experimental approach was employed. Evaluation was the last phase of the action study where intervention were assessed. The reflective aspect of this action was used throughout the process through observation noting.

## METHODOLOGY

### Research Design

The study utilized mixed research designs in the conduct of the study. Specifically, this action research used descriptive design to describe the participants' mean scores. Considerably, quasi-experimental approaches were used in the scaffolding of intervention and analyses among the participants through the identification of controlled and intervening groups. Moreover, inferential and observation designs were utilized to augment and support the findings of the latter design. This action research has a prior null hypothesis that there are no significant differences between the variables under study among classes with student-centered teaching and learning strategies and classes without intervention.

Additionally, the authors used likert-scale questionnaires, checklists, and field and observation notes as research instruments as a basis for data analysis. In support of calibrated and standard measures of variables, the researchers have used the motivation-matrix of the University of California Davis, Center for Educational Effectiveness as a key research instrument in this action research. The researchers used two classes, which had an average of 35 students per class.

### Participants of the Study

The teachers used the two heterogeneous class of BSBM for each three lecture-subjects of BSBM program offered in the campus namely Strategic Management, Product Management, and Advertising. The first class utilized the student-centered teaching and learning strategies whilst the other class did not. Moreover, four faculty members were sourced for the teachers responses in this action research.

### Adoption and Implementation Process

The learning management system (LMS) as a key delivery tool in instruction delivery is ana-

lyzed through the researchers' collective and collaborative ideas. This study attempted to understand and explore the facets of the new normal of learning. This action research looked at the use of student-centered activities during class discussions to see what impact they had on students' cognitive, affective, and psychomotor domains. Hence, suggestions of techniques and recommendations to improve class delivery in the context of business education have been made.

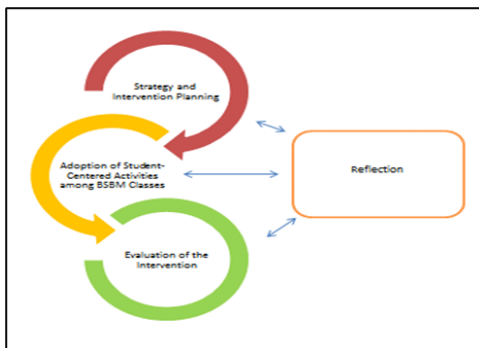


Figure 1b: Adoption-Evaluation Framework

The writers, as an a priori activity of this study, brainstormed potential student-centered learning methodologies. Furthermore, the proponents planned the delivery of the intervention by determining the appropriate tools to be used in the study, such as types of student-centered learning activities, topic leveling, class flow, classes to be considered, types of assessment, variables to be considered, research instruments, and intervention timeline. Considerably, the authors have the following assumptions:

- all classes under study were both heterogenous;
- internet accessibility was almost the same;
- applied in online session; and
- Google Workspace packages were utilized as LMS.

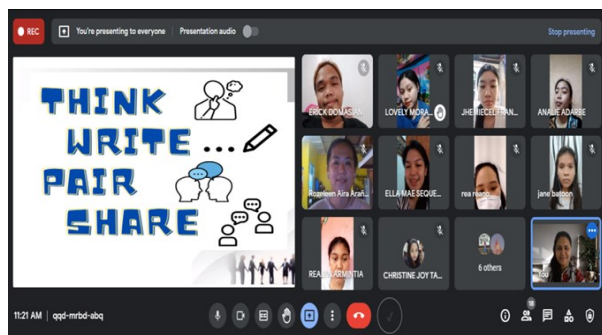


Figure 2a: Implementation Interactive Strategies (Think, Write, Pair and Share)

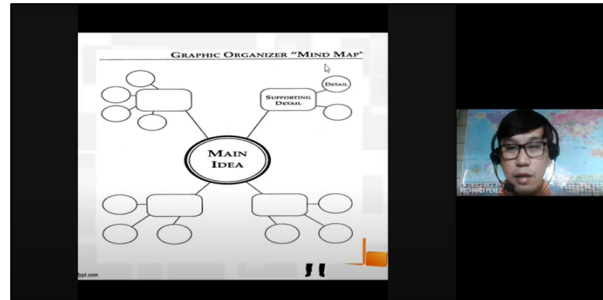


Figure 2b: Implementation Interactive Strategies (Graphic Organizer)



Figure 2c: Implementation Interactive Strategies (Live Discussion Forum)

In this action research, the faculty members employed various student-centered activities, namely: think-write-pair-share, graphic organizer, and live discussion forum as interventions, vis-a-vis traditional teacher-centered strategies. The proponents have relied on the advertising, product management, and strategic management subjects at Cavite State University's CCAT Campus' Bachelor of Science in Business Management Major in Marketing Management program.

The qualitative observation techniques were aided by class recordings. Additionally, to supplement the quantitative data needs, online evaluation sheets and student assessments were given and evaluated. Finally, descriptive and inferential statistics were used to offer proper analysis and empirical observation of the intervention.

## FINDINGS AND ACTION RESEARCH NARRATIVE

### Intervention Assessment

**Table 1. Teachers' Observation**

Areas of Observa-	With Intervention	Without Intervention
Cognitive Domain	<p>Clear understanding of the students towards subjects' terminologies were observed through adequate responses of the learners to the teachers' queries.</p> <p>Concepts of the subject were understood as the students relate relevant examples in real corporate situation.</p> <p>Deeper understanding were observed through students' analytical responses towards given problem and situations in relation to subject concern.</p>	<p>Student manifested average performance as observed by their responses on teachers queries towards subject terminology.</p> <p>Students were only starting to fully grasp the subject concept and terminologies.</p> <p>Understanding of the students are based on their plain re-</p>
Affective Domain	<p>Students expressed socialization and cooperation among co-learners.</p> <p>The sharing of ideas of the students promote interactive class atmosphere.</p> <p>Student demonstrated high respect to classmates and teacher through healthy confrontation and sharing of ideas.</p> <p>Active participation and involvement were noted with enthusi-</p>	<p>Socializing and cooperation of the students were somehow not observe.</p> <p>Free discussions among students towards topic was not observe.</p>
Psychomotor Domain	<p>Students were able to follow and apply procedures and instructions of facilitator with accuracy and promptness.</p>	<p>Students were able to follow and apply procedures and instructions of facilitator with accuracy and promptness.</p>

Table 1 shows the teachers' observation among BSBM classes with and without intervention. Observations under cognitive domain were almost the same except for a more visible explanations and discussions coming from the students. Considerably, observations from the psychomotor domain were the same across experiment groups. Finally, observations from affective domain shows that the students from with intervention tend to be more interactive, expressive, and participative compared to the study group without intervention.

**Table 2. Students' Response: Cognitive Domain**

Category	Without Intervention	De- scriptio n	With Inter- vention	Descrip- tion	
Cognitive Do- main	Understanding of subject terminologies.	4.34	Highly Agree	4.41	Highly Agree
	Understanding of subject concept and relevance to entrepreneurship and operational scenarios.	4.38	Highly Agree	4.33	Highly Agree
	Linking of subject concepts with the view of today's competitive market.	4.39	Highly Agree	4.36	Highly Agree
	Understanding subject concepts with marketing concepts and principles.	4.42	Highly Agree	4.42	Highly Agree
<b>Grand Mean</b>	<b>4.38</b>	<b>Highly Agree</b>	<b>4.38</b>	<b>Highly Agree</b>	

Table 2 showcases students' response under cognitive domain. Nominally the mean ranges were the same across experimental groups and is noted with the same grand mean for both classes. Additionally, descriptive values were the same with highly agree responses across observation groups. The results from the observation groups were almost similar because it can be attributed to the same business-cognitive competency delivered through traditional (teacher-centered) and student-centered class groups. As traditional approaches can be very rigid through lectures and were teachers act as main player, and the student-centered designs though interactive in nature, were constrained by technology and mobility issues, hence the theoretical arguments that student-centered is more conducive as far as cognitive aspect is considered was not affirmed as far as this action research is concerned.

**Table 3. Students' Response: Affective Domain**

Category	Without Intervention	De- scriptio n	With Inter- vention	De- scriptio n	
Affect- ive Do- main	Socializing with classmates and other colleagues.	4.39	Highly Agree	4.49	Highly Agree
	Cooperating peacefully and amicably with classmates or group mates.	4.42	Highly Agree	4.41	Highly Agree
	Empathizing with classmates during discussions and idea confrontation.	4.34	Highly Agree	4.40	Highly Agree
	Being Reflective on the consequences of decisions that the class will make.	4.36	Highly Agree	4.37	Highly Agree
<b>Grand Mean</b>	<b>4.38</b>	<b>Highly Agree</b>	<b>4.41</b>	<b>Highly Agree</b>	



Table 3 presents the students response under affective domain. Generally the mean range values were on the same category. Considerably, most of the mean values from the class with intervention are higher compared to the class without intervention. Especially with the socialization variable under this domain with a mean difference of 0.10. Additionally, descriptive values were the same with highly agree responses across observation groups. The results of this table affirms the qualitative results of the teacher observers that student-centered creates a more interactive and participative atmosphere in online class. Thus, socialization is evident.

**Table 4. Students' Response: Psychomotor Domain**

Category		Without Intervention	Description	With Intervention	Description
Psychomotor Domain	Following the procedures and instructions of the facilitator towards the subject.	4.45	Highly Agree	4.47	Highly Agree
	Application the subject skill in conceptualization of plan.	4.45	Highly Agree	4.41	Highly Agree
<b>Grand Mean</b>		<b>4.45</b>	<b>Highly Agree</b>	<b>4.44</b>	<b>Highly Agree</b>

Table 4 shows the students' responses under psychomotor domain. Generally, the mean ranges were almost the same across experimental group. Considerably, descriptive values were the same with highly agree responses. This assert the qualitative result of teacher observer that both strategy (student-centered and traditional approach) leads to the same output of creating interaction among learners.

**Table 5. Significant Difference of Students' Response: Cognitive Domain**

Category		Coefficient	p-value	Significance
Psychomotor Domain	Understanding of subject terminologies.	0.819	0.414	Insignificant
	Understanding of subject concept and relevance to entrepreneurship and operational scenarios.	0.552	0.582	Insignificant
	Linking of subject concepts with the view of today's competitive market.	0.375	0.709	Insignificant
	Understanding subject concepts with marketing concepts and principles.	0.013	0.989	Insignificant

Table 5 shows the significant difference under cognitive domain among the experimental groups. All the variables under study have p-values higher 0.05 thus are all insignificant. The researchers thereby accept the null hypotheses that there is no significant difference concerning cognitive domain between classes with intervention and classes without. Hence, the researchers found that that there is no causality of intervention on the experimental group under interactive activities using the online platform.

**Table 6. Significant Difference of Students' Response: Affective Domain**

Category		Coefficient	p-value	Significance
Affective Domain	Socializing with classmates and other	1.188	0.237	Insignificant
	Cooperating peacefully and amicably with classmates or	0.135	0.893	Insignificant
	Empathizing with classmates during discussions and idea	0.607	0.545	Insignificant
	Being Reflective on the consequences of decisions that the	0.059	0.953	Insignificant

Table 6 reveals the significant difference under affective domain among the experimental groups. All the variables under study have p-values higher 0.05 thus are all insignificant. The researchers thereby accept the null hypotheses that there is no significant difference concerning affective domain between classes with intervention and classes without. Thus, the researchers found that that there is no causality of intervention on the experimental group under interactive activities using the online platform as far as the affective domain is concerned.

**Table 7. Significant Difference of Students' Response: Psychomotor Domain**

Category		Coefficient	p-value	Significance
Psychomotor Domain	Following the procedures and instructions of the facilitator towards the subject.	.201	.841	Insignificant
	Application the subject skill in conceptualization of plan.	.389	.698	Insignificant

Table 7 showcases the significant difference under psychomotor domain among the experimental groups. All the variables under study have p-values higher 0.05 thus are all insignificant. The researchers thereby accept the null hypotheses that there is no significant difference concerning psychomotor domain between classes with intervention and classes without. Thereby, the researchers found that that there is no causality of intervention on the experimental group under interactive activities using the online platform as far as the psychomotor domain is concerned.

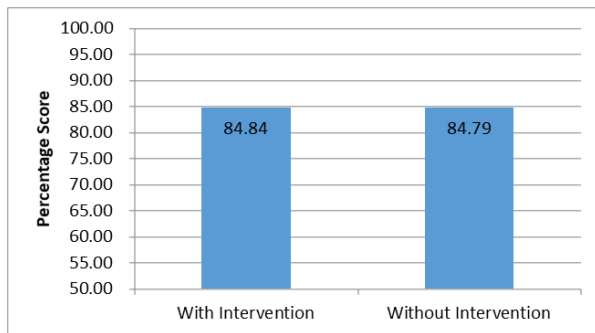


Figure 3. Assessment Scores of Students

Figure 3 shows the assessment scores of students at the end of the class session. Generally, students from classes with and without intervention performed at almost the same level based on the given assessment.

Table 7. Teachers' Observation: Challenges

The one hour prescribed online session is not enough to maximize the potential of providing student-centered learning activity.
Students and teachers were experiencing poor internet connectivity during the session.
Familiarity in the usage of applications of the students.
Some students' learning environment is not conducive for learning.

Table 7 shows the challenges that were observe by the teachers. The key challenge observed by the faculty members was that the time prescribed by the university is not enough to conduct interactive learning strategies.

## CONCLUSION

The authors have adopted and utilized students-centered teaching and learning activities in instructional delivery among BSBM students of Cavite State University - CCAT Campus, the authors conclude that:

1. the selected faculty members of the Department of Management Studies designed and implemented student-centered teaching and learning strategies namely think-write-pair-share, graphic organizer, and live discussion forum in the instructional delivery process of BSBM students using G-suite LMS;
2. the implementation of student-centered teaching and learning activity in instructional delivery process provides insignificant differences in terms of cognitive, affective, and psychomotor domain numerically speaking. However, through observation affective domain is highly visible in student-centered teaching activity; and
3. the faculty researchers have identified the following key challenges:
  - the one hour prescribed online session is not enough to maximize the potential of providing student-centered learning activity;
  - students and teachers were experiencing poor internet connectivity during the session.
  - familiarity in the usage of applications of the students; and
  - some students' learning environment is not conducive for learning.

## RECOMMENDATION

The researchers recommend the following:

1. increase in number of hours for class online session and maximizing the one and a half hour partial session or a 3 hour contact hours per week aligned with flexible learning approaches utilized by the program;
2. teachers should be aware of devices that the students are using to plan student-centered activities that utilizes tools that are accessible, compatible and data friendly;
3. a report of status of the internet connectivity of students may be provided and submitted to the university for their actions to be coordinate with proper authorities for their interventions, possible linkages and partnerships;

4. encourage the learners to find an environment that will be conducive for their online session learning; and
5. undertake future action researches concerning the efficiency and efficacy of this type of intervention and other variables that might influence the learning experiences of business students for further understanding and improvement of strategies.

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### REFERENCES

- Abug, N., Mendoza, XL., and Tadeo, J., (2021). Enhancing Class Engagement of BSBM Learners Through Interactive-Motivational Strategies in Lesson Delivery using Learning Management System. Unpublished.
- Adesina A., (2020). Leveraging the Capabilities of Online Facilitation as an Interactive Mode of Instructional Delivery in Open and Distance Learning in Nigeria. *Journal of Education and Practice*, ISSN 2222-1735 (Paper) ISSN 2222-288X (Online), Vol.11, No.36, 2020. Retrieved from <https://www.researchgate.net/profile/OluwadaraAbimbade/publication/348249681>
- [Leveraging the Capabilities of Online Facilitation as an Interactive Mode of Instructional Delivery in Open and Distance Learning in Nigeria/links/5ff4e5dd299bf1408874dd0e/Leveraging-the-Capabilities-of-Online-Facilitation-as-an-Interactive-Mode-of-Instructional-Delivery-in-Open-and-Distance-Learning-in-Nigeria.pdf](https://www.researchgate.net/profile/OluwadaraAbimbade/publication/348249681)
- Abernathy, D.F., & Thornburg, A.W. (2020). Theory and Application in the Design and Delivery of Engaging Online Courses: Four Key Principles that Drive Student and Instructor Engagement and Success. *Handbook of Researcher on Developing Engaging Online Courses*. Retrieved from <https://www.igi-global.com/book/handbook-research-developing-engagingonline/235696>
- Mahmood, S., (2020). Instructional Strategies for Online Teaching in COVID-19 Pandemic. *Human Behavior & Emerging Technology* 2021;3:199–203. Retrieved from <https://doi.org/10.1002/hbe2.218>
- Olelewe, C.J., Okwor, A.N., (2017). Lecturers' perception of interactive whiteboard for instructional delivery in tertiary institutions in Enugu State, Nigeria. *J. Comput. Educ.* 4, 171–196 (2017). Retrieved from <https://doi.org/10.1007/s40692-017-0077-6>
- Onyema E.M., Deborah, E.C., Alsayed A.O., Naveed Q. N. & Sanober S. (2019). Online Discussion Forum as a Tool for Interactive Learning and Communication. *International Journal of Recent Technology and Engineering (IJRTE)* ISSN: 2277-3878, Volume-8 Issue-4, November 2019. Retrieved from [researchgate.net/profile/AlhuseenAlsayed/publication/337654925\\_Online\\_Discussion\\_Forum\\_as\\_a\\_Tool\\_for\\_Interactive\\_Learning\\_and\\_Communication/links/5de2e74d92851c836457d477/Online-Discussion-Forum-as-a-Tool-forInteractiveLearningandCommunication.pdf](https://www.researchgate.net/profile/AlhuseenAlsayed/publication/337654925_Online_Discussion_Forum_as_a_Tool_for_Interactive_Learning_and_Communication/links/5de2e74d92851c836457d477/Online-Discussion-Forum-as-a-Tool-forInteractiveLearningandCommunication.pdf)
- Reem Sualiman Baragash, Hosam Al-Samarraie, Blended learning: Investigating the influence of engagement in multiple learning delivery modes on students' performance, *Telematics and Informatics*, Volume 35, Issue 7, 2018, Pages 2082-2098, ISSN 736-5853, Retrieved from <https://doi.org/10.1016/j.tele.2018.07.010>. (<https://www.sciencedirect.com/science/article/pii/S0736585318303848>)



