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Schools Division Research Committee (SDRC) and

Division’s Research Enthusiasts, Advocates and Mentors (DREAM) Team Schools Division Office of Imus City

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DepEd Vision

We dream of Filipinos
who passionately love their country
and whose values and competencies enable them to realize their full potential
and contribute meaningfully to building the nation.

As a learner-centered public institution, the Department of Education continuously improves itself to better serve stakeholders

DepEd Mission

To protect and promote the right of every Filipino to quality, equitable, culture-based and complete basic education where:

- Students learn in a child-friendly, gender-sensitive, safe and motivating environment
- Teachers facilitate learning and constantly nurture every learner
- Administrators and staff as stewards of the institution, ensure an enabling and supportive environment for effective learning to happen
- Family, community and other stakeholders are actively engaged and share responsibility for developing life-long learners.

DepEd Core Values

Maka-Diyos, Makatao, Makakalikasan, Makabansa

DepEd Mandate

The Department of Education was established through the Education Decree of 1863 as the Superior Commission of Primary Instruction under a Chairman. The Education agency underwent many reorganization efforts in the 20th century in order to better define its purpose vis some vis the changing administrations and charters. The present-day Department of Education was eventually mandated through Republic Act 9155, otherwise known as the Governance of Basic Education act of 2001 which establishes the mandate of this agency.

The Department of Education (DepEd) formulates, implements, and coordinates policies, plans, programs and projects in the areas of formal and non-formal basic education. It supervises all elementary and secondary education institutions, including alternative learning systems, both public and private; and provides for the establishment and maintenance of a complete, adequate, and integrated system of basic education relevant to the goals of national development.

DepEd Quality Policy Statement

The Department of Education is committed to provide learners with quality Basic Education that is accessible, inclusive, and liberating through:

- Proactive Leadership
- Shared Governance
- Evidence-Based policies, Standards, and Programs
- Responsive and Relevant Curricula
- Highly Competent and Committed Officials, and Teaching, and Non-Teaching Personnel
- An Enabling Learning Environment

The Department upholds the highest standards of conduct and performance to fulfill stakeholders' needs and expectations by adhering to constitutional mandates, statutory, and regulatory requirements, and sustains client satisfaction through continuous improvement of the Quality Management System.

MESSAGES

OFFICE OF THE REGIONAL DIRECTOR

I am delighted to acknowledge the Schools Division Office of Imus City for its publication of the I Dream Research Journal Volume 5, a valuable tool in sharing knowledge, innovations and expertise, thereby serving as a shining testament to your commitment to academic excellence and scholarly advancement.

We educators believe that the conduct of scholarly researches, specifically those anchored on the Basic Education Research Agenda and aligned with the MATATAG Agenda, will guide us in crafting evidence- based policies and can facilitate highly effective programs to address the needs of different types of young learners in the ever-changing educational landscape.

I believe that the publication of this research journal is a perfect platform for promoting collaboration among teachers and sharing insights among distinguished education leaders in the region.

I highly commend the hours spent on laborious review and value of scholarly approach applied to undertake such a remarkable scholarly pursuit. Well done and congratulations to the editorial board and teacher-researchers involved in achieving the goals of this laudable academic endeavor!

ATTY. ALBERTO T. ESCOBARTE, CESO II
Regional Director
Region IV-A CALABARZON

OFFICE OF THE ASSISTANT REGIONAL DIRECTOR

Educational research initiatives are vital for improving teaching and learning strategies, guiding governance decisions, enhancing disaster preparedness, supporting teacher professional development, and fostering innovation in the education system. It serves as a fundamental tool for adapting to evolving challenges and ensuring that learners are well-prepared for the future.

To the Schools Division of Imus City my warmest greetings as it releases its "I Dream Journal Volume 5" which showcases the best research practices in the division. This publication is a manifestation of the commitment and excellence of the division office in leading research for educational advancement.

May your dedication to research advancement in the division office help us to continuously improve the quality of education in our region. Let us join hands to attain the objectives indicated in our Regional Education Development Plan.

To all researchers, continuously conduct, present, and publish quality research that can be a good source of information in addressing educational challenges in the region.

May the Lord continuously guide us in serving our learners with quality education.

Mabuhay!

DR. LOIDA N. NIDEA
Assistant Regional Director
Region IV-A CALABARZON

OFFICE OF THE SCHOOLS DIVISION SUPERINTENDENT

Welcome to all teacher-researchers, continuous improvement advocates, and innovators throughout our Division and of the Region IV-A CALABARZON Region. I invite you to immerse yourselves in the enriching pages of the I DREAM Research Journal, proudly unveiling its 5th Volume- the MATATAG Volume.

This edition stands as a beacon of resilience, symbolizing the tremendous effort and dedication of a MATATAG DepEd educators. As we endeavor to rebound from the aftermath of the pandemic, this journal serves as a testament to our collective resilience, determination and unwavering dedication of our team.

Our vision for this journal extends far beyond its pages. We aspire for it to serve as a catalyst and an inspiration for holistic transformation and development, not only in Imus and CALABARZON but throughout the country. By sharing our twelve (12) research findings and best practices in the new normal, we aim to foster a culture of innovation and continuous improvement that permeates every aspect of the changing education landscape. Our battle cry of delivering quality basic education, characterized by proactive, evidence-based, and relevant curricula, as well as creating an enabling learning environment for all our school children and stakeholders, is vividly reflected in this publication. As SDRC adviser and Superintendent, I couldn't be happier.

On behalf of the entire team behind the I DREAM Research Journal, I extend heartfelt gratitude to our the local government unit (LGU) for its invaluable financial support, which played a pivotal role in bringing this journal to fruition. Additionally, I wish to express sincere appreciation to our esteemed external reviewers whose expertise in reviewing and layout artists have contributed significantly to making this 5th issue a reality. My deepest thanks to the Division teacher-researchers and community members who have tirelessly contributed to the evidence-based researches featured in this journal.

Para sa Bansang Makabata, Batang Makabansa!

Mabuhay po kayo at Maraming Salamat.

HOMER N. MENDOZA
Asst. Schools Division Superintendent
Officer-In-Charge
Office of the Schools Division Superintendent
Schools Division Office of Imus City

OFFICE OF THE ASSISTANT SCHOOLS DIVISION SUPERINTENDENT

This year, 2024, marks an assuring beginning for me as I step into the role of Assistant Schools Division Superintendent of Imus City. Within the changing landscape of SDOIC, the unwavering dedication and progressive spirit of our community continually shine through. It brings me great joy to commend the Research and Planning Section of the Schools Governance and Operations Division on the milestone of their 5th I-DREAM Research Publication.

In the midst of myriad topics ripe for exploration, SDOIC has chosen to prioritize research aligned with the Basic Education Research Agenda and intertwined with the current MATATAG Agenda. As we navigate the challenges brought by the pandemic, numerous questions remain unanswered. Foremost among these challenges is the imperative of learning recovery. Through research, a powerful tool for inquiry, we endeavor to uncover the most effective strategies for enhancing the quality of teaching and learning within our Schools Division.

While countless research endeavors may go unnoticed, I take immense pride in witnessing a publication tailored to the specific needs of Imuseño learners—a testament to our collective efforts. I urge every reader to draw inspiration from these invaluable knowledge resource—the research articles—and to implement pertinent adjustments within our educational community. May you, too, feel empowered to contribute to this growing body of knowledge, enriching not only our local context but also extending beneficial insights to colleagues in Imus and beyond.

I wish to express my deepest gratitude to all those who support our researchers in their endeavors. Their dedication, though often demanding, remains unwavering. I commend their resilience and extend my thanks to all who provide encouragement, motivation, and inspiration as they continue to dream for the betterment of our learners through their research.

To the committee responsible for this publication

and to all involved, I extend my heartfelt congratulations

and salute your dedication. Mabuhay kayo!

BERNADETTE T. LUNA
Assistant Schools Division Superintendent
Schools Division Office of Imus City

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UTILIZING LANGUAGE- BASED APPROACH (LBA) IN ENHANCING THE PERFORMANCE OF TVL STUDENTS IN LITERATURE

by

Jeramie G. Buensuceso, PhD
Gen Juan Castañeda Senior High School

Abstract

This study was conducted to determine the effectiveness of utilizing the Language-based approach as an intervention in teaching literature to improve the performance of students in 21 st Century Literature. Experimental Design was employed to find the effectiveness of Language-Based Approach. Purposive sampling technique was utilized. Thirty five (35) SMAW Students and thirty five (35) EIM Students of Gen Juan Castañeda Senior High School served as respondents of the study. It was revealed that the mean scores of Grade 11 SMAW and EIM in the pretest are 17.09 and 18.54 respectively. While the posttest scores are 22.63 and 24. 86 which are much higher than the pretest. The findings revealed that the use of LBA intervention in teaching 21st Century Literature in the post- test had increased the scores of the TVL students in their activities. Based on the t-test, it revealed that there is a significant difference between the pre-test without LBA intervention and the post- test with LBA intervention of the TVL students in the 21st Century Literature from the Philippines and the World. It indicates that using this intervention assists students to think critically and comprehend well a literary piece.

Keywords: language-based approach, performance, literature, comprehend

CONTEXT AND RATIONALE

In the classroom, literature is regarded as one of the instruments that may help with teaching and learning. Additionally, Hamid and Aziz (2020) agreed that the use of an effective strategy should be expanded in the classroom in instances when the critical use of literature to develop a variety of skills, including language and critical thinking abilities, among others. Mulligan (2011) also noted that 'flexibility and inventiveness, regular monitoring and modification' of the teaching strategies are necessary for successful education. On the other hand, Knutson (2014) stated that the relevance

of selecting the proper teaching techniques and how these approaches are implemented to students' learning must be emphasized. According to Bay (2012), the frequency of application of the teaching method in the classroom determines how effective it is.

Moreover, Vethamani and Rahman (2015) stated that the teaching of language skills and literature can complement one another. To use this method effectively, the choice of teaching resources and lesson planning are crucial. Similarly, consideration was given to teachers who are knowledgeable with literature and stylistics. In fact, learners at the intermediate level are better suited for this method's use.

Additionally, according to Center to Teaching Learning (2014), successful teaching entails understanding not just how to use tools, tactics, and strategies but also how students learn, absorb information, motivate themselves, and what obstacles to learning exist.

Concerning DepEd Memorandum No. 173, s 2019. According to paragraph 2 of *Hamon: Bawat Bata Bumabasa* (3Bs Initiative), elementary and high school learners are still deficient in literacy skills both in languages and content areas, more so in reading.

Presently, the Technical and Vocational Livelihood students of Gen. Juan Castaneda Senior High School have low performance in their literature subject. Based on their scores in 21st-century Literature from the Philippines and the World, their general average from the school year 2019 to 2022 falls under the categories of fairly satisfactory and satisfactory. Their general average for the most recent academic year, 2021–2022, was 77.50, while for the academic years 2019–2020 and 2020–2021, their general averages were 81.80 and 75.67, respectively.

Thus, the researcher conducted this study to improve the performance of the TVL students in 21st-century Literature from the Philippines and the World. The researcher hopes to help students understand each literary work addressed in the course, focusing in particular on the following competencies by using the Language-Based Approach (LBA): Writing a close analysis and critical interpretation of literary text and doing an adaptation of these requi-re the learners to have the ability to: 1) infer literary meaning from literal language based on usage, 2) explain the text in terms of literary elements, genres, and traditions, 3) explain the relationship of context with the text’s meaning and 4) appreciate the cultural and aesthetic diversity of literature of the world.

Action Research Questions

The main objective of this study was to determine the effectiveness of utilizing the Language-based approach in teaching literature to improve the performance of

students in 21st Century Literature. Specifically, it sought to answer the following questions:

1. What is the score in the pre-test and post-test of the students in the 21st Century Literature before and after utilizing the Language- Based Approach intervention?
2. Is there a significant difference in the scores of students before and after the intervention?
3. Based on the findings, what can be recommended to further improve the performance of the respondents in the 21st Century Literature?

Null Hypothesis

There is no significant difference between the pre-test and post-test of the respondents.

Proposed Intervention

Language-based approach

This approach is closely tied to Carter and Long's Language Model, in which literary works are seen as a technique of enhancing pupils' language skills. This is accomplished by exposing them to the target language and linking them to particular vocabulary and other linguistic elements.

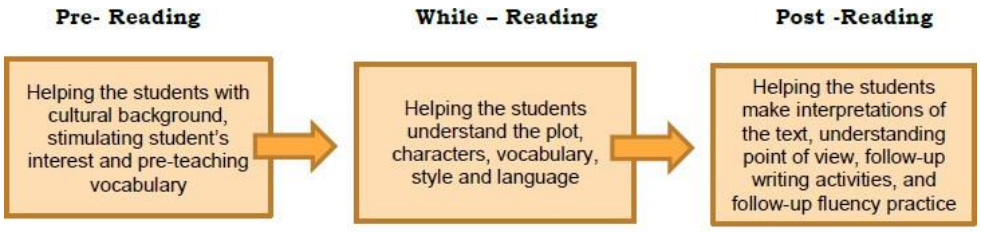
According to Maley and Duff (2007), the language-based approach allows for systematic and methodical access to a text. As this strategy is intended to assist students enhance their language abilities, the literature used is elevated. It may be effectively concluded by providing students with enough language knowledge and a connection to language features in detail. In the literature classroom, the focus was on the students, the reading process, and linguistic understanding (Too, 2007). Moreover, the language-based approach uses the underlying ideas of a piece of literature as a focal point, from which a lesson plan is developed.

In addition to language education, the language-based approach aims to help students to appreciate and experience the complexities of literature. It focuses on the concept "that LBA may give teaching literature with both literature and language in a complementary connection." By introducing LBA into literary lessons, students are able to evaluate a text's content in more depth, including alteration, transformation, experimentation, and dissection (Dhillon & Mogan, 2014).

According to Bose (2010), a language-based approach to utilizing literature involves methodologies and processes that are more directly focused with the examination of the literary test itself. The purpose of this lesson is to provide students with the skills they need to comprehend a book and evaluate it critically.

Furthermore, based on the study of Hamid & Aziz (2020), the use of the language-based approach is effective in enhancing students' interest in literature in classroom practice. Hence, English teachers are suggested to incorporate the language-based approach into their teaching as it serves numerous benefits to the students.

In order to apply the LBA as an intervention to TVL students, the researcher adopted the three steps/ procedures of Lazar (1993): The Pre-reading, The While-reading and the Post- reading with the integration of the different techniques in teaching on each stage of reading.



Lazar 1993 Procedures for Language-Based Approach

The pre-reading activities include; a) helping the students with the cultural background, b) stimulating students' interest in the story, and c) pre-teaching vocabulary. The while-reading activities include a) helping students understand the plot, b) helping students understand characters, c) helping the students with difficult vocabulary and d) helping students with style and language. The last but not the least, post-reading activities include a) helping the students make interpretations of the text, b) understanding narrative point of view, c) follow-up writing activities, and d) follow-up fluency practice.

The researcher crafted LBA- based lesson plans and activity sheets with Lazar (1993) stages for Language- Based Approach.

ACTION RESEACH METHOD

Participants and/or other Sources of Data and Information

The participants were the Grade 11 from Technical Vocational Livelihood (TVL) Students particularly the Electrical and Installation Maintenance (EIM) and Shielded Metal Arc Work (SMAW) students of Gen. Juan Castañeda Senior High School, City Schools Division of Imus for the School Year 2021-2022.

Sampling Design

The researcher utilized the purposive sampling technique in choosing the respondents of the study. This sampling design is a non-probability sample that is selected based on the characteristics of a population and the objective of the study. The researcher chose thirty five (35) SMAW Students and thirty five (35) EIM Students of Gen Juan Castañeda Senior High School.

Table 1. Respondents of the Study

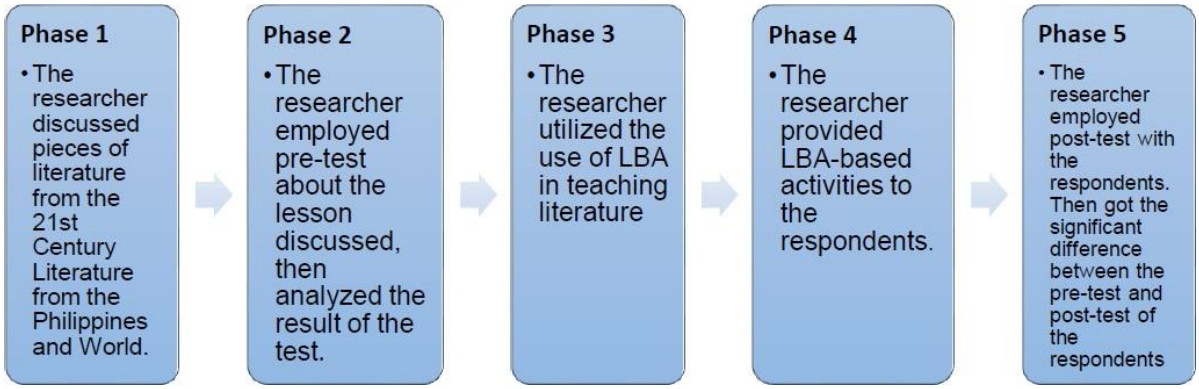
PARTICIPANTS	NUMBER OF PARTICIPANTS
Grade 11- SMAW	35
Grade 11- EIM	35

Data Gathering Methods

The research utilized the Experimental Design to find the effectiveness of Language-Based Approach in enhancing the performance of students in literature.

According to Creswell (2018), experimental design systematically manipulates one or more variables in order to evaluate how this manipulation impacts an outcome (or outcomes) of interest. In this study, results of pre-test and post-test were compared.

As for the method in gathering the data of the study, the researcher utilized five phases:



Data Analysis Plan

Descriptive and Inferential statistics were both used in the analysis of the quantitative data of the study. To determine the effectiveness of applying Language-Based Approach (LBA) in Teaching Literature, the researcher computed the difference between the mean scores of the pre-test and the post-test of the respondents, while, the difference between the scores of the pre-test and post-test of the respondents, Paired t-test was used.

Ethical Issues

This study adhered ethical considerations on the conduct of the study and to the Republic Act 10173, also known as Data Privacy Act of 2012. An informed consent letter was sent to the participants. The researcher also informed the participants on the purpose of the study. Moreover, protection of the privacy of the research participants and adequate level of confidentiality was ensured. Furthermore, result and findings of this study will only be shared to research conferences and research journals. Lastly, participation of the respondents in this study was voluntary and they have the rights to withdraw from the study at any stage if they wish to do so.

FINDINGS

Research Question 1. What is the score in the pre-test and post-test of students in the 21st Century Literature before and after utilizing the Language- Based intervention?

Table 2. The Pre-Test and Post-Test Mean Scores of the Participants

	PRE- TEST	POST-TEST	MEAN DIFFERENCE
Grade 11 SMAW	17.09	22. 63	5.54
Grade 11 - EIM	18. 54	24.86	6.31
TOTAL	17. 81	23. 74	5.93

Table 2 presents the scores of Grade 11 Thales and Archimedes during the intervention using language-based approach (LBA) activities.

The pre-test shows that students' scores in the activities without the use of LBA were lower than the posttest. Mean scores of Grade 11 Thales and Archimedes in the pretest are 17.09 and 18.54 respectively. While the post-test scores are 22.63 and 24. 86 which are higher than the pretest. To summarize, the total mean score for the pre-writing was 17.81 while the over-all score for the post writing activity was 23.74.

The data implies that the treatment approach of LBA appeared to have a substantial and positive effects on the students' scores in answering the activities.

Moreover, the results of the study was supported by Hamid and Aziz (2020), that utilizing the language-based approach can effectively increase students' engagement with literature in the classroom.

Research Questions 2. Is there a significant difference in the scores of students before and after the intervention?

Table 3. Significance Difference on Mean Scores the Pre-Test and Post Test of the Participants

	Mean	COMPUTED t-value	COMPUTER p-value	INTERPRETATION	DECISION
Grade 11 – SMAW	5.54	-14.99	0.000000000000000508	Significant	Reject Ho
Grade 11 - EIM	6.31	-8.57	0.000000000515	Significant	Reject Ho

Table 3 presents the significant difference of the mean scores between the pretest and posttest in using LBA for literary activities.

The pretest and posttest scores were taken for the purpose of comparison. T-test was used to statistically examine whether there was a significant difference between the pretest and posttest after the intervention was performed.

It revealed that the t-values were -14.99 for Grade 11-Thales and for Grade 11- Archimedes was -8.57. The computed p-value for Thales is 0.000000000000000508 and 0.000000000515 for Archimedes are lower than the p-value of.05. It can be claimed that there is a significant difference in the students' pretest and posttest in the activities using LBA. The significant two tailed was lower than the alpha level of .05.

The results have been proven by the study of Dhillon and Mogan (2014) that incorporating LBA into literary lessons allows students to assess a text's content in greater depth, including change, transformation, experimentation, and dissection.

CONCLUSION

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

1. The mean scores of Grade 11 Thales and Archimedes in the pretest were 17.09 and 18.54 respectively while the posttest scores were 22.63 and 24. 86 which are higher than the pretest. There was an increase in the mean score of pre-test and post-test. The findings revealed that the use of LBA intervention in teaching 21st Century Literature in the post- test had increased the scores of the TVL students in their activities. Therefore, the LBA Intervention has improved the

comprehension skills of the TVL students in 21st Century Literature.

2. There is a significant difference between the pre-test without LBA intervention and the post-test with LBA intervention of the TVL students in the 21st Century Literature from the Philippines and the World. It showed that using this intervention assists students to think critically and comprehend well a literary piece.

RECOMMENDATIONS

1. Teachers may include language lessons using the LBA Approach when teaching 21st century literature to struggling readers, as grammar review improve students' comprehension.
2. Teachers may design language based - activities and use literary texts that are appropriate for their students' abilities and preferences particularly TVL students, as good literary works challenge students intellectually, emotionally and linguistically.
3. Researchers may test further the effectiveness of LBA based learning activities for TVL students or to other group of samples in the Academic Track or other SHS tracks.

Plans for Dissemination and Utilization

The findings of the study will be disseminated in the following events and venues:

1. LAC sessions where teachers and administrations particularly those concerned in the area will be informed, thus the action plan will be implemented.
2. Division, regional, national and international conferences where the paper will be accepted for presentation
3. Research paper publications/journals

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EMOTIONAL COMPETENCE AND INSTRUCTIONAL LEADERSHIP CAPACITY OF MASTER TEACHERS IN THE SCHOOLS DIVISION OF IMUS CITY

by

Zyldjian Tepora
Anabu II Elementary School

Abstract

The study was conducted from December 2021 to January 2022 in the Schools Division of Imus City focusing on the emotional competence and instructional leadership capacity of the master teachers. Descriptive correlational research design was used in the study. Participants were composed of 110 master teachers. Data were collected using the Profile of Emotional Competence and Instructional Leadership Capacity Questionnaire through an online survey. Results showed that the level of emotional competence of the master teachers in terms of intrapersonal and interpersonal is “High” and their level of instructional leadership capacity is “Outstanding”. Findings of the study also revealed that there is no significant difference on the level of emotional competence of master teachers when grouped according to age, sex, civil status, highest educational attainment, and teaching experience. However, there is a significant difference in the level of emotional competence of the master teachers when grouped according to academic rank. In terms of instructional leadership capacity, there is no significant difference noted when grouped according to demographic profile. The study also revealed that there is a significant relationship between emotional competence and instructional leadership capacity. The study recommends utilizing its findings as basis for crafting development programs for master teachers.

Keywords: emotional competence, instructional leadership capacity, master teachers

INTRODUCTION

Emotional competence (EC) is the ability of an individual to identify, understand, express, regulate and utilize one's own emotions and of others (Brasseur, Gregoire, Bourdu & Mikolajczak, 2013). Several research studies reiterate that this ability is one of the most significant predictors of success at home and at work. The teaching profession, marked by continuous change, demands emotional competence from teachers dealing with various stakeholders. However, challenges in the education system hinder teachers from performing their responsibilities, leading to emotional challenges (Asrar-ul-Haq, Anwar & Hassan, 2017). In addition, Korotaj & Mrnjaus (2019) asserted that emotional competence is a prerequisite for effective teaching, considering it a moral obligation and professional standard for teachers.

Furthermore, the role of the teachers in leading colleagues and learners towards reaching their full potential could be emotionally demanding. In a news article by Adonis (2020), the Department of Education (DepEd) of the Philippines emphasized that schools should minimize the burden and stress of learners and teachers amidst the current coronavirus pandemic. The department suggests to put premium on performing instructional management tasks to reduce stress and anxiety on teachers brought about by the pandemic (Adonis, 2020).

Instructional leadership capacity of teachers should also be given emphasis to enhance the performance of the school in totality. Alegado (2018) notes the ongoing struggle for teacher leadership in Philippine schools. Leadership should not be limited to school principals but should transcend to teachers., allowing them to influence classrooms and contribute to student learning improvement (Alegado, 2018).

Next to the school principal, master teachers also serve as instructional leaders. In the Philippines, they should embody qualities outlined in the Philippine Professional Standards for Teachers (PPST) as Highly Proficient Teachers (Department of Education, 2017). Master teachers, as highly proficient, must demonstrate consistent high-level teaching, collaborate with peers, provide support and effective mentoring, and continuously enhance professional knowledge (Department of Education, 2017). Mandated by PPST, schools conduct quarterly classroom observations, with master teachers and principals as raters, using a standardized tool (Department of Education, 2017). Therefore, master teachers are really considered instructional leaders because of their exposure to various leadership roles and responsibilities in schools.

Emerging ideas suggest that EC should also be given importance apart from the individual's cognitive ability and especially in a rapidly changing society. In addition, instructional leadership capacity should also be emphasized more as it will be beneficial for the improvement of the school (Laude et al., 2018). Therefore, this study was intended to discover the relationship between the two important qualities that an effective master teacher should portray. Findings of this study may serve as a contributory factor in improving the instructional leadership of the master teachers. The study is beneficial in crafting appropriate faculty development programs in enhancing the emotional competence (EC) of the teachers, thus improving their instructional leadership capacity. Improved instructional leadership capacity may eventually reflect on the quality of the teaching and learning process in the school.

Research Questions

Generally, the study determined the relationship between the level of emotional competence and level of instructional leadership capacity of the master teachers in the Schools Division of Imus City.

Specifically, it aimed to answer the following questions:

1. What is the demographic profile of the master teachers in terms of:
    1.1 age,
    1.2 sex,
    1.3 civil status,
    1.4 academic rank,
    1.5 highest educational attainment, and
    1.6 teaching experience?
2. What is the level of emotional competence of the participants in terms of:
    2.1 intrapersonal emotional competence, and
    2.2 interpersonal emotional competence?
3. What is the level of instructional leadership capacity of the participants?
4. Is there a significant difference on the following variables when grouped according to the demographic profile of the participants?
    4.1 level of emotional competence, and
    4.2 level of instructional leadership capacity? and,
5. Is there a significant relationship between the level of emotional competence (EC) and level of instructional leadership capacity of the participants?

METHODOLOGY

Research Design

This study employed a descriptive correlational research design to examine participants' demographic characteristics, emotional competence (intrapersonal and interpersonal), and instructional leadership capacity. It also explored differences in emotional competence and instructional leadership capacity based on demographic profiles. Additionally, the study investigated the relationship between participants' emotional competence and instructional leadership capacity.

Sampling

The study employed total enumeration, examining the entire population of master teachers in public schools in the Schools Division of Imus City. Table 1 displays the distribution of master teachers in each school as of September 24, 2021, for the school year 2021-2022. Out of 140 master teachers, 110 participated in the study by submitting responses.

Table 1.Population of master teachers in the Schools Division of Imus City

LEVEL	NUMBER OF MASTER TEACHERS
Elementary Schools	82
Junior High Schools	39
Senior High Schools	19
TOTAL	**140**

Data Collection

The study commenced with a request to the Schools Division Superintendent for permission to involve master teachers in the public schools of Imus City. Upon approval, the official list of permanently employed master teachers was obtained. With consent secured, school heads assisted in disseminating the online survey link. The questionnaire was administered online through Google Forms to ensure a safe and

convenient survey process during the pandemic.

Instrument

The study employed the Profile of Emotional Competence (PEC), a 50-item self-assessment questionnaire validated by Brasseur et al. (2013), to gauge emotional competence. Participants used a 5-point Likert scale, assessing 25 items for intrapersonal and 25 for interpersonal emotional competence. Additionally, instructional leadership capacity was evaluated with a 44-item questionnaire adapted from Laude et al. (2018), following Arce's (2020) instrument. This survey covered content knowledge, pedagogy, curriculum planning, assessing, reporting, personal growth, and professional development. The questionnaire, comprising 94 items, underwent slight presentation modifications, authorized by the original test proponent.

Data Analysis

The study performed the following statistical treatments:

Frequency and Percentages: Used to identify the demographic profile of participants.

Mean and Standard Error: Employed to determine the levels of emotional competence and instructional leadership capacity of the participants.

Mann-Whitney U-test and Kruskal-Wallis One-way ANOVA: The Mann-Whitney U-test assessed differences in emotional competence and instructional leadership capacity based on sex, civil status, and academic rank. The Kruskal-Wallis Test examined differences concerning age, highest educational attainment, and teaching experience.

Spearman’s Rank Correlation Coefficient: Used to analyze the relationship between emotional competence and instructional leadership capacity among participants.

Ethical Considerations

Prior to the study, the researcher obtained consent from the Schools Division Superintendent of the Department of Education Imus City. The survey, including demographic details, the Profile of Emotional Competence (PEC), and Instructional Leadership Capacity Questionnaire, was sent to all master teachers online. Using Google Forms ensured participant safety during the pandemic, adhering to health protocols. Conducting the survey online allowed participants to respond at their convenience, eliminating the need for a gathering. This approach minimized the risk of exposure outside participants' homes and schools. The study prioritized confidentiality and anonymity during data collection and maintained high objectivity in data analysis.

RESULTS AND DISCUSSION

Demographic Profile of Master Teachers

Using the data gathered, the study identified the demographic profile of the master teacher participants in terms of age, sex, civil status, academic rank, highest educational attainment and teaching experience.

Age

Table 2 indicates that the majority of master teachers in the Schools Division of Imus City fall within the 36 to 50 age group, comprising 63% of the total sample. The

age distribution shows 33% in the old age bracket and 5% in the young age bracket. The majority of the master teachers in the middle age bracket of 36 to 50 years old could be attributed to the qualifications for the Master Teacher position provided by DECS Order No. 57 series of 1997, wherein for a teacher to be promoted to the first level of the Master Teacher position, he or she must be a permanent teacher, with Bachelor's degree or equivalent, obtained very satisfactory performance rating for the last two years, has rendered at least 3 years teaching experience and obtained at least 25 points in leadership and potential (Department of Budget and Management, 2012). These requisites can be obtained through years of teaching practice which can further explicate the dominance of the middle age bracket of the master teachers.

Table 2. Distribution of the master teacher participants in terms of age

AGE	FREQUENCY	PERCENT
Young Age (35 and below)	5	5
Middle Age (36 to 50)	69	63
Old Age (51 and above)	36	33
TOTAL	**110**	**100**

Sex

Table 3 reveals that in the Schools Division of Imus City, 85% of master teachers are female, with only 15% being male. This distribution aligns with the predominantly female nature of the teaching profession in the Philippines, where, as of 2019, 87.09% of primary teachers and 70.59% of secondary teachers are female (World Bank, 2021).

Table 3. Distribution of the master teacher participants in terms of sex

SEX	FREQUENCY	PERCENT
Male	17	15
Female	93	85
TOTAL	**110**	**100**

Civil Status

Table 4 reveals the civil status of the master teacher participants wherein out of 110 participants, 80 are married while 30 are single, separated or widowed. It could be gleaned from the results that majority of the master teachers are married which is composed of 73 percent of the total sample. It can be attributed to the fact that majority of the master teacher participants belonged to the middle age group which is above the average marrying age in the Philippines which is 29 years old for men and 27 for women according to the Philippine Statistics Authority (2021).

Table 4. Distribution of the master teacher participants in terms of civil status

CIVIL STATUS	FREQUENCY	PERCENT
Single/Sep/Widow	30	27
Married	80	73
TOTAL	**110**	**100**

Academic Rank

Table 5 displays the distribution of master teacher participants according to their academic rank or position. The results showed that 80 percent of the participants are Master Teacher I and 20 percent are Master Teacher II. It implies that there are

no Master Teacher III and IV among the participating master teachers in the Schools Division of Imus City. Higher standards of qualifications are expected among higher master teacher position levels, therefore majority are in the first level master teacher position and the succeeding levels can only be given to master teachers who are proven to meet the higher qualifications.

Table 5. Distribution of the master teacher participants by academic rank

ACADEMIC RANK	FREQUENCY	PERCENT
Master Teacher I	88	80
Master Teacher II	22	20
TOTAL	**110**	**100**

Highest Educational Attainment

Table 6 displays the master teachers' highest educational attainment. Among the 110 participants, 55% have a combination of a Bachelor's Degree and Master's Degree units, 29% possess a Master's Degree, and only 16% hold a Doctorate Degree or Doctorate Degree units. The majority of master teachers did not attain a Master's Degree. This result aligns with the study's focus on Master Teacher I and II positions, where at least a Bachelor's Degree is required for Master Teacher I, and a Master's Degree is required for Master Teacher II, according to Department of Budget and Management guidelines (2012).

Table 6. Distribution of the master teacher participants by highest educational attainment

HIGHEST EDUCATIONAL ATTAINMENT	FREQUENCY	PERCENT
BS/Master's Degree units	60	55
Master's Degree	32	29
Doctorate Degree/With units	18	16
TOTAL	**110**	**100**

Teaching Experience

In terms of teaching experience, Table 7 shows that 8 master teachers or 7.3 percent had been in the service for 10 years and below, 33 master teachers or 30 percent had been teaching for 11 to 15 years and 69 master teachers or 62.7 percent had been in the service for 16 years and above. It implies that majority of the master teachers are classified as very much experienced teachers. These findings support the notion that since majority of the master teachers are from the middle age group followed by old age group, the master teachers had longer teaching experience and had spent more years in the service.

Table 7. Distribution of the master teacher participants in terms of teaching experience

TEACHING EXPERIENCE	FREQUENCY	PERCENT
Less/More Experienced (10 and below)	8	7.3
Much Experienced (11 to 15)	33	30.0
Very Much Experienced (16 and above)	69	62.7
TOTAL	**110**	**100**

Level of Emotional Competence of Master Teachers

The study determined the level of emotional competence (EC) of the participants in terms of intrapersonal emotional competence and interpersonal emotional

competence.

Intrapersonal Emotional Competence of Master Teachers

As shown in Table 8, the level of intrapersonal emotional competence of the master teachers has obtained a grand mean of 3.78 which is interpreted as High. A similar conclusion has been revealed by Jimenez (2020) that the emotional intelligence of the teachers is high upon gathering data from 768 public secondary school teachers in Central Luzon.

Table 8. Level of intrapersonal emotional competence of the master teachers

ITEM NO.	ITEMS	MEAN	STANDARD ERROR	VERBAL INTERPRETATION
	Intrapersonal Emotional Competence			
1.	As my emotions arise, I don't understand where they come from.	3.87	0.113	**High**
2.	I don't always understand why I respond in the way I do.	3.94	0.108	**High**
6.	When I feel good, I can easily tell whether it is due to being proud of myself, happy or relaxed.	3.82	0.093	**High**
8.	I am good at describing my feelings.	3.81	0.091	**High**
9.	I never base my personal life choices on my emotions.	2.16	0.087	**Low**
10.	When I am feeling low, I easily make a link between my feelings and a situation that affected me.	3.69	0.085	**High**
12.	I easily manage to calm myself down after a difficult experience.	4.02	0.077	**High**
15.	When I am sad, I find it easy to cheer myself up.	3.81	0.081	**High**
16.	When I am touched by something, I immediately know what I feel.	4.02	0.080	**High**
17.	If I dislike something, I manage to say so in a calm manner.	3.91	0.079	**High**
20.	During an argument I do not know whether I am angry or sad.	3.91	0.090	**High**
21.	I use my feelings to improve my choices in life.	3.25	0.102	**Average**
22.	I try to learn from difficult situations or emotions.	4.19	0.074	**High**
24.	My emotions inform me about changes I should make in my life.	3.59	0.082	**High**
25.	I find it difficult to explain my feelings to others even if I want to.	3.25	0.097	**Average**
26.	I don't always understand why I am stressed.	4.00	0.092	**High**
37.	I find it difficult to handle my emotions.	4.05	0.086	**High**
38.	The people around me tell me I don't express my feelings openly.	3.82	0.091	**High**
39.	When I am angry, I find it easy to calm myself down.	3.66	0.092	**High**

41.	My feelings help me to focus on what is important to me.	3.67	0.097	**High**
42.	Others don't accept the way I express my emotions.	3.56	0.100	**High**
43.	When I am sad, I often don't know why.	4.18	0.090	**High**
48.	I am aware of my emotions as soon as they arise.	3.92	0.077	**High**
49.	When I am feeling low, I find it difficult to know exactly what kind of emotion it is I am feeling.	3.58	0.109	**High**
50.	In a stressful situation I usually think in a way that helps me stay calm.	4.20	0.069	**Very High**
	TOTAL	**3.78**	**0.042**	**HIGH**

Legend

1.00 – 1.79	Very Low
1.80 – 2.59	Low
2.60 – 3.39	Average
3.40 – 4.19	High
4.20 – 5.00	Very High

Interpersonal Emotional Competence of Master Teachers

Table 9 indicates that master teachers achieved a mean score of 3.56, denoting a high level of interpersonal emotional competence. This suggests proficiency in listening to others' emotions, identification, understanding, regulation, and utilization of others' emotions. The overall emotional competence, with a total mean score of 3.67, is interpreted as high, reflecting the master teachers' competence in identifying, understanding, expressing, and regulating both their own and others' emotions. These findings underscore the significance of emotional competence for school leaders in addressing challenges, as emphasized by Lubguban (2020).

Table 9. Level of interpersonal emotional competence of the master teachers

ITEM NO.	ITEMS	MEAN	STANDARD ERROR	VERBAL INTERPRETATION
	Interpersonal Emotional Competence			
3.	If I wanted, I could easily influence other people's emotions to achieve what I want.	2.52	0.120	**Low**
4.	I know what to do to win people over to my cause.	3.07	0.109	**Average**
5.	I am often a loss to understand other people's emotional responses.	3.88	0.101	**High**
7.	I can tell whether a person is angry, sad or happy even if they don't talk to me.	3.84	0.083	**High**
11.	I can easily get what I want from others.	2.56	0.100	**Low**
13.	I can easily explain the emotional responses of the people around me.	3.70	0.070	**High**
14.	Most of the time I understand why people feel the way they do.	3.71	0.077	**High**
18.	I do not understand why the people around me respond the way they do.	3.46	0.093	**High**

19.	When I see someone who is stressed or anxious, I can easily calm them down.	3.52	0.069	**High**
23.	Other people tend to confide in me about personal issues.	3.92	0.082	**High**
27.	If someone came to me in tears, I would not know what to do.	3.76	0.106	**High**
28.	I find it difficult to listen to people who are complaining.	3.91	0.100	**High**
29.	I often take the wrong attitude to people because I was not aware of their emotional state.	3.93	0.090	**High**
30.	I am good at sensing what others are feeling.	3.71	0.081	**High**
31.	I feel uncomfortable if people tell me about their problems, so I try to avoid it.	4.04	0.097	**High**
32.	I know what to do to motivate people.	3.94	0.069	**High**
33.	I am good at lifting other people's spirits.	3.99	0.071	**High**
34.	I find it difficult to establish a link between a person's response and their personal circumstances.	3.56	0.094	**High**
35.	I am usually able to influence the way other people feel.	3.25	0.092	**High**
36.	If I wanted, I could easily make someone feel uneasy.	2.15	0.105	**Low**
40.	I am often surprised by people's responses because I was not aware they were in a bad mood.	3.71	0.092	**High**
44.	Quite often I am not aware of people's emotional state.	3.73	0.101	**High**
45.	Other people tell me I make a good confidant.	3.92	0.081	**High**
46.	I feel uneasy when other people tell me about something that is difficult for them.	3.83	0.099	**High**
47.	When I am confronted with an angry person, I can easily calm them down.	3.50	0.085	**High**
	Total	3.56	0.040	**High**
	OVERALL EMOTIONAL COMPETENCE	**3.67**	**0.038**	**HIGH**

Legend

1.00 – 1.79	Very Low
1.80 – 2.59	Low
2.60 – 3.39	Average
3.40 – 4.19	High
4.20 – 5.00	Very High

Level of Instructional Leadership Capacity of Master Teachers

Table 10 illustrates master teachers' instructional leadership capacity across curriculum content and pedagogy, planning, assessing and reporting, and personal growth and professional development. The overall instructional leadership capacity is "Outstanding," with a grand mean of 4.24. Personal growth and professional development scored the highest at 4.29, followed by curriculum planning, assessing, and reporting at 4.25, and content knowledge and pedagogy at 4.19. These findings align with Laude et al.'s (2018) results, showing outstanding levels in curriculum planning and personal growth, and a very satisfactory level in content knowledge and pedagogy. The exceptional instructional leadership capacity may be attributed to the

qualifications for the first-level master teacher position, requiring 25 points in leadership and potential (Department of Budget and Management, 2012). This aligns with Anub's (2020) study, affirming consistent instructional leadership practices among school leaders in the Philippines.

Table 10. Level of instructional leadership capacity of master teachers

ITEMS	MEAN	STANDARD ERROR	VERBAL INTERPRETATION
Content Knowledge and Pedagogy			
As a Master Teacher, I can…			
1. model effective applications of content knowledge within and across curriculum teaching areas.	4.26	0.051	**Outstanding**
2. model exemplary practice to improve the applications of content knowledge within and across curriculum teaching areas.	4.19	0.049	**Very Satisfactory**
3. collaborate with colleagues in the conduct and application of research to enrich knowledge of content and pedagogy.	3.94	0.073	**Very Satisfactory**
4. lead colleagues in the advancement of the art and science of teaching based on their comprehensive knowledge of research and pedagogy.	3.96	0.063	**Very Satisfactory**
5. promote effective strategies in the positive use of ICT to facilitate the teaching and learning process.	4.08	0.066	**Very Satisfactory**
6. mentor colleagues in the implementation of policies to ensure the positive use of ICT within or beyond the school.	4.10	0.065	**Very Satisfactory**
7. evaluate with colleagues the effectiveness of teaching strategies that promote learner achievement in literacy and numeracy.	4.35	0.054	**Outstanding**
8. model a comprehensive selection of effective teaching strategies that promote learner achievement in literacy and numeracy.	4.25	0.052	**Outstanding**
9. develop and apply effective teaching strategies to promote critical and creative thinking, as well as other higher-order thinking skills.	4.35	0.055	**Outstanding**
10. lead colleagues in reviewing, modifying and expanding their range of teaching strategies that promote critical and creative thinking, as well as other higher-order thinking skills	4.30	0.056	**Outstanding**
11. model and support colleagues in the proficient use of Mother Tongue, Filipino and English to improve teaching and learning, as well as to develop the learners' pride of their language, heritage and culture.	4.27	0.058	**Outstanding**
12. show exemplary skills in and advocate the use of Mother Tongue, Filipino and English in teaching and learning to facilitate the learners' language, cognitive and academic development and to foster pride of their language, heritage and culture.	4.17	0.059	**Very Satisfactory**

13. display a wide range of effective verbal and non-verbal classroom communication strategies to support learner understanding, participation, engagement and achievement.	4.23	0.053	**Outstanding**
14. exhibit exemplary practice in the use of effective verbal and non-verbal classroom communication strategies to support learner understanding, participation, engagement and achievement in different learning contexts.	4.22	0.052	**Outstanding**
Total	4.19	0.039	**Very Satisfactory**
Curriculum Planning, Assessing and Reporting			
As a Master Teacher, I can…			
1. develop and apply effective strategies in the planning and management of developmentally sequenced teaching and learning process to meet curriculum requirements and varied teaching contexts.	4.25	0.052	**Outstanding**
2. model exemplary practice and lead colleagues in enhancing current practices in the planning and management of developmentally sequenced teaching and learning process.	4.17	0.053	**Very Satisfactory**
3. model the setting of achievable and challenging learning outcomes that are aligned with learning competencies to cultivate a culture of excellence for all learners.	4.23	0.049	**Outstanding**
4. perform high level skills that are aligned with learning competencies towards the promotion of suitable teaching strategies for all learners.	4.21	0.052	**Outstanding**
5. work collaboratively with colleagues to evaluate the design of learning programs that develop the knowledge and skills of learners at different ability levels.	4.31	0.054	**Outstanding**
6. provide advice in the design and implementation of relevant and responsive learning programs that develop the knowledge and skills of learners at different ability levels.	4.19	0.054	**Very Satisfactory**
7. review with colleagues, teachers and learners' feedback to plan, facilitate and enrich teaching practice	4.35	0.055	**Outstanding**
8. lead colleagues in professional discussions to plan and implement strategies that enrich teaching practice.	4.31	0.054	**Outstanding**
9. advice and guide colleagues in the selection, organization, development and use of appropriate teaching and learning resources, including ICT, to address specific learning goals.	4.23	0.053	**Outstanding**
10. model exemplary skills and lead colleagues in the development and evaluation of teaching and learning resources, including ICT, for use within and beyond the school.	4.11	0.052	**Very Satisfactory**

11. work collaboratively with colleagues to review the design, selection, organization and use of a range of effective diagnostic, formative, and summative assessment strategies consistent with curriculum requirements.	4.31	0.056	**Outstanding**
12. lead initiatives in the evaluation of assessment policies and guidelines that relate to design, selection, organization and use of effective diagnostic, formative and summative assessment strategies consistent with curriculum requirements.	4.22	0.055	**Outstanding**
13. interpret collaboratively monitoring and evaluation strategies of attainment data to support learner progress and achievement.	4.25	0.054	**Outstanding**
14. provide advice on, and mentor colleagues in the effective analysis and use of learner attainment data.	4.24	0.058	**Outstanding**
15. use effective strategies for providing timely, accurate and constructive feedback to encourage learners to reflect on and improve their own learning.	4.31	0.051	**Outstanding**
16. exhibit exemplary skills and lead initiatives to support colleagues in applying strategies that effectively provide timely, accurate and constructive feedback to learners to improve learning achievement.	4.24	0.048	**Outstanding**
17. apply skills in the effective communication of learner needs, progress and achievement to key stakeholders, including parents/guardians.	4.31	0.053	**Outstanding**
18. share with colleagues a wide range of strategies that ensure effective communication of learner needs, progress and achievement to key stakeholders, including parents/guardians.	4.25	0.058	**Outstanding**
19. work collaboratively with colleagues to analyze and utilize assessment data to modify practices and programs to further support learner progress and achievement.	4.31	0.056	**Outstanding**
20. lead colleagues to explore, design and implement effective practices and programs using information derived from assessment data.	4.20	0.053	**Outstanding**
Total	4.25	0.042	**Outstanding**
Personal Growth and Professional Development			
As a Master Teacher, I can…			
1. manifest a learner-centered-teaching philosophy in various aspects of practice and support colleagues in enhancing their own learner-centered teaching philosophy.	4.35	0.051	**Outstanding**
2. model a learner-centered teaching philosophy through teaching practices that stimulate colleagues to engage in further professional learning.	4.28	0.049	**Outstanding**
3. identify and utilize personal and professional strengths to uphold the dignity of teaching as a profession to help build a positive teaching and learning culture within the school.	4.35	0.051	**Outstanding**

4. act as a role model and advocate for upholding the dignity of teaching as a profession to build a positive teaching and learning culture within and beyond the school.	4.43	0.054	**Outstanding**
5. contribute actively to professional networks within and between schools to improve knowledge and to enhance practice.	4.30	0.056	**Outstanding**
6. take a leadership role in supporting colleagues' engagement with professional networks within and across schools to advance knowledge and practice in identified areas of need.	4.26	0.056	**Outstanding**
7. initiate professional reflections and promote learning opportunities with colleagues to improve practice.	4.29	0.055	**Outstanding**
8. demonstrate leadership within and across school contexts in critically evaluating practice and setting clearly defined targets for professional development.	4.25	0.052	**Outstanding**
9. reflect on the Philippine Professional Standards for Teachers to plan personal professional development goals and assist colleagues in planning and achieving their own goals.	4.30	0.053	**Outstanding**
10. lead reforms in enhancing professional development programs based on an in-depth knowledge and understanding of the Philippine Professional Standards for Teachers.	4.13	0.055	**Very Satisfactory**
Total	4.29	0.044	**Outstanding**
GRAND TOTAL	**4.24**	**0.039**	**OUTSTANDING**

Legend

1.00 – 1.79	Poor
1.80 – 2.59	Unsatisfactory
2.60 – 3.39	Satisfactory
3.40 – 4.19	Very Satisfactory
4.20 – 5.00	Outstanding

Difference on the Level of Emotional Competence of Master Teachers When Grouped According to Their Demographic Profile

The study also identified the significant difference on the level of emotional competence of the master teachers when grouped according to their demographic profile. The results of the data analysis performed are presented on the series of tables showing the difference on the level of emotional competence of the master teacher participants upon grouping them based on age, sex, civil status, academic rank, highest educational attainment and teaching experience.

Difference on the Level of Emotional Competence of Master Teachers When Grouped According to Age

The significant difference on the level of emotional competence of the master teachers when grouped according to age was tested using Kruskal-Wallis Statistical Test and the results are presented on Table 11. Notably, there is no significant difference on the level of intrapersonal, interpersonal and overall emotional competence of the master teachers upon classifying them into three age groups such as young age, middle age and old age. These findings are in accordance with findings

reported by Sharma (2017) which revealed that certain emotional competencies should be developed with the help of relevant trainings and are not significantly governed by age factor.

Table 11. Difference on the level of emotional competence of master teachers when grouped according to age

LEVEL OF EC	AGE	MEAN	MEAN RANK	KRUSKAL-WALLIS STATISTICS	P VALUE	REMARKS
Intrapersonal	Young Age	3.71	50.10	0.151	0.927	Accept Ho
	Middle Age	3.79	55.70			
	Old Age	3.79	55.86			
Interpersonal	Young Age	3.41	42.60	1.663	0.435	Accept Ho
	Middle Age	3.59	58.13			
	Old Age	3.54	52.25			
TOTAL	**YOUNG AGE**	**3.56**	**45.00**	**0.746**	**0.689**	**ACCEPT HO**
	MIDDLE AGE	**3.69**	**56.95**			
	OLD AGE	**3.67**	**54.18**			

Difference on the Level of Emotional Competence of Master Teachers When Grouped According to Sex

Table 12 shows that there is no significant difference in interpersonal and overall emotional competence between male and female participants. However, there is a significant difference in the ability of male and female master teachers in managing their own emotions. Notably, female master teachers exhibit a higher level of intrapersonal emotional competence, with a mean score of 3.83 compared to male master teachers' mean of 3.55. The study concludes that only intrapersonal emotional competence is influenced by gender. Female master teachers demonstrate significantly higher competence in handling their emotions, reflected in specific skills such as remaining calm in stressful situations and learning from difficult emotions. These skills are often associated with females, aligning with research findings on emotion-focused coping strategies.

Table 12 . Difference on the level of emotional competence of master teachers when grouped according to sex

LEVEL OF EC	SEX	MEAN	MEAN RANK	MANN-WHITNEY U-TEST	P VALUE	REMARKS
Intrapersonal	Male	3.55	38.56	502.500	0.017	Reject Ho
	Female	3.83	58.60			
Interpersonal	Male	3.45	46.76	642.000	0.219	Accept Ho
	Female	3.58	57.10			
TOTAL	**MALE**	**3.50**	**42.06**	**562.000**	**0.059**	**ACCEPT HO**
	FEMALE	**3.71**	**57.96**			

Difference on the Level of Emotional Competence of Master Teachers When Grouped According to Civil Status

As presented in Table 13, the p values of 0.374 for intrapersonal emotional competence, 0.411 for interpersonal emotional competence and 0.379 for overall

emotional competence revealed that there is no significant difference on the level of emotional competence of the master teachers when classified into two civil status groups as tested on the significant level of 0.05. Therefore, the study implies that the civil status of the master teachers does not significantly contribute to the development of their abilities and competencies in managing their own emotions and of others.

Table 13. Difference on the level of emotional competence of master teachers when grouped according to civil status

LEVEL OF EC	CIVIL STATUS	MEAN	MEAN RANK	MANN-WHITNEY U-TEST	P VALUE	REMARKS
Intrapersonal	Single/Sep/ Widow	3.72	51.08	1067.500	0.374	Accept Ho
	Married	3.81	57.16			
Interpersonal	Single/Sep/ Widow	3.52	51.42	1077.500	0.411	Accept Ho
	Married	3.58	57.03			
TOTAL	**SINGLE/SEP/ WIDOW**	**3.62**	**51.13**	**1069.000**	**0.379**	**ACCEPT HO**
	MARRIED	**3.69**	**57.14**			

Difference on the Level of Emotional Competence of Master Teachers When Grouped According to Academic Rank

Table 14 shows the significant difference on the level of emotional competence of master teacher participants according to their academic rank. It can be gleaned that there is no significant difference in the level of intrapersonal emotional competence of the master teachers when grouped according to academic rank with a p value of 0.058. However, a significant difference has been discovered in the level of interpersonal and overall emotional competence between Master Teachers I and II. This implies that the academic rank of the participants influences their abilities in managing the emotions of others and that Master Teachers I are found to be more emotionally competent than Master Teachers II. As the master teachers are promoted, their level of emotional competence declines. Several factors such as work-related stress, additional responsibilities, higher expectations and more people to be handled on the higher academic rank could probably be considered to influence these results which are supported by the findings of Collantes (2020) that the low performance of teachers can be influenced by the higher demand of work. As evident on the current experiences of the participants, Master Teachers II have higher standards to maintain and more responsibilities to accomplish than Master Teachers I which can support the findings of the study.

Table 14. Difference on the level of emotional competence of master teachers when grouped according to academic rank

LEVEL OF EC	ACADEMIC RANK	MEAN	MEAN RANK	MANN-WHITNEY U-TEST	P VALUE	REMARKS
Intrapersonal	Master Teacher I	3.82	58.38	714.500	0.058	Accept Ho
	Master Teacher II	3.62	43.98			
Interpersonal	Master Teacher I	3.60	58.59	696.000	0.042	Reject Ho

	Master Teacher II	3.43	43.14			
TOTAL	**MASTER TEACHER I** **MASTER TEACHER II**	**3.71** **3.52**	**58.63** **43.00**	**693.000**	**0.040**	**REJECT HO**

Difference on the Level of Emotional Competence of Master Teachers When Grouped According to Highest Educational Attainment

Table 15 represents the testing of the null hypothesis stating that there is no significant difference on the level of emotional competence of the master teacher participants when grouped according to their highest educational attainment. The study accepts the null hypothesis that there is no significant difference in the level of emotional competence of the master teachers when grouped according to the highest educational attainment. The study concludes that the highest educational attainment of the master teachers is not a contributory factor in the development and improvement of their level of intrapersonal emotional competence, interpersonal emotional competence and overall emotional competence.

Table 15. Difference on the level of emotional competence of master teachers when grouped according to highest educational attainment

LEVEL OF EC	HIGHEST EDUCATIONAL ATTAINMENT	MEAN	MEAN RANK	KRUSKAL-WALLIS STATISTICS	P VALUE	REMARKS
Intrapersonal	BS/Master's units	3.81	57.95	0.912	0.634	Accept Ho
	Master's Degree	3.73	51.33			
	Doct. Units/Doctorate	3.79	54.75			
Interpersonal	BS/Master's units	3.53	54.36	1.356	0.508	Accept Ho
	Master's Degree	3.55	53.19			
	Doct. Units/Doctorate	3.70	63.42			
TOTAL	**BS/MASTER'S UNITS**	**3.67**	**56.23**	**0.709**	**0.701**	**ACCEPT HO**
	MASTER'S DEGREE	**3.64**	**51.92**			
	DOCT. UNITS/ DOCTORATE	**3.74**	**59.44**			

Difference on the Level of Emotional Competence of Master Teachers When Grouped According to Teaching Experience

Table 16 depicts the difference in the level of intrapersonal, interpersonal and overall emotional competence of the master teachers when grouped according to their teaching experience.

The study accepts the null hypothesis that there is no significant difference in the level of intrapersonal, interpersonal and overall emotional competence of the master teachers in terms of teaching experience. Therefore, the study concludes that the teaching experience of the master teachers does not influence their ability to manage their own emotions and that of others. Similar conclusions have been presented by Galanakis et al. (2021) wherein it has been stated that the tenure or teaching experience of the teacher participants does not affect their emotional competence.

Table 16. Difference on the level of emotional competence of master teachers when grouped according to teaching experience

LEVEL OF EC	TEACHING EXPERIENCE	MEAN	MEAN RANK	KRUSKAL-WALLIS STATISTICS	P VALUE	REMARKS
Intrapersonal	Less/More Experience	3.60	41.44	1.722	0.423	Accept Ho
	Much Experience	3.77	55.65			
	Very Much Experience	3.81	57.06			
Interpersonal	Less/More Experience	3.39	41.19	2.229	0.328	Accept Ho
	Much Experience	3.62	59.82			
	Very Much Experience	3.56	55.09			
TOTAL	**LESS/MORE EXPERIENCE**	**3.50**	**40.13**	**2.088**	**0.352**	**ACCEPT HO**
	MUCH EXPERIENCE	**3.70**	**58.02**			
	VERY MUCH EXPERIENCE	**3.68**	**56.08**			

Difference on the Level of Instructional Leadership Capacity of Master Teachers When Grouped According to Their Demographic Profile

The study also identified the difference on the level of instructional leadership capacity of the master teachers when grouped according to their demographic profile. The master teachers were grouped according to their age, sex, civil status, academic rank, highest educational attainment and teaching experience.

Difference on the Level of Instructional Leadership Capacity of Master Teachers When Grouped According to Age

Table 17 displayed the difference on the level of instructional leadership capacity of the participants based on their age. The study revealed that there is no significant difference on the level of instructional leadership capacity when grouped according to their age. As presented on the table, the p value of 0.126 was not significant 0.05 alpha level, thus accepting the null hypothesis that there is no significant difference on the level of instructional leadership capacity when grouped according to age. In conclusion, the age of the master teachers does not influence in the development of their instructional leadership capacity.

Table 17. Difference on the level of instructional leadership capacity of master teachers when grouped according to age

	AGE	MEAN	MEAN RANK	KRUSKAL-WALLIS STATISTICS	P VALUE	REMARKS
Level of ILC	Young Age	4.14	44.60	4.141	0.126	Accept Ho
	Middle Age	4.26	51.80			
	Old Age	4.38	64.11			

Difference on the Level of Instructional Leadership Capacity of Master Teachers When Grouped According to Sex

The difference on the level of instructional leadership capacity of master teacher participants when grouped into male and female was tested using Mann-Whitney U-Test and the results are presented on table 18. The difference between the level of instructional leadership capacity and in its three components when grouped according to sex were investigated and results revealed that there is no significant difference on the master teachers' level of instructional leadership capacity based on

their sex, thus accepting the null hypothesis. The results of the current study provide evidence that sex is not a contributory factor in the instructional leadership capacity of the master teachers.

Table 18. Difference on the level of instructional leadership capacity of master teachers when grouped according to sex

	SEX	MEAN	MEAN RANK	MANN-WHITNEY U-TEST	P VALUE	REMARKS
Level of ILC	Male	4.25	55.47	790.000	0.997	Accept Ho
	Female	4.24	55.51			

Difference on the Level of Instructional Leadership Capacity of Master Teachers When Grouped According to Civil Status

Table 19 presents the difference on the level of instructional leadership capacity of the master teachers when grouped according to civil status. The study accepted the null hypothesis stating that there is no significant difference on the level of instructional leadership capacity of master teachers based on the two civil status groups. These findings provide new insights regarding the instructional leadership capacity of the master teachers since no previous studies have been found in investigating the difference on the instructional leadership capacity of the master teachers when grouped according to civil status.

Table 19. Difference on the level of instructional leadership capacity of master teachers when grouped according to civil status

	CIVIL STATUS	MEAN	MEAN RANK	MANN-WHITNEY U-TEST	P VALUE	REMARKS
Level of ILC	Single/Sep/Widow	4.27	59.20	1089.000	0.456	Accept Ho
	Married	4.23	54.11			

Difference on the Level of Instructional Leadership Capacity of Master Teachers When Grouped According to Academic Rank

Table 20 shows the difference on the level of instructional leadership capacity of master teachers when grouped according to academic rank such as Master Teacher I and Master Teacher II. The difference in the level of instructional leadership capacity between the two identified academic ranks is found not significant at 0.05 alpha level with a p value of 0.861. The implications of the findings suggest that academic rank of the master teachers does not define their level of instructional leadership capacity and should not serve as a basis in identifying their skills and competencies involved as instructional leaders.

Table 20. Difference on the level of instructional leadership capacity of master teachers when grouped according to academic rank

	RANK	MEAN	MEAN RANK	MANN-WHITNEY U-TEST	P VALUE	REMARKS
Level of ILC	Master Teacher I	4.25	55.77	944.500	0.861	Accept Ho

	Master Teacher II	4.24	54.43

Difference on the Level of Instructional Leadership Capacity of Master Teachers When Grouped According to Highest Educational Attainment

Table 21 shows the difference on the level of instructional leadership capacity of master teachers when grouped according to their highest educational attainment. No significant differences have been noted on the level of instructional leadership capacity of the master teachers when grouped according to their highest educational attainment as evident on the p value of 0.070. In contrary, the previous study of Laude et al. (2018) revealed that instructional leadership capacity of the master teachers is significantly associated with their highest educational attainment.

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Table 21. Difference on the level of instructional leadership capacity of master teachers when grouped according to highest educational attainment

	HIGHEST EDUCATIONAL ATTAINMENT	MEAN	MEAN RANK	KRUSKAL-WALLIS STATISTICS	P VALUE	REMARKS
Level of ILC	BS/Master's units	4.19	51.21	5.323	0.070	Accept Ho
	Master's Degree	4.22	54.86			
	Doct. Units/Doctorate	4.47	70.94			

Difference on the Level of Instructional Leadership Capacity of Master Teachers When Grouped According to Teaching Experience

Table 22 presents the significant difference on the level of instructional leadership capacity of the master teacher participants when grouped into Less / More Experience, Much Experience and Very Much Experience. Upon analyzing the data, the study found no significant differences on the level of instructional leadership capacity of the master teachers when grouped according to the number of years in service as teaching experience. However, in line with the findings of Laude et al. (2018), it has been concluded that the number of years in service of master teachers is a significant indicator of instructional leadership capacity.

Table 22. Difference on the level of instructional leadership capacity of master teachers when grouped according to teaching experience

	TEACHING EXPERIENCE	MEAN	MEAN RANK	KRUSKAL-WALLIS STATISTICS	P VALUE	REMARKS
Level of ILC	Less/More Experience	4.16	50.50	3.790	0.150	Accept Ho
	Much Experience	4.12	47.26			
	Very Much Experience	4.31	60.02			

Relationship Between the Level of Emotional Competence and Level of Instructional Leadership Capacity of the Master Teachers

Table 23 highlights a significant relationship between master teachers' emotional competence and instructional leadership capacity, determined through the Spearman Ranked Correlation Coefficient. The study shows a noteworthy connection between intrapersonal emotional competence and instructional leadership capacity, suggesting that master teachers' ability to identify, understand, and regulate their own emotions directly relates to their leadership competencies. Similarly, interpersonal emotional competence is significantly correlated with instructional leadership capacity, rejecting the null hypothesis. The overall emotional competence of master teachers, encompassing self and others' emotion management, also exhibits a significant

correlation with instructional leadership capacity. These findings align with previous research, suggesting that enhancing master teachers' emotional competence may improve instructional leadership capacity and overall school performance.

Table 23. Significant relationship between the level of emotional competence and the level of instructional leadership capacity of master teachers

Instructional Leadership Capacity			
LEVEL OF EMOTIONAL COMPETENCE	**SPEARMAN RANKED CORRELATION COEFFICIENT**	**P-VALUE**	**REMARKS**
Intrapersonal EC	0.300	0.001	Reject Ho
Interpersonal EC	0.255	0.007	Reject Ho
Overall EC	0.315	0.001	Reject Ho

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

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

1. Master teachers exhibit demographic heterogeneity in terms of age, sex, civil status, academic rank, highest educational attainment, and teaching experience.
2. Master teachers demonstrate high levels of intrapersonal, interpersonal, and overall emotional competence, indicating effective emotional management.
3. Master teachers excel in instructional leadership capacity, with an outstanding performance in content knowledge, pedagogy, curriculum planning, assessing, reporting, and personal growth and professional development.
4. Academic rank is the sole contributor to differences in emotional competence, with Master Teacher I showing significantly higher levels than Master Teacher II. No significant differences in emotional competence or instructional leadership capacity were found based on other demographic factors.
5. A significant positive relationship exists between emotional competence and instructional leadership capacity among master teachers. The higher the emotional competence, the higher the instructional leadership capacity of the master teachers.

Recommendations

Upon presenting the findings of the study, the following recommendations are hereby made:

1. Utilize the findings to design development programs and training for master teachers, aiming to enhance their emotional competence and instructional leadership capacity.
2. Provide targeted training to improve specific emotional competence skills where master teachers show lower competencies, such as considering emotions in personal decision-making and using emotions to influence collective causes.
3. Integrate activities under the Gender and Development (GAD) program to address the identified gender differences in intrapersonal emotional competence among master teachers. Conduct further research to confirm and expand on these findings.
4. Reevaluate work-related stress levels of master teachers, providing support to all academic ranks, especially Master Teachers II, who demonstrated lower emotional competence. Further investigation is recommended to validate these findings.

5. Consider using alternative instruments to measure emotional competence and instructional leadership. Developing new questionnaires based on the target population may be beneficial.
6. Explore data gathering through observations and interviews for a more comprehensive understanding.
7. Investigate other abilities of master teachers beyond emotional competence to explore additional skills associated with instructional leadership capacity.
8. Include the number of training hours related to instructional leadership capacity in the participants' demographic profile for future studies. Compare Master Teacher I and Master Teacher II demographics to understand direct effects. Specifically study and correlate the three components of instructional leadership capacity with emotional competence.

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BRIDGING THE DIGITAL DIVIDE: ENHANCING ACADEMIC OUTCOMES OF DISADVANTAGED LEARNERS IN DISTANCE EDUCATION THROUGH OFFLINE VIDEO LESSONS

by

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Abstract

In implementing distance learning, the school was challenged by the increased number of students transferring from online to modular distance learning (MDL) due to financial loss of their families. It was especially difficult to ensure equity in learning Information and Communications Technology. The study explored the effects of supplementary offline video lessons to financially disadvantaged modular learners who may be at risk of being marginalized. The study used the pre-test – post-test design to measure the effect of supplementary offline video lessons to students' academic outcomes. Participants in the study are 62 Grade 9 students under the ICT specialization who were initially in online classes but had to shift modalities because of financial struggles. Learners' scores in four lessons were significantly affected by the treatment (p=0.00). This shows that the use of supplementary offline video lessons enhanced the academic performance of modular learners. The research was conducted among economically disadvantaged Grade 9 Contact Center Services (CCS) students in General Emilio Aguinaldo National High School during SY 2020-2021. The developed supplementary offline video lessons are anchored on the learning outcomes stated in the CCS Curriculum Guide. The videos can aid learners' understanding on ICT concepts and enable them to visualize ICT equipment and applications that may not be present in their homes.

Keywords: *Disadvantaged Learners, Learning Resources, Video Lessons*

INTRODUCTION

Many schools in the world have closed in response to the adverse effects of COVID- 19. To continue education, distance learning was implemented globally, using various tools and technology (Nadikattu, 2020). DepEd also recognizes this as it issued a directive on Alternative Delivery Modes in order to minimize, or completely avoid face-to-face classes for the safety of children (DepEd, 2020): Modular Distance Learning (MDL); Online Distance Learning (ODL); TV-Video/Radio-based Instruction (TV- Video/RBI); and Blended Distance Learning (BDL).

Distance education is not a new way of teaching. It was common in the late 1800s, but its rapid use started in the late 1990s with the breakthrough of the online revolution (Kentnor, 2015). Distance education implies a teaching and learning process which take place separately from each other. It means that there is a geographical and physical separation between a teacher and a student, allowing learners to acquire knowledge separated from their teachers (Roberts, 2019).

Globally, distance learning was supported by e-learning and was found significantly effective for continuing teaching and learning during lockdown (Nadikattu, 2020). Kassymova, et al (2020) provides a general definition by claiming that it is “learning supported and stimulated through the use of information and communication technologies”. E-learning is to utilize any electronic technologies to access educational curriculum outside the traditional classroom. It is an implementation of electronic media for a variety of learning purposes to facilitate the delivery of distance education.

However, a new term related to e-learning has emerged. Digitalization of education is more than simply using ICT in learning. Digitalization involves knowledge production and distribution through digital media, in the absence of physical classrooms (Kassymova, et al, 2020). Scholars still question whether explanatory videos correspond to modern strategies for imparting knowledge or whether the development of technologies creates challenges that have to be addressed and that have to be tested or further researched.

Digitalization of education has its advantages. Research explains that exposure to digital media may lead to intellectual benefits. Students may create a mental space for learning, like a classroom is formed cognitively (Gee, 2015). Digital media supports different types of cognition exploration. According to Vygotsky (Kistner & Fischer, 2015), communication tools such as digital media support in adopting cognitive functions by acting as partners in the zone of proximal development. Moreover, digitalization makes education customizable, portable, and accessible because it can be in diverse formats such as slideshows, audio, video, PDF, e-mail, and word documents (Bajaj and Sharma, 2018). Teaching and learning materials can be easily shared, copied, and brought everywhere. Thus, students may acquire learning at their own comfort and requirements. It can be accessed at any time at the learner’s own convenience (Colchester et al., 2017). Digitized education also provides clear, easy, gradual instructions for better understanding of the learners. It is often regarded as the most suitable way for self-learning (Bajaj and Sharma, 2018).

As digitized education provides a wide range of materials for the learners, one of the most common medium used are explanatory videos. Videos are part of traditional classrooms, as well as the foundation of many online and blended lessons (Brame, 2016; Choe et al., 2019). Several studies have provided evidence on how the use of videos have increased learners' critical thinking (Kassymova et al, 2020; Atayeva et al, 2019; Brockfeld, 2018). Research also showed how videos, like other

forms of digitized education, provides learners the benefit of self-paced learning by repeating the lesson as often as wanted, which is useful for deeper understanding (Huang, 2015).

Due to the pandemic crisis, a huge, disruptive shift from existing educational system to online education system emerged. Certain challenges of online education include lack of online teaching skills in educators, insufficient pre-class study preparation, and inadequate discussion depth (Su et al., 2016; Brazendale, et al., 2017; Johnson et al., 2019). Inequalities faced by learners in implementation of online learning was also looked into. Learners sometimes do not have proper means to learn from the online medium, caused by lack of equipment and poor internet connection (Khalid et al., 2016). In a recent survey of incoming students in General Emilio Aguinaldo National High School (Learning Continuity Plan 2020) data shows that out of 10, 380 learners, only 3,028 enrollees own a computer (laptop, desktop, or tablet); 4,836 own a smartphone; and 3,174 own a TV (LED/LCD) with USB slot. In terms of internet connectivity, only 1,460 students have their own DSL, Broadband, Fiber, or Satellite connection at home; and 4,048 enrollees have Mobile Data connection. Therefore, majority of students have digital equipment, but only a few have connection to the internet and can afford online learning. Upon analysis, the school decided to implement both ODL and MDL, with majority of students choosing MDL. However, after the 1st Quarter, teachers observed that learners in the online modality have shifted to modular modality, which posed challenges on teaching and learning ICT.

Given this challenge, it was necessary to bridge the gap and consider the needs of the learners through educational materials and pedagogical provisions (Pragholapati, 2020). Distribution of digital media to both ODL and MDL learners will help ease marginalization of disadvantaged learners and promote equal access to quality education. Thus, the purpose of this study is to develop video lessons on the TLE subject, specifically on Information and Communications Technology (ICT). The study explored the effects of supplementary offline video lessons to financially disadvantaged modular learners who may be at risk of being marginalized.

Research Questions

The study aims to make digitized education accessible to all learners equitably, regardless of their chosen learning delivery modality. Since online education requires the acquisition of electronic tools and internet service, disadvantaged learners opt for MDL, which only requires minimum supplies. With the perceived benefits of digitized education, as mentioned in the studies above, this research intends to develop video lessons to make quality education equally accessible for all learners.

Specifically, the study answered the following questions:

1. What is the learners' profile in terms of:
    a. reasons for shifting from online to modular distance learning modality?
    b. access to learning gadgets/devices at home?
    c. availability of learning facilitator at home?
    d. duration of home learning weekly?
    e. challenges faced in learning Contact Center Services at home?
2. What video lessons in Grade 9 Contact Center Services shall be developed?
3. What is the effect of using video lessons among modular learners?

METHODOLOGY

Sampling

The study used purposive sampling. Purposive sampling involves an iterative process of selecting research subjects rather than starting with a predetermined sampling frame (Robinson, 2014). As the study used video lessons as intervention to Grade 9 Contact Center Services learners who are incapable to sustaining online learning, these learners were purposively selected as samples in the study.

Data Collection

Prior to the conduct of data gathering procedures, the researchers secured permission from the principal through a letter which stated the purpose of the study and full disclosure that classes nor school activities would not be disrupted by any means. The letter also included the nature and manner of data gathering, instruments to be used, and ethical considerations.

The primary sources of data of this study are researcher-made survey questionnaire and Learning Activity Sheets Assessments validated by the Master Teachers, Subject Head, and School Head.

Survey Questionnaire. The researcher-made survey questionnaire determined the profile of respondents regarding their reasons for shifting modality, access to learning gadgets and learning facilitator at home, as well as duration of home learning daily. These data served as basis for developing the video lessons.

Learning Activity Sheets Assessments. This instrument identified the learners' prior competencies and assess their performance after utilization of video lessons in distance learning. IDEA modules have been validated by Master Teachers, Head Teachers, the Education Program Supervisor, and the LRMDS of the Schools Division of Imus City. The study used the results of the pre-tests and post-tests to determine effects of the offline videos to the scores of learners.

Plan for Data Analysis

The researchers utilized descriptive statistics such as percentage and mean in analyzing the profile of the respondents. To determine the effectiveness of the developed video lessons, the pretest results were statistically compared with the posttest results using paired t-test set at 0.05 level of significance.

Ethical Issues

All information gathered from the study were treated with utmost confidentiality. Names and other personal information of the respondents in the study shall remain confidential. Researchers ensured that their consent and that of their parents were secured prior to the conduct of the study. The waiver for consent included an overview of the testing process, as well as a declaration of confidentiality and anonymity.

RESULTS AND DISCUSSION

4.1 Learners' Profile

To serve as basis for developing video lessons in Grade 9 Contact Center Services, the following data were gathered: reasons for shifting from online to modular distance learning modality; access to learning gadgets/devices at home; availability of learning facilitator at home; and duration of home learning daily.

4.1.1 Reasons for Shifting Modalities

Table 1. Learners' Primary Reason for Shifting from Online to Modular Distance Learning Modality

Reasons for shifting modalities	Number of Learners
Inability to sustain internet subscription	57
Sudden damage/malfunction of learning gadget	4
Difficulty coping with online learning environment	1

One of the biggest challenges that online learners face is the sustainability of internet subscription, either broadband or mobile data. Table 1 shows that out of 62 identified learners who shifted modalities in the middle of the school year, 57 were incapable of paying for their internet connection at home. With internet as a necessity in online learning, having limited resources to sustain internet connection at home may deliberately cause disadvantages to online learners, forcing them to transfer to the modular modality. This poses another challenge, because Contact Center Services, one of the ICT specializations in TLE, may be taught better online or with the presence of computers. Other reasons for shifting modalities, as reported by learners, is sudden damage or malfunction of learning gadgets (4 responses) and difficulty coping with online learning environment (1 response).

4.1.2. Access To Learning Gadgets/Devices at Home

Table 2. Access To Learning Gadgets/Devices at Home

Reasons for shifting modalities	Number of Learners
Desktop Computer	7
Laptop Computer	13
Tablet	9
Smartphone	57
TV with USB slot	27

Initially, in the online learning modality, all respondents have access to one or more learning devices or gadgets at home. Table 2 shows that majority or 57 of the learners have smartphones. This is followed by: TV with USB slot (27 responses); laptop computer (13 responses); tablet (9 responses); and desktop computer (7 responses). This implies that although students may not have access to the internet at home, they still have access to devices which can be used for watching offline video lessons.

Learners' limited access to both internet and learning devices has been observed in previous research. Khalid et al. (2016) discussed how learning can be affected when learners do not have proper means to learn from the online medium, caused by lack of equipment and poor internet connection.

4.1.3. Availability Of Learning Facilitator at Home

Table 3. Availability of Learning Facilitator at Home

Reasons for shifting modalities	Number of Learners
Parents	16
Older Siblings	13
Other Older Relatives	8
None	37

Another factor to be considered in developing the video lessons was the availability of learning facilitators in learners' homes. Table 3 reveals that 37 out of 62 respondents do not have an adult family member to assist them with home learning. Only 16 have parents to guide them during home learning; 13 have older siblings who can help them with studying; and 8 have other older family members who can assist them while learning at home. As digitized education through video lessons provides clear, easy, gradual instructions for better understanding of the learners (Bajaj and Sharma, 2018), access to offline videos is the most suitable way for self-learning.

4.1.4. Duration of Home Learning Weekly for the TLE Subject

Table 4. Duration of Home Learning Weekly for the TLE Subject

Reasons for shifting modalities	Number of Learners
Less than 1 hour	28
1 hour	31
2 hours	3

This study also determined the number of hours learners dedicate to studying the TLE subject at home, which includes accomplishing activities, tasks, and assessments. Table 4 shows that 31 learners spend an average of 1 hour weekly to study TLE. Twenty-eight (28) study for less than an hour and 3 learners reported spending 2 hours.

4.1.5. Challenges Faced in Learning ICT at Home

Table 5. Challenges Faced in Learning ICT at Home

Reasons for shifting modalities	Number of Learners
Difficulty understanding ICT concepts	19
Difficulty acquiring ICT skills	32
Lack of authentic exposure to/ experience with software	39
Lack of authentic exposure to/ experience with hardware	11

Given that Contact Center Services is one of the TLE specializations under ICT, learners face challenges in learning concepts and acquiring skills at home. Majority of learners (39 responses) said that they encounter lack of authentic exposure to/

experience with software. In turn, 32 learners experience difficulty acquiring ICT skills. Other concerns are difficulty understanding ICT concepts, with 19 responses and lack of authentic exposure to/ experience with hardware, with 11 responses.

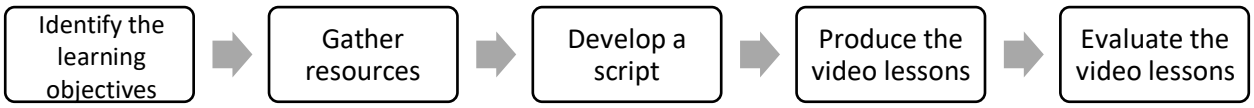
4.2 Video Lessons Developed and Implemented

The research was conducted in General Emilio Aguinaldo National High School (GEANHS), Division of Imus City, during the Second Quarter of School Year 2020-2021. The objective of the study is to develop and test the video lessons for Contact Center Services (CCS) Grade 9 for Week 5 to Week 8 of the second quarter.

4.2.1. Development

To develop the offline video lessons, the researchers created Project VALUE (Videos for Accessible Learning and Upgraded Engagement) that aims to: 1) Develop localized, contextualized video lessons as supplementary materials for distance learning modules and/or activity sheets; 2) Enhance understanding of lesson concepts and encourage acquisition of skills in five minutes of real-life video materials; and 3) Encourage equal access to learning through provision of videos to both online and modular learners.

Figure 1. Video Production Process



The researchers followed a video production process to effectively and efficiently develop the lessons:

1. *Identify the learning objectives*. The developers ensured that contents of the module are aligned to the learning competencies for Contact Center Services mandated by the Department of Education.
2. *Gather resources*. The researchers gathered resources such as the K to 12 Information and Communications Technology - Contact Center Services (NC II) Curriculum Guide and the modules developed by Mella et al. (2021) for Contact Center Services Grade 9. This ensures that the videos are based on sound pedagogical principles and that they are effective for teaching the material.
3. *Develop a script*. The researchers developed a script for each video lesson. The script included the learning objectives, the key points of the lesson, and the layman terms that would be used.
4. *Produce the video lessons*. The researchers produced the video lessons using a variety of software and tools, such as MS PowerPoint and Canva. The researchers converted the video lessons to offline format, using MP4. This made it possible for learners to access the videos without needing an internet connection.
5. *Evaluate the video lessons*. The researchers evaluated the video lessons to ensure that they were effective for teaching the learning objectives. The researchers considered the profile of the respondents and came up with guidelines in making accessible videos for modular learners:

a. *Consider students' baseline data and the daily screen limit*. The videos are developed to be 3 to 5 minutes long only to consider the students' baseline data and the daily screen limit. This ensures that the videos are engaging and appropriate for the students' learning styles and attention spans.
b. *Focus on lesson delivery*. The videos are designed to teach specific concepts and skills. This is important for modular learners, who may not have access to traditional classroom instruction.
c. *Use layman terms*. The videos use layman terms so that they are accessible to students who may not have adult family members to guide them during studying. This is important for ensuring that all students have the opportunity to learn the material.

The researchers considered the students' baseline data, daily screen limit, and learning styles and consulted with experts in the field and utilized existing resources. Table 6 presents the lessons developed as videos for the remainder of the Second Quarter of S.Y. 2020-2021.

Table 6. List of Topics for Video Lessons

Week	Lesson/Competency
Week 5	Introduction to MS PowerPoint
Week 6	Manipulate features of MS PowerPoint 2016 (Opening and Creating Presentation)
Week 7	Manipulate features of MS PowerPoint 2016 (Formatting, Saving, Presenting)
Week 8	Online help of a program

4.2.2. Distribution

To distribute offline video lessons for modular learners during distance learning, the researchers considered the following:

1. *Lack of internet and computers*. The videos were given to learners offline, either through wireless transfer using smartphones or thumb drives. This ensured that all students had access to the videos, regardless of their internet access or computer availability.
2. *Scheduled weekly distribution of modules*. The distribution of videos was conducted during the scheduled weekly distribution of modules. This minimized the need for additional face-to-face interaction between learners and teachers, thereby helping to limit exposure and protect both learners and teachers.

4.3 Effect of Using Video Lessons among Modular Learners

As shown in Table 7, a paired sample t-test revealed a statistically significant difference between mean pretest and posttest scores in four lessons ($p<0.05$). Since the mean posttest score is greater than the mean pretest score, this implies that that there is sufficient evidence to conclude that the exposure to the developed video lessons largely yielded improvement in the knowledge of students in Grade 9 Contact Center Services lessons from the 2nd Quarter Week 5 to 8.

Table 7. Comparison of Pretest and Posttest Scores of Students

	Paired Differences				
	Mean	**Std. Deviation**	**t**	**df**	**Sig (2-tailed)**
Week 5 *Pretest-Posttest*	9.48	0.21	25.06	62	.000*
Week 6 *Pretest-Posttest*	9.62	0.30	26.18	62	.000*
Week 7 *Pretest-Posttest*	9.85	0.31	24.03	62	.000*
Week 8 *Pretest-Posttest*	8.93	0.28	24.38	62	.001*

**Significant at p < .05*

These findings demonstrate that using offline videos to supplement printed modules can enhance students' understanding of ICT concepts and skills. The significant differences between the mean pretest and posttest scores show the effectiveness of the developed offline video lessons.

CONCLUSIONS

Through the results of the study, the researchers reached the following conclusions:

Learners experience varied challenges in sustaining the online distance learning modality, putting them at risk of marginalization. Economic factors greatly affect learning. Sudden loss of internet connectivity and inability to upgrade or replace damaged device affects home learning. Students are forced to shift from online to the modular learning modality, which is not conducive for learning ICT specializations. Lack of available learning facilitators and limited time to study at home also puts these learners in a disadvantaged position, as compared to students who have a support system at home. Modular learners, who were previously in the online modality, reported difficulties learning both ICT concepts and ICT skills, given their modality, as it was difficult to learn ICT with limited access to ICT resources at home.

Video lessons that focus on content delivery and consider applicability to various devices are more accessible to modular learners. Longer videos take up more space in storage devices, such as smartphones, which are commonly accessible to modular students. The video lessons created for the pilot study presented simple and direct instructions on how to manipulate software in both computers and mobile devices. Not all students have access to computers and may have to use phones to access software such as MS PowerPoint. Considering the devices used by learners will lessen the risk of marginalization in learning ICT concepts and skills.

Video lessons help modular learners succeed with little supervision, making them responsible for their own learning. Results in the t-test revealed a statistically significant difference between mean pretest and posttest scores in four lessons, showing improvement in the knowledge of students in Grade 9 Contact Center

Services lessons from the 2nd Quarter Week 5 to 8. As learners have limited access to home learning facilitators, offline video lessons helped them acquire necessary understanding of ICT lessons which may be difficult for modular learners.

RECOMMENDATIONS

Anchored on the conclusions made in this study, the researchers propose the following recommendations:

Strengthening hybrid learning as contingency for shifting learning modalities. Teachers must be able to deepen understanding of hybrid learning and its ability to promote equal access to education, even for learners who are economically advantaged. Learning and development opportunities for teachers on this matter will help them maximize the features of hybrid learning and promote equal access to learning for all learners.

Development of concise, offline video lessons. As students encounter difficulty accessing online videos, teachers or schools may provide modular learners with video materials to strengthen lessons written in printed modules, especially for lessons that require further explanation. Modular learners are at risk of being marginalized because they have limited means of communicating with teachers to ask for clarifications and additional discussion. Therefore, they must be provided with all the necessary materials that they may read, watch, or listen to, when they encounter difficult topics. Subject heads, school heads, or supervisors, may encourage teachers to create video lessons for modular learners. Trainings or workshops on development of video lessons will be beneficial to both teachers and learners.

Conduct a validation study of the developed video lessons. Given the pilot nature of this study, further validation of the developed video lessons is crucial before widespread implementation. Including a larger and more diverse group of learners would strengthen the generalizability of the findings.

Further research on effectiveness of offline video lessons. Further study on the difference between controlled and experimental groups may provide more enlightenment on the effectiveness of offline video lessons to modular learners. Once the video lessons are validated, a larger-scale study with a longer duration could be conducted to assess their long-term impact on academic outcomes and learner engagement. The study can also be replicated in other TLE specializations whose learners face difficulties in sustaining the online learning modality and shifted to the modular modality.

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STUDENT REFLECTION ON AND FOR LEARNING: A FOUNDATION FOR RESPONSIVE TEACHING

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Abstract

Purpose: This research examined learners' experiences on student reflection and its impact to learners' motivation and success. The study also provided teachers with insights on how to design and conduct reflections in class. Design/methodology/approach: This mixed-methods action research ran from August 2021 to July 2022, involving 31 Grade 10 learners of Gen. Emilio Aguinaldo National High School, Imus City. Quantitative results were analyzed through descriptive statistics, while qualitative data gathered through students' e-portfolios and semi-structured interviews were subject to content analysis. Findings: The findings indicate a substantial increase in student motivation and achievement upon engaging in reflections. The positive impact can be attributed to learners' experiences on reflection writing, categorized into 5 themes: reviewing and reinforcing concepts learned; self-evaluation, self- correcting and desire to improve; contextualizing learning; integrating knowledge from different disciplines; and building a learning community. Participants associate successful implementation of student reflection to the use of appropriate technology, provision of writing prompts, and sufficient time for reflection. Research limitations/implications: The research is centered on the impact of student reflection and learners' experiences on the process of reflection writing. Originality/value: The study posits foundational concepts for creating and implementing student reflections, as a course of responsive teaching.

Keywords: *reflection, e-portfolio, self-evaluation, responsive teaching*

INTRODUCTION

Reflective learning is one of the five pedagogical approaches reiterated by the Department of Education Region IV-A CALABARZON in support of the educational goals of RA 10533 or the Enhanced Basic Education Act of 2013. The reflective approach involves looking into what the teacher and learners do in the classroom, analyzing why they do so, and evaluating whether it works for learning (Regional Memorandum No. 233, s. 2016).

With the sudden shift in the educational landscape caused by the adoption of distance learning, reflective learning remained embedded in the PIVOT I-D-E-A Lesson Exemplar (Deped Region IV-A CALABARZON, 2020). Amid alternative modes of learning, personal reflection is underlined in lesson delivery. Learners are encouraged to reflect on their knowledge, skills, attitude/values, aspirations, and actions; they are urged to assess their learning and relate these concepts to their own lives. In the I-D- E-A Lesson Exemplars, each lesson ends with a reflection where students are asked to answer two prompts in their notebook, journal, or portfolio: (1) "I understand that…"; and (2) "I realize that…".

With students being members of Generation Z, the first truly digital and global generation (Ng & Parry, 2016), electronic portfolios or e-portfolios can be added to the roster of possible means for reflective learning. These students have integrated technology seamlessly in their lives. Thus, incorporating reflections makes the e-portfolio a powerful learning tool.

E-portfolios are successors of traditional portfolios that have been present for decades, largely in print or written format and included collections of artifacts. The vast development of technology enabled the digitalization of portfolios where content is easier to collect, organize, store, and edit, and made available to a wider audience, as well as connecting it to a defined set of performance standards. (Hamdan & Yassine-Hamdan, 2022). An e-portfolio is a purposeful, organized, digital collection of artifacts about a student's learning experiences, progress, and academic achievements during their learning journey (Andrade & Zeigner, 2021; Farrelly & Kaplin, 2019). This includes all learning that occurs inside and outside of the classroom that could be translated into electronic files, texts, images, multimedia, blog entries, and hyperlinks (Rhodes, 2019).

However, an e-portfolio is not merely a compilation of evidence of students' learning. It offers a personal learning space where students record and reflect on their strengths and weakness and identify areas for improvement (Sharifi, Soleimani & Jafarigohar, 2016). During this process of authentic reflection, learners may recognize and understand themselves in relationship to their learning processes and learning outcomes (Wiedmer, 1998). Thus, an e-portfolio can be considered as an exemplary tool for capturing learners' behavior, knowledge, and skills in digital formats (Bair et al. 2019; Madden et al., 2019).

Previous studies have substantiated a relationship between the use of e-portfolios and higher retention (Collins & Crawley, 2016; Deneen, Ryan & Prosser, 2022). E-portfolios help students learn, as they reflect deeply upon their own development. It enables learners to articulate their own learning experiences visibly (Madden et al., 2019), allowing them to reflect implicitly and deepen their learning when making their accomplishments evident (Kuh et al., 2017). This positive impact is attributed to learners' experiences on developing their reflections through e-portfolios. Learners enjoyed the e-portfolio process (Hwangji, 2021), as sharing their e-portfolios with their peers and teachers fostered collaboration, engagement, and feedback

(Prokopetz, 2021). Students did not see e-portfolios as mere coursework to be completed for a grade (Ciesielkiewicz, 2019). Furthermore, students saw e-portfolios as a 'safe space' during the pandemic (McManus, 2021). Nevertheless, these positive experiences can only be possible if students are prepared to use the e-portfolio or its platform (Batson, 2002).

Given this evidence on the impact of e-portfolios to learners' experiences, there has been a trend in higher education towards an increase in using e-portfolios globally (Fallowfield, 2019; Hume & Hamilton, 2019; Madden et al., 2019; Roberts & Kirk, 2019). Hence, this study is an attempt to explore the plausible experiences and impact of using e-portfolios among secondary learners in General Emilio Aguinaldo National High School during School Year 2021-2022. This mixed methods study shall employ the use of quantitative and qualitative data to attain the following objectives: (1) identify the impact of the e-portfolio in learners' learning processes and outcomes; (2) determine learners' experiences in terms of readiness and implementation on the development of reflection in an e-portfolio; and (3) propose an innovation to foster student reflection through e-portfolios.

Research Questions

Although e-portfolios have been widely used in various disciplines in higher education, the utilization of e-portfolios in secondary education has not been documented. There is a need to evaluate the application of e-portfolios in this field of study. Thus, the following research questions were raised:

1. What is the impact of the reflective e-portfolio among students, in terms of:
    a. motivation
    b. achievement
2. What is the students' perception on the development of reflection in an e-portfolio in terms of:
    a. readiness
    b. implementation

METHODOLOGY

Data Gathering

Prior to the conduct of data gathering procedures, the researcher secured permission from the school principal through a letter which stated the purpose of the study and full disclosure that classes nor school activities would be disrupted. The letter also included the nature and manner of data gathering, instruments to be used, and ethical considerations. Moreover, before data gathering, the students composed reflective entries for one quarter (eight weeks) in their e-portfolios. Portfolios were checked using a rubric crafted by the researcher.

This research is characterized by conducting quantitative and qualitative approaches to data collection and analysis. The quantitative method was conducted in the first stage, followed by the qualitative approach using a narrative analysis. Quantitative data were gathered through two sources: (1) a researcher-made survey questionnaire validated by three experts in the field of education and research writing; and (2) students' quarterly grades in Technology and Livelihood Education in S.Y. 2021-2022. To gather qualitative data, a semi-structured interview was conducted on all participants. The findings from both phases of the study were then examined and combined to draw conclusions.

Data Analysis

The research employed a Mixed Methods Analysis to analyze both quantitative and qualitative data. Quantitative results were analyzed through descriptive statistics, while qualitative data were subject to content analysis. The researcher used constant comparison among and within the transcripts to identify recurring words, ideas, and concepts. After identifying clustered themes, categorical titles for each theme were made to create a table of themes. Extracted data were then compared to develop subordinate themes (Creswell, 2018).

Table 1. Range and Verbal Interpretation of the 5-Point Scale

Numerical Weight	Range of Score	Verbal Interpretation
5	4.50-5.00	Strongly Agree
4	3.50-4.49	Agree
3	2.50-3.49	Neutral
2	1.50-2.49	Disagree
1	1.00-1.49	Strongly Disagree

Ethical Considerations

All information gathered from the study were treated with utmost confidentiality. Names and other personal information of the respondents in the study shall be kept confidential. The researcher ensured that learners' consent and that of their parents were secured prior to the conduct of the study. The waiver for consent included an overview of the interview process, as well as a declaration of confidentiality and anonymity.

RESULTS AND DISCUSSION

4.1. Impact of the reflective e-portfolio among students

The findings demonstrated a substantial increase in student motivation and achievement upon engaging in reflections.

3.1.1. Motivation

Table 1. Students' Level of Motivation in Learning ICT Before the Use of E-Portfolio

Statement	***Mean***	***Verbal Interpretation***	***Rank***
I like the atmosphere of my ICT class.	5.38	Highly Agree	1
I am doing my best to learn ICT.	5.24	Highly Agree	2
I am interested in learning more about ICT.	5.12	Agree	3
I really enjoy learning ICT.	4.15	Somewhat Agree	4
I am prepared to spend a lot of time and effort in learning ICT.	4.05	Somewhat Agree	5
I always look forward to my ICT class.	3.95	Somewhat Agree	6

Grand Mean	***4.65***	***Agree***

Table 1 reveals students' pre-existing motivation towards ICT learning before using the e-portfolio. Students strongly agree that the class environment is enjoyable (5.38, Highly Agree), suggesting a positive first impression of the subject and learning space. They also displayed a strong commitment to learning, with a high average agreement (5.24, Highly Agree) on actively trying their best. Respondents also indicated that they have interest in further exploring ICT (5.12, Agree), however, learning ICT is somewhat not that enjoyable (4.15, Somewhat Agree). In addition, respondents showed that they are not too keen on investing time and effort in learning ICT (4.05, Somewhat Agree). This is evident in the low rating for the anticipation of ICT (3.95, Somewhat Agree), suggesting the need to enhance engagement.

Table 2. Students' Level of Motivation in Learning ICT After Use of E-Portfolio

Statement	***Mean***	***Verbal Interpretation***	***Rank***
I am doing my best to learn ICT.	5.96	Highly Agree	1
I am interested in learning more about ICT.	5.87	Highly Agree	2
I like the atmosphere of my ICT class.	5.83	Highly Agree	3
I really enjoy learning ICT.	5.74	Highly Agree	4
I always look forward to my ICT class.	5.68	Highly Agree	5
I am prepared to spend a lot of time and effort in learning ICT.	5.45	Highly Agree	6
Grand Mean	***5.76***	***Highly Agree***	

Table 2 presents students' motivation towards ICT after utilizing e-portfolios. Students strongly agree on putting their best effort into learning ICT (5.96, Highly Agree), suggesting a significant increase in motivation compared to pre-e-portfolio use. They also highly agree on wanting to learn more about ICT (5.87, Highly Agree) and on enjoying the ICT class environment (5.83, Highly Agree), suggesting that the positive initial impression remained. A remarkable increase in agreement on genuinely enjoying learning ICT (5.74, Highly Agree) highlights a significant positive impact of e-portfolios on intrinsic motivation. Similarly, learners highly agreed on looking forward to ICT classes (5.68, Highly Agree). While still high, the agreement on being prepared to invest time and effort (5.45, Highly Agree) showed a slight decrease compared to pre-e-portfolio use, but remained at a positive level.

3.1.2. Achievement

Table 3. Average Grade in Technology and Livelihood Education - Information and Communications Technology for S.Y. 2021-2022

Quarter 1	***Quarter 2***	***Quarter 3***	***Quarter 4***
88.40	92.84	94.20	95.19

Participants in the study also exhibited increase in achievement. Their average

grades from the first quarter (88.40) to the second quarter (92.84) manifested a significant improvement in their learning outcomes in ICT, upon implementation of e-portfolios during Quarter 2 of S.Y. 2021- 2022. The continuous utilization of e-portfolios for reflections resulted to an increasing trend of learners' quarterly average grades in Quarter 3 (94.20) and Quarter 4 (95.19). This demonstrates the positive impact of reflection writing on learners' experiences.

Reviewing and Reinforcing Concepts Learned. Participants associate their achievements to the reinforcement of the concepts learned by writing reflections. Through reflections, they are able to remember terms and concepts introduced in class, encouraging them to learn more. One student account said:

> "Nilalagay ko sa reflection kung anong natutunan ko sa bawat lesson. 'Pag sinusulat ko yung learnings, mas naaalala ko yung mga napag-aralan. Pwede ko rin basahin araw-araw. Mas masarap basahin kesa sa notes lang kasi ako yung gumawa." ("I write about what I learn in every lesson. It helps me remember what has been taught. I could also read my reflections every day. It's more enjoyable to read since I'm the one who wrote them.")

This is similar to previous studies' claim that the use of e-portfolios results to higher retention (Collins & Crawley, 2016; Deneen, Ryan & Prosser, 2022). By writing what they have learned, students retain essential information such as terms and concepts introduced in class. Aside from the paragraphs written by students, artifacts attached to their e-portfolios also aid in retention. In one of the interviews, a student shared how attached files helped her review for quizzes:

> "We also attach activities on our e-portfolio so every time we need to review for a quiz, I can easily remember important things about the topic. I can remember the acronyms and definitions and even the class activities and recitations we did during class time. When I remember about what we did in class, I can also remember the lessons easily."

Reflecting and keeping a proof of learning (such as quizzes and seatworks) increases the chances of retention. Artifacts compiled as a digital collection about a student's learning experiences and progress encourages achievement (Farrelly & Kaplin, 2019; Andrade & Zeigner, 2021).

Self-Evaluation, Self-Correcting and Desire to Improve. Students utilize reflections as a means to evaluate themselves, in relation to a particular knowledge or skill. It helps them identify their level of learning, based on their own evaluation. In this case, students create their own evaluation rating instead of assessing themselves based on other's standards. One participant shared his experience on this:

> "Nakatulong po sya [reflection] ng sobra kasi nata-track ko po kung ano yung score ko para sa sarili ko. Kunwari may Performance Task this week, nalalaman ko sa reflection if ready na ba ko ng 100% para malaman ko rin kung need pa ng aral para mataas grade ko. At least alam ko kung anong level na ko." (Reflections help a lot in tracking my self- evauation. For instance, when there is a Performance Task, I can easily identify whether I am 100% ready for the task or I still need more effort to practice to get a good grade. With this, I can assess my own level of understanding.")

E-portfolios compile student reflections that show learners' knowledge and skills (Bair et al. 2019) which help them monitor their own learning experiences. In an interview with another participant, she shared how writing reflections helped her understand herself:

> “Nung nagsimula na kaming magsulat ng reflections sa TLE, mas nakikita ko yung journey ko as a student. Na-feel ko po na nagbabago yung opinions ko minsan and nagiging mas maganda po yung pagtingin ko sa pag-aaral. Parang less na nakakapagod po kasi ‘ah ito na pala yung natutunan ko’ kaya out of 5, nasa 4 na ako. Konti nalang maaabot ko na yung gusto kong matutunan.” (“When we started writing reflections, I began to visualize my journey as a student. I felt that some of my opinions about learning have changed for the better. I feel less tired when studying because I can evaluate myself if I’m 4 out of 5. Just a few more steps and I’ll be able to achieve my desired learning.”)

Participants’ experiences are congruent to Madden’s (2019) study on e-portfolios as a tool for learners to reflect on their own development. Reflections enable learners to articulate their own learning experiences visibly and helps them create their own target for themselves, thus increasing the desire to learn and achieve. One student expressed his experience on self-correcting through reflections:

> “Pag may mali akong intindi at may realizations ako, nasusulat ko kaagad sa reflection. It also helps din po pag may hindi ako maintindihan masyado or may need pa akong i-search or pag-aralan, I can write about them. Natutulungan po talaga akong malaman kung saan ko need mag-improve.” (“When there are things I misunderstood, I write them down. It helps me keep track of things I don’t understand much or those that I need further reading about. It really helps me determine aspects where I need to improve.”)

Participants similarly shared how reflections help them understand themselves better as learners. This is analogous to the research findings of Sharifi, Soleimani, and Jafarigohar (2016) that e-portfolios provide a personal learning space where students record and reflect on their strengths and weakness and identify areas for improvement. Contextualizing Learning. Reflections enable learners to connect their own learning to their daily lives. Although learning happens inside the classroom, students associate technical concepts to situations outside the school. In her interview, a participant shared her experience on contextualizing learning:

> “Lahat po ng natutunan ko sa TLE subject, nagagawa ko po sa bahay. Yung mga ICT lessons nagagamit namin sa bahay. Nakakatulong ako sa kapatid ko, nanay at tatay ko pag kailangan nila ng tulong sa internet or sa ibang applications… Kaya gusto ko na matuto lalo hindi na po para sa grades pero para magamit ko araw-araw.” (“I am able to apply everything I learned in TLE at home. The ICT lessons I learned allowed me to help my family every time they needed assistance on the internet and other applications… I want to learn more, not because of grades, but because I can use this knowledge to everyday life.”) Learning can more authentic when they can be translated into everyday life (Rhodes, 2019).

Reflections give learners an opportunity to view learning from different perspectives. Learning becomes malleable and applicable in every day. Furthermore, learners do not treat reflection writing as another task to be completed or a part of the requirements for a grade. They treat reflections as a part of learning, helping them record not only what they learn, but how they learn, their emotions about a particular topic, as well as their experiences inside and outside the classroom where they apply the lesson. They consider portfolios as a venue to create a personal, mental place for their learning, similar to McManus’ study (2021) that e-portfolios provided learners with a ‘safe pace’ during the pandemic.

Integrating Knowledge from Different Disciplines. Learners are also able to

connect learning in one subject area to another. One interviewee explained how reflections allowed him to build connections among different disciplines:

> "Ang galing po kasi may mga lessons na applicable din sa ibang subjects. Nagiging isang knowledge nalang po lahat. Dati naman ganun din kaso ngayon ko lang napansin kasi na- realize ko sa reflections." ("It's amazing that some lessons in one subject are applicable in another. It becomes one big knowledge. It's same as before but I was only able to realize this through portfolios.")

During this process of reflection, learners may recognize and understand themselves in relationship to their learning processes and learning outcomes (Wiedmer, 1998).

Building A Learning Community. E-portfolios give learners an opportunity to share their learnings and experiences with their peers. This creates a learning community among learners where they can complement each other's strengths and address their weaknesses. One participant highlighted how reflections helped her communicate with her classmates more:

> "It is very inspiring po to read all our reflections online. Personally, I try to be open and honest as possible. When some of my friends read my reflections, they assist me with some things that I'm having problems with. Nagkakaroon kami ng sharing sa Messenger about lessons na nahihirapan ako, tapos nagsheshare din ako about topic na alam ko. Sabay sabay kami nag-aaral." ("We conduct sharing of knowledge through Messenger. We learn together."

Learners enjoy the e-portfolio process (Hwangji, 2021), as it fosters collaboration, engagement, and feedback when they share their e-portfolios with their peers and teachers. Participants emphasized how helpful reflections were to inform the teacher of small wins and challenges that they encounter in the classroom or tasks given.

> "Masaya po pag nababasa at nagcocomment minsan si maam sa reflections ko. Feeling ko po nakakatulong sya pag gumagawa si maam ng activities at quizzes. Kasi kung saan ako nahihirapan minsan, nagkakaroon kami ng activity or nag-eexplain pa lalo si maam kaya mas naiintindihan ko na." (It makes me happy when the teacher reads and responds to my reflections. I feel that it helps our teacher in creating activities and quizzes. There are instances when our teacher gives more activities or further discussions on lessons which were challenging for me, helping me completely understand the lesson.")

By sharing their victories, they build confidence, resulting to being more motivated to learn. Furthermore, participants believe that sharing shortcomings and challenges gives the teacher insights on their progress and behavior towards the lessons or classroom experiences. By making accomplishments visible to the teacher and peers, learners deepen their learning (Kuh et al., 2017). Teachers become more responsive to the needs of learners by reading their reflections and learners greatly benefit from this.

3.2. Students' Experiences in developing reflections in an e- portfolio

In a study by Batson (2002), he noted that the positive experiences of reflection writing can only be possible if students are prepared to use the e-portfolio or its platform. Thus, the study also analyzed learners' readiness on making reflective e-portfolios and their perception on its implementation.

3.2.1 Readiness

Table 4. Students' Level of Readiness in Making Reflective E-Portfolios

Statement	***Mean***	***Verbal Interpretation***
I understand what an e-portfolio is.	5.87	Highly Agree
I know how to make an e-portfolio.	5.80	Highly Agree
I understand what a reflection is.	5.54	Highly Agree
I know how to write a reflection.	5.41	Highly Agree
I know how to use the e-portfolio platform.	5.30	Highly Agree
Grand Mean	***5.58***	***Highly Agree***

Table 4 presents a generally positive picture of students' perceived readiness to create reflective e-portfolios, with all statements receiving average agreement scores ranging within "Highly Agree." In detail, students overwhelmingly agreed (5.87, Highly Agree) that they understand what an e-portfolio is, indicating a strong foundational knowledge of the concept. Similar to understanding, students highly agreed (5.80, Highly Agree) on knowing how to make an e-portfolio, suggesting confidence in their ability to build one. While slightly lower than the previous two statements, students still significantly agreed (5.54, Highly Agree) on understanding what a reflection is. The average agreement on knowing how to write a reflection (5.41, Highly Agree) was slightly lower than understanding the concept, suggesting some potential room for improvement in the practical application of reflection skills. Lastly, learners highly agree (5.30) on their ability to use the e-portfolio platform.

3.2.2. Implementation

Table 5. Students' Perception on the Implementation of Reflections

Statement	***Mean***	***Verbal Interpretation***
I can share my portfolio with others.	5.95	Highly Agree
I am given independence in creating my e-portfolio.	5.72	Highly Agree
I am guided in creating my reflections.	5.66	Highly Agree
I am given enough time to write my reflection.	5.15	Highly Agree
I receive feedback from others.	5.12	Highly Agree
Grand Mean	***5.52***	***Highly Agree***

Table 5 exhibits positive student perceptions regarding the implementation of reflections in their e-portfolios. With the highest score, students overwhelmingly agreed (5.95, Highly Agree) on being able to share their portfolios with others, suggesting they value the potential for audience and feedback. They also highly agreed (5.72) on having independence in creating their e-portfolio, but at the same

time, receiving guidance in creating reflections (5.66). While lower than the previous statements, students still agreed (5.15, Highly Agree) on having enough time to write their reflections, suggesting they feel comfortable with the allocated timeframe. However, receiving feedback from others (5.12, Highly Agree) was slightly lower, indicating a potential desire for more robust feedback mechanisms. Participants associate positive learning experiences to in writing reflections through the use of appropriate technology, provision of writing prompts, and sufficient time for reflection.

Use of Appropriate Technology. During the study, students accessed and utilized a teacher- made online e-portfolio hub that compiles and publishes all student reflections. Google Sites, one of the built-in applications of Google, allows users to create websites or project hubs for internal or external audiences. Participants shared how user-friendly the interface was with its drag-and-drop interface. They emphasized how it allowed easy navigation and manipulation, making building websites easy even for beginners like them. One learner stressed its easy-to-understand Graphical User Interface:

> "I was scared to use it at first kasi bago lang. Pero madali lang po pala basta may basic knowledge sa computer and internet. What I like most about it ay yung pwede ako maglagay ng pictures at files kahit hindi na ako mag-print. Nababago ko rin yung wallpapers, colors, yung text, tsaka may videos and music din akong maalagay. Akin talaga yung portfolio and comfortable po ako gamitin kasi na-eexpress ko yung sarili ko sa reflections and sa design." ("I was scared to use it at first since it was new to me; but as long as one has basic knowledge on computers and the internet, it was easy to use. What I like most about it is that is allows me to add pictures and files without printing them. I can also customize the wallpaper, colors, text, and I can add videos and music. I can feel that the portfolio is mine and I am comfortable to use it since I can express myself well in both the reflections and the design.")

In creating a site, all content is uploaded to a Google Drive. Editing a Google Site can be real-time, collaborative, and accessible in desktop of mobile devices (Google, 2022). These features make Google Sites the best platform to be used by both the proponent and the students in creating their reflective e-portfolios.

Provision of Writing Prompts. Another factor that enhanced learners' readiness in using e- portfolios for reflections is the writing prompts given by the teacher. To guide the learning process, students are provided with beginning statements such as "Today, I learned that…" and "I can apply what I learned in daily life by…" In some instances, probing questions are given, for instance, "What is the best thing that you learned today?" and "How can this lesson benefit you and your community?" Through these statements and questions, participants are guided on what to write or how to begin their reflection. A learner shared how difficult it was for him to begin a paragraph without a prompt:

> "Hindi po kasi ako talaga writer kaya yung mga question and phrases na binibigay po, nakakatulong talaga para alam ko kung paano ako magsisimula tsaka paano ko mako- compose yung paragraph ko. Pag wala kasi nun, hindi ko alam kung saan ako magsastart." ("I am not really writer so the questions and phrases given really help me figure out how to start and to compose my paragraphs. Without these, I wouldn't know where to start.")

Despite the provision of beginning statements, participants did not feel being restricted to a single thought, but helped them widen their insights. When asked if they

felt constrained when prompts are given, they explained otherwise. According to one participant:

> "I still feel free to write what I felt or thought during the moment. It [statements] only helped me how to gather my thoughts. In all my reflections, I share everything I learned and I feel free to write anything that can help me remember topics and experiences I encountered."

Sufficient Time for Reflection. Interviews reveal how time plays a crucial role in making learners ready to engage in reflection writing.

> "Nagbibigay po kasi ng time si maam sa klase para gawin yung reflection namin. May reflection time talaga kami. So hindi sya assignment at na-eenjoy akong gawin sya." ("The teacher gives us time to write our own reflections during class. We have a "reflection time" as part of our class. Reflections are not considered as assignments, so I enjoy doing it.") In the duration of the study, Friday was considered a time for reflection and sharing.

Students are given 30 minutes to write their reflections, attach necessary files and evidences, and customize the designs. These reflections are published in online where both peers and the teacher can read their posts.

3.3 Synthesis

The quantitative and qualitative results of this study converge to suggest that student reflection is a powerful tool for learning that can lead to increased motivation, achievement, and a deeper understanding of the material.

For example, the quantitative results showed that students' motivation increased after engaging in reflection writing. This is likely because reflection helped students to identify their own learning goals and track their progress towards those goals. Additionally, the qualitative results showed that students used reflection to evaluate their own learning and identify areas where they needed to improve. This suggests that reflection helped students to become more self-directed learners and to take ownership of their own learning.

The quantitative results also showed that students' quarterly grades improved since the implementation of reflection writing in classes. This is likely because reflection helped students to review and reinforce the concepts they had learned in class, to contextualize their learning, and to integrate knowledge from different disciplines. Additionally, the qualitative results showed that students used reflection to identify areas where they needed to improve and to set goals for themselves. This suggests that reflection helped students to become more strategic learners and to develop the skills they need to succeed.

Both quantitative and qualitative results of this study also suggest that students are highly ready to make reflective e-portfolios when they are provided with appropriate technology, writing prompts, and sufficient time. Students found the e-portfolio hub to be user-friendly and easy to navigate, even for beginners. This suggests that the use of appropriate technology can play a significant role in enhancing students' readiness in using e-portfolios for reflection. Similarly, students found the writing prompts provided by the teacher to be helpful in guiding their reflections. Students also emphasized the importance of having sufficient time to reflect, indicating that teachers should provide students with enough time to write their reflections and engage in meaningful reflection.

These results provide strong evidence of the benefits of student reflection on

motivation, achievement, and learning experiences. Reflection is a valuable tool that can help students to become more self-directed, strategic, and effective learners.

CONCLUSIONS

The research is centered on the impact of student reflection and learners' experiences on the process of reflection writing through an e-portfolio. Based on the findings of the study, the following conclusions were drawn:

Student reflection is a powerful tool for learning, as it increases motivation and achievement by allowing students to process their experiences, identify areas for improvement, and develop a deeper understanding of the lesson. From a mean of 4.65, learners' motivation increased to a mean of 5.76 after engaging in reflection writing. Learners' quarterly grades also showed an increasing trend since the implementation of reflection writing in classes. These positive impacts can be attributed to learners' experiences on reflection writing, which are categorized into 5 themes: reviewing and reinforcing concepts learned; self- evaluation, self-correcting and desire to improve; contextualizing learning; integrating knowledge from different disciplines; and building a learning community. By writing what they have learned, students retain essential information such as terms and concepts introduced in class. Students utilize reflections as a means to evaluate themselves, in relation to a particular knowledge or skill. Reflections enable learners to connect their own learning to their daily lives. Learners are also able to connect learning in one subject area to another. Finally, e-portfolios give learners an opportunity to share their learnings and experiences with their peers and teacher, encouraging feedback and improvement.

Learners' readiness and perception in making reflections are associated with the use of appropriate technology, provision of writing prompts, and sufficient time for reflection. Respondents highly agree that they are ready to write reflection and that the implementation is positive. Participants emphasized that the platform, Google Sites, allowed easy navigation and manipulation, making building websites easy even for beginners like them. Another factor that enhanced learners' readiness in using e-portfolios for reflections is the writing prompts given by the teacher. Moreover, time plays a crucial role in making learners ready to engage in reflection writing.

These conclusions posit the relevance of reflections to responsive classroom teaching. The implementation of student reflections results to the following implications towards effective teaching:

Redirecting instruction. Effective teaching requires a teacher's ability to observe students' knowledge and skills in the classroom. Responsive teaching, in turn, pertains to the use of these observations to make informed decisions and turn instructions in the direction of the learners' needs and situations. Responsive teachers are aware of their students' individual needs and learning styles, and they tailor their instruction accordingly. Through reflections, teachers can identify authentic learning and determine specific needs, which can serve as basis for planning and structuring instruction, learning tasks, and assessments. For example, responsive teachers can use student reflections to identify areas where students are struggling and to provide them with additional support. They can use student reflections to inform their lesson planning and to ensure that they are providing their students with opportunities to learn and grow in ways that are meaningful to them. Reflections empower a teacher with data and information to make different decisions for different learners at different times (Enser, 2022). Such encourages a learner-centered environment because responsive

teaching focuses on the child and not the content or the subject matter. Hence, reflection can be a powerful tool for responsive teachers to use to better understand their students' learning needs and to provide them with the support they need to succeed.

Fostering relationships. Responsiveness is the interacting with someone who is “cognizant of, sensitive to, and behaviorally supportive” of learners (Fletcher-Wood, 2018). Reflections help teachers connect with learners by nurturing a culture of care. Teachers become more concerned of what students understood, what their challenges are, and what they need to succeed in a particular task, lesson, or in life. Through information found in reflections, teachers develop a sense of care about how students are doing, their missteps and misconceptions that they themselves can correct. Aside from being cognitively supportive, teachers begin to be behaviorally supportive as well, focusing on adapting teaching to meet learners needs, and not of the needs of the curriculum alone. By sharing their reflections with each other, students can learn from each other's experiences and perspectives. This can help to create a more supportive and collaborative learning environment.

RECOMMENDATIONS

Based on the conclusions presented above, the study suggests the following recommendations:

Establish a clear process and mechanism for student reflections. Prior to implementing student reflections in the classroom, it is important to draft a clear process that includes steps to be taken, prompt questions and statements, and schedule for writing. In planning, the teacher must also set specific objectives and make students understand that the reflection is a personal note of their learning, and not a part of their requirements.

Make student reflections digital. Considering the students as digital natives, creating e-portfolios to serve as a repository for their reflections will enable customization, portability, and technicality. Students are greatly familiar with navigating online and offline applications. Choosing the right platform for reflections can be discussed among the learners and the teacher. Proper introduction and workshop on the chosen platform are essential to ensure that learners are ready for implementation.

Utilize and manage information from student reflections to activate responsive teaching. Teachers can utilize data taken from reflections to serve as basis for planning of classroom activities and assessments. Knowledge formed through students’ reflections can result to differentiated instruction and informed decisions of the teacher. Aside from focusing on the target learning outcomes, teachers can also consider looking at learners’ needs and conditions for responsive teaching.

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DEVELOPMENT AND VALIDATION OF CONTACT CENTER SERVICES (CCS) MODULES FOR EXPLORATORY AND SPECIALIZED TECHNOLOGY AND LIVELIHOOD EDUCATION (TLE) IN JUNIOR HIGH SCHOOL

by

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Abstract

The lack of standard modules for teaching and learning CCS poses a challenge in providing students with authentic learning in preparation for the world of work. Hence, the purpose of this study is to develop and validate three localized modules for CCS Exploratory (Grade 7/8) ang Specialization (Grade 9-10). The study was guided by the ADDIE model of instructional design. The developed modules were pilot tested among three classes in Grade 8-10. Pre-test and post-test were administered to collect data on students' achievement. To evaluate the modules, two sources of information were gathered: students' evaluation on content and format; and Rubrics in Evaluating PIVOT 4A Learner's Materials by five TLE experts. The modules were validated as "Exceeds Set Standards" by experts. The significant change in the learners' pre-test and post-test scores indicated that the modules improved their knowledge on CCS competencies. Moreover, the modules were highly acceptable to students in both content and format. The research was conducted in General Emilio Aguinaldo National High School in SY 2020-2021. Modules were utilized in distance learning for blended (online and modular) classes. The study aims to make digitized education accessible to all learners equally, regardless of their chosen learning delivery modality. Since online education requires the acquisition of electronic tools and internet service, disadvantaged learners opt for MDL, which only requires minimum supplies.

Keywords: Contact Center Services, Learning Materials, Technology and Livelihood Education

INTRODUCTION AND RATIONALE

In today's global landscape, the role of education has shifted from being a way of developing students' knowledge and skills, but also as a means of preparing them to be globally competitive in the workplace (Gregorio, 2014). The Enhanced Basic Education Act of 2013 created "a functional basic education system that will develop productive and responsible citizens equipped with the essential competencies, skills and values for both life-long learning and employment." In order to attain its aim of empowering individuals with "the competence to engage in work and be productive", the K to 12 Program strengthened Technology and Livelihood Education (TLE) in junior high schools as a response to the need of the community, considering that it would provide practical knowledge and skills of vocational and technological efficiency and problem solving in daily life (Albarico, Tagura, Visitacion, Zabala, Magnetico & Ramayan, 2014).

From Grade 7 to Grade 10, students undergo technical-vocational education which is anchored on the training regulations on the Technical Education and Skills Development Authority (TESDA). Technical education begins in Grade 7 and Grade 8, where students take four TLE mini courses for each level, under the four components: Agri-Fishery Arts, Home Economics, Industrial Arts, and Information and Communications Technology. TESDA's standards and learning materials are integrated in the curriculum of Grades 7 and 8 to expose the students before they decide on the different career tracks. In Grade 9, students choose a Specialized TLE among the courses he/she previously undertook, and pursue this course until Grade 10, in order to gain a Certificate of Competency (COC) or National Certificate I or II, granting them employable skills as they exit Junior High School.

One of the most notable features of TLE in the enhanced curriculum is ensuring the relevance of the outcomes of the education system to labor market—qualifications will have to be responsive to area demand for employability (TESDA Planning Office, 2013). Therefore, it is necessary to identify the industries within and surrounding the locality, to ensure that there is a labor market for the graduates. In the City of Imus, one of the most salient industries is Business Process Outsourcing (BPO), more popularly known as the call center industry. The city accommodates both local and international call centers; it's neighboring cities, Bacoor and Dasmariñas, also offers infrastructure for numerous BPO companies. The city's strategic location, moreover, allows Imus residents to work in call centers in the National Capital Region (NCR), particularly in Manila, Pasay, Makati, Taguig and Alabang. This boosts in the industry resulted to the establishment of training centers, as well as numerous recruitment hubs for BPO companies located in adjacent cities. Hence, General Emilio Aguinaldo National High School (GEANHS), a secondary school in the City of Imus, offered the Contact Center Services course as one of the specializations in TLE, in order to provide the necessary skills to students who aim to be employed in this emergent labor market.

Contact Center Services (CCS) is under the Information and Communications Technology (ICT) component of the TLE subject and is adapted from TESDA's Contact Center Services NC II course. As one of the most dynamic sectors of the Philippine economy in terms of its contribution to GDP and provision of jobs to Filipinos, the BPO industry has provided workers with high wages and financial incentives, more than double the legislated minimum wage (Hechanova, 2013). However, the industry is challenged with the insufficient supply and quality of talent. Schools are not delivering enough number of graduates to meet the labor demands of

the industry (Remo, 2014). Thus, TESDA developed the CCS NC II course to produce a sufficient labor pool of competent contact services providers.

Also recognizing this need, the Department of Education adapted and crafted the curriculum for this course as one of the TLE courses in junior high school. The Contact Center Services Curriculum Guide was published in December 2013. It is divided into three parts: Exploratory course for Grade 7 and 8; Specialization course for Grade 9; and Specialization course for Grade 10. Both exploratory and specialization courses lead to a Contact Center Services National Certificate (NC) II. The desired outcomes of the K to 12 Education Program are defined in expectancies which are in the form of content and performance standards specified in the curriculum of each learning area. Content standards are what the students should know, what they do, and what understanding they construct as they process the information. Performance standards are what students do or how they use their learning and understanding (K to 12 Toolkit: Reference Guide for Teacher Educators).

The CCS curriculum and learning materials are expected to be anchored from the TESDA Training Regulations (TESDA Planning Office, 2013) for CCS NCII to ensure that industry requirements are met by the students in order to gain both a national certification and employment. However, to this date, only the Learner's Material (LM) for Grade 10 CCS Specialization has been completely published. The LM for Grade 9 CCS Specialization remains unfinished (compared with the CCS Curriculum Guide) and the LM for CCS Exploratory has yet been published. Therefore, it is necessary that instructional materials for CCS be developed to provide students authentic learning in preparation for the world of work.

Hence, the purpose of this study is to develop and validate three localized modules for TLE - Contact Center Services: Exploratory (Grade 7/8), Grade 9 Specialization and Grade 10 Specialization. As a school located in an urbanized landscape with an abundant BPO labor market, the development of modules parallel to industry standards is essential to help students acquire the competencies required for success in the workplace.

Literature Review

The Curriculum as Response to Global Competitiveness

Schools have always played a vital role in ensuring that students have the skills needed for the job or career they have chosen. The key function of education is to fully prepare students for life after schooling preparation for the world of work is a necessary and vital part of that equation. As our society and economy continues to evolve, it may be time to rethink how public education aids students in choosing career and education pathways.

Through Republic Act 10533, also known as the Enhanced Basic Education Act of 2013, the K to 12 Program was made into law on last May 15, 2013. Such should provide sufficient time for mastery of concepts and skills, develop lifelong learners, and prepared graduates for tertiary education, middle-level skills development, employment, and entrepreneurship. The need to enhance the Philippine educational system has been established in numerous studies (Bautista et al., 2009). One similar factor that contributed to this pressing need, as seen in various trend studies, was the students' poor performance in national achievement tests and international tests. Another factor is the Philippines' short basic education cycle that affected economic cooperation with other countries. The Basic Education Curriculum (BEC) of the Philippines was delivered in only ten years. However, the Bologna Accord required

twelve years of education for university admission and professional practice in the European countries (K to 12 Toolkit: Reference Guide for Teacher Educators).

The SEAMEO Regional Center for Educational Innovation and Technology conducted a comparative study on the curricula of Malaysia, Singapore, Brunei Darussalam, and Philippines. Among the four curricula, the Philippines' Basic Education Curriculum was found congested especially in the subjects Science, Mathematics, and Languages, which was believed to have affected the Filipino students' mastery on the competencies, thus affecting the development of lifelong skills essential for productive life. The K to 12 Education Program also addresses the congestion in the curriculum by removing repetitive competencies that were deemed unnecessary, allowing effective mastery of the important concepts and competencies (K to 12 Toolkit: Reference Guide for Teacher Educators).

Finally, another unrelenting factor for the implementation of the K to 12 Education Program is the country's long-time problem on unemployment rates that are associated with the graduates' lack of college preparation and lack of basic skills needed for employment in spite of available jobs within the country. Bologna and Washington Accords assessed the country's basic education system as insufficient to equip Filipino professionals to compete globally in the world market, affecting graduates' employability. Hence, one of the goals of the K to 12 Education Program is making the curriculum relevant by methodically matching the learning goals with the labor market requirements, especially in the local community. Focus on integrated instruction to equip learners with skills for future employment is also called for in the new curriculum, including critical and creative thinking and life skills. Moreover, the K to 12 Program is enriched by having the four twenty-first century skills—information, media and technology skills, learning and innovation skills, life and careers skills, and effective communication skills (BEP, 2012).

Empowering K to 12 Learners through Technical-Vocational Education

Republic Act No. 10533 Series of 2012, An Act Enhancing the Philippine Basic Education System by Strengthening its Curriculum and Increasing the Number of Years for Basic Education, Appropriating Funds Therefor and for Other Purposes, to be known as the "Enhanced Basic Education Act of 2013", states that the graduate of basic education shall be "an empowered individual who has learned, through a program that is rooted on sound educational principles and geared towards excellence, the foundations for learning throughout life, the competence to engage in work and be productive, the ability to coexist in fruitful harmony with local and global communities, the capability to engage in autonomous, creative, and critical thinking, and the capacity and willingness to transform others and one's self." It also declares in one of its provisions, that "the State shall create a functional basic education system that will develop productive and responsible citizens equipped with the essential competencies, skills and values for both life-long learning and employment."

In order to attain the mandated provisions of the K to 12 Program, it was necessary to strengthen the subject Technology and Livelihood Education (TLE) in junior high school, in preparation for the Technical-Vocational track offered in senior high school. TLE is a program which equips learners with knowledge and information, skills and process, right work values and life skills in the field of Home Economics, Industrial Arts, Agri-Fishery Arts, and Information Communication Technology (Albarico, Tagura, Visitacion, Zabala, Magnetico & Ramayan, 2014).

The introduction of Technical-Vocational education in Grades 7 and 8 to all junior high school is the exploratory phase where common competencies such as use

hand tools, perform mensuration and calculation, interpret plans and drawings, perform shop maintenance and practicing occupational health safety will be included in the curriculum. TESDA's standards and learning materials are integrated in the curriculum of Grades 7 and 8 to expose the students before they decide on the different career tracks. One of the four (4) tracks is TechVoc, with qualifications at the levels of National Certificate (NC) I and II shall be taken in Grades 9 to 12. This will ensure that students taking the TechVoctrack have employable skills when they exit Grade 10 for NC I or II (TESDA Planning Office, 2013).

The alignment of TLE curriculum in the escalating demand of skilled employees will enable the graduate to obtain certification and employment. Thus the need for the realistic and experiential learning aided by the right and adequate tools, equipment and machines for instruction is necessary (Albarico, et. al, 2014). It is also imperative to ensure relevance of the outcomes of the education system to labor market. Technical-Vocational qualifications will have to be responsive to area demand for employability.

Philippine Call Center Industry as a Labor Market

The Philippine call center industry has grown tremendously in the past decade. From only two US based call centers in 2000, the country now houses 68 US-based call centers. In 2010, it generated 5.5B dollars edging out India as the call center capital of the world (Hechanova, 2013). The industry currently provides employment to around 96,000 Filipinos as call center agents. Employment for this sector has more than doubled every year, starting with 1,500 seats in 2000 and finishing with around 60,000 seats in 2005 (Alava, 2005).

The call center industry is part of the outsourcing industry, which also includes medical transcription, IT support, animation, software development, financial accounting and payroll processing services. A call center is a customer-oriented business operation handling multiple types of customer-oriented functions such as marketing, selling and servicing, through multiple channels of customer interaction such as electronic mail, the World Wide Web, electronic messaging, voice messaging, fax messaging, and traditional mail. Call centers serve various stakeholders of an organization: from prospects to customers, suppliers to competitors, as well as distributors, partners, and employees. The term "call center" is used as a collective term to refer to these operations for the reason that the primary means of contact facilitated by these businesses are through telephone calls (Alava, 2005).

The preference for the Philippines has been attributed to the large pool of computer-literate college graduates with American English communication skills. The growth was also made possible because the industry has lured workers with high wages and financial incentives. Call center workers earn more than double the legislated minimum wage. On top of this, call center agents who work graveyard shifts earn 30 percent to 50 percent additional night differential pay (Hechanova, 2013). Given the scarcity of better paid opportunities in their chosen courses and professions and the limited employment opportunities for those with a liberal arts or science degree, high and easy entry in call centers have enticed mostly young individuals to join the workforce. Hence, the Business Process Outsourcing (BPO) sector has become the fastest growing provider of employment for Filipino college graduates, employing more than 600,000 people by end of 2011 (Reese & Soco-Carreon, 2013).

The consistency of supply of qualified call center personnel is threatened, as reflected in a very low 3% acceptance rate, by apparent degradation of the quality of primary and secondary education in both private and public schools. Although it has

been reported that the average 10-year-and-above literacy rate in the Philippines is above 93%, literacy is not enough to ensure a position for a call center applicant. Basic English proficiency, for that matter, is considered a minimum requirement, enough for the agent to be considered for a position, but still insufficient to match the higher levels of conversational and even colloquial proficiency required for hiring. While low-cost labor still works to the country's advantage, labor on the average making up 60% of the total costs of operating call centers, such an advantage will not be sustainable if the country is not able to supply as much as is needed by steadily growing demand (Alava, 2005; Reese & Soco-Carreon, 2013).

Contact Center Services Curriculum as Response to Call Center Industry

During the School Year 2012-2013, the content and performance standards for the various learning areas for Grades 1 and 7 were articulated and put into learning resources for both students and teachers. Series of seminars, for instance In-Service Training (InSeT) were conducted nationwide to communicate development in these activities and train teachers across the country. The K to 12 Information and Communications Technology - Contact Center Services Curriculum Guide was published in December 2013. It was divided into three parts: Exploratory course for Grade 7 or 8; Specialization course for Grade 9; and Specialization course for Grade 10. Both exploratory and specialization courses lead to a Contact Center Services, National Certificate (NC II).

The Exploratory course covers five common competencies that a Grade 7 or 8 student must possess, namely: 1) use of equipment; 2) performing computer operation; 3) applying quality standards; 4) interpreting technical drawing and plans; and 5) practicing Occupational Health and Safety (OHS) procedures. After completing the Exploratory course, the student will take the Specialization courses. The Specialization course for Grade 9 covers two core competencies, namely: 1) performing basic computer operations and internet navigation; and 2) demonstrating an understanding of local and international geography and cultures. Sequentially, the Specialization course for Grade 10 covers two more core competencies that a Grade 10 Technology and Livelihood Education (TLE) student ought to possess, namely: 1) communicating effectively using the English language; and 2) delivering quality customer service (K to 12 Information and Communications Technology - Contact Center Services Curriculum Guide).

In relation to the learning outcomes printed on the Curriculum Guide, the K to 12 Contact Center Services Technology and Livelihood Education: Information and Communications Technology Learner's Materials for Grades 9 and 10 were published and made available to the public in 2014. The authors of which are Dr. Virgilio O. Guevarra, Jr., Rose Ann M. Sulla, Diana Marie B. Dagli, and Maria Angelica G. Mates. It included the lesson contents, learning resources, and assessments for students. However, a Learning Material for the Exploratory course for Grade 7/8 was not made available to date.

Gaps between the Curriculum and Industry Competencies

In response to DepEd's objectives of producing graduates who are prepared and qualified for employment, the TESDA Training Regulations shall serve as inputs or guide to the curriculum to be developed by DepEd (TESDA Planning Office, 2013). In October 2014, TESDA released a CCS NC II Training Regulations (TR), which was "designed to develop the basic and common knowledge, skills, and attitudes of a

Contact Center Services Provider in accordance with industry standards." The 2014 TR manual was validated by industry experts from well-known contact centers in the country namely: Aegis People Support, Convergys, ePerformax, Stream, Sutherland, Genpact, Sitel, Sykes, Teleperformance, Teletech, and VXi. The collaboration was formed to ensure that the competencies for training are parallel to industry qualifications. As a result, the TR included 4 Basic Competencies, 2 Common Competencies, and 3 Core Competencies, which are not directly parallel to the DepEd CG. Table 1 below, shows the comparison of competencies.

Table 1: Comparison of CCS NC II Competencies in TESDA Training Regulations and DepEd Curriculum Guide

TESDA Training Regulations	DepEd Curriculum Guide
Basic Competencies	Exploratory Course (Grade 7 or 8)
Participate in workplace communication	Use of equipment
Work in a team environment	Performing computer operation
Practice career professionalism	Applying quality standards
Practice Occupational Health and Safety	Interpreting technical drawing and plans
	Practicing Occupational Health and Safety (OHS) procedures
Common Competencies	Specialization (Grade 9)
Apply quality standards	Performing basic computer operations and internet navigation
Perform computer operations	Demonstrating an understanding of local and international geography and cultures
Core Competencies	Specialization (Grade 10)
Communicating effectively in English for customer service	Communicating effectively using the English language
Perform customer service delivery processes	Delivering quality customer service
Demonstrate ability to engage customers	

Students' mastery in the subject matter can be appropriately displayed through the conduct of suitable competencies like that of TESDA's National Competence or Certificate of Competency (COC). Assessment of competencies takes the learners' knowledge and attitudes into account but requires actual performance of the competency as the primary source of evidence (Naelga & Sonsona, 2017). With employment being one of the primary objectives of K to 12, there is a need to align the learning outcome of the students to the expected competencies of the industry. Hence, there is a need to develop learning materials that would match the TESDA Training Regulations for Contact Center Services.

Development of Instructional Materials

A module is developed within a course structure, in alignment to the national qualifications framework where professional requirements should be met. The use of modules directs students to practice or rehearse information. To gain mastery of the concepts, exercises are given following the progression of activities from easy to difficult. The arrangement of the exercises as such formalizes the level of difficulty that the learners can perform. Another benefit of using modules for instruction is the acquisition of learning skills among students. Students engage themselves in learning concepts presented in the module (Torrefranca, 2017). They develop a sense of responsibility in accomplishing the tasks provided in the module.

In the development of modules, aligning the learning activities to the competencies, objectives, and assessments is essential. It is part of the planning process so that students can achieve the desired outcomes (Morcke, Dornan, & Eika,

2013). Therefore, internal and external factors must be considered during the planning stage. In terms of designing modules, a planned integrated approach to the learning process is necessary.

In a study by Cunningham, Key and Capron (2016), all study participants affirmed the use of input from industry professionals also known as subject matter experts to develop their competencies and objectives. Ongoing collaboration between qualified professionals is required during the curriculum development process to ensure the program will have access to specific industry experience and some curriculum development experience. Moreover, validity of competencies is maintained by ensuring an iterative and evolving cycle where market demands, academic expectations, and student's needs could be incorporated in the competencies over time (Dragoo, 2015; Johnstone & Soares, 2014). A feedback loop from students and employers to faculty and program designers was also included as another measure of validity of the program competencies. Given adequate and meaningful instruction in different units, the module can enhance the teaching-learning process, and help students master the content and skills required in TLE (Limon Vallente, 2016).

Theoretical Framework

Competency Based Learning

Historically, Competency Based Learning (CBL) was coined as a general concept, based on the ideas of mastery of learning and criterion-referencing of assessment. Teaching and learning should be guided by clearly specified minimum competencies to be evidently attained by students (Morcke, Dornan & Eika, 2013). Brown (1994), in his historical account, suggested that the third generation of competency-based learning approach was largely concerned with formative vocational education and training.

In modern education, Competency-Based Learning is labelled as "an intentional and transparent approach to curricular design with an academic model in which the time it takes to demonstrate competencies varies and the expectations about learning are held constant. Students acquire and demonstrate their knowledge and skills by engaging in learning exercises, activities and experiences that align with clearly defined programmatic outcomes… Learners earn credentials by demonstrating mastery through multiple forms of assessment, often at a personalized pace" (Competency-Based Education Network, 2014). The advantage to CBL is that competencies are transparent, wherein students understand the learning goals and outcomes.

Approaches to CBL

United Nations approach. This approach by UNDP, UNESCO and UNICEF asserts mainly on life skills and living together in society. It is concentrated on the improvement of citizenship attitudes, environmental protection, and health preservation. This approach is inclusive, from the angle of both learners and contents. With regard to learners, it seeks to reduce the factors of exclusion. In relation to contents, if the emphasis is on these special contents represented by life skills, the latter go hand in hand with the development of other contents, whether knowledge or know-how, or cross-cutting competencies (Roegiers, 2016).

Interdisciplinary/cross-cutting capacities approach. The vital element in this approach is to develop a set of generic competencies in order to better learn and learn to learn. These generic competencies are sometimes called cross-cutting capacities,

which are common to various disciplines (Roegiers, 2016). This approach affirms the importance of giving the learner cross-cutting cognitive and socio-emotional proficiency to handle the requirements of various disciplines in order to move beyond the division of disciplines and ensures better adaptation to the changes of society.

Standards approach. This approach is based on standards, focusing on the introduction and assessment of minimum competencies at each level, in a bid to harmonize learner profiles with a view toward employability, namely with respect to the professional and personal activities that learners may be called upon to perform (Roegiers, 2016). An example of this approach is the European Qualifications Framework (EQF), which makes training courses more comprehensible for the user and the employer, and to enable education and training operators to situate their offer at both the national and the European level by defining learning outcomes.

Terminal competencies approach. Often called the basic competencies approach, this approach gives learners cognitive, gestural and emotional capability, enabling them to act concretely in complex situations as a responsible citizen. This approach is the fact that it is contextualized; there is no normative bid to standardize the contents of situations. These situations must match its context, its values and the challenges facing it locally, regionally or internationally, given that they respond as much to local as to regional or universal concerns (Roegiers, 2016). These competencies describe an exit profile sought at each level of education with a view toward the incorporation of young people in society, their involvement in professional activities, or the pursuit of their studies.

Types of Competencies

Generic competencies. Generic competencies are often described as key competencies in Asian context; and as core skills, soft skills, employability skills, or workplace know-how in Western countries. One of the fundamental features of generic competencies lies in their cross-cutting character; that is, they transcend disciplines and are not associated with disciplinary situations or specific tasks. However, they are taken into account in the framework of professional activity, for recruiting and assessing staff. Examples of these competencies are the nine generic competencies interfacing with disciplinary learning objectives in mathematics in Hong Kong: collaboration skills, communication skills, creativity, critical thinking skills, information technology skills, numeracy skills, problem-solving skills, self-management skills and study skills (Leung, Leung, Zuo, 2013). In South Korea, “the vision of a ‘global creative person’ should possess key competencies such as self-respect and self-understanding, communication, creativity, logic, problem-solving, citizenship, cultural sensitivity, and leadership” (Keunhoo, 2014).

Situational competencies. These competencies are defined as a combination of the potential to act, educational/technical content and context/situation. These competencies are being delimited by a set of contents supposedly acquired by the learner and that he/she must reinvest in situations (Roegiers, 2016). Situational competencies draw on knowledge, types of know-how and life skills. For example, the situational competencies of driving a car draws on knowledge (including the Highway Code and the various commands for driving the car), types of know-how (knowing how to use the gears, reverse, park, and so on) and life skills (being careful, courteous and the like). One category of resources of these situational competencies happens to be certain generic competencies. Anticipating or managing one’s stress is generic competencies which also come into play in the situational competencies: driving a car, just as in other situational competencies like managing an industrial project or

performing an open-heart operation. Figure 1, below, shows the relationship of know-how, generic, and situational competencies.

CBL and Life Skills

Schools redirect their emphasis on learners' competencies and no longer just their knowledge. This focus on competencies is meant to equip learners to meet the demands of daily and professional life (Roegiers, 2016). While the school has to cope with new knowledge and know-how following the natural evolution of knowledge, it is, above all, faced with the need to take into account new categories of content, such as life skills or cross-cutting competencies necessary for employment. Moreover, for a better quality education, learners must take an ever more active part in their learning processes as often as possible. This learner activity may take a great many forms: group work, online research, surveys, projects, and so on (Roegiers, 2016).

CBE is expected to broaden access to higher education by assessing student-based workforce ready skills by developing career-relevant program competencies that include both broad professional capabilities and context-specific terms within an organization, collect and analyze assessment data, and determine appropriate competency assessment tools (Cunningham, Key & Capron, 2016). Competency expectations have increased significantly across all sectors of the economy, and the abilities employers expect new college graduates to demonstrate the first day on the job have been intensified (Hanneman & Gardner, 2010).

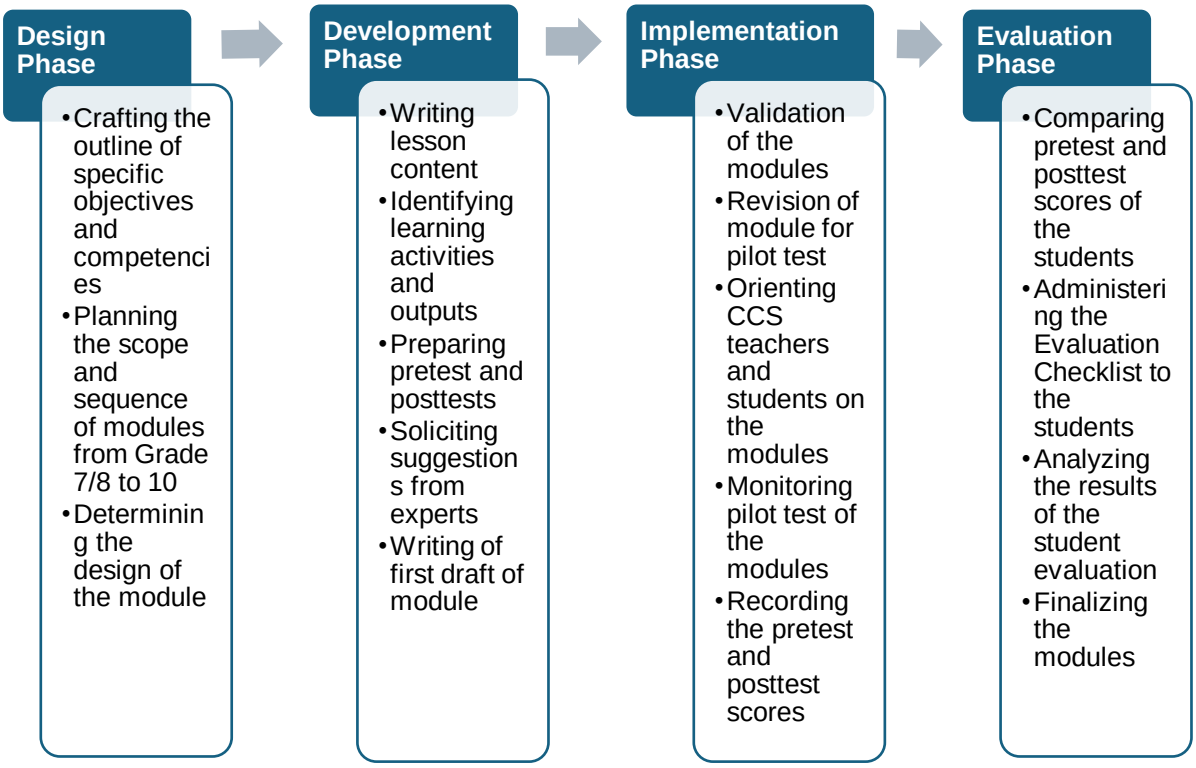
More importantly, relevance of the competencies in the curriculum must be examined. Relevance embraces several aspects. It refers, first of all, to the question of contextualizing the curricula with regard to both their design and to their introduction by the various stakeholders: teachers, school principals, regional education officials, and so on. It challenges, in particular, the end purposes of education in a given context, and the link that the latter maintains with the needs of life in society, together with the needs linked to the job market and its possible changes.

One of the ways that competency educators drive changes in the development of these educational programs is by collaborating with industries and employees, "such collaborative efforts ensure a balance of skills and knowledge as well as an application of competencies into productive outcomes" (Glen, 2004). By including employers and industry specialists in the development of a competency-base program, the employers can provide feedback to validate that the assessment requirements will provide student demonstrations of real industry skills. In a study by Franklin & Lytle (2015), ninety-three percent of survey respondents indicate the importance of looking to authoritative sources to determine the essential standards, skills, and norms within an affiliated field. With regards to TLE in K to 12, courses as expected to be parallel with industry standards through TESDA Training Regulations (TESDA Planning Office, 2013).

Conceptual Framework

The objective of the study is to develop and validate localized modules for Contact Center Services courses in TLE Exploratory and Specialization in Grade 8, 9 and 10. In order to systematically achieve this objective, an Instructional Design (ID) model was used to assist researchers in the design and development of course content. Specifically, the study employed the use of the ADDIE model of instructional design, which stands for Analyze, Design, Develop, Implement, and Evaluate. Figure 2, below, shows the development process of the CCS modules.

Figure 1. Conceptual Framework in the Development and Validation of CCS Modules



In the design phase, all components of instruction from beginning to the end was considered and plotted. During the design phase, module developers crafted an outline of CCS competencies based on the TESDA Training Regulations for CCS NCII, and plan the scope of competencies (Basic, Common and Core) from Exploratory (Grade 8) to Specialization (Grade 9 and 10). Learning objectives were then be identified to determine which methods (lecture, demonstration, group work), materials (handouts, equipment) and media (computer multimedia, flip charts, video) were be incorporated in the module.

Upon identifying the design and estimated cost of the module production, the researchers then proceeded to the development phase. In the stage, lesson and sub-topic contents were written, based on credible sources. All materials, such as fact sheets and activity sheets were also be crafted on this point. Learning activities such as individual and group tasks, written and performance tasks, outputs, and culminating activities must be plotted, as well as evaluation rubrics and sample outputs. Pretests and posttests for each lesson were also be included to identify students' success in each competency. Throughout the development of the modules, constant feedback from peers and experts were also be solicited to gather enough suggestions for the improvement of the materials.

Validation of developed modules, called rapid prototyping (or continuous evaluation), ensures everything which has been created goes well and is checked against goals and learning objectives. Implementation is where the actual instruction takes place. Students rely on the expertise of their instructors to present the content in a meaningful way. At the same time, students should be engaged in the learning process. All of the planning done in the design and development stages is onstage in the implementation phase. This is where instructor's expertise shines, along with the selected approach to teaching, whether in the classroom, the lab, the field setting or

online (Aldoobie, 2015). Implementation then, involves facilitation of learning.

Finally, evaluation happens at two levels: formative and summative. Formative evaluation takes place during the planning and instruction and evaluates what instructors and students are doing. In this phase, educators obtain feedback about the modules and make the appropriate adjustments (Cheung, 2016). Summative evaluation occurs after instruction and tells whether or not the students have participated in and retained the information stated in the instructional objectives.

Research Questions

The main purpose of this study is to develop and validate localized modules in Contact Center Services for Exploratory and Specialized TLE in Junior High School.

Specifically, the study aims to answer the following questions:

1. What is the validity of the developed modules in terms of:
    a. Content?
    b. Structure and Sequence?
    c. Functionality/ Usability?
    d. Design composition and Layout?
    e. Language and Mechanics?
    f. Inclusivity?
2. What is the effect of the modules to students' performance?
3. What is the level of acceptability of the modules, in terms of:
    a. Content?
    b. Format and language?

Scope and Limitation

The research was conducted in General Emilio Aguinaldo National High School (GEANHS), Division of Imus City in School Year 2019-2020. The objective of the study was to develop and validate localized Contact Center Services modules for Exploratory and Specialized TLE in Grades 8, 9 and 10. The modules were developed using the ADDIE model of instructional design, starting from the Development phase until the Evaluation phase. Throughout the stages of the model, constant feedback with experts were solicited in order to immediately address concerns and integrate suggestions for improvement. A panel of experts validated the modules prior to the pilot testing among selected CCS classes. School administrators, parents, stakeholders, and other school partners were not involved in the study. Moreover, respondent profile such as sex, age, educational attainment, marital status, position or occupation, and years in service were discussed in the study.

METHODOLOGY

Sampling

The study took place in General Emilio Aguinaldo National High School, Imus City. A total of five (5) experts were part of the panel that validated the modules. The panel consists of five (5) TLE experts from the Department of Education. Identified TLE experts must have at least finished a Master's Degree and has worked in DepEd, specifically in TLE, for at least 5 years.

Furthermore, the modules were pilot tested among three classes: one Grade 8 section for the Exploratory module; one Grade 9 section for the Grade 9 Specialization module; and one Grade 10 section for the Grade 10 Specialization module. All participants in the pilot test must be Contact Center Services students during the

school year.

Data Collection

Instruments

In gathering data relevant in this study, the researcher employed the following: Experts' Validation Checklist; Pretest and Posttest for each CCS module; and Students' Evaluation Checklist of the CCS Modules.

Rubrics in Evaluating PIVOT 4A Learner's Materials/Modules and IDEA Exemplars. In order to evaluate and validate the developed learners' materials, this research utilized Part II (Detailed Evaluation of The Teaching & Learning Materials) of the Rubrics in Evaluating PIVOT 4A Learner's Materials/Modules and IDEA Exemplars, which was based on DepEd Region 4A-CALABARZON' s (2019) General Specifications for PIVOT 4A Learner's Materials. The descriptors of the instrument are presented in Table 1.

Table 1. Detailed Evaluation of the Teaching & Learning Materials

Elements/ Categories	Descriptors/ Indicators of The Standards
Content	-Manifests congruence to the Most Essential Competencies, anchored on the DepEd Vision-Mission-Values, link to previous and present competencies and coherence among the different segments or parts. -Contains level/ability-appropriate, needs-based, and learner-centered contents that enhance cognitive task(s), Higher Order Thinking Skills, metacognitive engagement and other 21st century skills. -Contains sufficient contents (activities, tasks, assessment, etc.) and reasonable workload that are appropriate to the segments or parts as described in the format. -Highlights constructivist, inquiry-based, reflective, collaborative and integrative pedagogical approaches.
Structure and Sequence	-Contains all parts as specified in the format and are arranged in the given order. -Manifests systematic presentation of contents (logical, chronological, psychological, simple to complex, etc.) -Presents contents in varied media (video, audio, written, visual and/or combination), formats (word, PDF, photo), and style (infographics, graphic organizers) from different credible sources that are cited. -Meets required maximum number of pages without sacrificing important segment(s) or content(s). -Provides and labels mandatory and optional tasks for the learner.
Functionality/ Usability	-Allows easy access, use and navigation for learners to be accountable in successfully completing all activities, tasks, assessments, etc. -Allows flexibility and applicability to individual, small- and large-scale audience. -Allows easy facilitation for teachers, parents, or any person to serve as guide for learners on the use of learning module. -Fits for print, digitized and online format and is readily convertible/adoptable to another format. -Provides self-help instructions, user's guide, rubrics, and other troubleshooting support to the learner. -Ensures learner's successful completion of the module using typical equipment and materials that are available without or with less cost.

Design composition and Layout	-Adheres to the elements of graphic design: font style, font size, spacing, line, shape, colors, texture, etc. -Follows principles of design: movement, rhythm, proportion, etc. -Includes texts and graphics (properly cited) that are clear, readable, and appropriate to the content. -Displays proper (only the important elements are included, appropriate placement, size and color combination) and attractive layout. -Presents visual and textual elements that are within the context of Filipino/CALABARZON learners.
Language and Mechanics	-Displays error-free use of language in terms of grammar and choice of words. -Applies proper spelling, punctuation, capitalization, and other writing mechanics. -Uses words, phrases, sentences, and discourse that are grade level-appropriate. - Instructions/directions and/or process of completion are clear and concise. -Follows the DepEd Manual of Style and the DepEd Service Marks and Identity Manual.
Inclusivity	-Reinforces or complements concepts within and across the curriculum and in other field of knowledge/specialization. -Considers Gender and Development principles and advocacy (i.e., use of gender-fair language, content, tasks, assessments and activities, promotion of gender equity concepts). -Specifies provision for privacy, data protection and other rights of the learners and individuals. -Incorporates social content such as global citizenship, social responsibility, nation/community-building, health and safety, environment, etc. and supports the Sustainable Development Goals and Ambisyon 2040.

The instrument has three set of standards with scores that range from 1 to 3. Table 2 exhibits the standards and corresponding descriptions.

Table 2. Legend and Description

Standard	Score	Description
Exceeds Set Standards	3	All descriptors/indicators were satisfied. The module incorporated other features not included in the descriptors/indicators but contributed to the enhancement/enrichment of the segments or to the overall impact of the material.
Meets Set Standards	2	One or two descriptors/indicators were not satisfied. The module satisfied basic requirements for sufficiency and quality in terms of the descriptors/indicators.
Falls short to Set Standards	1	Three or more descriptors/indicators were not satisfied. The module significantly lacked basic requirements for sufficiency and quality in terms of the descriptors/indicators.

Pretest and Posttest. A quarterly achievement test was administered as a pretest to gather baseline information on what the students know prior to their exposure to the instructional module and as a posttest to measure the students' achievement after learning the content of the Quarter 1 module.

Students' Evaluation Checklist of the CCS Modules. This instrument is a five-

point Likert checklist adapted from the research of Limon and Vallente (2016) and Ballado and Espinar (2017). The checklist for students focused only on the content and format of the developed instructional modules, yielding a total of 10 items.

Table 3. Interpretation of Students' Evaluation Checklist

Range	Verbal Interpretation
4.50 – 5.00	Highly Acceptable
3.50 – 4.49	Acceptable
2.50 – 3.49	Undecided
1.50 – 2.49	Unacceptable
1.00 – 1.49	Highly Unacceptable

Procedure

Guided by the ADDIE model of instructional design, data collection activities that were done in the study are described as follows:

Design Phase. The researcher referred to the competencies in the TESDA Training Regulations for Contact Center Services NCII. The goal is to construct a matrix that would outline the competencies that must be demonstrated in Exploratory and Specialized TLE. The researcher identified the basic parts of the module, and the topics were laid out in the form of a curriculum grid. Each lesson of the modules has the following components: pretest, overview, objectives, learning activities, tasks, and posttest.

Development Phase. In preparing the instructional activities for each lesson, the researcher ensured that that they are written in clear and appropriate language suitable to the level of the target respondents who are in Grade 8 to 10. Also, in this stage, writing the pretest and posttests were based on the set objectives in the Design Phase.

Implementation Phase. In order to gather evidence to support the appropriateness of the CCS modules, expert judgments from teachers and experts were solicited by the researchers. Their feedback was incorporated in the revision of the modules. The revised modules were then validated by a panel of experts in TLE and the call center industry. They examined the modules based on five indicators which include: objectives; content; format and language; presentation; and usefulness. The validation used a 4-point Likert scale, as follows:

Evaluation Phase. In evaluating the developed CCS modules, two sources of information were gathered: feedback of the students on the modules in terms of content and format; and results of the pretest and the posttest. The instructional modules were finalized based on the results of the evaluation stage.

Ethical Issues

All information gathered from the study were treated with utmost confidentiality. Names and other personal information of the experts to be consulted in the study remained confidential; only the qualifications of the experts shall be disclosed for the credibility of the validation process. All experts were given/sent a letter of invitation noted by the school head. Proposed schedules were included in the letters but did not remain flexible to accommodate the experts' priorities. With regards to the students who were part of the study, researchers ensured that their consent and that of their parents were secured prior to the conduct of pilot testing. The waiver for consent included an overview of the testing process, as well as a declaration of confidentiality and anonymity. Presentation of results were, in no instance, include any name of

participant to uphold individual privacy and confidentiality.

Plan for Data Analysis

The researchers utilized descriptive statistics such as percentage and mean in analyzing the validation ratings of experts, as well as the students' evaluation of the modules. In order to ascertain the effectiveness of the CCS modules, the pretest results were statistically compared with the posttest results using paired t-test set at 0.05 level of significance.

RESULTS AND DISCUSSION

Designed Learner's Material

Learner's Materials for First Quarter Contact Center Services Exploratory Grade 7/8, Specialization Grade 9 and Grade 10 were developed and validated.

Anchored on DepEd Curriculum Guide, the Exploratory Learner's Material has 7 core content: (1) Personal Entrepreneurial Competencies; (2) Environment and Market; (3) Use of Tools and Equipment; (4) Maintain Computer Equipment and Systems; (5) Perform Mensuration and Calculation; (6) Prepare and Interpret Technical Drawing; (7) Practice Occupational Health and Safety Procedure. For CCS Specialization, the core content are Perform Basic Computer Operations and Internet Navigation for Grade 9 and Communicating Effectively in English for Grade 10.

For every quarter, the material contains the following parts: (1) Introduction; (2) Objectives; (3) Content Standard; (4) Performance Standard; (5) Learning Competencies; (6) Pre-Assessment; (7) Post-Assessment. In each lesson, the students are guided by these segments: (1) Introduction of the lesson, to set the expectation of the learner; (2) Let's Remember, or the review of the previous lesson; (3) Let's See, an introductory activity that bridged prior learning to new lesson; (4) Let's Learn, presentation of lesson content; (6) Let's Practice, learning activities that develop understanding of lesson; (7) Let's Do It, application of the lesson in real life tasks; (8) Let's Recap, generalization of the lesson and bridging of daily life to the lesson; and (9) Assessment.

Figures 2 to 4 below shows the cover page and introductory page of Grade 7/8, Grade 9, and Grade 10 modules for illustrative purposes.

In the development of modules, aligning the learning activities to the competencies, objectives, and assessments is essential. It is part of the planning process so that students can achieve the desired outcomes (Morcke, Dornan, & Eika, 2013). Therefore, the modules designed not only focused on developing students' knowledge but also empathized on acquiring competencies demanded by daily and professional life. Through modules, learners take an active part in their learning processes (Roegiers, 2016).

Evaluation of Modules by Experts

The evaluators' overall average rating on all developed modules from Grade 8 to Grade 10 ranges from 17 to 18, which translates to Outstanding. Table 4 shows the distribution of evaluators' ratings in category.

Table 4. Expert Evaluation of Modules

Element/ Category	Grade 7/8		Grade 9		Grade 10	
	Score	Verbal Interpretation	Score	Verbal Interpretation	Score	Verbal Interpretation

Content	3	Exceeds Set Standards	3	Exceeds Set Standards	3	Exceeds Set Standards
Structure and Sequence	3	Exceeds Set Standards	3	Exceeds Set Standards	3	Exceeds Set Standards
Functionality/ Usability	3	Exceeds Set Standards	3	Exceeds Set Standards	3	Exceeds Set Standards
Design composition and Layout	3	Exceeds Set Standards	3	Exceeds Set Standards	3	Exceeds Set Standards
Language and Mechanics	3	Exceeds Set Standards	3	Exceeds Set Standards	3	Exceeds Set Standards
Inclusivity	3	Exceeds Set Standards	2	Meets Standards	2	Meets Standards
Total	18		17		17	
Adjectival Rating	Outstanding		Outstanding		Outstanding	

In detail, the Exploratory modules have a rating of 3 or “Exceeds Set Standards” in all categories: Content, Structure and Sequence, Functionality or Usability, Design composition and Layout, Language and Mechanics, and Inclusivity. Both Grade 9 and Grade 10 modules also have rating of 3 or “Exceeds Set Standards” for all elements except for the Inclusivity category with a rating of 2 or “Meets Standards”.

These results imply that no revision is necessary, and the material is set for production and distribution for CCS students.

Effectiveness of the modules

As shown in Table 5, a paired sample t-test revealed a statistically significant difference between mean pretest and posttest scores in all three materials ($p<0.05$). Since the mean posttest score is greater than the mean pretest score, this implies that that there is sufficient evidence to conclude that the exposure to the developed modules largely yielded improvement in the knowledge of students on Contact Center Services Exploratory (Grade 8), and Specialization (Grade 9 and 10).

Table 5. Comparison of Pretest and Posttest Scores of Students

	Paired Differences				
	Mean	**Std. Deviation**	**t**	**df**	**Sig (2-tailed)**
Grade 7/8 *Pretest-Posttest*	6.48	2.11	3.06	40	.004*
Grade 9 *Pretest-Posttest*	9.62	0.20	47.98	39	.000*
Grade 10 *Pretest-Posttest*	8.03	0.32	24.38	39	.000*

**significant at p < .05*

These findings demonstrate that using well-designed modules can be greatly beneficial to improving students’ understanding on exploratory and specialized CCS. The significant differences between the mean pretest and posttest scores show the effectiveness of the developed learner’s materials.

This is consistent with earlier findings on how modules help direct students

practice or rehearse information, and gain mastery of concepts through progression of easy to difficult exercises. Students engage themselves in learning concepts presented in the module (Torrefranca, 2017).

Level of Acceptability of the Modules as Perceived by the Students

Students also have evaluated the acceptability of the developed modules in terms of its content and format. The responses of one hundred twenty-one (121) respondents were tallied per indicator.

Table 6. Level of Acceptability of Content

Content	Grade 7/8		Grade 9		Grade 10	
	Mean	Verbal Interpretation	Mean	Verbal Interpretation	Mean	Verbal Interpretation
1. I easily understood the objectives of the lessons.	4.73	Highly Acceptable	4.61	Highly Acceptable	4.85	Highly Acceptable
2. I easily understood the instructions in the lessons.	4.75	Highly Acceptable	4.43		4.68	Highly Acceptable
3. I could work on the lessons at my own pace.	4.75	Highly Acceptable	4.52	Highly Acceptable	4.70	Highly Acceptable
4. I clearly understood the idea/ concept in the lessons.	4.64	Highly Acceptable	4.68	Highly Acceptable	4.75	Highly Acceptable
5. The illustrations/ captions guided me easily in following the instructions in the module.	4.61	Highly Acceptable	4.34	Acceptable	4.55	Highly Acceptable
6. The learning activities helped me fully understand the topics.	4.50	Highly Acceptable	4.59	Highly Acceptable	4.55	Highly Acceptable
7. I appreciated the styles of illustrations and call center conversation scripts.	4.45	Acceptable	4.57	Highly Acceptable	4.50	Highly Acceptable
8. I enjoyed answering the learning activities.	4.39	Acceptable	4.43	Acceptable	4.48	Acceptable
9. I found it easier to study CCS using these modules.	4.39	Acceptable	4.50	Highly Acceptable	4.53	Highly Acceptable
10. I enjoyed working through the lesson until I finished the whole module.	4.41	Acceptable	4.48	Acceptable	4.45	Acceptable
Grand Mean	4.56	Highly Acceptable	4.52	Highly Acceptable	4.60	Highly Acceptable

Table 6 shows that all three modules are highly acceptable to students in terms of content, with a mean of 4.56 among Grade 8 students, 4.52 among Grade 9 learners, and 4.60 among Grade 10 respondents.

This supports earlier research on how self-paced modules can enable learners to be more active in their own learning (Roegiers, 2016) and how competency-based

modules equipped with actual performance tasks largely improves learners' knowledge and attitudes towards learning (Naelga & Sonsona, 2017).

Table 7. Level of Acceptability of Format and Language

Content	Grade 7/8		Grade 9		Grade 10	
	Mean	Verbal Interpretation	Mean	Verbal Interpretation	Mean	Verbal Interpretation
1. The layout of the module is arranged in a logical and sequential order.	4.70	Highly Acceptable	4.75	Highly Acceptable	4.90	Highly Acceptable
2. The font size and font style used made the module readable.	4.64	Highly Acceptable	4.45	Acceptable	4.86	Highly Acceptable
3. The instructions in the activities are easy to understand and follow.	4.45	Acceptable	4.50	Highly Acceptable	4.55	Highly Acceptable
4. Difficult and new terms (jargon) are well-defined.	4.34	Acceptable	4.30	Acceptable	4.28	Acceptable
5. Tables and diagrams are well-presented and easy to understand.	4.55	Highly Acceptable	4.45	Acceptable	4.53	Highly Acceptable
6. Key concepts are emphasized and highlighted to catch attention while reading.	4.45	Acceptable	4.55	Highly Acceptable	4.35	Acceptable
7. Titles and subtitles are clearly defined.	4.66	Highly Acceptable	4.52	Highly Acceptable	4.58	Highly Acceptable
8. Illustrations, pictures, and captions are placed properly in relevant lessons.	4.55	Highly Acceptable	4.75	Highly Acceptable	4.45	Acceptable
9. The steps in procedures/processes are arranged sequentially and easy to follow.	4.43	Acceptable	4.32	Acceptable	4.50	Highly Acceptable
10. The module is generally well-formatted on the paper size used.	4.82	Highly Acceptable	4.52	Highly Acceptable	4.53	Highly Acceptable
Grand Mean	4.56	Highly Acceptable	4.51	Highly Acceptable	4.55	Highly Acceptable

In terms of format and language, all three modules were also evaluated as highly acceptable by the learners: Grade 7/8 module with a mean of 4.56; Grade 9 module with a mean of 4.51, and Grade 10 module with a mean of 4.55.

Given adequate and meaningful instruction in different units, the module can enhance the teaching-learning process, and help students master the content and skills required in TLE (Limon Vallente, 2016).

SUMMARY AND CONCLUSIONS

Contact Center Services modules for Exploratory Grade 7/8, Specialization Grade 9, and Grade 10 were developed and validated as “Exceeds Set Standards” by experts. Evaluation included content, Structure and Sequence, Functionality/ Usability, Design composition and Layout, Language and Mechanics, and Inclusivity. The modules were affirmed for production and distribution to Grade 8, Grade 9, and Grade 10 students.

The significant change in the pretest and posttest scores obtained by learners before and after they were exposed to the modules signifies that the modules improved their knowledge on CCS competencies.

The developed modules are highly acceptable to students in both content, and format and language. The logical organization of lesson content, learning activities, performance tasks, and assessments contributed to making learning easier and enjoyable for the students.

Based on the findings of the experimental study, the researcher drew the following implications:

Learners’ understanding of exploratory and specialized CCS competencies, content standards, and performance standards, can be promoted effectively if appropriate self-paced learning materials are provided.

Modules refocus the concept of learning from what students learn to how they learn, helping teachers properly facilitate learning during classroom instruction. Classroom time will not be spent entirely on delivery of content and notetaking, but on facilitated interaction that will deepen learners’ understanding.

Students become responsible for their own learning and accepts modules as tools for learning in their own pace. Through systematic presentation of content, gradual increase in difficulty of learning activities, and demonstration of real-world situations, modules help students develop their knowledge and skills in CCS that are adjacent to the demands of the workplace.

RECOMMENDATIONS

Anchored on the conclusions made, this research made the following recommendations:

The developed modules can be used as supplementary materials for teaching Contact Center Services Exploratory and Specialization courses. To adapt to distance learning modalities, the modules can be produced and/or distributed to students in either printed or digitized formats, whichever fits the needs of learners.

Teacher’s guides or exemplars can be crafted to complement the developed CCS modules. These materials can assist teachers in effectively facilitating class time and assigning topics for individual learning.

Lastly, the study may be replicated by other researchers by preparing modules for other Exploratory or Specialization courses in Technology and Livelihood Education. The study may also be validated by conducting an experimental design. Further studies on attitudes of students towards modular instruction, printed or digitized, can also be studied.

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BATANG EMILIANO, KALUSUGA'Y PANALO: INFORMATION, EDUCATION AND COMMUNICATION (IEC) FOR INFECTIOUS DISEASES MITIGATION

by

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Abstract

Scaling up health education during the pandemic is crucial as an integral part of learning. One way to promote health education is through Information, Education and Communication (IEC) materials. The study assessed students' awareness on infectious diseases and hygiene practices, and teachers' current health education practices, to develop IEC materials for prevention of infectious diseases during distance learning. The study used a mixed-methods sequential explanatory design. In Phase 1, two survey questionnaires were administered: students' questionnaire identified their level of awareness on infectious diseases and hygiene practices; and teachers' questionnaire determined their health education implementation in class. Phase 2 collected qualitative data through two separate Focus Group Discussions for students and teachers. Results show that learners' knowledge is limited to infectious diseases that their families have personally experienced. Learners may be at risk of infectious diseases due to inadequate hygiene practices. Teachers struggle to communicate adequate health education information to students amid challenges of distance learning, particularly on ensuring equally access of online and modular learners. The research was conducted in General Emilio Aguinaldo National High School in SY 2020-2021. The study gathered necessary information as basis for developing IEC initiatives customized for the school and students' needs.

Keywords: *COVID-19, Health Education, Hygiene, WINS, IEC*

INTRODUCTION

The 2019 coronavirus disease (COVID-19) epidemic has affected educational activities globally, leading to the closing of schools to protect children from infection (Upoalkpajor & Upoalkpajor, 2020). COVID-19 is an infectious disease caused by a new coronavirus that is particularly grave for those with underlying health problems like diabetes, cardiovascular disease, cancer and chronic respiratory illness (WHO, 2020).

However, even before the spread of COVID-19, diarrhea of presumed infectious origin is the tenth leading cause of death among school-age children. Most deaths occur in children under five years old (GBD Diarrheal Diseases Collaborators, 2017; Liu et al., 2015); however, older children of ages 5 to 14 are also greatly affected by diarrhea (GBD, 2016 Causes of Death Collaborators, 22017; Institute for Health Metrics and Evaluation, 2016), accounting for 12% of all deaths and rank among the leading causes of mortality in this age group (Institute for Health Metrics and Evaluation, 2016). In the Philippines, an estimated 43.7% of pre-school age and 44.7% of school-age Filipino children have soil-transmitted helminth infections (DepED Order No. 10 S. 2016). The large percentage of diseases afflicting school children could be attributed to unsafe drinking water (Department of Health, 2010) and sanitation (Department of Education, 2010). Poor sanitation and hygiene practices among almost 20 million Filipinos have been attributed to poverty resulting to lack of access to safe and clean water.

The alarming status of hygiene and sanitation, causing disease and death among children has been a concern of the United Nations. In order to address this global challenge, all 193 members agreed to the 2030 vision for WASH in schools Transforming our world: The 2030 Agenda for Sustainable Development. In general, the agenda aim to end all forms of poverty by taking transformative steps for resiliency, inclusivity and sustainability (United Nations, 2015). Among the Sustainable Development Goals (SGD), SGD4 and SGD6 tackles on how promoting water and sanitation can eliminate inequalities in access to education. SDG4 aims to “ensure inclusive and quality education for all and promote lifelong learning” and highlights the elimination of inequalities at all levels of education (WHO ang UNICEF, 2018). SDG6 aims to “ensure available and sustainable management of water and sanitation for all” and includes targets for universal access to drinking water, sanitation and hygiene for all by 2030 (6.1 and 6.2) (WHO and UNICEF, 2017).

In support and compliance to the United Nations’ SDG and in realizing the country’s 2015 Millennium Development Goals (MDG), the Department of Education crafted a holistic program that encompasses water, sanitation, deworming, health education, and capacity building. WinS or WASH (Water, Hygiene and Sanitation) in Schools is a global movement to improve WASH services in the school setting. The program recognizes that sanitation and hygiene are essential for health and are critically contributing to performance and educational success.

WinS promotes well-being of students by making them less prone to illnesses, comfortable and confident among their peers, participative in class, and engaged in learning. Schools are expected to provide a healthy environment where children feel safe and protected and where the basic needs of children, including access to water and sanitation are met. In addition, WinS programs must “ensure correct knowledge and understanding among learners of effective hygiene and sanitation projects” and “improve hygiene and sanitation practices among learners to enable them to develop life-long positive hygiene and sanitation behaviors” (DO No.10 s.2016). WinS provides

an entry point for raising awareness and promoting behavior change to end improper sanitation and hygiene practices among children; hence, the highlight on health education.

Given that health education is an integral part of learning, scaling them up during these difficult times might be crucial. Providing information and preventing the spread of the epidemic are important and should not be neglected (Upoalkpajor & Upoalkpajor, 2020). Good efforts are being made to continue education despite the challenge of distance. DepEd has introduced learning delivery strategies as alternative for traditional face-to-face classes to prevent the spread of pandemic (DM 162, s. 2020). Efforts to stalk the spread of COVID-19 through proper hygiene and protective procedures such as self-isolation and social-distancing were also made (Upoalkpajor & Upoalkpajor, 2020). However, there seems to be lack of teaching on public health education especially on infectious diseases such as COVID-19. Children must be informed on what the COVID-19 crisis is, what infectious diseases are, and what they should do to mitigate the risk of being infected (Wan, Ya Shin, 2020). World Health Organization (2020) agrees that one of the important ways to contain and slow the spread is to intensify education on the mode of transmission and the signs and symptoms of the disease.

One of the ways to promote health education is through the use of Information Education Communication (IEC) initiatives. IEC provides a platform for the discussion of important health issues to foster an understanding of concepts, underlying principles, and benefits of health initiatives. IEC is essential to achieving better health outcomes in all public health interventions (Chilengi, 2016) and improve the level of knowledge among children (Devi & Devi, 2018).More so, IEC initiatives and activities are adopted not only for disseminating curative guidelines for diseases but also as a part of the effort to bring about a behavioral change: the prevention of negative behavior and promotion of positive behavior (Sachdeva, et al., 2015).

General Emilio Aguinaldo National High School (GEANHS) in Imus City has a population of over 10,000 students from Grade 7 to 10. Such huge population raises the need to strengthen promotion of awareness and positive practices on hygiene and sanitation. Since children will not be in school due to distance learning arrangements that can be either online or modular, this is the time to teach them how to maintain their hygiene during the COVID-19 pandemic and avoid other infectious diseases even at home. IEC activities are developed based upon needs assessment, sound educational principles, and periodic evaluation using a clear set of goals and objectives (Sachdeva, et al., 2015). Thus, the study aims to assess students' awareness and practices to develop IEC materials that would mitigate infectious diseases.

Research Questions

IEC materials could affect more changes in the community if they are prepared properly and well used by the community (Pratheepa & Nithya, 2014). The study, then, gathered necessary information as basis for developing and communicating IEC initiatives customized for the school and the students' needs.

Specifically, the study answered the following questions:

1. What is the knowledge of students on infectious diseases?
2. What are hygiene practices of students?
3. What are health education practices among teachers?

4. What Information, Education and Communication (IEC) materials can be developed to strengthen health education in distance learning?

ACTION RESEARCH METHODS

To attain the objectives of the study, this research has two sets of respondents: students and teachers. The study used Krejcie & Morgan's (1970) formula to determine the sample size for student and teacher respondents. The study used stratified random sampling to give every member of the population a chance to be included in the sample. Table 1 shows the distribution of respondents per year level.

Table 1. Student Respondent per Grade Level

Grade Level	Enrollment	Number of Respondents
Grade 7	2,108	76
Grade 8	2,893	103
Grade 9	2,637	94
Grade 10	2,742	98
Total	10,380	371

The same formula for determining sample size was used to randomly select respondents from faculty members. Out of 368 teachers, this research gathered a sample of 188 teachers.

To gather qualitative data, participants are purposively selected based on the criteria set for every Focus Group Discussion (FGD):

FGD 1: 8 Class Advisers (two for each year level)

FGD 2: 8 Students (two for each year level)

Prior to the conduct of data gathering procedures, the researchers secured permission from the principal through a letter which stated the purpose of the study and full disclosure that classes nor school activities will not be disrupted by any means. The letter also included the nature and manner of data gathering, instruments to be used, and ethical considerations.

A mixed-methods sequential explanatory approach is used to gather data for this research. The quantitative method was conducted in the first stage, followed by the qualitative approach using thematic analysis. The findings from both phases of the study were then examined and combined to draw the conclusions.

Phase 1. The study employed the use of researcher-made survey questionnaires that have been validated by the school WINS Coordinator, school nurse, and school head. The student questionnaire identified students' level of awareness on infectious diseases and their practices on hygiene and sanitation. The teachers' questionnaire determined the frequency of conducting health education among students, as well as their strategies and materials used.

Phase 2. The second phase of the study, which collected qualitative data, aims to help explain the quantitative data in greater depth. These data represent the voice of the participants in the study, strengthen the quantitative data, and ensure exploration of infectious disease mitigation through health education. For students, the questions asked for qualitative data collection were: (1) What are the experiences of students in practicing hygiene at home during distance learning? (2) What are the experiences of students in infectious diseases? For teachers, the questions asked for qualitative data collection were: (1) What are the experiences of teachers in

conducting heath education to students in the distance learning setting? (2) What are the needs of teachers in conducting heath education to students in the distance learning setting?

Phase 1 used statistical treatment of data to determine the respondents' level of awareness on infectious diseases and hygiene practices, and the teachers' frequency of conducting health education among students. In Phase 2, thematic coding was used to analyze the qualitative data of this study from the focus group discussions. The researchers did not have pre-conceived constructs and used constant comparison among and within the transcripts in order to identify reoccurring words, ideas, and concepts. After identifying clustered themes, categorical titles for each theme were made to create a table of themes. Extracted data from were compared to develop subordinate themes (Maxwell, 2012).

RESULTS AND DISCUSSION

4.1 Knowledge of Students on Infectious Diseases

Findings reveal that students have varied knowledge on infectious diseases. Table 2 shows how students' level of awareness seem to decrease from knowing what the disease is to awareness on how to prevent them. Out of 371 students, 100% of them know what diarrhea, dengue, and COVID-19 are. These are followed by Hepatitis A (369), Flu (363), Leptospirosis (328), Typhoid Fever (323), and Cholera (312).

Table 2. Awareness of Students on Infectious Diseases

Infectious Diseases	I know what it is.	I know its signs and symptoms.	I know its treatment.	I know how to prevent it.
1. Diarrhea	371	370	366	322
2. Dengue	371	351	212	333
3. Influenza (Flu)	363	296	127	104
4. Leptospirosis	328	291	42	208
5. Typhoid Fever	323	272	29	32
6. Cholera	312	241	53	29
7. Hepatitis A	369	194	34	26
8. COVID-19	371	367	218	291

Majority of students are also aware of the signs and symptoms of diarrhea (370), the tenth leading cause of death among school-age children (Liu et al., 2015). Most of them also know the signs and symptoms of COVID-19 (367), Dengue (351), Influenza (296), Leptospirosis (291), Typhoid fever (272), Cholera (241), and Hepatitis A (194).

In terms of knowing the treatment of infectious diseases, students are mostly aware about how Diarrhea (366), COVID-19 (218), Dengue (212), and Influenza (127) are treated. However, data shows that only a few students know the treatment of Cholera (53), Leptospirosis (42), Hepatitis A (34) and Typhoid fever (29).

Finally, students know how to prevent dengue (333), Diarrhea (322), COVID-19 (291), Leptospirosis (208), and Influenza (104). A limited number of students know how to prevent certain infectious diseases, namely: Typhoid fever (32), Cholera (29), and Hepatitis A (26). This data shows that children have inadequate knowledge on infectious diseases. According to Wan and Ya Shin (2020), children must be informed on what infectious diseases are, and what they should do to mitigate the risk of being

infected.

Participants in the study expressed their experiences with infectious diseases. As shown in Table 3. analysis resulted to two major themes: (1) Recognizing Infectious Diseases; and (2) Learning to accept help.

Table 3. Experiences of Students and Their Families in Infectious Diseases

Themes	Subthemes
Recognizing Infectious Diseases	• Developing tolerance to symptoms and/or pain • Using past experiences
Learning to accept help	• Professional consultation and treatment • Learning about signs and symptoms

Recognizing Infectious Diseases. Upon analysis of FGD, students' experiences with infectious diseases primarily focused on how their family recognized the presence of an infectious disease in one or more members. In the onset of identification, their families resorted to two subthemes: (1) Developing tolerance to symptoms and/or pain; and (2) Using past experiences.

Developing tolerance to symptoms and/or pain. As mentioned above, some students' families experience financial instability. Awareness of this constraint causes sick members to simply tolerate the pain or symptoms caused by the illness acquired. Worse, ill family members choose to hide their illness in hopes that it will simply pass and they would be healthy again. Unfortunately, keeping quiet of the existence of disease inside their homes only enabled the spread of infection, causing bigger problems for the family. In one account, a student expressed his family's experience:

> *"Nung nagkasakit po yung kuya ko, hindi nya sinasabi. Ako lang ang nakakaalam. Pero napansin ko po pumayat talaga sya kasi wala syang gana kumain tapos po nilalagnat sya paminsan. Naawa po ako sa kanya kaso sabi nya wala naman daw masakit sa kanya. Tapos ayun nagkasakit narin yung ate ko. Doon lang naming nalaman na may Hepatitis pala si kuya tapos nahawa si ate. Nakakatakot po pag hindi sinasabi agad yung sakit." ("When my older brother got sick, he didn't say it to anybody but me. I noticed that he lost weight because he didn't eat much, and he had occasional fevers. I really wanted him to get well but he said that he does not feel any pain. After a while, my older sister also got sick. That is when we found out that he has Hepatitis A and he passed it onto my sister. It is frightening when we don't inform others of an infectious disease."*

Using past experiences. Still in relation to avoiding fear of other family members and not wanting to be a financial burden to the family, sick family members choose to apply previous knowledge and experiences on illnesses. When sick, they resort to over-the-counter medicine or alternative practices rather than consult a medical professional. They also believe that the illness will pass over time.

> *"Sabi nila gagaling din naman po sa gamut na nabibili, parang Biogesic." ("They say that over- the-counter medicine can cure them, like Biogesic.")*

Learning to accept help. When illnesses become severe, sick members learn to accept help from others. This happens in two ways: (1) Professional consultation and treatment; and (2) Preventing getting sick and spreading the disease.

Professional consultation and treatment. When pain becomes intolerable, families resort to doctors' advice and medical treatment. Some go to hospitals, local family clinics, or medical centers to treat and/or recovery from their illnesses. A

participant articulated his experience on this subtheme:

> *"Isang linggo na po na sumasakit yung tiyan nung kapatid kong bunso. Saka lang sya dinala sa center kasi iyak na sya ng iyak." ("It has been a week since my youngest sibling experiences abdominal pain. He was only bought to the medical center because he kept on crying every day.")*

Learning about prevention and signs. Learners emphasized that it would have been helpful for them personally and for their families if they know more about how to prevent infectious diseases in the first place. If they religiously avoid any possibility of getting infected, no family member would get sick, avoiding any emotional turmoil nor financial liabilities. However, they acknowledge that sicknesses always come unexpected. They hope to understand signs and symptoms of common infectious diseases to enable early detection and minimize mortality. In one account, a learner stated:

> *"Kung alam lang po naming kung ano yung sakit, kung ano yung sintomas, malalaman na agad naming na ganun na yung sakit niya. Mas maganda pa kung alam po naming kung paano iiwasan para talagang wala nang magkasakit." (If we only knew what the illness was and its symptoms, we could have identified the disease earlier. It is also better if we know how to prevent these diseases so that no one will get sick."*

4.2 Hygiene Practices of Students

This research also gathered the hygiene practices of students, focusing on handwashing, toothbrushing, and bathing.

4.2.1 Handwashing

Diarrhea, one of the leading causes of child morbidity and mortality in world can be greatly reduced through handwashing (Kumar, et al., 2017). Children need to improve hand hygiene for they may be at greatest risk for preventable yet infectious diseases.

Table 4 shows how often students wash their hands in specific situations. Students "Always" wash their hands after using the toilet (weighted mean of 3.74). They "Fairly Often" wash hands before meals or preparing a meal (3.74), using soap (3.71), and after contact with a sick person (3.53). Respondents "Sometimes" wash their hands after contact with animals (3.53) and after visiting public spaces (3.02).

Table 4. Frequency of Handwashing Among Students

Frequency of Handwashing	Mean	Verbal Interpretation
1. How often do you wash hands before meals/ preparing a meal?	3.74	Fairly Often
2. How often do you wash hands after visiting public spaces?	3.02	Sometimes
3. How often do you wash hands after using the toilet?	4.76	Always
4. How often do you wash hands after contact with animals?	3.05	Sometimes
5. How often do you wash hands after contact with a sick person?	3.53	Fairly Often
6. Do you use soap to wash your hands?	3.71	Fairly Often

In the Philippines, an estimated 43.7% of pre-school age and 44.7% of school-age Filipino children have soil-transmitted helminth infections (DepEd Order No. 10 S.

2016) and way to prevent this is by handwashing on every occasion mentioned in Table 4. Handwashing with soap with proper technique significantly reduces bacteria and contamination (Friedrich, et al., 2017) and was as efficacious as alcohol-based hand sanitizers (Wolfe, et al., 2017).

Table 5. Duration of Handwashing Among Students

Duration of Handwashing	Number of Responses	Percentage
Less than 10 seconds	113	30%
Between 10-20 seconds	214	58%
More than 20 seconds	44	12%

Students also have varied duration of handwashing, which range from less than 10 seconds to more than 20 seconds. Fifty-eight percent or 214 students wash their hands between 10 to 20 seconds. Thirty percent or 113 learners choose to consume only less than 10 seconds for handwashing. The smallest number of respondents, 12% or 44 students, spend more than 20 seconds in washing their hands. Figure 3 shows the distribution of the duration or handwashing among the respondents.

Verifying the ideal duration for handwashing is difficult because few studies about the health impacts of altering handwashing times have been done. However, the currently acceptable length to wash hands is at least 20 seconds. This allows ample time to minimize the number of microbes, decreasing chances of illness. (Jensen, Danyluk, Harris, & Schaffner, 2015).

Table 6. Students' Reasons for Neglecting Handwashing

Reasons for Neglecting Handwashing	Number of Responses	Percentage
I forget about it.	254	68%
I have more important things to do.	17	5%
I do not understand why I need to wash my hands.	29	8%
I do not have time to do it.	34	9%
There is no water available.	37	10%

Learners, moreover, have different reasons for not washing their hands. Figure 4 shows various reasons of students for not handwashing. Majority or 254 students responded, "I forget about it". This is followed by "There is no water available" with 10% or 37 respondents' "I do not have time to do it" with 9% or 34 responses; "I do not understand why to wash my hands" with 8% or 29 responses, and; "I have more important things to do" with 5% or 17 Reponses.

4.2.2 Toothbrushing

Table 7. Students' Frequency of Toothbrushing in a Day

Frequency of Toothbrushing in a Day	Number of Responses	Percentage
Once	73	26%
Twice	201	54%
Thrice	97	26%

Another essential hygiene practice is toothbrushing. Regular toothbrushing is important for both children and adults because it helps remove bacteria and plaque

that cause tooth decay and gum disease (Newby, et al., 2013). It is recommended that everybody brush their teeth twice a day, in the morning and before going to bed at night (Newby, et al., 2013). Table 7 shows that most respondents, 54% or 201 students, do this daily. Twenty-six percent or 97 learners prefer to brush their teeth thrice a day; 26% or 73 students choose to brush their teeth only one a day.

Table 8. Students' Reasons for Neglecting Toothbrushing

Reasons for Neglecting Toothbrushing	Number of Responses	Percentage
I forget about it.	174	47%
I have more important things to do.	44	12%
I do not understand why I need to wash my hands.	44	12%
I do not have time to do it.	65	18%
There is no water available.	39	11%

In instances when children do not brush their teeth, there also varied reasons, as shown in Table 8. The primary reason is that they tend to forget about it, with 47% or 174 responses. Other reasons for not brushing their teeth include: "I do not have time to do it" with 18% or 65 respondents; "I have more important things to do" with 12% or 44 responses; "I do not understand why to brush my teeth" with also 12% or 44 responses; and "There is no water available" with 11% or 39 responses. The large percentage of diseases afflicting school children could be attributed to unsafe drinking water (Department of Health, 2010) and sanitation, which includes toothbrushing. Data gathered may imply that learners do not prioritize brushing their teeth since almost half of the respondents forget doing it.

4.2.3 Bathing

The third crucial activity to maintain hygiene is bathing. Regular bathing must promote normal, healthy skin by maintaining a layer of oil and a balance of "good" bacteria and other microorganisms. (Shmerling, 2019). Figure 7 shows how often students take a bath in a weekly basis.

Table 9. Students' Frequency of Bathing in a Week

Frequency of Bathing in a Week	Number of Responses	Percentage
Everyday	266	72
Every other day	83	22
Thrice a week	18	5
Once a week	4	1

Although it is expected that adolescents bathe every day, only 72% or 266 respondents stated that they do so daily. Twenty-two percent or 83 students choose to take a bath every other day. Five percent or 18 learners bathe thrice a week, and 1% or 4 students bathe only once every week. According to the American Academy of Dermatologists, children aged 6–11 years only need to take a shower every few days. Once they hit puberty, it is suggested that daily showering is necessary (Goto, et al., 2018).

Table 10. Students' Reasons for Neglecting Bathing

Reasons for Neglecting Bathing	Number of Responses	Percentage
I forget about it.	149	41%
I have more important things to do.	58	16%
I do not understand why I need to wash my hands.	29	8%
I do not have time to do it.	79	22%
There is no water available.	47	13%

Students' frequency of bathing is affected by different reasons. Like handwashing and toothbrushing, majority of students neglect bathing because they forget about it (41% or 149 responses). Figure 8 shows students' other reasons for not bathing, namely: "I do not have time to do it" with 22% or 79 responses; "I have more important things to do" with 16% or 58 responses; "There is no water available" with 13% or 47 responses; and "I do not understand why to bathe" with 8% or 29 responses. Poor sanitation and hygiene practices among almost 20 million Filipinos have been attributed to poverty resulting to lack of access to safe and clean water (Department of Education, 2010).

Focus group discussion with students presented two main themes as shown in Table 5: (1) Practicing hygiene at home; and (2) Challenges in practicing hygiene.

Table 11. Experiences of Students in Practicing Hygiene at Home During the Distance Learning

Themes	Subthemes
Practicing hygiene at home	• Handwashing • Toothbrushing • Bathing
Challenges in practicing hygiene	• Lack of motivation to practice hygiene • Unavailability of resources related to hygiene

Practicing hygiene at home. Students voiced that they practice handwashing, toothbrushing, and bathing at home, even during the quarantine period.

Handwashing. Students try to wash their hands multiple times a day in specific situations, such as before eating, after going to the toilet, and after holding an animal. A student explains that she does this to avoid illnesses:

> *"Sunusubukan ko po na maghugas ng kamay lagi pag kakain kami at kapag humawak ako sa pusa naming. Naghuhugas din ako ng kamay at mag-alcohol pag gumamit ng toilet para hindi magkasakit." ("I try to wash my hands before meals and after touching our cat. I also wash my hands and use alcohol after using the toilet to avoid getting sick.")*

Toothbrushing. Participants also acknowledge that toothbrushing is important and must be done every day. However, their opinions varied on how many times they brush, from once to thrice a day. One student mentioned:

> "*Araw-araw po ako mag-toothbrush, three times kasi three times po tayo kumakain. Bawat pagkatapos po kumain dapat nagsisipilyo para maiwasan ang cavities na nagbibigay ng sakit sa ipin." (I brush my teeth every day for three times because we also have meals three times a day. We need to brush our teeth after every meal to avoid cavities which cause tooth ache."*

Bathing. Bathing is also an essential daily activity for the students. They view bathing a means to clean oneself from dirt and bacteria, and a way to refresh the body

due to the heat. Similar to toothbrushing, students had varied insights in the frequency of bathing every week. With quarantine protocols play, students are more prone to choosing not to bathe since they are not allowed to leave their homes, as compared to when they needed to attend school daily. One notable response was:

> *"Nakakatamad po maligo kasi hindi naman po kami lalabas. Nakakapasok po kami sa school kahit nasa bahay lang kaya po minsan nakakalimutan narin naming maligo. Dati po araw-araw talaga kaso nakakaligtaan ko na." ("I get too lazy to bathe since I won't be leaving our house. I am able to attend school despite straying at home so I sometimes forget to take a bath. When classes were still at school, I take a bath every day; but lately I just iften forget."*

Challenges in practicing hygiene. The student's statement above poses one of the challenges of sustaining hygiene practices at home during the pandemic. Data revealed that there are two challenges in practicing hygiene: (1) Lack of motivation to practice hygiene; and (2) Unavailability of resources related to hygiene.

Lack of motivation to practice hygiene. It had become a common practice for students at home to neglect their hygiene activities. This results to forgetting to handwash, toothbrush or bathe regularly. Students also expressed that they do not completely understand nor value the importance of hygiene. They have not been sick even after forgetting hygiene routines and adults at home rarely remind them to do so. A Grade 9 student shares his experience in relation to this:

> *"Minsan po ok lang sa mama ko na hindi ako mag-toothbrush o maligo. Hindi naman daw po kasi ako aalis ng bahay." ("Sometimes, my mother is ok with me forgetting to brush my teeth or take a bath, since I won't be going out anyway."*

Unavailability of resources related to hygiene. An inevitable factor for students to neglect hygiene habits is the lack of resources need. Unstable water supply inhibits washing, brushing and bathing, even when students want to do so. Lack or absence of hygiene supplies, such as soap, shampoo, toothpaste, and toothbrush is also a challenge for students. Their families experience financial constraints that limit their hygiene activities.

4.3 Health Education Practices Among Teachers

4.3.1. Frequency of facilitating health education in distance learning

Teachers vary in terms of how often they conduct health education in their respective classes. Most of the teachers (62 or 33%) said they conduct health education every class. This is flowed by once a month with 52 or 30% responses; once every quarter with 34 or 18% responses; and once a year with 9 or 5% responses. Thirty-one or 16% claim that they have not conducted any health education integration nor class in any of their classes during the implementation of distance learning. Figure 9 shows the distribution of responses.

Table 12. Teachers' Frequency of Conducting Health Education

Reasons for Neglecting Bathing	Number of Responses	Percentage
Every week	62	33%
Once a month	52	30%
Once every quarter	34	18%
I have not conducted any health education session in any of my classes	31	16%
Once a year	9	5%

4.3.2. Hygiene practices discussed by teachers

Respondents have also discussed various hygiene practices to students, as shown in Figure 10. Majority or 154 teachers discuss handwashing. However, only 41 discuss bathing, and 39 share information about toothbrushing. Nineteen teachers said that they have not conducted any health education session.

Table 13. Hygiene Practices Discussed by Teachers

Hygiene Practices Discussed by Teachers	Number of Responses
Handwashing	154
Bathing	41
Toothbrushing	39
I have not conducted any health education session in any of my classes	19

4.3.3. Infectious diseases discussed by teachers

Aside from hygiene practices, teachers also discuss infectious diseases which may result from lack of hygiene practice. The pandemic has made COVID-19 the most discussed disease by teachers with 151 responses. This is followed by: Diarrhea, with 40 responses; Dengue, with 25 responses; Influenza, with 25 responses; and Leptospirosis, with 12 responses. Only nine out of 188 teachers discussed Hepatitis A, Cholera, and Typhoid Fever.

Table 14. Infectious Diseases Discussed by Teachers

Infectious Diseases Discussed by Teachers	Number of Responses
COVID-19	151
Diarrhea	40
I have not conducted any health education session in any of my classes	28
Dengue	25
Influenza	15
Leptospirosis	12
Hepatitis A	9
Cholera	9
Typhoid Fever	9

This study also conducted a FGD with teachers to grasp the implementation of health education among classes. Data were analyzed and two prominent themes emerged, as shown in Table 6: (1) Teacher initiatives; and (2) Challenges encountered.

Table 15. Experiences of Teachers in Conducting Heath Education to Students in The Distance Learning Setting

Themes	Subthemes
Teacher initiatives	• Integrating health education in lessons • Conducting health education during homeroom period • Reminders through various communication platforms
Challenges encountered	• Inequality between online and modular students • Lack of localized procedure and materials for health education

Teacher initiatives. Curriculum implementation remains in the hands of teachers, including the delivery of health education. As participants shared their experiences in conducting health education in the distance learning setting, three subthemes surfaced: (1) Integrating health education in lessons; (2) Conducting health education during homeroom period; and (3) Reminders through various communication platforms.

Integrating health education in lessons. Teachers creatively inject health education topics during their classes in different subjects. A TLE teacher shared how she integrates hygiene in her Cookery class:

> *"Yung sa lesson naming ng Cookery, since it is about food, we make sure na we teach proper hygiene tulad ng handwashing, before proceeding sa ibang lesson. Syempre hahawak sila ng pagkain kaya importante na maituro ang proper food handling." ("In our Cookery class, since it is about food, we make sure that we teach proper hygiene like handwashing before proceeding to other lessons. Since they will be touching food, it is crucial that they learn proper food handling."*

An online teacher also shared how she incorporates snippets of health education in the preliminaries part of the class after the greetings. She highlighted how important it is to constantly remind learners of proper hygiene even at home:

> *"Before ako magstart ng class, after greetings, kamustahan, kinakamusta ko kung naligo na ba sila at nag-toothbrush kasi nasa bahay lang sila. Pinapaalala ko lagi kasi baka nakakalimutan. Every class naming, ganun ginagawa ko." (Before I start my classes, after the greetings and updates, I inquire on whether they have taken a bath of brushed their teeth since they attend classes while at home. I make sure to remind them about this because they tend to forget. I do this in every class."*

Conducting health education during homeroom period. Other teachers, specifically advisers, also utilize their advisory class's homeroom period. Aside from discussion on the homeroom guidance modules, they include health education reminders and announcements, especially on the COVID-19 context. They emphasize regular handwashing, use of hand sanitizers, disinfection, and use of Personal Protective Equipment (PPE) like face masks and face shields.

Reminders through various communication platforms. Participants also utilize various communication platforms to share information on health education and post regular reminders. The primary tool they use is Facebook Group, where different media can be shared. One teacher voiced how he uses this for health education:

> *"Mayroon kaming Facebook group. Doon ako naglalagay ng mga information at videos tungkol sa proper hygiene para mapanuod nila at mapaalalahanan sila." ("We have a Facebook group where I post information and videos on proper hygiene that they can watch and serve as reminders for them."*

Teachers also commonly use Messenger, not only to post announcement and reminder, but to share knowledge on proper hygiene. One teacher's account says:

> *"Sa group naming sa Messenger ng advisory class ko, lagi ako may announcement. Nilalagay ko rin yung mga paalala sa handwashing, pag-toothbrush tsaka paliligo." (I always post announcements in our Messenger group. I put reminders on handwashing, toothbrushing, and bathing.")*

Challenges encountered. Despite their dedication and ingenuity, teacher

faces challenges in communicating health information to students given the present distance learning setting. This includes the following subthemes: (1) Inequality between online and modular students; and (2) Lack of localized procedure and materials for health education.

Inequality between online and modular students. Teachers expressed their dissatisfaction when it comes to apparent inequality in implementing health education among online and modular students. Online students have more access to information as they are present online every day. Modular students, on the other hand, have limited to zero internet connectivity, limiting their access to online information and chances of communicating with regards to health education. Once modular class adviser explains:

> *"Mahirap sa modular. Kaya nga sila nag-modular kasi wala silang internet, walang gadget. Hindi nila maa-access yung Facebook o Messenger para basahin yung mga post, lalo na yung manunuod pa ng videos." ("Reaching out to modular students is a challenge. Modular students have no internet connection nor gadgets at home. They have no access Facebook nor Messenger, so they will not be able to read posts and watch videos.")*

Since minors are not allowed to leave their homes, teachers can only communicate directly with the parents or guardians. Advisers relay information to the latter, expecting that students will be informed. A modular teacher states:

> *"Ang magagawa nalang naming, sabihan yung mga magulang tuwing kukuha sila ng modules. Sa kanila nalang naming sasabihin yung mga paalala para sa mga bata. Kaya lang hindi tayo sigurado kung nare-relay talaga yung information kasi marami rin ginagawa mga magulang." (What we could do is inform the parents every time they pick up modules in school. We relay the information, hoping that it will be passed on to the students. However, we are cannot be sure whether the* information has truly been relayed to them since parents also have many things to do."

Lack of localized materials for health education. Participants shared their need for school-based teaching ang learning resources that will help them and their students in communicating and learning health education.

> *"Mas maganda siguro kung meron na kaming materials na pare-pareho na gawa ng school para same kami ng discussion sa lahat ng students at pareho sila ng natututunan talaga." (Having school-based materials [on health education] will help us in our class discussion and will ensure that students have standard knowledge."*

4.4 Information, Education and Communication (IEC) Materials to be Developed

Respondents use varied resources to supplement verbal discussion on health education. Most teachers (125 responses) use posters, infographics, or images. Other resources used by teachers include slides, with 49 responses; videos, with 37 responses; and audio or podcasts with 9 responses.

Table 16. Resources Used for Conducting Health Education

Resources	Number of Responses
Posters, infographics, images	125
Slides	49
Videos	37
I have not conducted any health education session in any of my classes	25

As mentioned in the previous question, teachers expressed a need for materials to be used in conducting health education in the distance learning setting. To elaborate on teachers' needs in terms of effective health education implementation, this study explored a single theme: Teaching and learning resources. Table 7 shows two subthemes: (1) Online resources and (2) Printed resources.

Table 17. Needs of Teachers in Conducting Heath Education in Distance Learning

Themes	Subthemes
Teaching and learning resources	• Online resources • Printed resources

Online resources. With the inevitability of social media, teachers highlighted that is serves as the main platform for disseminating information non health education. As mentioned previously, they primarily utilize Facebook and Messenger to share and post resources from international non-government organizations related to sustainability and health. As these are international, context may be too broad and lacks locality, as mentioned by one of the participants:

> *"Ang nashi-share kong videos tsaka posts mga galing sa UNICEF or WHO na international kasi wala naman tayong sa atin." ("I share videos and posts from UNICEF and WHO, which are international in context, because we do not have local resources available."*

Teachers emphasized the need for video materials which they can simply play in their online classes or which students can watch on their own time and pace. They also unanimously agreed that having localized, standard materials can help them facilitate health education smoothly and will enhance their confidence on the materials they use.

Printed resources. It has been mentioned in the previous results that students in the modular learning modality may experience difficulty in accessing online resources. Modular teachers call for printed materials that can be distributed together with the modules, which contain similar information from online resources to be developed. One teacher voiced:

> *"Kahit simpleng ilagay natin sa mga pini-print at pinamimigay nating activity sheets yung mga information on health education. Isama na natin sila para isang basa nalang din ang bata. Talagang mababasa nya kasi andun na sa activity sheets." ("We can simply place health education information on activity sheets that we reproduce and distribute to learners. Information will be accessible that way. Learners can read them directly on their activity sheets."*

4.5 Synthesis and Implications to Health Education Campaigns

Quantitative and qualitative results suggest that students have a range of knowledge and experiences with infectious diseases. While some students have a good understanding of infectious diseases and how to prevent them, others may have limited knowledge and experience. The qualitative results also indicate that students' experiences with infectious diseases can be shaped by a number of factors, including financial instability, lack of access to healthcare, and cultural beliefs and practices. It is important to note that this is just a small study, and more research is needed to understand the knowledge and experiences of students with infectious diseases.

However, the results of this study suggest that there is a need for educational programs that can help students to develop a better understanding of infectious diseases and how to prevent them. These programs should be culturally sensitive and should take into account the financial constraints that some families may face.

Furthermore, results show that students have good hygiene practices in some areas, but there is room for improvement in others. For example, students almost always wash their hands after using the toilet, but they are less likely to wash their hands before meals or after contact with animals. Additionally, many students do not wash their hands for long enough. The most common reason for not washing hands is forgetting. Other reasons include lack of time, lack of water, and not understanding the importance of handwashing. Students also have good toothbrushing practices, with most students brushing their teeth at least twice a day. However, the primary reason for not brushing teeth is forgetting. Other reasons include lack of time, lack of water, and not understanding the importance of brushing teeth. Students are also less likely to bathe daily than to wash their hands or brush their teeth. The most common reasons for not bathing include forgetting, lack of time, lack of water, and not understanding the importance of bathing.

The qualitative results of the study provide insights into students' hygiene practices at home and the challenges they face. Students reported that they try to practice good hygiene at home, even during the pandemic. However, they sometimes forget to wash their hands, brush their teeth, or bathe regularly. They also expressed that they do not always understand the importance of hygiene, and they are not always reminded to practice hygiene by adults at home. One of the main challenges that students face in practicing hygiene is lack of motivation. They may forget or neglect hygiene practices if they are not motivated to do them. Another challenge is lack of resources. Students may not have access to soap, water, or other hygiene supplies, or they may not have the time to practice hygiene.

The quantitative results of the study show that there is variation among teachers in terms of how often they conduct health education and the topics they cover. Most teachers conduct health education at least once a month, but some teachers only conduct it once a year or not at all. The most common hygiene practices that teachers discuss are handwashing and toothbrushing, but fewer teachers discuss bathing and other hygiene practices. The most common infectious disease that teachers discuss is COVID-19, but other infectious diseases, such as diarrhea, dengue, influenza, and leptospirosis, are also discussed.

Furthermore, the study provides insights into the initiatives that teachers take to conduct health education in the distance learning setting and the challenges they face. Teachers use a variety of initiatives to conduct health education, including integrating health education into lessons, conducting health education during homeroom period, and sending reminders through various communication platforms. However, teachers face a number of challenges in conducting health education in the distance learning setting, including inequality between online and modular students and lack of localized procedure and materials for health education. Online students have more access to information and opportunities to communicate, while modular students have limited to zero internet connectivity. Additionally, teachers lack school-based teaching and learning resources to help them communicate and teach health education.

These findings of this study pose several implications for IEC campaigns on infectious diseases. First, it is important to tailor messages to different levels of understanding. For example, some students may need basic information about what

infectious diseases are and how they are transmitted, while others may need more detailed information about prevention and treatment. Second, IEC campaigns should address the challenges that students face in dealing with infectious diseases. For example, campaigns could provide information on how to access affordable healthcare, or how to overcome stigma. Third, IEC campaigns should empower students to take action to protect themselves and others from infectious diseases, such as campaigns on identifying the signs and symptoms of common infectious diseases, and how to practice good hygiene. Campaigns could also teach students how to communicate with their parents or guardians about the importance of hygiene, or how to access hygiene supplies if they are not available at home.

In addition, this study has implications for health education practice among teachers. Teachers should be provided with support and resources to help them conduct health education in the distance learning setting. This could include providing them with training on how to integrate health education into lessons, how to use various communication platforms to reach students, and how to develop localized procedure and materials for health education. School administrators and teachers should work to reduce inequality between online and modular students.

CONCLUSIONS

Based on quantitative and qualitative results gathered in this study, the following conclusions have been made:

Learners' knowledge is mainly limited to those infectious diseases that they and their family members have personally experienced. Most students know what the diseases are, and its signs and symptoms, but remain unaware of its treatment and prevention. Students may need to improve their knowledge on the signs and symptoms, treatment, and prevention of other infectious diseases namely: Dengue, Influenza or flu, Leptospirosis, Typhoid fever, Cholera, and Hepatitis A. In terms of specific diseases, students are generally most familiar with Diarrhea, the gravest cause of mortality among children, and COVID-19, which can be attributed to the presence of information in media and the internet. However, they have developed tolerance to its signs and symptoms, given their family's lack of prioritization on health brought about by financial instability. They only seek and accept help when illnesses have become worse or has spread among other family members. Students acknowledge that they can minimize acquisition and spread of infectious diseases through knowledge on prevention measures and early detection.

Learners may be at risk of infectious diseases because of inadequate hygiene practices, caused by lack of motivation and unavailability of resources. Students do not always handwash in expected and/or required situations. In terms of toothbrushing, it can be generalized that most students have good practices when it comes to how often they must brush their teeth, but this activity must be reinforced to target those who lack proper practice. Moreover, students do not prioritize bathing, often forgetting or choosing to do something else rather than taking a bath. The idea that they can attend school without going out has become students' reason for not practicing hygiene activities since they are confined in their homes. Another factor that hinders hygiene practice among learners is the unavailability of essential resources, such as water and toiletries, in their homes.

Teachers struggle to communicate adequate health education information to students amid challenges of distance learning. Initiatives to build and sustain students' knowledge and awareness on hygiene and its benefits to prevent infectious diseases

have been implemented by teachers in their own classes. Frequency, strategy, and content of these initiatives vary. Most teachers discuss health education in every class or weekly; some teachers do so every month and every quarter. This can be attributed to the strategy they use for health education—some choose to integrate health education in their respective subject areas, others use their advisory class' homeroom period, and many utilize daily conversations and announcements in social media and instant messaging platforms. Information shared by teachers are largely limited to handwashing and its relation to preventing the spread of COVID-19. Teachers recognize the challenge to reach both online and modular learners as resources are mainly online.

Teachers need localized resources that are equally accessible to online and modular learners. As educators strive to send information on health education, they use international resources such as posters, infographics, images, slides, videos, audio, and podcast. As these can only be accessed by online learners, there is a need for printed materials for modular learners that contain the same information.

RECOMMENDATIONS

Anchored on the conclusions made, the study made the following recommendations for strengthening health education in distance learning:

Information drive on infectious diseases common among Filipinos and on hygiene practices for students and parents/guardians. School can utilize different communication methods to disseminate information on infectious diseases, focusing on its causes, transmission, immediate treatment, and prevention. The paramount aim of health education is to encourage change geared towards the advocated concept. To ensure that learners address the threat to infectious diseases that they may encounter every day, teachers may assist parents in reminding students of personal hygiene practices that they must regularly perform daily, like handwashing, toothbrushing, and bathing. To reach a greater target audience, schools may use a hybrid of online, such as social media platforms, and offline resources like printed materials.

Crafting of specific school policy, process, and guidelines on integrating health education in classroom instruction and/or homeroom. Integrating health education in classes can be strengthened by crafting school policies that includes specific instructional processes and/or guidelines for teachers. This will enable teachers to acquire knowledge and standard process on how to conduct and/or integrate health education in the classroom.

Individual and organizational capacity building on health education. The school and its personnel must be equipped with ample knowledge on infectious diseases and hygiene practices so they can effectively communicate essential information, and advocate improvement and sustainability of hygiene practices among students. Capacity building can help the school achieve its mission to help students and their parents/guardians develop awareness and motivation to regularly practice and monitor their own hygiene at home.

Development, validation, and implementation of localized online and printed EIC materials. To address teachers' concern on inequality in access to information among online and modular students, both online and printed EIC materials must be developed and compiled as a WINs EIC Toolkit. Students' current knowledge on infectious diseases and hygiene practices must be taken into consideration in the development of resources, which will be validated by experts prior to implementation.

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AUGMENTING LEARNER-CENTERED CLASSROOMS THROUGH INTEGRATIVE ASSESSMENT: IMPACT TO LEARNING EXPERIENCES AND ACHIEVEMENT OF OUTCOMES

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Gen. Emilio Aguinaldo National High School

Abstract

Purpose: The primary intent of this pilot study was to determine the impact of integrative assessment (IA), in the form of a capstone project, to students' learning experiences and achievement of outcomes. Design/methodology/approach: This research employed mixed-methods sequential explanatory design through a validated survey questionnaire and focus group discussion. The study ran from January to August 2021 and involved 33 Grade 9 learners from Gen. Emilio Aguinaldo National High School (GEANHS), Imus City. Quantitative data were analyzed using descriptive statistics and qualitative records were subject to thematic coding. Findings: The findings manifest that integrated assessment increased the level of quality of learning experience among participants. IA established more meaningful learning for students by significantly reducing workload, encouraging productive feedback with teachers and peers, and enabling self-regulation through observable progress. Furthermore, participants achieved all learning outcomes when engaged in IA, attributed to heightened motivation, and enhanced connection of multiple topics. Research limitations/implications: This research revealed the impacts of integrative assessment as experienced and perceived by GEANHS learners, presenting relevant material for teaching practice. Originality/value: The study is an innovative attempt to design and implement integrative assessment for Junior High School learners and confirm its impact to both learning experiences and achievement through quantitative and qualitative data.

Keywords: *integrative assessment, learning experience, learning outcomes, student achievement*

INTRODUCTION

Assessment is an integral element to teaching and learning. It is a joint educational process that involves both teachers and learners. The implementation of assessments in the classroom enables the recognition of diverse abilities of students. Through appropriate and varied methods of assessment, teachers can measure learners' current and developing knowledge and skills (Black & Wiliam, 2018). The Department of Education (2015) defines classroom assessment as "an ongoing process of identifying, gathering, organizing, and interpreting quantitative and qualitative information about what learners know and can do" (p. 1). This definition highlights the role of assessment as a tool to determine the achievement of competencies by the learners. Correspondingly, UNESCO (2020) recognizes that assessment is a powerful tool, not only for diagnosing, but for planning, monitoring, and improving learning.

In educational research literature, formative and summative assessments are often referred to as a dichotomy (Wiliam, 2017). Formative assessment is viewed as assessment for learning as it is used to identify students' progress at a certain time as basis for teachers' adjustments. The goal of this assessment is to improve learning by ensuring learners' accountability of the learning process (Stiggins, 2019). As such, this can be given before, during, or after the teaching learning process to provide students with feedback which they can use as reference to enhance their learning. On the other hand, summative assessment is seen as assessment of learning, and is carried out at the conclusion of the educational process. This assessment aims to determine the competencies achieved by the learners, whether they have met the content or performance standards (Department of Education, 2015). This conventional view that assessment is only used to measure student learning outcomes results to assessment being a separate activity from the learning process (Hadi, 2020). Assessment is an ongoing process and should not be used as mere method or an annual summary for accountability purpose. This is where integrative assessment is crucial.

Integrating the summative with formative purposes of assessment can allow for assessing student learning to form a solid foundation for certification while trying to heighten the same. This integration can be achieved using incremental or progressive assessment. By connecting assessment tasks, feedback from prior assessments can clarify student's progress of learning and performance in later assessments. Timely feedback provides students with a picture of their current learning and allows them to act on the feedback (Wiliam, 2017). In this way, learning can be emphasized over assessing (Vu, 2014).

Furthermore, assessment can be integrated with real-world practice for authentic learning. This can be accomplished by identifying core activities of the designated profession, the people and things involved in the activities, and a concrete context for carrying out the activities (Vu, 2014). The teacher can then use the information to design the assessment task and articulate assessment requirements.

Finally, integrative assessment can occur with the inclusion of different learning areas and 21st century skills. An effective assessment task encourages the application of knowledge and skills from other learning areas. Meaningful learning is attained when the learners are assessed in a way that they are inspired to see how learning areas are interrelated (McTighe et. al., 2020).

Integrative assessment provides students with opportunities to analyze their approaches to responding to a problem, issue, situation, or performance and engage with a meaningful task that has inherent worth beyond just an assessment activity

(Brookhart, 2015). The adoption of integrated assessment acts as a catalyst for student learning and a gauge for evaluating student performance (Kamardeen, 2014), improving students' performance (Boud & Nicol, 2017) and motivation (Umar, 2018) as learners become more responsible for their own learning.

Recognizing the relevance of integrative assessments, the Department of Education (2020), in its release of "Interim Guidelines for Assessment and Grading in Light of the Basic Education Learning Continuity Plan", advised teachers to "collaboratively design and implement performance tasks that integrate two or more competencies within or across subject areas" (p. 4). Thus, this study intends to develop an integrative assessment that interconnects real world practice and different learning areas. Guided by the elements of integrative assessment, this research investigated the efficacy of a research capstone project as integrative assessment among Grade 9 learners in General Emilio Aguinaldo National High School during School Year 2021-2022. Furthermore, this paper explored learners' experiences to provide opportunities for improvement.

Research Questions

The study aims to develop a research capstone project as an integrative assessment and identify its conceivable effects and learning experiences among students. Specifically, the study answered the following questions:

1. How did the respondents describe the perceived efficacy of the research capstone project as an integrated assessment?
2. How did the respondents describe the impact of research capstone project as an integrated assessment in the achievement of the learning outcomes?

METHODOLOGY

Research Design

This research utilized the mixed-methods sequential explanatory design, which is characterized by conducting quantitative and qualitative approaches to data collection and analysis (Creswell, 2018). The first phase employed quantitative method of data gathering, followed by a qualitative approach in the second phase.

Participants and/or other Sources of Data and Information

Participants of the study were thirty-three (33) students from Grade 9 Science, Technology, and Engineering (STE) section from General Emilio Aguinaldo National High School during School Year 2021-2022. The study used purposive sampling to focus on a group with characteristics relevant to the research question. The STE section has a wider range of subjects compared to regular sections. This exposes students to a broader variety of content and potentially different assessment practices.

Data Gathering Methods

Before gathering data among the participants, the researcher secured permission from the school head through a letter which stated the purpose of the study. The letter also included the nature and manner data gathering, instruments to be used, and ethical considerations.

The following instruments were utilized in the study:

Researcher-made Survey Questionnaire. This instrument consisted of two sections to identify students' perceptions on: (1) the efficacy of the research capstone

project as an integrated assessment; and (2) the quality of learning experience during the research capstone project. Participants' responses were collected on a 5-point scale shown in Table 1.

Table 1. Range and Verbal Interpretation of the 5-Point Scale

Numeral Weight	***Range of Score***	***Verbal Interpretation***
5	4.50-5.00	Strongly Agree
4	3.50-4.49	Agree
3	2.50-3.49	Neutral
2	1.50-2.49	Disagree
1	1.00-1.49	Strongly Disagree

Based on the provided 5-point scale and verbal interpretations, each score suggests the following interpretation, in terms of the efficacy of the research capstone project as an integrated assessment:

1. Strongly Agree. Students believe the project effectively measured their learning and helped them understand course material.
2. Agree. Students see value in the project as an assessment but might have some minor reservations.
3. Neutral. Students might have experienced uneven aspects or found the assessment moderately effective.
4. Disagree. Students have concerns about the project's effectiveness as an assessment.
5. Strongly Disagree. Students strongly believe the project was not an effective assessment.

In terms of quality of learning experience during the research capstone project, the following are the implications of the verbal interpretations:

1. Strongly Agree. Students had a very positive learning experience, likely finding the project engaging and stimulating.
2. Agree. Students had a generally positive learning experience, but perhaps encountering minor challenges or areas for improvement.
3. Neutral. Students find some aspects valuable but others less engaging or effective.
4. Disagree. Students had a negative learning experience, finding the project frustrating, challenging, or not conducive to their learning goals.
5. Strongly Disagree. Students had a very negative learning experience, finding the project poorly designed, demotivating, or detrimental to their learning.

Focus Group Discussion (FGD) Guide. The FGD method provided further understanding on students' assessment of the research capstone project and their experiences, insights, and perceptions for the entire duration of the integrative assessment. The FGD was conducted in four groups, each with eight to nine participants only. The FGD Guide contained core questions that focus on: (1) their experience in the integrative assessment; (2) the best features of the research capstone project; (3) aspects of the assessment that needs improvements and how. The moderator may add questions to probe into the responses of the participants.

Data Analysis Plan

The research employed a Mixed Methods Analysis to analyze both quantitative and qualitative data. In particular, the study utilized the following approaches to data analysis:

Weighted Mean. This statistical treatment was used to interpret and analyze quantitative data to be gathered from the survey questionnaire.

Open coding process and Thematic Analysis. This qualitative method was used to analyze the qualitative data from the four FGDs. To perform the open coding process, the researchers did not have pre-imagined concepts and used continuous evaluation among and within the transcripts to detect recurring expressions and thoughts. Once themes are clustered, each theme was given categorical titles to create a table of themes, including subthemes.

The Research Capstone Project

The researchers developed Project SOAR or Students Optimize and Amplify Research. The project aims to: (1) foster research writing and presentation skills among students; (2) promote integration of different subject areas in research for holistic and authentic learning; and (3) equip learners with 21st century skills for global competence and lifelong learning.

Project SOAR involved the crafting of an integrative assessment for Grade 9 learners of the Special Program in Science, Technology and Engineering (STE) in the form of a student research capstone project. An integrative assessment plan included the development of evaluation rubrics for identified subjects. To enable integration of various learning areas in the research capstone project, the content standards and performance standards for the Fourth Quarter of Grade 9 English, Araling Panlipunan, Edukasyon sa Pagpapakatao, Arts, Health, Technology and Livelihood Education (Information and Communications Technology), and Science (Research) were analyzed.

The validation of the assessment plan utilized in Project SOAR was conducted through a collaborative process involving the proponents, teachers, Master Teachers, Head Teachers, and the school head. The validation process included the following steps:

1. The proponents developed the assessment plan based on the learning objectives of the Special Program in Science, Technology and Engineering (STE).
2. The teachers reviewed the assessment plan to ensure that it was aligned with the learning objectives of the STE program and that it assessed the learners' higher-order thinking skills.
3. The proponents submitted the assessment plan to the Master Teachers and Head Teachers for validation. The Master Teachers and Head Teachers reviewed the assessment plan to ensure that it was valid, reliable, and fair.
4. The school head reviewed the assessment plan and approved it for implementation.

The project was conducted during the Fourth Quarter of School Year 2021-2022, and served as the class's culminating activity for the academic year.

Ethical Considerations

The study secured consent from both the respondents and their parents through a form/waiver. Parents and guardians were given a copy of the survey

questionnaires and Focus Group Discussion guides prior to conducting data gathering. All names and other information of participants were protected to uphold confidentiality and anonymity of any personal data.

RESULTS AND DISCUSSION

A. Quality of Learning Experience

The quality of learning experience as perceived by learners is presented in Table 2 below. Respondents generally consider the integrated assessment as a positive learning experience for them, as interpreted by a weighted mean of 4.71. In detail, students Strongly Agree in all nine statements related to quality of learning experience: “The Research Capstone Project allowed me to demonstrate and maximize my potentials” (4.85); “The Research Capstone Project motivated me to be actively involved in my own learning” (4.71); “The Research Capstone Project was practice-oriented, and intellectually challenging and stimulating” (4.66); “The Research Capstone Project offered timely and critical feedback on my progress” (4.72); “The Research Capstone Project improved my organizational and time management skills” (4.66); “The Research Capstone Project increased my proficiency with oral and written communications” (4.93); “The Research Capstone Project developed my teamwork and collaboration skills” (4.88); “The Research Capstone Project Working enhanced my analytical and critical thinking abilities” (4.62); and “The Research Capstone Project advanced my ability to engage in independent and reflective learning” (4.62).

Table 2. Quality of Learning Experience as Perceived by Learners

Criteria	Rank	Mean	Verbal Interpretation
The Research Capstone Project allowed me to demonstrate and maximize my potentials.	3	4.85	Strongly Agree
The Research Capstone Project motivated me to be actively involved in my own learning.	5	4.71	Strongly Agree
The Research Capstone Project was practice-oriented, and intellectually challenging and stimulating.	6	4.66	Strongly Agree
The Research Capstone Project offered timely and critical feedback on my progress.	4	4.72	Strongly Agree
The Research Capstone Project improved my organizational and time management skills.	6	4.66	Agree
The Research Capstone Project increased my proficiency with oral and written communications.	1	4.93	Strongly Agree
The Research Capstone Project developed my teamwork and collaboration skills.	2	4.88	Strongly Agree
The Research Capstone Project Working enhanced my analytical and critical thinking abilities.	7	4.65	Strongly Agree
The Research Capstone Project advanced my ability to engage in	8	4.62	Strongly Agree

independent and reflective learning.

Mean	***4.74***	***Strongly Agree***

Table 2 presents highly positive student perceptions of the research capstone project's impact on their learning experience. Students strongly agreed that the project motivated them to actively engage in their learning (4.71) and allowed them to demonstrate their full potential (4.85). The project was perceived as both intellectually stimulating and practice-oriented (4.66), offering a balance between theoretical knowledge and real-world application. Students valued the timely and critical feedback they received (4.66), suggesting the project effectively supported their growth and development. Additionally, they reported improvements in organizational skills (4.72), communication skills (4.66), teamwork (4.93), critical thinking (4.88), and independent learning (4.65).

In the conventional view, assessments are only seen as a means to measure students' learning outcomes. However, assessments must not be seen as a separate activity from the learning process (Hadi, 2020). The results of the study coincide with this view, as students see integrated assessment as an activity than enhances their learning process, and not merely a requirement for to pass a subject or a quarter.

To deepen understanding of the implemented integrative assessment, an FGD was conducted among the participants of the study. From the narrative analysis, learners associate the integrative assessment as a significant activity to their learning, due to three emerging themes: (1) Significantly reducing workload; (2) Encouraging productive feedback; and (3) Enabling self-regulation through observable progress. Table 3 presents the emerging themes, sub-themes and sample statements given by the participants.

Table 3. Emerging Themes and Subthemes on Students' Learning Experiences on Integrative Assessment

Themes	***Sub-themes***	***Sample Statements***
Significantly reducing workload	Less requirements	"Hindi na ganoon karami ang kailangan gawin kasi isa nalang ang Performance Task para sa mga subjects namin." *"We do not need to work on a lot of requirements since we only have one Performance Task for most subjects."* "Mas magaan po. Instead na eight tasks, yung six subjects naming, isa nalang." *"It is convenient. Instead of having eight tasks, there's only one task for six subjects."* "Sobrang bigat po kapag minsan nagsasabay yung deadlines. Masaya po kami ng groupmates ko kasi at least sa isang task, marami nang grades ang kasali." *"It's very tedious for us when we have too many deadlines. My groupmates and I are happy because with one task, we comply with*

		most subject requirements already." "Bawas po sa pagod tsaka sa oras kaya mas may time na makapag-isip and may rest pa konti." *"It's less tiring, we spent less time to plan, and we were able to rest even for a while."*
	Increase in focus	"Mas nakakapag-concentrate po sa Performance Task na to kasi isa lang sya. Lahat ng time namin, sya ang pinaplano naming para sure na maganda yung output." *"I can focus on the Performance Task more since we only needed to do one instead of many. We can dedicate all our time to preparing for a great output."* "Very helpful po sa amin na one task lang for most subjects kasi we can produce a quality paper and presentation." *"[The integrated assessment] was very helpful, as there is only one task to be done. We can produce a quality paper and presentation."* "Unlike noon na may eight kaming kailangan tapusin, sobrang nakakapagod po, ngayong nabubuhos naming lahat ng creativity, lahat ng effort naming sa isang bagay na alam po naming magiging maganda talaga kasi may focus kami." *"Unlike before when we had eight tasks to finish and it makes us really tired, we can now focus all our creativity and effort to produce a quality output."*
Encouraging productive feedback	Feedback from peers	"Nagtutulungan kaming lahat sa group. Nagbibigayan kami ng suggestions para mas maging maganda yung project namin." *"Everybody helps. We give suggestions to make our project better*"

Significantly reducing workload. The first and primary theme that emerged in the qualitative data gathered in the study is that the integrated assessment significantly reduced the workload of learners. There are two sub-themes convened under this theme: (1) Less requirements; and (2) Increase in focus. Students highlighted that instead of having eight tasks to be submitted, they only need to accomplish one. By combining the content and performance standards of six learning areas, students can focus most of their time and effort in a single activity. Learners become more confident that they can achieve the set competencies and targets since they have more time to

prepare for one big task, in comparison to having multiple requirements. Reducing the workload of learners motivates learners to exert knowledge and skills, which may result in positive learning experiences.

Encouraging productive feedback. Participants connect positive learning experiences to gaining feedback from both their peers and their teachers. Through a collaborative activity, students can give and receive immediate feedback from their peers, which they can use to further improve their learning and achievement of task objectives. Moreover, feedback given by teachers in different learning areas enhances not only their learning, but their confidence in their own work. Timely feedback provides students with a picture of their current learning and allows them to act on the feedback (Wiliam, 2017). Hence, feedback from people whom they trust enables them to improve themselves while learning.

Enabling self-regulation through observable progress. A concept that was made apparent by the response of participants is self-regulation. Self-regulation is the degree to which individuals can influence, change, or regulate their own behavior (including thoughts and feelings) in accordance with objectives or standards (Sassenberg & Hamstra, 2017). Learners may not be aware, but they became more aware of their own behavior and make decisions to alter these throughout their learning experience, as shown on three sub-themes: (1) Time management; (2) Responsibility on one's learning; and (3) Self-evaluation. Learners shared that they learned to manage their time more effectively. Despite having less tasks to accomplish, they decided to put more time for the performance task as the weight of accomplishing the task. Students became more responsible for their learning, accepting ownership of their own outcome. Congruent to Crips's study (2012) states that integrative assessments provide students with opportunities to analyze their approaches to responding to a problem, issue, situation, or performance and engage with a meaningful task that has inherent worth beyond just an assessment activity (Brookhart, 2015). As they accept responsibility for their own learning, they also learn to evaluate their own performance. Kamardeen (2014) concluded that the adoption of integrated assessment acts as a catalyst for student learning and a gauge for evaluating student performance. Integrated assessment improved both learners' knowledge and their attitude towards learning.

B. Achievement of Learning Outcomes through Integrated Assessment

Aside from improving learning experiences, the integrated assessment also positively affected their learning outcomes in the subject areas involved. Respondents strongly agree that they have achieved the learning outcomes in six areas with a weighted mean of 4.68. Table 5 shows how learners strongly agree with that they have achieved the learning outcomes on: Foundation on research (4.80); Desktop publication (4.87); Usage of tense consistency, modals, and active and passive constructions (4.66); Connecting research to economic development and national progress (4.70); Valuing education as an essential concept for my plans in the future, in both higher education or employment (4.59); Theater and performance concepts during the proposal presentation (4.53); and Resilience, vigilance, and proactive behaviors to prevent intentional injuries (4.63).

Table 5. Respondents' Perceived Impact of the Research Capstone Project as An Integrated Assessment in the Achievement of the Learning Outcomes

Criteria	***Rank***	***Mean***	***Verbal Interpretation***
The Research Capstone Project built my foundation on research proposal preparation and presentation.	2	4.80	Strongly Agree
The Research Capstone Project fostered my desktop publication knowledge and skills.	1	4.87	Strongly Agree
The Research Capstone Project enhanced my usage of tense consistency, modals, and active and passive constructions.	4	4.66	Strongly Agree
The Research Capstone Project helped me connect research to economic development and national progress.	3	4.70	Strongly Agree
The Research Capstone Project encouraged me to value education as an essential concept for my plans in the future, in both higher education or employment.	6	4.59	Strongly Agree
The Research Capstone Project provided an opportunity to apply theater and performance concepts during the proposal presentation.	7	4.53	Strongly Agree
The Research Capstone Project allowed me to demonstrate resilience, vigilance, and proactive behaviors to prevent intentional injuries.	5	4.63	Strongly Agree
Mean		***4.68***	***Strongly Agree***

Table 5 indicates that respondents strongly perceived the research capstone project as having a positive impact on their achievement of various learning outcomes. Students strongly agreed that the project improved their skills in research proposal preparation and presentation (4.80) and desktop publication (4.87). The project also positively impacted their communication skills, enhancing their understanding and usage of tense consistency, modals, and active/passive voice (4.66). Students reported improved understanding of the connection between research and real-world impact like economic development and national progress (4.70). Respondents strongly agreed that the project influenced their future aspirations, encouraging them to value education for both higher education and career paths (4.59). While the table focuses on these core areas, additional items point to the project's potential impact on other skillsets, including performance skills (4.53), safety awareness (4.53), and resilience (4.63).

As students become more responsible of their own learning, they improve their performance as well (Boud & Nicol, 2017). Participants associated their achieved learning outcomes to two themes: (1) Heightened motivation; and (2) Enhanced connection of multiple topics. Table 6 shows the emerging themes and subthemes on students' learning experiences on integrative assessment.

Table 6. Emerging Themes and Subthemes on the Respondents' Perceived Impact of the Research Capstone Project as An Integrated Assessment in the Achievement of the Learning Outcomes

Themes	***Sub-themes***	***Sample Statements***
Heightened motivation	Desire to achieve good outcomes	"Sana po mataas yung grades ko kaya po I try my best na ma-achieve lahat nung nakalagay sa task." *"I hope to achieve high grades so I try my best to achieve all tasks."* "Pinag-aaralan ko po talaga yung lessons para sure na maganda yung scores ng group namin." *"I make sure I study the lessons well to assure myself that I will get good scores."*
	Desire to learn more	"I look forward to more lessons po kasi na-excite ako sa last assessment namin." *"I look forward to more lessons because I am excited about the last assessment."* "Gusto ko matutunan lahat ng skills na magagamit ko for class at sa daily life." *"I want to learn all skills that I can use in class and in daily life."*
Enhanced connection of multiple topics	Application of knowledge and	"Ang galing po kasi ang daming lessons na na-apply galing sa ibang subjects. Kunwari, yung lesson sa ICT namin, "It's interesting because we can apply lessons from different subjects, like our ICT lessons"

Heightened motivation. In relation to positive learning experiences encountered by the learners, integrated assessments heighten their motivation. This is similar to other previous studies (Umar, 2018) that directly relates the effect of integrated assessment to students' behavior towards learning and their motivation. In the FGD, students' responses in relation to their motivation are categorized into two sub-themes: (1) Desire to achieve good outcomes; and (2) Desire to learn more. Participants expressed desire to achieve good outcomes, encouraging them to learn necessary knowledge and skills. However, scores and grades are not the only driving factor to increase motivation. By acknowledging the importance of learning, students develop a desire to learn more, intrinsically, not relying on the extrinsic motivation of getting good grades alone.

Enhanced connection of multiple topics. Through integrated assessments, students began to value the interconnectedness of topics from different areas. They consider integrated assessments as a venue for: (1) Application of knowledge and skills from different learning areas; and (2) Meaningful learning. Integrative assessment includes lessons from different learning areas, as well as 21st century skills. Like the study of Vu (2014), integrated assessments allow students to concretize learning. Finally, integrated assessment encouraged learners to apply competencies learned in other learning areas to real life. Meaningful learning is attained when the

learners are assessed in a way that they are inspired to see how learning areas are interrelated (McTighe et. al., 2020).

CONCLUSIONS

Based on the findings presented above, this study has the following conclusions:

The research capstone project, implemented as an integrated assessment, resulted in a highly positive learning experience for students. Students reported increased motivation, active participation, and engagement in their learning. The project fostered the development of critical thinking, communication, organizational, teamwork, and independent learning skills. Timely and constructive feedback played a crucial role in enhancing learning and building confidence. The reduced workload associated with integrated assessment allowed students to focus their efforts on a single meaningful task, promoting self-regulation and ownership of learning.

Students perceived the project as having a significant impact on their achievement of various learning objectives. They reported improvement in research, communication, and critical thinking skills, along with application of knowledge to real-world contexts. The project encouraged students to value education and consider future aspirations related to higher education and career paths. Additionally, the project potentially impacted other skillsets like performance, safety awareness, and resilience.

RECOMMENDATIONS

From the conclusions drawn, the study suggests the following recommendations:

School-level curriculum review to allow development of integrated assessments for all grade levels. The positive impact of integrated assessment to both learning experiences and learning outcomes of students provides evidence that it can be applied in various grade levels and will lead to improvement of the curriculum delivery. A curriculum review in the school level will allow educational leaders and teachers to revisit the curriculum as one learning journey for learners, and not as a division of learning areas. A curriculum review provides critical assessment of the school's academic program with the goal of maximizing student learning experiences, which may include the development of integrated assessments encompassing content and performance standards of different subjects, with the intent of forming a unified learning.

Capability building of teachers on integrated assessment. As the primary implementer of the curriculum, teachers must be sufficiently knowledgeable on the foundations of integrated assessment. Teachers must understand the importance of collaboration among teachers with diverse expertise, to design integrated assessments anchored on the set learning competencies of the Department of Education.

Strengthen knowledge management within the school. Teachers produce a tremendous amount of data daily, from students' assessments, activities, and reflections. It is necessary that teachers know how to use quantitative and qualitative data on making decisions for classroom instruction and assessment. Knowledge management pertains to the process for finding, collecting, analyzing, and disseminating information within an organization (Moxley, 2022). By understanding the

process of knowledge management, teachers can maximize learners' data in creating authentic integrated assessments and implement necessary adjustments upon implementation.

Conduct further research. Researchers may investigate the long-term impact of integrated assessments by analyzing how they influence student learning, achievement, and career trajectories beyond the immediate timeframe. Variations in student experiences can also be analyzed, such as program type, project focus, and individual learner characteristics that may influence perceptions and outcomes of integrated assessments.

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INFOGRAPHIC-AIDED MATERIAL (IAM): A TOOL FOR ENHANCING THE WRITING SKILLS OF GRADE 12 STUDENTS IN CREATIVE NONFICTION

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Abstract

This action research focused on the development of infographic materials that aimed to improve the writing skills of HUMSS students enrolled in Creative Nonfiction. The study employed the pre-assessment and post assessment in writing before and after the intervention and T-test was used to analyze the difference in the scores. The pretest showed that the mean scores in the pretest for commentary is 26.26 for Class 1, 24.96 for Class 2, and 27.17 for Class 3 which is lower than the mean score in the posttest, 35.42, 40.625, and 41.31 respectively. Moreover, the score in writing mini critique in the pretest, 24.64 for Class 1, 25.18 for Class 2, and 29 for class 3 are lower than the posttest scores of 46.09, 42.87, and 46.04 respectively. The findings also showed that the computed difference for commentary writing with 0.0004, .00001 for Class 2, and 0.00001 for Class 3 and critique writing with 0.00001 for Class1, and also a p-value of 0.00001 for Class 2 and 3 are less than the p-value alpha level of.05. The data show that there is significant difference in the students' prewriting and post writing in the commentary writing and critique writing. The results showed the notable improvement in the mean score and the significant difference between pretest and after the intervention was conducted. Infographic aided materials helped the students improved their performance in writing.

Keywords: infographic, nonfiction materials, writing skills, writing approach, writing challenge

CONTEXT AND RATIONALE

Writing has been the most challenging task and skill in English subject for the teachers and students in Senior High School. Writing encompasses reading comprehension, vocabulary, and critical thinking skills. It is a multiplex activity (Ling 2016). Nunan (2003) cited by Novariana (2008) states that writing is the process of thinking to create ideas, crafting the process on how ideas will arrange into statement and paragraph. Through writing, people can share feelings, ideas, convince and persuade others. In the school setting, students use writing to do report like laboratory report, progress report, communication letter, and essays. They write creatively to express their experiences.

Callora and Suñas (2023) explained the importance of writing as one of the essential means for communication, paving the way for self-reflection, peer expression, mental preservation, a productive skill, a form of literacy, a communicative activity, and sometimes a means through which learners can be assessed (Peter, J, Singaravelu, G 2021), a tool for the people to conceptualize everything they have in their minds in written way (Rahmanita,2023), and it holds an important role in mastering a language (Dewi, et.al 2017). Writing prepares students to greater opportunities for tertiary and even for employment and business, as a method of communication, writing can be used to establish and maintain contact with others, transmit information, express thoughts, feelings, reactions, entertain, and persuade (Peter & Singaravelu, 2021).

In Senior High School Curriculum, students deal with multiple writing subjects like Reading and Writing, English for Academic and Professional Purposes, Practical Research 1&2, Creative Writing, and Creative Nonfiction. Roxas (2020) said that among the subjects EAPP is considered new to the student for giving less emphasis to academic writing in the Junior High School Curriculum. Senior High School Curriculum is considered a point of no return. Finding out lack of skills in reading and writing could not be addressed immediately. The discussion, presentation of lesson stated in the curriculum must not stop to address the gap in learning. The competencies stated in the curriculum are using the skills developed in the past and applying the skills dictated by the academic community.

Challenges in Writing among Senior High School

Challenges in writing according to Novariana, H. et al. (2018) are internal problems that include grammatical problem, word choice, cognitive problems such as punctuation and capitalization, spelling, content and organization. Moreover, lack of practice is also considered as one of the problems that posed threat for the production of output. Roxas (2020) identified the challenges of senor high school such as insufficient knowledge of academic jargons, difficulty in comprehending task instructions, insufficient amount of reliable information and planning. With the students' exposure to technology and open sources, accessibility to information, verified or not, contributes for the non-development of the skills needed in writing academic papers.

In the current educational landscape, students are familiar with remote learning, either through modular modality or online modality. The post pandemic era in education exposes students to blended and flexible learning which combines face to face and modular. Teachers have to think of different strategies to help the students in writing academic output. In Creative Nonfiction, students are required to write based on facts, real events, real people, and commentary and mini-critique papers. During

the preliminary writing, students were tasked to write a narrative based on their real experience. Prior to that activity, students were asked to share the most significant event or activity that they have attended. From their answer, they created a web of phrases and words that can be used as they proceed to write the activity, describing the emotions involved in the events. The source of their writing output is based on their prewriting activity. The researcher noted in the writing output that students could not expound well. Roxas (2020) explained that majority of the participants claimed that translating their thoughts into words was a problem due to insufficient knowledge of academic jargons. On the other hand, Novariana et al. (2018) found that the most internal problems challenged the students in writing are grammatical problem and the second is lack of motivation. And the next is problem in cognitive and sentence structure. Moreover, Moses & Mohamad (2019) found out in the literature review that lack of vocabulary has caused the students' challenges in acquiring writing skills. These challenges impedes the delivery of written output. Urbano, et al. (2021) found out in their study that the Senior High School students in their study are not well-versed in the conventions and process of writing academic texts, specifically research reports, position paper, project proposal, and correspondence letters which they need in order to pursue higher education and employment. The main factor to this is their poor skills in reading and writing. Moreover in writing, they found out the factors that hinder the writing production and these are lack of topic-relevant background knowledge and topic-specific paper on texts, (2) insufficient knowledge and practice on writing with proper citation, (3) incorrect grammar, (4) shallow vocabulary, and (5) use of different patterns of development when writing.

While Callora and Suñas (2023) in their study explained that the writing proficiency of the respondents was developing. The level of writing proficiency in the areas of content and structure was approaching while in lexico-grammatical ability and mechanics were developing.

Moves to Solve the Challenges

Rahmanita (2023) recommended the strategies to be implemented inside the classroom. First give an easy and interesting topic, give and assign the students to read source materials, allow the students to discuss the topic and do mind mapping, and give proper feedback and enough time to practice. On the other hand, Dewi and Daud (2017), in their search of the teaching strategies to teach writing, the qualitative results of their study exposed that teacher used finding meaning and practice writing to address the problem in vocabulary. In addition, group writing was used so that students can write in a cooperative way and share their work with their friends.

Urbano, et. al (2021) in their study found out that students want authentic academic text samples to learn conventions, mechanics, structure, organization, grammar, and vocabulary. To address the problem, the researchers suggested explicit instruction using the textual approach in the teaching of reading and writing, comprehension strategies, creation of a syllabus using eclectic approach to cater to various learning styles and different language situations, outcome-based approach to ensure focused teaching and learning which is integrated with authentic, collaborative task-based, and student-centered. Aguilar and Panoy (2022) showed in their study that the problem comprehension, curriculum exploring, and the infographic design element- visual, content, and knowledge element were highly integrated in the infographic material. More so, the study revealed that the problem-based infographic materials partially affects the scientific knowledge of the students.

Students are technology natives and were born in the midst of warring

technology. Technology and social media were the constant companion of the students. Bicen, H, Beheshti, M. (2017) said that the significant change in the method of accessing information has influenced the format of presenting information for 21st century generations, thus, visual knowledge resources with brief textual detail are more preferred. Putra (2021) explained that the utilization of visual teaching media especially infographics has been widely used especially in the education system. To help the students to write academic output, the researcher will use an Infographic-aided material, a tool to help them grasp the ideas easily.

Infographics is a combination of the words “information and “graphics” used to combine the data into a design (Noh ,2014), pictures that combine a collection of data and graphics to deliver the messages briefly and create good communication with the audience (Putra,2021). Siricharoen and Siricharoen (2015) also explained that infographic is data visualization that present complex information that may include signs, photos, maps, graphics, and charts. Infographics is composed of three major parts; visual, content and knowledge and must have a clear message, simple and effective, have an interesting design and visual to become efficient and effective. (Aguilar, Panoy,2022)

Infographics are already present in the environment where students stay. Signage, reminders, user’s manual, and even appliance and toy boxes contain infographics. As presented in the research above, mostly the solution to address the problem is to improve the syllabus, appropriate activities like collaborative work, product and outcome-based approaches. In this study, to address the gap in the writing skills of the students, the researcher explores the idea of combining text and infographics. The crafting of instructional material in the other research was not considered.

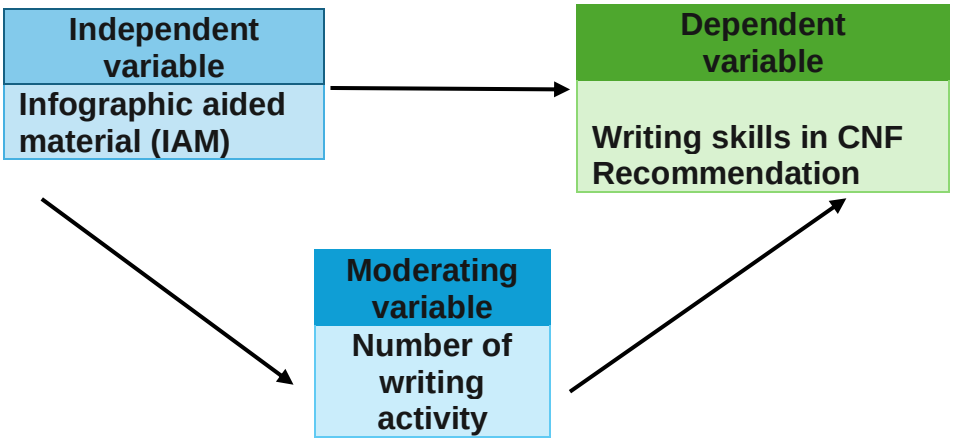
This study aims to use infographics aided learning materials as a tool in enhancing the writing skills of students in creative nonfiction.

Statement of the Problem

1. What is the score of Grade 12 students at Gen. Juan Castañeda Senior High School in the pre-writing activity and post writing activity in the following competencies?
   2.1 commentary;
   2.2 mini critique.
2. Is there a significant difference in the score of the participants in the pre-writing and post-writing activity after the intervention?
3. What can be recommended to further improve the results of the study in terms of:
   3.1 infographics material;
   3.2 implementation of the intervention;
   3.3 validation of results?

Conceptual Framework

Figure 1. Conceptual framework of infographic aided materials for enhancing the writing skills of Grade 12 HUMSS students in Creative Nonfiction



This research study focuses on enhancing the writing skills of Grade 12 Senior High School students in Creative Nonfiction. This subject requires creative writing using a nonfiction prompts or situations. With the aim to solve the problem in writing, the researcher created instructional material- learning activity sheet using infographics. The reading materials contain infographics. The infographic part of the IM contains data, pictures, shapes that help the students in finding the most significant information in the writing activity. The infographic aided-materials in this study serve as the independent variable that influence the enhancement of writing skills in the target subject. The number of completed writing activity before and after the use of IAM is the moderating variable. The number of writing activities include the pre and post writing activity which requires completeness.

Proposed Innovation, Intervention, and Strategy

Action research is designed for the solution to the problems met by teachers. This type of research is considered effective in addressing current problems.

In the era, where students are exposed to visual realities brought by social media. Social media have become the superhighway that give access to students to increase their expectation of being more creative and collaborative and eventually raising the skills of visual literacy.

Infographic-aided materials were provided to the students to better grasp the ideas and aid them to better understand the content of the articles or journals.

After each pre-writing activity, the researcher evaluated the output followed by the writing activity, IAM was given to the students followed by the discussion of contents and theme. Evaluation followed as post-writing activity.

ACTION RESEARCH METHODS

Research Design

This study utilized the Quasi-Experimental design and Classroom Action Research (CAR) by Julian Hermida (2001).It is a method of finding out what works best in one's own classroom to improve the student learning and to improve teachers' teaching.

This research study used the stages in the Classroom Action Research cycle: planning, observing, acting, and reflecting. The diagnostic test and initial writing activity identified the skill gap among Grade 12 HUMSS students. After the result of the diagnostic test was finalized, the crafted the infographic aided-material was subjected for validity. During acting stage, the survey of writing activity commenced

that served as the pretest. The written output was evaluated using the rubrics **(Kindly specify what rubrics were used, is it adapted or self made)** The participants underwent an intervention program where the IAM was used as a tool. Pre-writing, during, and post writing activities were part of the treatment. Data collection commenced after. Number of writing activity, number of students, and their scores were monitored in order to assess whether the treatment or the program reached the objectives of enhancing the writing skills of the participants. The researcher reflected on, evaluated and described the effects of implementation of IAM.

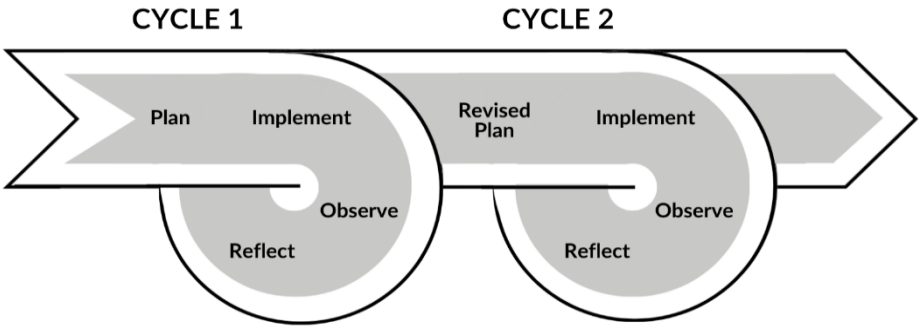


Figure 2. Cycles of Classroom Action Research

The first cycle of this study was the crafting of the IAM tool. The researcher utilized non-prose material with graphs, pictures, and icons. The students showed interest in doing the writing activity. It was the realization of using infographics in the materials to be used by the HUMSS students. After the initial study, the researcher has to redesign the IAM material according to the results and to the next level of the study which is the utilization and validation of the material.

On the other hand, quasi-experimental one group pretest-posttest design was used in determining the performance of students after using the proposed infographic-aided instructional materials. One group pretest-posttest design was used to measure and observe a single group before and after being exposed to a treatment. In the case of Gen Juan Castañeda Senior High School, pre-test and posttest scores of all the participants in this study were taken and computed to determine whether the intervention using IAM was effective. This helped the researcher observed if any changed occurred.

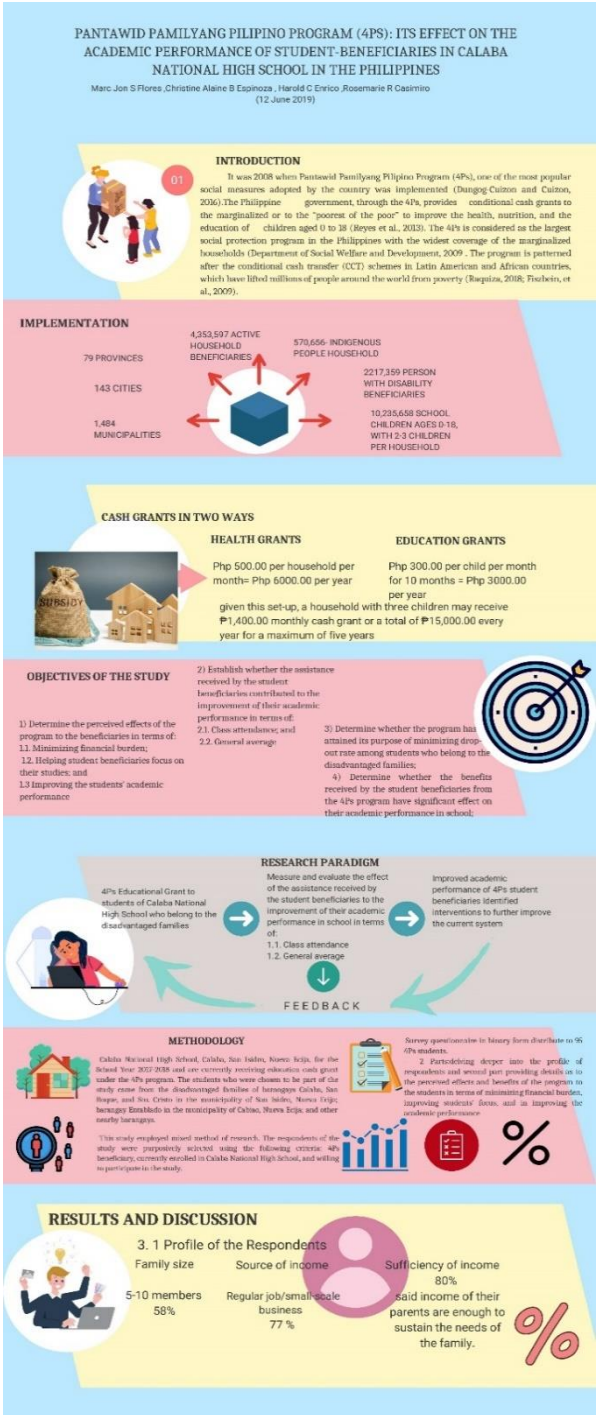
Participants

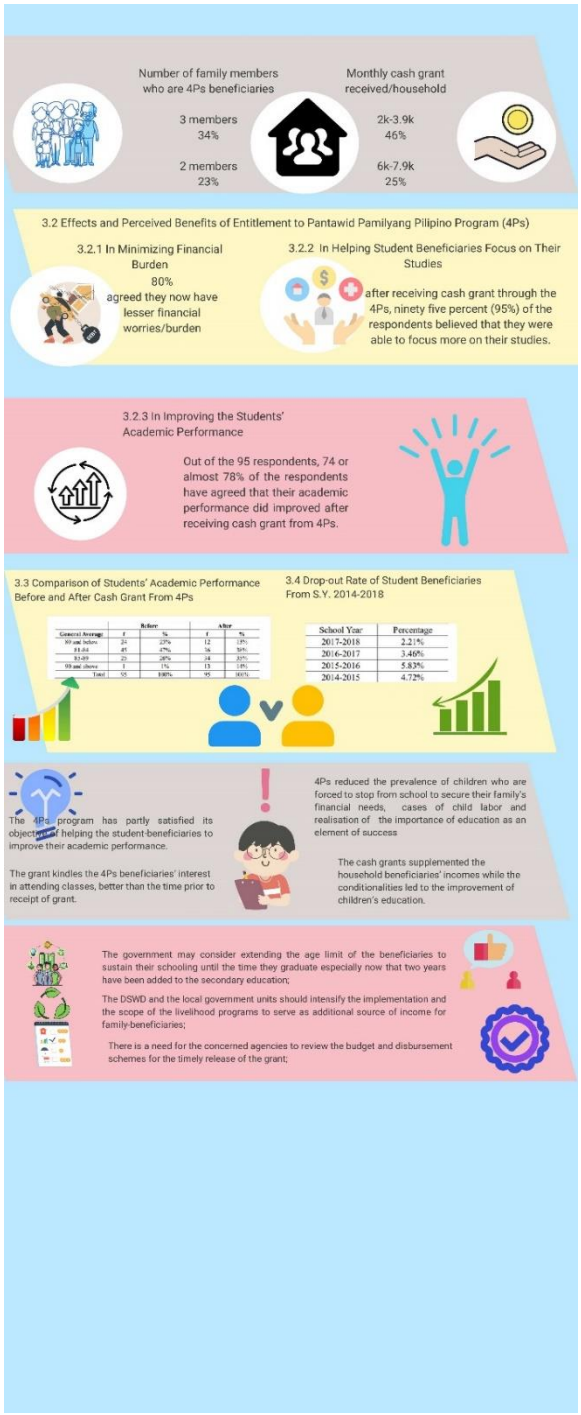
The participants of this study were the Grade 12 students under HUMSS who were enrolled in Creative Nonfiction for the 2nd Semester SY 2021-2022 and used the total enumeration sampling. The participants comprised the three sections of HUMSS. This group of students were qualified and selected to be taken as participants because only this group of students have the subject Creative Non Fiction. STEM and TVL students do not have CNF subject, therefore, Grade 12 HUMSS students were the best participants for this study.

Data Gathering Methods

The researcher used the pre-test and posttest. The pre-test given was the writing activity on writing a critique paper. The score was analyzed using the rubrics attached in this study. There were two raters to determine the scores. Rater 1 was the researcher and rater 2 was Dr. Jeramie G. Buensuceso. During the conduct of the intervention, IAM material were given to the students to read. After every used of IAM,

writing activity was performed and served as the post writing activity. The students were given a full text material to be used as source for the writing of commentary and mini-critique. Evaluation took place to be scored using the rubrics by the raters as Rater 1and Rater 2. After each writing session, outputs were collected and evaluated. The contents of the material were validated by the school-based evaluators on content following Quiambao, C., Punzalan, J. (2019), construction of infographics. The ICT Coordinator evaluated the infographic part including the lay out. While the content part of the material was evaluated by the reading coordinator.





Data Analysis Plan

The writing activity output of the students was evaluated using the rubrics for scoring the writing commentary and writing critique activities. T-test is parametric statistical technique that tests the difference between two means. Mean refers to the average score of the given set of values. It is obtained by getting the sum of all scores divided by the number of total values. Standard deviation (SD) is the square root of variance which is a helpful indicator of the variation within the data and needs to present alongside the mean (Barott, 2017). This study utilized the mean and standard deviation to get the findings for question number one and t-test to get the answer for research question number two.

RESULTS AND REFLECTION

The score of pretest and posttest of Grade 12 students at Gen. Juan Castañeda Senior High School in the pre-writing activity and post writing activity in writing commentary and writing mini critique.

Table 1. Summary Mean score in the Pretest and Posttest Evaluated by Raters 1&2

	Writing Commentary		Writing Critique	
	Pre-test	Posttest	Pre-test	Posttest
Class 1	26.2619	35.42857	24.64286	46.09756
Class 2	24.96875	40.625	25.1875	42.875
Class 3	27.17778	41.31111	29	46.04444

Table 1 presents the score of the students in the pretest and posttest writing activity in writing a commentary and mini critique.

The pretest shows that the mean scores in the pretest for commentary is 26.26 for Class 1, 24.96 for Class 2, and 27.17 for Class 3 which is lower than the mean score in the posttest, 35.42, 40.625, and 41.31 respectively. Moreover, the score in writing mini critique in the pretest, 24.64 for Class 1, 25.18 for Class 2, and 29 for class 3 are lower than the posttest scores of 46.09, 42.87, and 46.04 respectively. Based on the scores, it can be noted that the scores in the posttests are higher than the pretest.

This study conforms to the findings of Noh, M.A, et al. (2014), in their study, that proved that the use of infographics has great potential to be used for visual learners to acquire and understand information. The use of visual elements in teaching and learning can have a positive result and can facilitate the acceptance of information quickly. This prepare the students before the actual writing. Moreover, who explored infographics to teach grammar in the EFL class. The result of their study suggests that the application on infographics-based learning has a strong influence on EFL learners' motivation. This could mean that the Infographic aided material used in the current study can motivate students to write since information is made easier to understand, thus, improve the quality of their performance. Another study, Alrwele (2017), has similar results, the study indicates that infographics are effective for improving students' achievement in learning course content and that students' intellect and life skills can be developed.

Significant difference of the prewriting and post writing assessment of the research part.

Table 2. Significant Difference in the Pretest-Posttest

	Commentary		Decision	Critique		Decision
	T-value	p-value		T-value	p-value	
Class 1	4.63	0.0004	sig. at p‹.05	24.34	0.00001	sig. at p‹.05
Class 2	26.103	0.00001	sig. at p‹.05	28.364	0.00001	sig. at p‹.05

Class 3	13.3801	0.00001	sig. at p‹.05	21.9866	0.00001	sig. at p‹.05

Table 2 presents the scores that determine the significant difference between the pretest and posttest for writing commentary and mini critique.

The pretest and posttest scores were taken for comparative purposes. T-test was executed to statistically examine whether there was a significant difference between the pretest and posttest after the intervention was performed. The data revealed that the computed p-value for commentary writing of Class 1 is 0.0004, .00001 for Class 2, and 0.00001 for Class 3, which are less than or smaller than the p-value alpha level of.05. The data show that there is significant difference in the students' prewriting and post writing in the commentary writing. On the other hand, the findings for Critique writing which reveal a p-value of 0.00001 for Class1, and also a p-value of 0.00001 for Class 2 and 3 are all less than the alpha level of .05 proved that there is a significant difference between the pretest and posttest of critique writing.

This study is similar to the study of Alrwele (2017) that indicates that using infographics significantly improved the group participants' achievement. Additionally, the improvement is attributed to the visual appeal of infographics and the easy-to-find information. Similarly, Aguilar and Panoy (2022), in their study explained that utilizing the material integrated with infographics affects the scientific knowledge of the students. Moreover, Narmatha and Balasubramaniam, (2023) conclude that incorporating infographics into educational toolkit revolutionize the way students learn and engage with information.

What can be recommended to further improve the results of the study in terms of:

1.1 infographics material
1.2 validation of results?

Infographic Materials

Siricharoen & Siricharoen, N. (2015) in their study explained that the three major components of infographic materials are visual elements, content elements, and knowledge. They also presented the different main type of infographics: visual article, flow chart, useful attraction, timeline, data visualization, compare and contrast, the photo, how to process, research result, and did you know. They also recommended when crafting an infographic as source of information to consider the best way to get across the information, to create a technical and literacy-based infographics, and every detail used should be checked by experts for consistency and meanings. On the other hand, Berlian, L. et.al (2022) included three activities in the creation of their infographic materials: determining the product outlines, product design, and making expert validation. Product design in their study is about creating a rough sketch of the product design and serves as reminder for the layout, selecting graphic design platform, and collecting materials such as illustrations or images related to the theme.

Quiambao and Punzalan (2019) used a scale in evaluating the infographics content of the materials in science with the rating from education experts, graphic artists, and students. Likewise, Berlian, L. et.al (2022) used a rating scale for material expert validation, media expert validation, validation of science teachers.

Validation of results

Quiambao and Punzalan (2019) in their study, Development and Validation of Infographics Based on the Least Mastered Competencies in Physics, they used the criteria in validating the material: objectives, content, design characteristics adaptability and clarity. The validation was done by education experts, students, graphic artists. Quiambao and Punzalan (2016) established that infographics have a strong level of acceptance and rated very strongly acceptable. Berlian, L. et.al (2022), use the curriculum analysis based on core competencies, basic competencies and the indicators. The evaluation of material contains appropriate material with core and basic competencies, learning presentation, serving equipment, sentence suitability, and language suitability. This study employed the content for validation of Punzalan (2019) of infographic aided materials in Creative NonFiction for the further improvement of the IAM material for Grade 12 HUMSS students.

CONCLUSION AND RECOMMENDATION

The results of this study provide answer to the research question about the pretest and posttest scores of the participants. Also, the computation between the pretest and posttest in the writing of commentary and critique after the treatment was conducted proved the significant difference. The results are clear that the use of infographic aided materials as a tool to enhance the writing skills of Grade 12 HUMSS students proved to be effective for improving the writing performance of the students. The significant difference between the pretest and posttest were notable. The outcome may provide solutions for the teachers to include infographics as alternative instructional tools.

In light of the research findings, it is recommended that classroom-based instructional materials consider integrating infographics to their teaching. And to writing class consider the IAM material. This study contributes to a number of studies that tested the power of visual instructional material through infographics. This study also recommends for the assessment, utilization and validation of the materials in the coming semester. The validation should be done by the people of their field of expertise and the user of the materials.

The limitation of this study is that this was done during the online and modular classes under HUMSS track. That is why the infographics is used for Creative NonFiction. In the future, infographics may be used in science and other subjects.

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PROCESS-GENRE APPROACH (PGA) IN TEACHING ACADEMIC WRITING (PRACTICAL RESEARCH 2) IN SENIOR HIGH SCHOOL

by

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Abstract

This study sought to provide a specific approach to use in teaching research writing and to find out if there is a significant different in the pretest and posttest after the intervention was conducted. Classroom Action Research (CAR) was used as a method of finding out what works best in one's own classroom to improve the student learning and to improve teachers' teaching. Participants of the study were the Grade 12 students under Practical Research 2. The researcher used Process-genre approach in the intervention following its six stages. The total mean score for the pre-writing was 2.82 while the over-all score for the post-writing activity was 3.55. There was significant difference in the students' prewriting and post writing in the following parts of research paper; the introduction with the p-value (sig.) of 0.000901864; review of related literature 0.005859; methodology; 0.003434. The significant two tailed was lower than the alpha level of .05. On the other hand, the computed significant difference in the pretest and post-test writing output of students in the results and discussion and conclusion exceed the alpha level of .05 with its p-value of 0.125839.

Keywords: *Process- Genre Approach, Research writing, Senior High School*

CONTEXT AND RATIONALE

Writing has been one of the most challenging skills for the students to deal with and a crucial skill. Writing requires students to learn about the language to be used, the context where writing happens, and the skills in using the language (Tudor 2017). Writing skill involved the students to focus in meaning use, language learning and fluency development in order for them to tell the readers about the information they want to share and allow them to digest whatever the information included in the writing. It can be said that writing output of students defines their second language ability. Writing involves knowledge about the language. Burgos (2017) explained language, a system of meaning potentials, individuals have options to select specific meanings to perform different social activities. Burgos (2017) said that writing represents an opportunity to scaffold the students with resources for making meaning, as texts as are the results of meaning potentials writers or students create and convey in the community.

Academic Writing

Academic writing is being taught and is required to use in some applied and specialized subjects in Senior High School. Academic writing is a style of expression used in different disciplines or different areas of expertise. Academic writing includes a formal tone, use of non-emotive and non- personal language, focus on the research problem under investigation and the academic conventions of citing sources in the body of the paper. As the students prepare for the higher education, academic writing is needed to be developed by the students. Senior High School curriculum has core, specialized and applied subjects. Roxas (2020) explains that K to 12 introduces three English courses namely Reading and Writing Skills (RW), English for Academic and Professional Purposes (EAPP), and Oral Communication in Context. These subjects focus on academic writing. Additionally, students in Senior High School are confronted with three research subjects.

HUMSS students have creative writing and creative non-fiction as specialized subjects. While the Applied subjects include English for Academic and Professional Purposes which vary according to the Academic requirement of the Academic Track, Practical Research 1, Practical Research 2 and Inquiries, Investigation and Immersion in all tracks.

In tertiary level, writing has been emphasized in formal writing classes and as an activity in other discipline-based courses (Alabere and Shapii 2019), such as narrative, argumentative, descriptive, and expository, letter writing and report writing. These types of writing are under academic writing. Moreover, in academic writing the focus is on the language use, structure of the text, organization, grammar, punctuation. While the content is on discourse, knowledge and general ability to reason logically. Agibuay (2017) in her Creative Writing class requires the English major students to write descriptive writing in creating travelogue. In Senior High School settings, students learn to write academically as a requirement in their subjects.

Research Writing in Senior High School Class

Research writing in Senior High School provides opportunity to the students to take a milestone in their writing career. In Gen. Juan Castañeda Senior High School, students under STEM enrolled in Practical Research 1 can represent the school for Science Investigatory Project and may continue it. As the semester starts, planning on what topic to study takes a lot of time, more so, in writing the preliminaries in

qualitative research. For the Grade 12 students, Practical Research 2 deals with quantitative research. How to begin to write, and how to present findings, write interpretation and synthesis come next.

Students experience some difficulty in writing every part of the research paper. The common writing classroom generally follow the product approach where the focus is the product not the process. There was a small opportunity to activate the schema of the students and let them expose the kind of product they are producing. Some studies revealed that the students are weak in writing expository text by cause and effect, classification, and process. These types of writing are usually present in research writing. Another problem met by the researcher was the issues on copy paste of information, paraphrasing and summarizing, synthesis of information, tenses and use of appropriate language. But the most challenging to them is how to start writing the introduction. Learners to be a good writer should undergo processes, like planning what and how to write. Novariana et al. (2018) shared the result of their study that senior high school students' problems are divided into internal and external problems. Internal problems in writing are grammatical problem, lack of motivation, cognitive and sentence structure. The external problems are students are lazy and lack of motivation to practice and there is no feedback on their writing. Alabere and Shapii (2019) shared that after generating ideas follows the well-organized and in sequential order of paragraphs in essay. Processes and stages of writing served as the scaffolding of students for writing meaningful and informative output to convey in the community.

Process Genre Approach

In writing, the main consideration a teacher should focus on is the ability of the students to produce a writing output. Several approaches to writing were created but each lack something. The process approach and genre approach gave birth to process-genre approach which integrates the characteristics of the two approaches (Badger & White, 2000). Frith (2006) and Goa (2007); Babalola and Litinin (2012) cited by Agesta (2017), the process genre approach is a combination of two approaches which main aim is to help students develop their writing skills. Genre approach gives specifics to knowledge of context, purpose of writing and text feature. While process approach focuses on the writing skills development and learner's response. The union of two approaches-genre and process gives a mixed characteristics, such as the learners' creative thinking, the act of how writers form text, the knowledge of linguistic features, and specific discourse community (Babalola and Litinin (2012); Agesta 2017).

Process-genre approach (PGA) allows to mix the process of writing to benefit students; prewriting, drafting, revising and editing and have a particular view with the text they have to produce. The processes of genre approach are preparation stage, modelling and reinforcing stage, planning stage, joint constructing, independent constructing stage, and revising stage.

In the preparation stage, the teacher prepares the students to write by defining a situation that requires a written text with identified genre. In the case of this study, descriptive and exploratory writing are used for writing research. This stage activates the schemata and allows students to anticipate the structural features of the genre.

Modelling and reinforcing stage, the teacher introduces a model of the genre and allows students consider or identifies the social purpose of writing a research. The teacher then, explains the structure of writing the introduction, findings, interpretation, conclusion and recommendation.

Planning stage provides activities that activate the students' schemata about research topic including brainstorming, discussing and reading associated material on the approved research topic. The aim of this stage is to develop the interest of the student in writing the research topic by experiencing it.

On the other hand, the joint construction stage facilitates independent composing. Here, the students and the teacher work together to begin writing a text. Also, the teacher uses the writing processes of brainstorming, drafting, and revising while the students contribute information and ideas. The teacher gathers ideas contributed by the students and present it on the blackboard or computer. The final draft provides a model for students to refer to when they work on their individual compositions.

The independent construction stage allows students to undertake the task of composing their own research writing on a related topic. In this era of new normal in education, students can compose independently during the writing day set mutually by the teacher and students. The teacher will be available to help, clarify, and consult about the research process.

Revising stage provides the students with an opportunity to undergo final revision and editing. This stage does not require the teacher to collect the papers to be marked but may use this stage by the students to check, discuss, and evaluate their work with fellow students, under the supervision of the teachers. The teacher could make an effort to publish the students' work as a sense of achievement and motivate the students to become better writers (Saputra and Marzulina, 2017).

Process-genre approach has been used as teaching strategy to improve the essay writing of the students. PGA has been used to develop the writing skills of the students. Xu, Li (2018) in their study used PGA in teaching foreign language specifically, reading and writing of texts. Burgos (2017) and Alabere and Shapii (2019) used PGA in teaching expository essay. Agibuay (2017) proved that process genre approach as helpful to the students in writing descriptive compositions, particularly in crafting travelogues. Process-genre approach was used by these authors to develop the skill of their students in essay writing. This study used Process-Genre Approach in teaching quantitative research writing, specifically Practical Research 2. Moreover, the researcher used the six stages of PGA in the daily lesson log and learning activity sheet (LAS) in PR2.

This study aims to provide a specific approach to use in teaching research writing. As a teacher, the researcher finds it necessary to not only to come up with research output to be graded but also to arm the students with skills and experience on how to write. Process-genre approach (PGA) provides the combined characteristics of process and genre approaches. PGA provides opportunities for the students acquire an understanding and structure of the expository writing genre, influences students writing skill and enhance students' performance in academic writing that also benefits teachers (Alabere and Shapii 2019), and showed that students can gain guidance during writing process. This research study proves that an existing approach to writing can still be useful to address some problems in writing. Moreover, this study contributes to the existing number of learning resource materials in research writing using a specific approach and custom-fit to the topic being explored by the students.

Statement of the Problem

The purpose of this study is to determine the effectiveness and usefulness of process-genre approach in teaching research writing.

Specifically, this study sought to answer the following questions.

1. What are the scores of Grade 12 Senior High School Students of Gen. Juan Castañeda Senior High School during the pre-intervention writing activity and post writing in the following:
   1.1 writing introduction
   1.2 writing review of literature
   1.3 writing methodology
   1.4 writing results and discussion and conclusion sections?
2. Is there a significant difference between the pre-intervention writing activity and post writing in the parts of research paper?
3. What action plan can be recommended to the improvement of the writing skills of the Grade 12 students at Gen. Juan Castañeda Senior High School in research writing?

Proposed Innovation, Intervention and Strategy

Action research is designed for the solution of school problems met by teachers, principal, and other school personnel. This type of research is considered effective in addressing current problems.

In this era of new normal in education where modular and online class are the options, students under research writing class should be well- prepared. This action research aims to provide an avenue for the students to clearly understand the situation and the process to take and the expected output to produce, to be presented with a model or sample of target output for clarity of what type of writing will be used, to tap the prior knowledge like process or writing, to collaborate with classmates and teacher on how to take the stages or processes, to test to write independently and to have an opportunity to evaluate with peers the output before publishing.

Although PGA existed since year 2000, this has been used by many researchers in their writing classes. The six stages or process of PGA ready the student before the actual writing. Each stage provides the students to capacitate themselves with the academic writing that encompasses research writing.

After the assessment of the writing skills of the students using the rubrics, the researcher utilized the PGA in teaching the parts of research: writing introduction, writing review of related literature, writing of methodology, and writing of findings, conclusion and recommendation. The intervention part used each part/stage of process genre approach.

- Preparation Stage- the teacher-researcher creates the situation. For PR2 subjects, identifying the topic for researcher will be the case
- Modelling and reinforcing stage, the teacher introduces a model of the genre and allows students consider or identifies the social purpose of writing a research. The teacher then, explain the structure of writing the introduction, findings, interpretation, conclusion and recommendation.
- Planning stage provides activities that activate the students' schemata about research topic including brainstorming, discussing and reading associated material on the approved research topic. The aim of this stage is to develop the interest of the student in writing the research topic by experiencing it.
- On the other hand, the joint construction stage facilitates independent composing. Here, the students and the teacher work together to begin writing a text. Also, the teacher uses the writing processes of brainstorming,

drafting, and revising while the students contribute information and ideas. The teacher gathers ideas contributed by the students and present it on the blackboard or computer. The final draft provides a model for students to refer to when they work on their individual compositions.

- The independent construction stage allows students to undertake the task of composing their own research writing on a related topic. In this era of new normal in education, students can compose independently during the writing day set mutually by the teacher and students. The teacher will be available to help, clarify, and consult about the research process.
- Revising stage provides the students with an opportunity to undergo final revision and editing. This stage does not require the teacher to collect the papers to be marked but may use this stage by the students to check, discuss, and evaluate their work with fellow students, under the supervision of the teachers. The teacher could make an effort to publish the students' work as a sense of achievement and motivate the students to become better writers (Saputra & Marzulina 2017).

After the final analysis of the effectiveness of PGA, the researcher proposed for the PGA based Learners' Activity Sheet to be used in Practical Research 2.

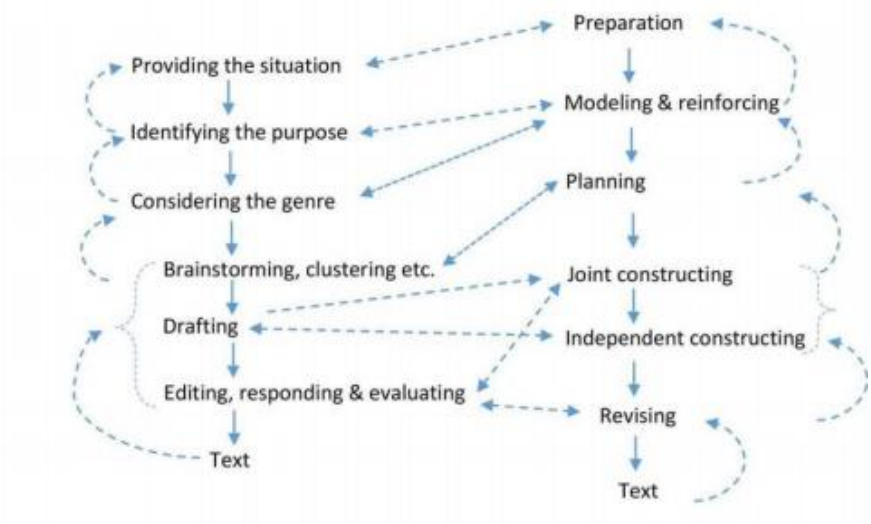

Figure 1 Conceptual Framework of Process-Genre Approach for Teaching Practical Research 2

ACTION RESEARCH METHODS

A. Research Design

Research is the blue print or plan created in order to answer the research questions and to control variance. This study utilized the quantitative research design using Classroom Action Research (CAR) adapted by Julian Hermida (2001). It is a method of finding out what works best in one's own classroom to improve the student learning and to improve teachers' teaching. Action research "uses continuous cycles of investigation designed to reveal effective solutions to issues and problems experienced in specific situations and localized settings" (Stringer, 2014, p. 1, Xu and Li 2018).

The reality of classroom life is that teachers are constantly confronted with practical and critical challenges, and it is up to the individual action

researchers to seek out approaches that provide both practical solutions and empowerment to address the critical social and cultural issues of classrooms today. (p. 17) (Xu and Li 2018)

Illustrated below is the flow of the intervention process, how PGA was used in the Practical Research 2.

Stage 1 (Preparation Stage) –

- The teacher prepared the students by checking their own experience in Practical Research 1, the topic that interests them and related to their academic track. The teacher encouraged the students to think of the topic to be used in their Practical Research 2
- The teacher prepared the students to every part of research

- Stage 2: Modeling Stage- On this stage the teacher prepares the students for the type of writing the students will engage in. Teacher will allow the students to anticipate the structure and content of the part of research. Then, students are allowed to write. Next, the teacher introduced the model, discussed how the part will be written, how the organization to complete the piece

- Stage 3: Planning Stage -The teacher and students brainstorm ideas on how to write the part of research. Then, teacher helped the students developed the thesis statement, supporting details, make an outline, let them analyze what to include in writing the part of research.

- Stage 4 Joint Construction- 3-Joint Construction-The teacher and students brainstormed ideas on how to write the part of research. Then, teacher helped the students developed the thesis statement, supporting details, make an outline, let them analyze what to include in writing the part of research. Then, teacher wrote the sample text. The draft provided a model text for students to work

- Stage 5 Independent Construction- Students composed the research part using the model/ and samples. During this stage, class time is devoted to writing so that students could compose independently. The teacher was monitoring the class and available to help them in the process. The students continued to write until the given date of submission.

- Stage6- Revising- In this step, the students may check, discuss and evaluate the writing output with fellow students as the teacher guides and facilitates the process. The purpose of this stage is to make the students realize what to improve in their output in terms of structure, mechanics, content, style, organization.

Post Teaching Activities

This stage allows the teacher to conclude or summarize the lesson by giving feedback to the students on what to improve and may use this stage to give praises.

B. Participants

The participants of this study were the two sections of Grade 12 students at Gen.

Juan Castañeda Senior High School enrolled in Practical Research 2 in the Online Delivery Learning handled by the researcher. The participants were chosen conveniently. They were Grade 12 HUMSS students enrolled in the online modality and were under the class of the researcher. Grade 12 students had to take Practical Research 2 regardless of chosen modality.

This study utilized the stratified sampling technique where the population was divided into subgroups. In today's classroom situation, students were grouped according to their proximity and interest in the topic to be selected. That just in case, there would be the need to meet real time, the group members can. Sample output was selected from the subgroup for assessment and evaluation. With the challenges faced by the teacher-researcher in the Online Delivery Learning, the participants in the subgroup, those were the groups created per section, were identified according to their participation in the online class and to the submission of their finished output from Day 1 up to the last output. Some students were not able to complete the tasks like, submitting the pre-writing output but failed to submit the post-writing output. So the teacher-researcher reviewed each subgroup, who among the members had the complete set of outputs.

C. Data Gathering Methods

This study engaged two sections of Grade 12 in Gen. Juan Castañeda Senior High School enrolled in Practical Research 2. Students' writing produced in the said class was collected for the evaluation. The teacher utilized first product/traditional approach in writing after they reviewed related literature how each part was written. As Badger and White (2000) expressed that learner needed to be given linguistic knowledge about texts, and that imitation is one way in which people learn. After the checking and evaluation of the prewriting activity output, the teacher-researcher scored the outputs. Then the intervention followed using the six stages of PGA-preparation, modelling and reinforcement, planning stage, joint construction, independent construction, and revising stage, in very part of the research paper-introduction, writing of review of literature, writing methodology, writing results and discussion and conclusion. After every, intervention using PGA, the students were given writing task to produce. After which, the writing output was collected and evaluated using the rubrics:

Content	35 %
Organization	25 %
Style	20%
Grammar and Mechanics	10%
Documentation and sources	10%

Each criterion has different numbers of factor to be evaluated with verbal interpretation of:

5- VGE to a very great extent
4- GE- to a great extent
3- SE- to some extent
2- LE- to a little extent
1- N- not at all

This rubrics for evaluation of Barrot, J.S 2017, Practical Research 2 for Senior High School was used for scoring the pre-intervention and post writing. Each rubric for every part differs in the content. Whereas in the organization, style, grammar and mechanics, and documentation and sources criterion are the same. Two raters assessed the students' output.

D. Data Analysis Plan

The writing activity output of the students was evaluated using these tools. T-tests are a parametric statistical technique that tests the difference between two means. Mean refers to the average score of a given set of values. It is obtained by getting the sum of all scores divided by the number of total values. Standard deviation (SD) is the square root of variance which is a helpful indicator of the variation within the data, and needs to present alongside the mean (Barott 2017). This study utilized the mean and standard deviation to get the findings for question number one and t-test to get the answer for research question number two.

RESULTS AND REFLECTION

1. The scores of Grade 12 Senior High School Students at Gen. Juan Castañeda Senior High School in the pre-intervention writing activity and post writing in the following:

1.1 writing introduction
1.2 writing review of literature
1.3 writing methodology
1.4 writing results and discussion and conclusion sections?

Table 1. Pre-Test and Post-Test Scores in Introduction, RRL, Methodology

	TEST RESULTS-introduction	
RATERS	PRETEST	POSTTEST
Rater 1	2.949285714	3.704571
Rater2	3.095	3.920286
TOTAL SCORE	3.022142857	3.812429
	TEST RESULTS- REVIEW OF RELATED LITERATURE	
Rater 1	2.636142857	3.641
Rater2	2.785428571	3.712429
TOTAL SCORE	2.710785714	3.676714
	TEST RESULTS- METHODOLOGY	
Rater 1	2.794285714	3.607857
Rater2	2.82	3.676429
TOTAL SCORE	2.807142857	3.676429
	TEST RESULTS- RESULTS AND DISCUSSION	
Rater 1	2.695714286	3.009286
Rater2	2.832857143	3.132143
TOTAL SCORE	2.764285714	3.070714
OVER-ALL SCORE	2.82	3.55

Table 1 presents the scores of the rater and inter rater in the pre-writing and post-writing activity in the four parts of research.

The pretest shows that students' scores in the part of research paper were

lower than the posttest. Mean scores in introduction was 3.02, review of related literature was 2.710, methodology 2.80, and results and discussion and conclusion were 2.76, After the intervention, the scores of the students in the post test showed better improvement. Mean scores in introduction was 3.81, RRL was 3.67, methodology was 3.64, and results and discussion and conclusion were 3.07. To summarize, the total mean score for the pre-writing was 2.82 while the over-all score for the post-writing activity was 3.55. This data showed that the treatment approach of PGA appeared to have a substantial and positive effects on the students' output in writing the parts of the research.

Similar results of Eliwarti (2017), in his research, students scored in the pretest was 41.13 which was much lower than the score of posttest of 71. 12. The score in the posttest soared after the treatment strategy using PGA. Moreover, Reonal (2015) in her study PGA approach in teaching expository writing, the results noted improvement in the ideas, organization, voice, and sentence fluency. It is also explained in her study that PGA provided opportunities to the students to acquire knowledge in the purpose and structure of expository writing and improved the students' performance in writing expository essay. Another positive result was the study of Agibuay (2017), in her study explained that the posttest results showed higher scores obtained by the students than the pretest scores. This can attest that process-genre approach helps students write better descriptive composition.

2. Significant difference of the prewriting and post writing assessment of the research part.

Table 2.1 Significant Difference between Pretest/Posttest-Introduction

	INTRODUCTION		RRL		METHODOLOGY		CHAPTER 4&5	
	Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*
Mean	3.022142857	3.812429	2.710786	3.676714	2.807143	3.642143	2.764286	3.070714
Variance	0.103015476	0.125238	0.111008	0.473526	0.204524	0.165332	0.04167	0.201154
Observations	7	7	7	7	7	7	7	7
Pooled Variance	0.114126548		0.292267		0.184928		0.121412	
Hypothesized Mean Difference	0		0		0		0	
Df	12		12		12		12	
t Stat	-4.376478645		-3.34264		-3.63261		-1.64525	
P(T<=t) one-tail	0.000450932		0.00293		0.001717		0.062919	
t Critical one-tail	1.782287556		1.782288		1.782288		1.782288	
P(T<=t) two-tail	0.000901864		0.005859		0.003434		0.125839	
t Critical two-tail	2.17881283		2.178813		2.178813		2.178813	

Table 2.1 presents the scores to determine the significant difference between the pretest and posttest for each part of research paper.

The pretest and posttest scores were taken for comparative purposes. T-test was executed to statistically examine whether there was a significant difference between the pretest and posttest after the intervention was performed. The table revealed that there was significant difference in the students' prewriting and post writing in the following parts of research paper; the introduction with the p-value (sig.)

of 0.000901864; review of related literature 0.005859; methodology; 0.003434. The significant two tailed was lower than the alpha level of .05. On the other hand, the computed significant difference in the pretest and post-test writing output of students in the results and discussion and conclusion exceeds the alpha level of .05 with its p-value of 0.125839. It can be gleaned that the there was no significant difference between the prewriting and post-writing activity in writing the results and discussion and conclusion

Eriwarti's (2016) research, Effect of Process-genre Approach on EFL students' writing performance, revealed that that PGA to teaching of writing had significant effect on the students' writing performance with the p-value of.000 between those who were exposed to process-genre approach than those to traditional product approach. Moreover, Saputra and Marzulina (2016) measured the significant difference on students' writing achievement scores taught by PGA with p-value of .000 which was lower than .05. It was proven that there was significant difference in the writing performance of the students taught using Process-Genre Approach.

3. Action plan to be recommended to the improvement of the writing skills of the Grade 12 students at Gen. Juan Castañeda Senior High School in research writing

Classroom writing like essay is a difficult task, more so, research writing. Agesta (2017) explained that writing is considered as the most difficult skill by the students (Hensel, 2008; Wang, 2003) because it has complex aspect such as content, organization, vocabulary, language use and mechanics (Brown, 1994). The Curriculum Guide (CG) and the Most Essential Competency (MELC) for Practical Research 2 require and demand the students for a competency in writing. The CG and MELC asked the students to describe sampling procedure, plans data collection procedure and data analysis using statistic and hypothesis testing, presents research methodology, etc. These learning competencies required students to produce written output. The teachers' role here is to come up with specific plan on how to help students to write and produce the required performance standard. Therefore, the use of some approaches in teaching and developing writing skills can be beneficial to both teachers and students. There were several approaches to teach writing such as product process, genre and process genre approaches. PGA was used in this study allowing teacher and students to work together to write one text. Agesta (2017) suggested a teaching scenario using process genre approach which the researcher adapted.

Table 3. Teaching Scenario Using Process Genre Approach

Meeting	Steps in Learning	Activities	Time Allocation (minutes)
1	1. Preparation	• Explain about the part of research to be taught/topic/writing every segment/part or research • Anticipate the structural features of a particular genre	15
	2. Modelling of the Text	• Teacher introduces the model of the genre and lets the students realize the social	

		purpose of the content, including the audience and recipients of the study • Teacher discusses the structure, contents, organization, style, mechanics of the particular part of research study • Students to do some comparisons and analysis between the model and their related articles • Students fill out the worksheet related to the features of the text	15
	3. Building knowledge of the Field/planning	• Activity to activate the schema of students in research writing • Reading of related articles/materials about their topic • Discussing and sharing of insights about the possibility of using their chosen topic, identifying of materials as RRL • Deciding on what materials will be useful in writing the study	30
2 3.	4. Joint Construction of the Text	a. Teacher and students • Teacher and students begin to write the thesis statement to start writing the research part. • Teacher to ask the students how to make their thesis statement powerful and strong • Students to make the supporting statement from the RRL read • Teacher to write all the answer to be given by the students • Teacher asks the students to make an outline of the text • Students together with the teacher revise the outline • Students make a text based on the outline they made	60

		• Student revise the text together with the teacher • After finishing the revision, the student have already written the text b. Students and students • Students work in their group members • Each group works on their research topic • Students are given a framework where all the contents for each part of research are stated. Students work in group to fill up the framework • After that students have to make their outline and then develop the outline into a text • After finishing their work, group exchange their work and give comment each other • Students may revise their work • Teacher choose some groups to display their work	
4.	5. Independent Construction of the Text	• Students have to go over the framework filled up during the joint construction and examine the outline of the text and the model text • Ask the students to compose their own text as individual member of their group • Class time is set fro students to compose independently so that the teacher is available to help, clarify, or to consult about the process • If the output is not yet done after 60 mins, the task can be continued and finished at home	60
5.	6. Revising	• Students are asked to check their draft based on the guideline given • Students are asked to revise their work	60

		• Students are asked to exchange their work • Students are asked to edit their peer's draft • Students are asked to revise and edit their draft based on the feedback they have go	

CONCLUSION, LIMITATIONS, AND IMPLICATIONS

Findings from this study have shown that students' writing performance improved significantly because of the intervention using process genre approach. The effect was significant in the introduction, review of related literature and methodology parts proven by the higher score in the post-writing output and the two-tailed mean significant score is lower than 0.05 . Therefore, if PGA will be used and applied effectively in any writing activity such as essay like what Eliwarti (2016) used, report writing like what Assagaf (2016) used ensures that students acquire the required skills. Agesta (2016) conclude that PGA should be used effectively by following the stages.

Implications of this study, teachers of Research writing and other writing subjects in senior high school should help the students deal with the Second Language writing complexity. It is evident that with the use of the process genre approach, the students could improve their writing abilities during the process of data collection. Therefore, the process genre approach can be used to teach writing that allows students to analyze various genres from different aspects, build up their knowledge and foster their creativity and thinking skills in writing. Moreover, PGA as an approach promotes the students to gradually develop their independent writing skills.

It is noted that the limitation of this study is the small size of participants since the researcher only handles two online classes and the students as research participants, some changed the modality from online to modular and some failed to comply in the submission of the output. Second, the distant learning set up affects the teacher-student communication since 2 hour a week is allotted to PR2 classes. Third, the present study used the online classes, therefore the findings of this study may not be applicable to modular classes.

RECOMMENDATIONS

Based on the findings of this study, the recommendations for future research are provided.

Since the present study focused on the students' output in research writing, future research using PGS should be tried in other writing subjects like EAPP, PR1, and Reading and writing and even laboratory report. This is to prove the effectiveness of PGA in developing the students' ability to produce their own text.

Additionally, this study used the STEM and HUMSS students as participants, for future research PGA can also be used to other academic track such as ABM and GAS and to TVL students and to modular students under writing courses.

Furthermore, the six stages present in PGA should also be considered in writing LeaP, Learning Exemplar, LAS in teaching writing to Senior High School students.

Lastly, the present study was carried out under PR2 writing. Therefore, to claim PGA effectiveness in improving the students' writing proficiency in other course/subjects, future research should be conducted with other subject like science

and math.

Plans for Dissemination and Utilization

Research is a source of knowledge, solutions to the existing problems. The usefulness of research is when it is to be shared with the community. A research will come to its perpetuity and will be placed in the archive once shared. So the researcher aims to disseminate the findings in the following events and venues:

1. LAC, INSET sessions, especially to Language teachers
2. Research conferences, division, regional and international paper presentation/Research paper publications/journal
3. To be used in LAS/LE writing

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EFFECTIVENESS OF PLAY-BASED LEARNING ON THE READING LEVELS OF GRADES 1 TO 3 LEARNERS DURING THE IMPLEMENTATION OF NATIONAL LEARNING CAMP 2023 IN ANABU II ELEMENTARY SCHOOL

by

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Abstract

This paper examined the effectiveness of using play-based learning on the reading levels of Grades 1 to 3 learners who participated in the National Learning Camp (NLC) 2023 in Anabu II Elementary School. Quasi-experimental research design was used in this study. The participants of the study were Grades 1 to 3 learners who joined the reading intervention camp of NLC conducted on the 2022-2023 EOSY break. The Comprehensive Rapid Literacy Assessment (CRLA) was used to measure the significant difference on the reading levels of the participants before and after using play-based learning. Findings revealed that there is a significant difference in the reading levels of Grades 1 to 3 learners before and after using play-based learning on NLC. The study recommends the use of this approach in improving the reading skills of struggling readers.

Keywords: play-based learning, reading, Grades 1 to 3 learners, national learning camp

INTRODUCTION

Beginning reading, also known as early literacy, is a critical stage in a child's development. Reading is a fundamental component of language development and is crucial in building a strong foundation of the educational journey of each learner. Through the years, Philippines faces various literacy challenges. While efforts have been made to improve the literacy rate of the Filipino learners, these challenges continue to affect the country. In a news article entitled "Why 9 out of 10 Filipino Children Can't Read?", it has been highlighted that Unicef provides an estimate of 70 percent of all children in low-income countries, such as in the Philippines, are unable to read simple sentences at the age of 10 (Oseña-Paez, 2022). After the pandemic and with all the challenges and disturbances it brought, literacy has become one of the reasons why more learners are experiencing learning gaps.

Efforts to address the literacy challenges include the Department of Education initiatives through the implementation of National Learning Camp (NLC) during the end of school year break. Learners in the intervention camp under NLC should be provided with necessary support to develop foundational skills such as reading (Department of Education, 2023). Teachers, who are in the frontlines of the teaching-learning process, play a vital role in this initiative towards learning recovery, specifically in enhancing the reading levels of the learners by using appropriate and effective approaches. However, one of the perceived challenges in reading of learners as highlighted by Tomas, Galman and Villaros (2021) is that teachers demonstrate a lack of dedication to reading due to an absence of a well-defined reading strategy, inadequate reading materials, and insufficient tools. Furthermore, the poor reading abilities of the Filipino learners can be attributed to various factors as reiterated by Idulog, Gadiano, Toledo and Hermosada (2023), thus promoting early literacy programs, providing teacher training and developing culturally relevant and engaging materials for learners are the identified potential areas for improvement. Librea, Luciano, Sacamay, Libres and Cabanilla (2023) also recommended on their study that there is a need for restructuring the reading program in Philippine elementary schools in order to resolve the reading deterioration in the country. Consistent with the findings of Tomas et al. (2021), it has been reiterated by Librea et al. (2023) that some factors influencing the poor reading levels of the children are lack of reading enthusiasm, teacher's incompetence and insufficient reading materials.

To address the foundational challenges hindering the development of children's reading skills, educators are implementing a variety of strategies to effectively teach reading. One of the strategies used by teachers, especially in early childhood education, is the play-based learning. Learning through play is an approach wherein learners develop holistic skills through interaction with people, objects, and representations in an actively engaging, enjoyable, meaningful and socially interactive learning experiences (Parker, Thomsen & Berry, 2022). Several research studies support the use of play-based learning in developing beginning reading among young learners. In a study conducted by Moore (2020), it has been found that play-based learning is an effective strategy in promoting literacy, specifically in teaching phonemic awareness and phonics skills especially if properly implemented with an adult as a facilitator. Despite the evidences from previous studies supporting play-based learning, incorporating play opportunities in classrooms has declined in recent years (Rand & Morrow, 2021).

In Anabu II Elementary School, it has been reported that approximately 8 percent of Grade 1 learners, 21 percent of Grade 2 learners and 16 percent of Grade

3 learners needed moderate to full refresher in reading upon the first administration of the Comprehensive Rapid Literacy Assessment (CRLA). The identified learners participated in the intervention camp of NLC 2023 wherein the primary approach used by the volunteer teachers is the play-based learning. The study, therefore, intends to focus on the effectiveness of play-based learning on the reading levels of the Grades 1 to 3 learners through determining the difference between the CRLA scores of the learners before and after using play-based learning approach in NLC. The findings of the study aim to provide relevant recommendations in using play-based learning as the primary approach in developing the reading skills of learners who need additional support.

Research Questions

The purpose of the study is to determine the effectiveness of play-based learning on the reading levels of Grades 1 to 3 learners during the National Learning Camp (NLC) 2023. Specifically, this study aims to answer the following questions:

1. What is the reading level of Grades 1 to 3 learners before using play-based learning on the NLC?
2. What is the reading level of Grades 1 to 3 learners after using play-based learning on the NLC?
3. Is there a significant difference on the reading levels of the Grades 1 to 3 learners before and after implementing the play-based learning approach on the NLC?

Hypothesis

This study was tested at 0.05 level of significance using the following hypothesis:

There is no significant difference in the reading levels of Grades 1 to 3 learners before and after using the play-based learning approach on the conduct of National Learning Camp (NLC) 2023.

Scope and Limitation

The study was concerned mainly with identifying the significant difference on the reading levels of Grades 1 to 3 learners after using the play-based learning approach on the NLC 2023. The participants of the study were the identified Grades 1 to 3 learners who needed further intervention to enhance their reading level. Specifically, the participants were composed of Grades 1 to 3 learners who obtained low levels of reading levels during the Comprehensive Rapid Literacy Assessment (CRLA) which were administered prior to the conduct of the NLC. The study was conducted in Anabu II Elementary School during the end of school year (EOSY) break of 2022-2023. Play-based learning was implemented during the NLC as the primary approach in teaching reading among the learners. After the NLC, the reading levels of the participants were measured again using the CRLA.

METHODOLOGY

The purpose of this chapter is to provide an overview of the research methods which were followed in the implementation of the study. This part outlines and discusses the research design, sampling, data collection, instrument, data analysis and ethical considerations of the study.

Research Design

Quasi-experimental research design was used in this study. This design

involves evaluating the effectiveness of a treatment such as an educational intervention wherein pre-test and post-test are used without random assignment of participants (Price, Jhangiani & Chiang, 2020). Using this research design, this study determined the effectiveness of using play-based learning approach on the reading levels of Grades 1 to 3 learners during the conduct of the National Learning Camp (NLC) 2023. The design is suitable for this purpose since pre-test and post-test administration of Comprehensive Rapid Literacy Assessment (CRLA) were used to measure the difference on the reading levels of the participants after the implementation of play-based learning approach as a reading intervention during the NLC.

Sampling

The study utilized total enumeration in identifying the participants. This refers to utilizing the entire population sharing common characteristics to be examined for the purpose of the research study (Crossman, 2020). All the Grades 1 to 3 learners who participated in the NLC 2023 served as the participants of the study. Equal opportunity to participate in the study were given to Grades 1 to 3 learners since play-based learning was the primary approach used in the intervention camp. The study used total enumeration to acquire more accurate and relevant results through studying the entire population and also upon considering the relatively small population size to be examined for the purpose of the study. A total of 61 learners participated in the study. Table 1 shows the number of participants in each grade level.

Table 1. Number of Participants per Grade Level

Grade Level	Number of Learners
Grade 1	12
Grade 2	27
Grade 3	22
Total	**61**

Data Collection

To initiate the conduct of the study, a letter of request addressed to the School Head of Anabu II Elementary School was sent to seek permission to conduct the study among the Grades 1 to 3 learners of NLC. The participants were identified using the results of the Comprehensive Rapid Literacy Assessment (CRLA) which was administered prior to the implementation of the NLC which served as the pre-test of the study. Parental consent of the participants was also secured. Volunteer teachers of the NLC were provided with orientation on using the play-based learning as the primary approach for the reading intervention camp of NLC. Play-based learning approach was implemented in teaching reading among the participants during the NLC 2023 from July 24 to August 25, 2023. After the NLC, the CRLA was administered as post-test to identify the reading levels of the participants after using the play-based learning. Data from the pre-test and post-test were analyzed to answer the research questions and obtain relevant findings.

Instrument

The instrument used in the study was the Comprehensive Rapid Literacy Assessment (CRLA) which is a standardized tool developed for the purpose of determining the reading levels of the Grades 1 to 3 learners. The main goal of this

assessment is to identify the learners who need further support in reading. CRLA is a teacher-led, teacher-scored, benchmarked, valid, reliable, replicable, scalable, and sustainable assessment tool developed and utilized by the Department of Education. It was initially pilot tested in November 20 in select schools. After the success of the initial implementation, the CRLA is now the official tool used by the Department of Education in assessing the reading profiles of the learners and in identifying the learners who need further support. The duration of the assessment for each learner was 5 to 8 minutes. The highest possible score a learner can obtain in the assessment is 20. In this study, this assessment was used to determine the reading levels of the participants before and after using the play-based learning as the primary approach in providing reading intervention during the NLC 2023.

Data Analysis

The study performed the following statistical treatments to analyze the data:

Mean and Standard Deviation. These descriptive statistics were used in identifying the reading levels of the Grades 1 to 3 learners before and after using the play-based learning on the NLC.

Related Samples t-test. This statistical test, which is also called dependent samples t-test, measures the difference between the pre-test and the post-test scores. In this study, related samples t-test was employed in determining the difference on the reading levels of the participants before and after using the play-based learning approach in the NLC 2023.

Ethical Considerations

Prior to the conduct of the study, permission to conduct the study from the School Head of Anabu II Elementary School was obtained. Parental consent was also secured among the parents or guardians of the participants. Full disclosure of the data gathering procedure and the purpose of the study was properly communicated among the parents of the student participants through informed consent. In compliance with the Republic Act 10173 or the Data Privacy Act of 2012, the confidentiality and anonymity of the information collected during the data gathering procedure were guaranteed (National Privacy Commission, 2012). The CRLA results were pooled only for the purpose of the research. Moreover, participation in this study was completely voluntary wherein participants were given the right to withdraw from the study at any time. Non-maleficence was also observed throughout the study to protect the participants from any harm.

RESULTS AND DISCUSSION

This chapter presents the analysis, findings and interpretations of data gathered which generally aims to determine the effectiveness of play-based learning on the reading levels of Grades 1 to 3 learners who participated in the National Learning Camp (NLC) 2023. These are presented in tables arranged based on the research questions of the study.

Reading Level of Grades 1 to 3 Learners Before Using Play-Based Learning

The reading levels of the participants prior to the implementation of play-based learning approach on the National Learning Camp (NLC) is shown on Table 2.

Before using the play-based learning approach, the mean pre-test score of Grade 1 learners in the Comprehensive Rapid Literacy Assessment (CRLA) is 8.08

with a standard deviation of 3.03. The mean pre-test score of Grade 2 learners is 9.04 with a standard deviation of 5.30. For Grade 3 learners, the mean pre-test score is 5.64 with a standard deviation of 3.27. The average reading levels of the participants imply that full refresher should be given to the learners, justifying their participation in the NLC 2023. Results of the pre-test using the CRLA also show that based on the average reading level of the learners, additional support was needed by the learners to enhance their reading levels.

The analysis of the pre-test results supports the rationale for implementing a play-based learning approach by identifying initial reading levels, pinpointing areas for improvement, and justifying the participation of Grade 1 to 3 learners in the NLC 2023 for targeted literacy interventions. These findings contribute valuable information for designing effective literacy enhancement programs.

The results are consistent with the findings of the study conducted by Roque, Javillonar, Pascua and Cruzat (2023) that learners in lower elementary grade levels have low reading levels which fall under frustration to non-reader levels. Due to this problem in the reading ability of the learners, Roque at al. (2023) also reiterated that schools must develop a reading program for early primary-grade learners to promote early development in reading.

Table 2. Reading Levels of the Participants Before Using Play-Based Learning in the NLC

Grade Level	Number of Learners	Mean	Standard Deviation
Grade 1	12	8.08	3.03
Grade 2	27	9.04	5.30
Grade 3	22	5.64	3.27

Reading Levels of Grades 1 to 3 Learners After Using Play-Based Learning

After using the play-based learning approach on the intervention camp of NLC, a post-test using CRLA was administered among the participants to identify their reading levels. Table 3 shows the reading levels of Grades 1 to 3 learners after the intervention.

Grade 1 learners obtained a mean post-test score of 16.75 with a standard deviation of 3.05. Grade 2 learners had a mean post-test score of 15.70 with a standard deviation of 4.53. On the other hand, Grade 3 learners obtained a mean post-test score of 18.14 with a standard deviation of 2.01. Results of the post-test show relatively higher reading levels than before using the play-based learning on NLC. The variations in mean scores and standard deviations across grades provide insights into the extent of improvement.

Findings of the current study support Moore (2023) that play-based learning has a positive effect on improving the reading skills of the learners specifically on phonemic awareness and phonics skills. Higher reading levels of the participants show that after using play-based learning during the NLC, the learners were able to read what they were not able to read before. Furthermore, this result of the current study is also consistent with the findings of Hansmann (2022) that learners were able to move towards proficiency after using play-based learning as an intervention.

Table 3. Reading Levels of the Participants After Using Play-Based Learning in the NLC

Grade Level	Number of Learners	Mean	Standard Deviation
Grade 1	12	16.75	3.05
Grade 2	27	15.70	4.53
Grade 3	22	18.14	2.01

Differences on the Reading Levels of Grades 1 to 3 Learners Before and After Using Play-Based Learning on NLC

The comparison in the CRLA scores of Grade 1 learners before and after using the play-based learning on NLC is shown on Table 4. Prior to the implementation of play-based learning, the mean pre-test score of Grade 1 participants was 8.08 with a standard deviation of 3.03. On the other hand, after participating in the NLC, the mean post-test score of the Grade 1 learners is 16.75 with a standard deviation of 3.05.

The paired *t* of 13.989 with a *p*-value of <0.001 is statistically significant at 0.05 level using 11 degrees of freedom. The null hypothesis that there is no significant difference on the reading levels of the Grade 1 learners before and after using play-based learning on NLC is therefore rejected.

These findings mean that there is a significant improvement in the CRLA scores of the Grade 1 learners after participating in the NLC with the play-based learning as the primary approach used by the volunteer teachers. Therefore, play-based learning is an effective approach in teaching reading among Grade 1 learners who needed further support at the end of the school year.

Table 4. Difference on the Reading Levels of the Grade One Learners Before and After Using Play-Based Learning

Test Score	Mean	Standard Deviation	Paired *t*	P value	Remarks
Pre-Test (Before)	8.08	3.03	13.989	<0.001	**Reject Ho**
Post-Test (After)	16.75	3.05			

Degrees of Freedom = 11
Significant at 0.05 level

Furthermore, the difference on the reading levels of the Grade 2 learners before and after using play-based learning on NLC was also measured and analyzed. Results presented on Table 5 show that the mean pre-test score of the Grade 2 learners is 9.04 with a standard deviation of 5.30. On the other hand, the mean post-test score of the Grade 2 learners is 15.70 with a standard deviation of 4.53.

The paired *t* of 11.855 with a *p*-value of <0.001 is statistically significant at 0.05 level using 26 degrees of freedom. The null hypothesis that there is no significant difference on the reading levels of the Grade 2 learners before and after using play-based learning on NLC is therefore rejected.

Findings imply that there is significant difference between the CRLA scores of the Grade 2 learners before and after using play-based learning on NLC. Therefore, play-based learning is also an effective approach in teaching reading among Grade 2

learners who initially needed additional support in learning how to read.

Table 5. Difference on the Reading Levels of the Grade Two Learners Before and After Using Play-Based Learning

Test Score	Mean	Standard Deviation	Paired *t*	P value	Remarks
Pre-Test (Before)	9.04	5.30	11.855	<0.001	**Reject Ho**
Post-Test (After)	15.70	4.53			

Degrees of Freedom = 26
Significant at 0.05 level

Finally, Table 6 presents the difference on the reading levels of the Grade 3 learners before and after using play-based learning on NLC. Prior to the implementation of play-based learning approach, the mean score of the Grade 3 learners is 5.64 with a standard deviation of 3.27. On the other hand, the mean score of 18.14 and a standard deviation of 2.01 were acquired by Grade 3 learners after the implementation of play-based learning on NLC.

The paired *t* which is 19.727 with a *p*-value of <0.001 is statistically significant at 0.05 level using 21 degrees of freedom. Therefore, the null hypothesis stating that there is no significant difference on the reading levels of Grade 3 learners before and after using the play-based learning is rejected.

Findings revealed that after using play-based learning on NLC, there is a significant improvement on the reading levels of Grade 3 learners, thus play-based learning approach is effective in improving the reading levels of the learners.

Table 6. Difference on the Reading Levels of the Grade Three Learners Before and After Using Play-Based Learning

Test Score	Mean	Standard Deviation	Paired *t*	P value	Remarks
Pre-Test (Before)	5.64	3.27	19.727	<0.001	**Reject Ho**
Post-Test (After)	18.14	2.01			

Degrees of Freedom = 21
Significant at 0.05 level

The results of the current study that there is a significant difference on the reading levels of the Grades 1 to 3 learners before and after using play-based learning during the NLC support the significant findings of Tekman and Yeniasir (2023) which revealed that play-based learning environments are highly effective in increasing student motivation specifically in the development of learners' four basic language skills such as speaking writing, reading and listening. Furthermore, similar findings were revealed by McGinn (2017) that young learners develop language skills and vocabulary skills in the most effective way through play.

CONCLUSION AND RECOMMENDATION

This chapter presents the conclusions drawn from the results obtained and the relevant recommendations offered by the study.

Conclusions

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

1. The average reading levels of the Grades 1 to 3 learners before using the play-based learning were low and characterized under full refresher reading levels in general. This was used as basis of their participation in the National Learning Camp (NLC) during the EOSY break 2022-2023. The identified learners who served as the participants of the study were encouraged to join the NLC to enhance their reading skills.
2. The average reading levels of the participants after using the play-based learning on NLC were high and characterized as moderate refresher to Grade ready reading levels. The higher CRLA scores of the Grades 1-3 learners implies an improvement on their reading skills after the play-based learning experience during the conduct of NLC.
3. There is a significant difference in the reading levels of Grades 1 to 3 learners before and after using the play-based learning as the primary approach in the implementation of reading intervention camp of NLC. The significant improvement on the CRLA scores of the participants is associated with the use of play-based learning approach. The volunteer teachers prepared appropriate reading interventions done through play rather than the traditional way of teaching reading. Therefore, the study concludes that the effectiveness of play-based learning on the reading levels of Grades 1 to 3 learners is statistically significant and this approach in providing reading intervention among non-readers and slow-readers is effective in improving their reading levels.

RECOMMENDATIONS

Upon presenting the findings of the study, the following recommendations are hereby suggested:

1. The study suggests utilizing play-based learning approach in conducting reading interventions among struggling readers. Play-based learning can also be incorporated not just in National Learning Camp (NLC) but also in regular classes to provide enjoyable yet meaningful learning experiences among learners.
2. The study also recommends providing relevant training and programs for teachers on promoting play-based learning approach in teaching reading to capacitate all teachers on implementing this effective approach.
3. Continuous assessment and monitoring mechanisms are also recommended by the study to evaluate the sustained impact of play-based learning on reading levels. Teachers may regularly analyze student progress and adjust interventions as needed to address emerging challenges.
4. The study also suggests to educate parents about the benefits of play-based learning in improving reading skills. Provision of resources and guidance among parents to continue supporting their children's literacy development through play at home is also recommended.
5. Educational institutions and policymakers could consider incorporating these findings into pedagogical frameworks, emphasizing the value of dynamic, interactive, and engaging methods for fostering literacy skills in young learners.

6. For future studies, data gathering may also be conducted through observations and interviews to acquire more accurate information and investigate the study from a wider perspective. Evaluating the effectiveness of play-based learning on other foundational skills such as numeracy is also recommended.
7. Additionally, future research may explore the transferability of these results to different educational contexts and age groups, contributing to a broader understanding of the potential applications of play-based learning in literacy education.

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SCHOOL INTERNAL SERVICES ASSESSMENT OF THE CITIZEN'S CHARTER IN-LINE TO QUALITY MANAGEMENT SYSTEM FOR SCHOOL LEARNING ACTION CELL

by

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Abstract

The study assessed and analyzed the level of the implementation of Imus Pilot Elementary School on the school's internal services of the Citizens Charter in-line to the Quality Management System (QMS). The paper used descriptive type of research to determine the level of implementation of school internal services in the areas of issuances of special order for service credits and certification of compensatory time credits; use of laboratory and school inventory; school learning and development; and feedback and complaints mechanism. The findings revealed that the school has high level of implementation of school internal services with an overall mean value of 3.646. However, there is still a need for maintenance program focusing on the identified areas of concerns particularly in the areas of feedback and complaints, issuances of special order for service and time credits and learning and development.

Keywords: *internal services, citizen charter, special order, complaints mechanism, service, and time credits*

INTRODUCTION

Good to great services in the school makes the client happy- happy enough to try the services and sing praises to others for the experience. School clients are teachers, students, and the community, thus Imus Pilot Elementary School with its goal for continuous improvement, targeted digging deeper into the internal school services and how to perfectly go on with the processes. School personnel, to be more engaged in using the school's internal services, should understand and be trained in the processes.

In line too, with the Quality Management System (QMS) which the school targeted to achieve soon, perfectly engaging and practicing the processes in the internal services of the schools' citizens charter among the school personnel will give a better grasp on how the school will deal with the standards brought by QMS. Knowing the processes involved in the internal school services will influence how our school provides external school services to the students as well as to the community. Intrinsically, the school's internal processes involved are based on standards of the Citizens Charter, (2021 DepEd Citizens Charter) and needed to be truly practiced.

Thus, this action research aims to measure the degree of school personnel's grasp and understanding of the school's internal services of the Citizen`s Charter and design a LAC plan for coaching and mentoring on how the processes involved in the internal services be perfectly done.

Conceptual Framework

The assessment of the level of implementation of the school's internal services of the Citizen`s Charter in-line to Quality Management System (QMS) is the prerequisite for addressing the areas in the internal services that are needed to be capacitated with the school teaching and non-teaching personnel for implementation. Hence, the study adapted the use of the Input-Process-Output model in measuring the level of implementation of the school's internal services in Imus Pilot Elementary School .

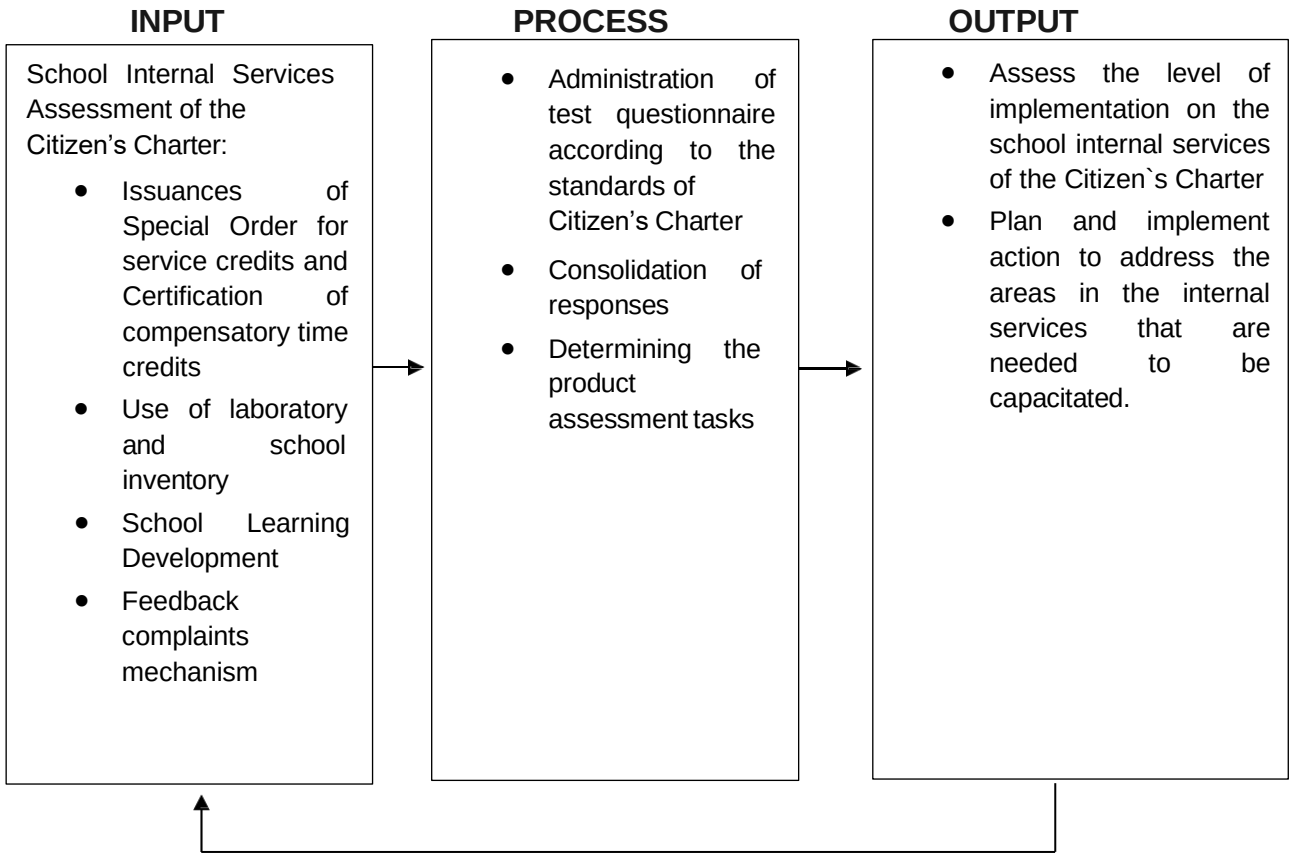

Figure 1. Research Paradigm

Figure 1 shows the input frame for determining the level of the School Internal Services Assessment of the Citizen's Charter in terms of: issuances of a special order for service credits and certification of compensatory time credits, use of laboratory and school inventory, school learning and development and feedback and complaints mechanism. The process frame indicates the administration of test questionnaire according to the standards of the Citizen's Charter in-line to Quality Management System and analysis of determining the product assessment task.

The results of assessing the level of implementation of the school's internal services of the Citizen`s Charter were able to point out areas in the internal services that are needed to be capacitated. This then helped them to understand the need to design a School Learning Action Cell (SLAC) plan for coaching and mentoring on how the processes involved in the internal services can be more efficient and effective. The study assessed and analyzed the level of the implementation on the school's internal services of Imus Pilot Elementary School from the Citizen`s Charter in-line to QMS and provided information that will serve as an output of the study which is an action plan to address the result of the assessment as to the level of implementation of school's internal services in the QMS program.

REVIEW OF RELATED LITERATURE

The Department of Education (DepEd) is committed to providing learners with quality basic education that is accessible, inclusive, and liberating through proactive leadership, shared governance, evidence-based policies, standards, and programs, a responsive and relevant curriculum, and enabling learning environment and highly competent and committed officials and teaching and non-teaching personnel. Thus, the Philippine educational system has been known to be enhancing and progressing each passing year to provide quality educational services in the country.

Currently, the Department of Education is considering providing a Quality Management System (QMS) as one of the significant ways to develop the quality of learning and services of the school to its stakeholders. Hence, DepEd abides by the stipulation of Executive Order No. 605, s. 2007 which instructed all departments to set up a QMS certified to the ISO 9001 standards. The executive order urged the institutionalization of QMS in Government as part of the execution of a government-wide quality management program. Furthermore, the executive order directs the establishment Citizen's Charter of key government offices as a service guarantee.

Prevailing Quality Management System (QMS) research in education helps the institution to obtain numerous opportunities and benefits in using a quality management system. Also, it helps the school in accomplishing its network of objectives and infrastructure of goals effectively and efficiently (Matorera, 2018). Hence, establishing the QMS in an organization has intriguing effects on the structure of the institution specifically in terms of management practices, customs, and providing services.

School Quality Management System

The Bureau of Philippine Standard - ISO (2020) defined a Quality Management System (QMS) as a formalized system that documents processes, procedures, and responsibilities for achieving quality policies and objectives. The study of Alcon (2019) reiterates the aims of QMS to increase an organization's awareness of its responsibilities and commitment to meeting the needs and expectations of its customers and interested parties, and in attaining satisfaction with its products and

services.

A study on the school QMS by Crosby (2018) mentioned that the quality search must start from the leading management while responsibility for implementation and execution lies with an excellent leader in a committed quality department. Quality is everyone's concern as "Quality is no one's responsibility in particular." Everyone should aim for quality but making it possible is something that can come only from the initiative of organizational leadership and be delivered to stakeholders for implementation. A similar study by Matorera (2018) about the School Quality Management System stressed that leadership in the top management system is the most significant principle in school QMS. The content and methods of leadership at any organization are identified by the balance of collaboration between leading management and followership.

Presently, competition among educational organizations is increasing; therefore, they should work hard to be able to meet their demands. Considering this, educational institutions are seeking to achieve ISO 9001 quality management system certification since this document provides different benefits for institutions in the education sector. The ISO standards help to lessen the expenses of the organization, strengthen the internal and external services, activities are better supervised and measured, increase client and worker fulfillment, and raise students with varied vision, to promote an efficient administration in the educational institution and to increase the profit and productivity rates (Celik et. al.,2018).

In the Philippines, Sisno (2017) studied the quality management system of the Northern Negros State College of Science and Technology (NONESCOST) as a basis for International Organization for Standardization (ISO) Certification. The study utilized ISO 9001:2008 Quality Management System Requirements Checklist and the Questionnaire on the Attitudes toward ISO 9001. Based on the result of the data gathered, the attitude of administrators, educators, and administrative staff towards ISO 9001 in terms of advantages, challenges, commendations, and guidelines did not differ significantly. Findings revealed that the personnel have mostly affirmative perceptions of ISO 9001, resulting in positive attitudes in the place of work. Most of them believe that implementing a quality management system in the school will help them to improve the learning and services being provided in their workplace.

Even though there are still some deliberations within educational organizations regarding the efficacy of QMS, various recent studies have suggested that they offer more advantages and improvements for schools than disadvantages. In the study of De la Torre (2013), the design and development of a QMS help the school to systematize both its administrative and academic procedures, including the teaching-learning process. The impact of QMS on schools includes the analyzed effects that have appeared since their direct or indirect implementation, and which have significantly affected the work and 'ways' of the educational institution and its results. This impact is described as the extent of transformation, and it does not often arise immediately after the application of an enhancement plan, but its results are progressively combined and integrated into the organization. As a result, it modifies the culture, planning, management and decision-making system, climate, etc. (Fernández, FJ, Santaolalla & Luna, 2013; Fernández, MJ 2013).

The study of Diaz, F. et al. (2018) to Quality Management Systems (QMS) and their impact on schools in the Basque Country, Spain is composed of 14 schools. They were analyzed utilizing a sample of 315 subjects (42 managers and 273 teachers) who utilized one of the QMS models. The results show that the longer the period for which schools had quality certification, the greater the awareness of quality among the

teaching staff, regardless of the model used. This leads to the conclusion that having in place a quality model in a school makes the teaching personnel more informed of the existence and value of quality management systems and leads them to aspire to higher educational quality. Thus, it is evident that a quality management system plays a big role to form a systematized structure in school to achieve its goals and commitment for both customers and employees in providing quality products and services.

Citizen's Charter

The use of the Citizen's Charter is a way for the government to provide good governance in terms of showing transparency, accountability, and responsiveness in governing. Its initiatives are an effort in solving the challenges while dealing with the government or any other organizations. It is a manuscript of an authorized statement that guarantees the commitment of the organization and its responsibility toward the citizen in providing excellent service. The Citizen's Charter is a personal initiative of Prime Minister John Major after he was nominated to the party leadership in 1990 and was declared to the public in 1991. The charter intended to revolutionize public service with the primary goal of empowering the people, who were to be regarded as silent spectators of government policies and programs. The main objectives of the Charter were to make clear and comprehensible to the public how civil servants and other administrations were working in the delivery of public transactions. Moreover, it explained the main practices in government supervision, the monitoring roles of the government over the privatized sectors, the use of research in the production, outsourcing of public service to enhance the quality-of- service delivery, and future guidelines on privatization of some government sectors. On the other hand, every public service institution is required to issue a charter, with the goals of enabling citizens to learn and decide the suitable standards of any public service organization and to educate the citizens about the process of complaining and obtaining their compensation in case of the service given was not up to the acceptable standard. Therefore, Citizen's Charters would empower the public who were dependent on government services by ensuring that they receive a quality service which they were entitled to obtain (Castellani, 2017). One study in Bangladesh conducted by Kundo, H. K. (2016) described the citizen's charter to be a useful tool for involving citizens in supporting active governance in many countries. It has the full capability to produce numerous benefits for all stakeholders including the service providers; however, it didn't happen in the case of Bangladesh. The analysis of the findings revealed that most of the service recipients are unaware of the charter even after 8 years of its introduction. This only proves that citizens should be informed and should gain enough knowledge about the charter to empower its stakeholders and be able to experience the service they are entitled to receive.

On the other hand, the study of Castellani L. (2017) emphasized the very significant role of the charter in empowering its citizens. In a democratic country, citizens have become more open towards the government's responsibilities, and they expect the administration not only to respond to their requests but also to anticipate their needs in the future. In India, the Department of Administrative Reforms and Public Grievances in Government (DARPG) oversees managing, supervising, planning, and operationalizing Citizen's Charters at the Central Government as well as States Government. However, the fulfillment of the Citizen's Charter in India faced many difficulties due to its government's bureaucratic structure and resistance to change in its working system. It only means that the participation of both government and its

citizens is very important to experience quality and efficient services.

In the Philippines, Section 2 of the Republic Act (RA) 11032 otherwise known as the Ease of Doing Business and Efficient Government Service Delivery (EODB-EGSD) Act of 2018 states that:

> "*It is hereby declared that the policy of the State to promote integrity, accountability, proper management of public affairs and public property as well as to establish effective practices, aimed at the efficient turnaround of the delivery of government services and the prevention of graft and corruption in the government. Towards this end, the State shall maintain honesty and responsibility among its public officials and employees and shall take appropriate measures to promote transparency in each agency concerning the manner of transacting with the public, which shall encompass a program for the adoption of simplified requirements and procedures that will reduce red tape and expedite business and nonbusiness related transactions in government*."

Likewise, section 6 of the Act orders that all government organizations shall put up their most current and revised service standards to be known as the Citizen's Charter. Also, it abides by the Executive Order No. 605, s. 2007 Institutionalization of Government Quality management program to establish citizen's charter of key government offices as a service agreement.

The Department of Education Citizen's Charter for the year 2021 is a document issued by the government that gives rights and provides information on the Philippine education system and DepEd management structure. Furthermore, it is composed of central, regional, division, and school offices' external and internal services guide. It describes the complete details about the type of transactions, requirements needed, who may avail, client steps, agency action, fees to be paid, processing time, and person responsible for accomplishing the operations. The Department of Education abides in the order of making a Citizen's Charter to meet the demands of its stakeholders and to ensure that they are receiving quality and excellent service in both internal and external services.

School Internal Services Assessment

In line with the institutionalization of the Quality Management System was the development of the different internal services of the school which focuses on the issuance of a special order for service credits and certification of compensatory time credits, laboratory and school inventory, school learning and development, and feedback and complaints.

Based on the Department of Education 2021 Citizen's Charter (1st Edition), internal services play a very significant role in the school. They are accountable for providing vacation service credits for working beyond regular work hours/days where payment of an allowance or overtime pay is not possible. Likewise, there are instances where unusual work is demanded from teachers including those who are at risk, and for which monetary benefit is not enough; hence, extra non-monetary compensation is justified. Furthermore, the internal services are accountable for properly checking its school buildings and facilities such as classrooms, laboratories, offices, equipment, and materials. Employees who execute the task are trained on the set of guidelines being observed on the categorization of school structures. As well as they are

responsible for the school's learning and development. It is a school strategic initiative based on the result of the electronic Self-Assessment Tool (e-SAT) and other similar needs assessments to address any competency gap/s that affect or contribute to the school's performance.

Similarly, government employees are evaluated for their year's accomplishments using the Individual Performance Commitment and Review Form (IPCRF). The final section of the IPCRF, which consists of the development plans, is separated into four sections. The areas in which the employee excels and those in need of improvement are both noted on the individual development plan (IDP). The employee's strengths are emphasized and acknowledged in this way. IPCRF-IDP plays an important role in assessing and addressing the competency gap of teachers and other school personnel who are responsible for improving school internal and other services in school. This can be used as a reliable reference to be able to facilitate and respond promptly to the demands of the school. The research by Rahmatillah, Dini, and Desiana, Putri (2019) demonstrated that the use of IDP in Isra Presisi Indonesia is successful in assisting the business in increasing the production department employees' competency and performance through training. The organization will be able to better develop a training regimen that is fit for the IDP results to enable the competence required of employees.

Additionally, the U.S. Office of Personnel Management claims that IDP is a tool for aiding staff members in their professional and personal growth. Its main goal is to enhance present job performance while also assisting people in achieving short- and long-term career goals. The organization gains from this by coordinating employee training and development initiatives with its mission, objectives, and goals. Using an IDP, administrators can create more practical staff and development plans by having a better grasp of the professional goals, strengths, and development requirements of their team. The organization’s personnel assume personal responsibility and accountability for their professional growth, gaining or improving the skills they need to keep up with the demands of the job. This could be done through School Learning Action Cell (SLAC), Coaching and Mentoring, In-Service Training (INSET), Work Immersion, or Team Development.

On the other hand, many recent studies focused on the significance of internal services, not only in school but also in other industries. The study of Joshi P. et.al (2016), investigated the different components identifying the internal service quality in schools and was able to develop a model demonstrating different aspects made up of these components. This study emphasized the ways to enhance the internal service quality in schools.

Several studies have proposed that workers are often very strained and exhausted from the requirements of doing transactions with clients, and high-demanding work stress constrains their inner motivation which affects their service performance. Based on the research, salesclerks' job effort and input become higher when the internal service quality is high which can help sales performance increase (Sharma, Kong, & Kingshott, 2016). Another similar study in internal services of Li L. et.al (2019), studied the connection between salesclerks' internal service quality and turnover intention through the administrators of their job participation and sales performance. The researchers distributed surveys to salesclerks in Korea and used structural equation modeling to test the hypotheses. Hence, job involvement mediates the relationship of internal service quality with salespersons' performance and turnover. To increase both job involvement and sales performance the managers or

leaders should assess and apply a high level of internal service quality in the five dimensions of responsiveness, empathy, tangibles, assurance, and reliability (Sharma et al., 2016).

Thus, based on the studies shown above, there is a need to improve and strengthen the internal services of an organization to increase its worker's performance. Also, training sessions should be provided to be able to help and respond quickly to the demands of the school.

School Learning Action Cell (SLAC)

The DepEd acknowledges that the quality of learning is deeply affected by the quality of teaching. Thus, it is vital to hire qualified educators and it is necessary to promote their development in the teaching career. Managing professional learning groups will assist teachers in the building of new understanding of instruction and in reviewing traditional beliefs and theories about education (Little 2003) to address the present needs of students. In line with the implementation of Republic Act No. 10533 or the Enhanced Basic Education Act of 2013, the Department of Education (DepEd) issues the policy (DepEd Order No.35, s.2016) on The Learning Action Cell (LAC) as a K to 12 Basic Education Program School-Based Continuing Professional Development Strategy for the Improvement of Teaching and Learning. With this policy, the DepEd fully supports the continuing professional development of its teaching personnel.

This is anchored on the principle of lifelong learning and DepEd's commitment to the improvement of teachers' capacity towards their success in their careers. This can be applied through the school-based LAC, which served as a professional learning community for teachers that will aid them to develop practice and learner achievement. In DepEd, Learning Action Cell is a group of educators who take part in cooperative learning conferences to solve shared challenges experienced. It is facilitated by the school head or a designated LAC Leader. LAC should provide positive, caring, and safe spaces for every teacher.

Many research supported the positive benefit and effects of applying learning action cells in school (Bajar, J. T. F et.al. 2021; Dizon N. 2019; Vega M. 2020). The study of Silva V. (2021), described the school learning action cell as a key for teachers' continuous learning and development. This research was participated by 30 key teachers and findings revealed the need for teachers' training in terms of learner's diversity and inclusion, content and pedagogy, assessment, and reporting, 21st-century skills, and ICT integration and curriculum contextualization. Hence, implementing school learning action cells matters in the professional development of teaching personnel.

Moreover, in the study of Gumban, H.F (2021), explained that teachers can create globally competitive learners who are value-driven, qualified with 21st-century skills, and capable of driving the country toward advancement and progress by developing their pedagogical skills by participating in SLAC. The study is created to find out how the programs of School-Based Learning Action Cell (SLAC) as a lesson study plan in the Philippines connects to Educator's Work Performance. The study involved 11 selected public elementary schools around Norala in the province of South Cotabato. There were 129 selected teachers and 6 key informants who take part in the study. Based on the findings of the study, the teachers were greatly involved in SLAC activities and the performance of teachers at service is very satisfactory in all its indicators: learning environment and learner diversity, content knowledge and pedagogy, assessment and reporting, and curriculum and planning. After the analysis,

the data revealed that when teachers cooperate in SLAC activities, their work performance improves.

Based on the studies shown above, assessing the needed training for school personnel first helps to find out the right program and activities that should be implemented in SLAC and as the school teaching personnel participate in the program, it also increases their work performance. The researchers believe that there is much to do in assessing the needed training among the teaching personnel and school staff to provide quality and excellent service in school. Given the demands of addressing these concerns in knowing improving the school services. This study will focus on the assessment of school internal services of the DepEd Citizen's Charter in line with the Quality Management System as the basis for the future school learning action cell program.

Research Questions

1. What is the level of implementation on the school internal services of the Citizens Charter in- line to QMS as to:
    - 1.1 Issuances of Special Order for service credits and Certification of compensatory time credits
        - 1.1.1 Brigada Eskwela,
        - 1.1.2 COMELEC,
    - 1.2 Use of laboratory and school inventory in:
        - 1.2.1 offices,
        - 1.2.2 classrooms,
        - 1.2.3 laboratories,
        - 1.2.4 materials,
        - 1.2.5 equipment?
    - 1.3 School Learning and development specific to:
        - 1.3.1 SLAC,
        - 1.3.2 Coaching and mentoring,
        - 1.3.3 INSET,
        - 1.3.4 Work immersion or Team development?
        - 1.4 Feedback and complaints mechanism
2. What are the areas in the internal services that are needed to be capacitated with the school` teaching and non-teaching personnel for implementation?

Proposed Innovation, Intervention, and Strategy

School Learning Action Cell (SLAC) sessions will be designed and implemented based on the result of the action research which is purposely done to assess the capacity of the school personnel on the school internal services of the DepEd Citizen`s Charter. This is to train and keep oriented all the school personnel both teaching and non-teaching staff on the implementation and making sure that all the processes will be practiced for best results.

RESEARCH METHODOLOGY

a. Research Design

In this study, the researchers used descriptive type of research to determine the level of implementation of school internal services of the Citizen`s Charter in-line

to QMS which targeted the use of issuances of special order for service credits and certification of compensatory time credits, use of laboratory and school inventory, school learning and development, and feedback and complaints mechanism. The researchers used test questionnaire according to the standards of Citizen's Charter to determine how the school implements the internal services.

b. Participants

The study sample was made up of forty-two (42) teaching personnel and six (6) non- teaching personnel with different tasks in school internal services such as school head, administrative officers, supply/ property custodians, EBEIS, SMEA coordinator, program project activities owners, SLAC coordinator and ICT coordinator of Imus Pilot Elementary School for the SY 2021-2022.

c. Data Gathering Methods

First, approval from the Imus Pilot Elementary School top management to administer the questionnaire will be requested;

Second, after the receipt of approval, the researchers will now administer the questionnaire to the participants via printed or electronic form; and

Third, after one week, the researchers will request the participants to return the completed questionnaires.

d. Data Analysis Plan

Statistical Treatment. The data gathered will be treated statistically with the use of

SPSS software. The statistical treatment is as follows:

1. To address SOP 1. The statistical test will be the weighted mean. The weighted mean result will be used to analyze the level of implementation of school internal services of the Citizen`s Charter in-line with QMS planning in terms of issuances of a special order for service certification of compensatory time credit; use of laboratory and school inventory; school learning and development; and feedback and complaints. To analyze the result items with less than 3.50 will be considered weaknesses, that is, they will require enhancement program, and those that are 3.50 or more, will require maintenance program.

2. To address SOP 2. The researchers will be used ranking to identify the top priority concerns in QMS internal services. Ranking will answer the areas in the internal services that are needed to be capacitated.

RESULT AND DISCUSSION

Problem 1: Level of implementation on the school internal services of the Citizen`s Charter in-line to Quality Management System (QMS).

Table 1. *Level of implementation of school internal services of the Citizen`s Charter in terms of issuances of special order for service credits and certification of compensatory time credits in Brigada Eskwela, and COMELEC.*

Issuances of special order for service and time credits indicators	Weighted Mean	Ranking	Descriptive Level
1. Check submitted requirements	3.75	3.5	High
2. Acknowledge client request and advise of next steps, i.e. request will be forwarded to the SDO and SDO will provide document to school. School will inform the client when the document is available for release.	3.5	5.5	High
3. Log and collate requests for SDO, prepare transmittal letter to be signed by school head	3.5	5.5	High
4. Sign the transmittal letter	2.75	8	Moderate
5. Forward the collated requests to SDO	3.75	3.5	High
6. Follow-up status of request with SDO	4	1.5	High
7. Upon the advice of SDO, pick-up requested documents	4	1.5	High
8. Release document 2 working days upon receipt of documents from SDO	3.25	7	Moderate
Total Weighted Mean	**3.56**		**High**

Table 1 shows the level of implementation of school internal services of the Citizen`s Charter in terms of issuances of a special order for service credits and certification of compensatory time credits in Brigada Eskwela, and COMELEC with a composite mean value of **3.56** indicating that the level of implementation is **high**.

Specifically, the three items with the utmost expected level of implementation of school internal services of the Citizens Charter in terms of issuances of a special order for service credits and certification of compensatory time credits in Brigada Eskwela, and COMELEC involve: a.) the level of the implementation of school internal services to follow-up status of the request with SDO and upon the advice of SDO, pick-up requested documents, both gained the highest mean of 4, **high level of implementation**; b.) the level of the implementation of school internal services to check submitted requirements and forward the collated requests to SDO, both gained the total mean of 3.75**, high level of implementation**; and e.) the level of the implementation of school internal services to acknowledge client request and advise of next steps, i.e. request will be forwarded to the SDO and SDO will provide a document to the school. The school will inform the client when the document is available for release and log and collate requests for SDO, prepare a transmittal letter to be signed by the school head, both gained the total mean of 3.5, **high level of implementation**.

The items with the lowermost composite means are: a.) the level of the implementation of school internal services to sign the transmittal letter with the total mean of 2.75, **moderate level of implementation**; and b.) the level of the implementation of school internal services to release document 2 working days upon receipt of documents from SDO with the total mean of 3.25, **moderate level of implementation.**

The issuances of a special order for service credits and certification of compensatory time credits play a very significant role for the employees in school.

According to the Department of Education's 2021 Citizen's Charter, the importance of internal services in the school is stated in the first edition. When the payment of an allowance or overtime compensation is not possible due to working outside of usual business hours or days, they are responsible for providing vacation service credits. There's a need to strengthen the process of signing the transmittal letter and releasing the requested documents in 2 working days; these are for the benefit of the employees in the school, to give what they deserved. Additionally, there are times when extraordinary work is required of instructors, including those who are at risk, for whom financial compensation is insufficient; as a result, additional non-monetary compensation is justified. Also, it resulted in delays in the processing and issuance of service credits.

The findings generated a meaningful interpretation that most of the participants have **high level of implementation** of school internal services of the Citizens Charter in terms of issuances of a special order for service credits and certification of compensatory time credits in Brigada Eskwela, and COMELEC; however, there is a need to improve the implementation in signing the transmittal letter and the releasing of document 2 working days upon receipt of documents from SDO.

As a result, it is suggested to have a maintenance program in a.) acknowledging client requests and advise of next steps, i.e. request will be forwarded to the SDO, and SDO will provide a document to the school. The school will inform the client when the document is available for release. And in, b.) logging and collating requests for SDO, preparing transmittal letter to be signed by the school head. On the other hand, an enhancement program must be provided in a.) signing the transmittal letter, and b.) releasing document 2 working days upon receipt of documents from SDO.

Table 2. Level of implementation of school internal services of the Citizen`s Charter in terms of the use of laboratory and school inventory in offices, classrooms, laboratories, materials, and equipment.

	Laboratory and school inventory indicators	Weighted Mean	Descriptive Level
1.	Gather data on inventory from class advisers, laboratory custodian, etc. at the end of each school year or as needed	3.917	High
2.	Consolidate school inventory and submit to school head for signature	3.917	High
3.	Review and sign the report	3.917	High
4.	Submit School Inventory Report to SDO via hard copy/email	3.917	High
	Total Weighted Mean	**3.917**	**High**

Table 2 shows the level of implementation of school internal services of the Citizen`s Charter in terms of the use of laboratory and school inventory in offices, classrooms, laboratories, materials, and equipment with the composite mean value of 3.917 indicating that the level of implementation is **high**.

The above-presented table revealed the fact that most of the participants observed a **high level of implementation** of school internal services of the Citizens Charter in terms of the use of laboratory and school inventory in offices, classrooms, laboratories, materials, and equipment. Specifically, in gathering data on inventory

from class advisers, laboratory custodians, etc. at the end of each school year or as needed, consolidating school inventory and submitting the school head for signature, reviewing and signing the report and submitting school inventory report to SDO via hard copy/email.

The findings generated a meaningful interpretation that the participants have **high level of implementation** of school internal services of the Citizen`s Charter in terms of the use of laboratory and school inventory in offices, classrooms, laboratories, materials, and equipment. Based on the Department of Education 2021 Citizen's Charter (1st Edition) the internal services are responsible for doing so inspecting the school's structures, including its classrooms, laboratory, offices, equipment, and materials. The set of instructions being observed are taught to the staff members who carry out the task. As a result, it is recommended to provide a maintenance program to sustain the quality using the laboratory and school inventory in offices, classrooms, laboratories, materials, and equipment.

Table 3. Level of implementation of school internal services of the Citizen`s Charter in terms of the school learning and development in SLAC, Coaching and mentoring, INSET, and work immersion or team development.

	Learning and development indicators	Weighted Mean	Ranking	Descriptive Level
1.	Check submitted requirements	3.75	4	High
2.	Identify needs of teachers based on documents	3.69	5	High
3.	Craft an action/SLAC plan/proposal	3.79	3	High
4.	Implement SLAC	3.84	1	High
5.	Conduct Monitoring and Evaluation	3.81	2	High
	Total Weighted Mean	3.776		High

Table 3 shows the level of implementation of school internal services of the Citizen`s Charter in terms of the school learning and development in SLAC, Coaching and mentoring, INSET, and work immersion or team development with the composite mean value of 3.776 indicating that the level of implementation is **high**.

For the top three items with the highest mean of level of implementation in school internal services of the Citizen`s Charter in terms of the school learning and development in SLAC, Coaching and mentoring, INSET, and work immersion or team development are: a.) the level of the implementation of school internal services to implement SLAC gaining the highest mean of 3.84; **high level of implementation**; b.) the level of the implementation of school internal services to conduct monitoring and evaluation with the total mean of 3.81; **high level of implementation**; c.) the level of the implementation of school internal services to craft an action/SLAC/plan/proposal with the total mean of 3.79, **high level of implementation**.

The items with lowermost weighted means are; a.) the level of the implementation of school internal services to identify needs of teachers based on documents gaining a total mean of 3.69, **high level of implementation**; and b) the level of the implementation of school internal services to check submitted requirements gaining a total mean of 3.75, **high level of implementation**.

The findings generated a meaningful interpretation that the participants have **high level of implementation** of school internal services of the Citizen`s Charter in

terms of the school learning and development in SLAC, Coaching and mentoring, INSET, and work immersion or team development. As a result, the school should provide a program that will maintain good implementation and development in SLAC, INSET, and other team development because the learning and growth of the school are the responsibility of the school's internal services. The goal of this school's strategic effort is to close any skill gaps that may be affecting or contributing to the performance of the school. It is based on the results of the electronic-Self Assessment Tool (e-SAT) and other similar needs assessments. The School Learning Action Cell (SLAC), coaching and mentoring, In-Service Training (INSET), work immersion, or team development are some possible methods for achieving this.

Table 4. Level of implementation of school internal services of the Citizen`s Charter in terms of feedback and complaints mechanism.

	Feedback and complaints indicators	Weighted Mean	Ranking	Descriptive Level
1.	Accomplish the client feedback form that would be given by the stationed guard at the entrance of the premises or email the respective DepEd RO Official Email Address	3.33	2.5	Moderate
2.	Public Affairs Offices (CO: PAAC, RO: PAU, SDO: Office of the SDS, Schools: School Head) will collect the feedback forms every week for recording, and endorsement to concerned offices. Issues and requests shall be addressed by the concerned office/s, and monitored and recorded by the respective public affairs office.	3.33	2.5	Moderate
3.	Filing a complaint for walk-in, go to the respective Public Affairs Office of the respective governance level. Discuss the concerns with the designated complaints officer. Submit necessary evidence, if applicable.	3.5	1	High
4.	Filing a complaint on email/hotline, send/discuss complaint thru the official PAAC email address (action@deped.gov.ph) or the official email address of the respective office or call Hotline 8888.	3.17	5	Moderate
5.	The complaints officer will record the complaint on their respective database. If the necessary information is provided and complete, the officer will prepare appropriate Request for Action (RFA). The complaints officer will then monitor the response/action taken through email and/or phone call. The complaints officer will send updates to the concerned party.	3.32	4	Moderate
	Total Weighted Mean	**3.33**		**Moderate**

Table 4 shows the level of implementation of school internal services of the Citizen`s Charter in terms of feedback and complaints mechanism with the composite mean value of 3.33 indicating that the level of implementation is **moderate**.

Specifically, the items with the utmost expected level of implementation of

school internal services of the Citizen`s Charter in terms of feedback and complaints mechanism involve; a.) the level of the implementation of school internal services in filing a complaint for walk-in, go to the respective Public Affairs Office of the respective governance level. Discuss the concerns with the designated complaints officer. Submit necessary evidence, if applicable gaining a highest mean of 3.5, **high level of implementation**; b.) the level of the implementation of school internal services in accomplishing the client feedback form that would be given by the stationed guard at the entrance of the premises or email the respective DepEd RO Official Email Address and Public Affairs Offices (CO: PAAC, RO: PAU, SDO: Office of the SDS, Schools: School Head) will collect the feedback forms every week for recording, and endorsement to concerned offices. Issues and requests shall be addressed by the concerned office/s, and monitored and recorded by the respective public affairs office, both gained a total mean of 3.33, **moderate level of implementation**.

The items with lowermost weighted means are; a.) the level of the implementation of school internal services in filing a complaint on email/hotline, send/discuss complaint thru the official PAAC email address (action@deped.gov.ph) or the official email address of the respective office or call Hotline 8888 gaining a total mean of 3.17, **moderate level of implementation**; and b.) the level of the implementation of school internal services in the complaints officer will record the complaint on their respective database. If the necessary information is provided and complete, the officer will prepare appropriate Request for Action (RFA). The complaints officer will then monitor the response/action taken through email and/or phone call. The complaints officer will send updates to the concerned party gaining a total mean of 3.32, **moderate level of implementation**.

The findings generated a significant interpretation that the participants have **moderate level of implementation** of school internal services of the Citizen`s Charter in terms of feedback and complaints mechanism. As a result, there should be an enhancement program to improve the process in accomplishing client feedback, collecting feedback forms, filing a complaint on online/hotline, and recording and monitoring the updates of the complaints with the involved parties. On the other hand, maintenance program will be provided in filing a complaint for walk-in. To meet the demands of its stakeholders and to ensure that they are receiving quality and excellent service in both internal and external services.

Problem 2: Areas in the internal services that are needed to be capacitated with the school teaching and non-teaching personnel for implementation.

Table 5. Top dominant concerns in the areas of internal services that require capacity building.

Citizen Charter Internal Services	Weighted Mean	Ranking	Area of Concerns
Issuances of special order for service and time credits	3.56	3	There is a need to improve the implementation in signing the transmittal letter and the releasing of document 2 working days upon receipt of documents from SDO.

Laboratory and school inventory	3.917	1	Needs for the maintenance program to sustain the quality using the laboratory and school inventory in offices, classrooms, laboratories, materials, and equipment.
Learning and development	3.776	2	Sustainable program that will maintain good implementation and development in SLAC, INSET, and other team development because the learning and growth of the school are the responsibility of the school's internal services.
Feedback and complaints	3.33	4	Improve the process in accomplishing client feedback, collecting feedback forms, filing a complaint on online/hotline, and recording and monitoring the updates of the complaints with the involved parties.
Total Weighted Mean	**3.646 – High level of implementation**		

The Table 5 above shows the total level of implementation of school internal services of the Citizen`s Charter in terms of the issuances of special orders for service and time credits, laboratory, and school inventory, learning and development, and feedback and complaints with a composite mean value of 3.646 indicating that the level of implementation is **high.**

The summary of top dominant concerns in the areas of internal services that require capacity building.

a.) Level of implementation of school internal services of the Citizens Charter in terms of feedback and complaints of 3.33, **moderate level of implementation.**

The school should improve the process in accomplishing client feedback, collecting feedback forms, filing a complaint on online/hotline, and recording and monitoring the updates of the complaints with the involved parties. It is recommended to create an appropriate and systematized process in collecting client feedback. Selection of appropriate person-in-charge that will handle feedback and complaints is highly recommended.

b.) Level of implementation of school internal services of the Citizen`s Charter in terms of issuances of special order for service and time credits of 3.56, **high level of implementation.**

There is a need to improve the process of issuances of special order for service and time credits particularly in signing the transmittal letter and the required releasing

of document within two working days upon receipt of documents between from Schools Division Office.

c.) Level of implementation of school internal services of the Citizens Charter in terms of learning and development of 3.776, **high level of implementation.**

The school should focus on designing sustainable program that will maintain good implementation and development in SLAC, INSET, and other team development because the learning and growth of the school are the responsibility of the school's internal services.

CONCLUSION

Based on the findings, the study presents the following conclusions:

- The study concludes that the school has high level of implementation of school internal services of the Citizen`s charter in terms of the issuances of special orders for service and time credits, laboratory, and school inventory, learning and development, and feedback and complaints. Though, there is a need for maintenance program that focusing on the identified areas of concerns particularly in the areas of feedback and complaints, issuances of special order for service and time credits and learning and development.
- There is a need for the improvement of the process in accomplishing client feedback, collecting feedback forms, filing a complaint on online/hotline, and recording and monitoring the updates of the complaints with the involved parties.
- There is a need to improve the process of issuances of special order for service and time credits particularly in signing the transmittal letter and the required releasing of document within two working days upon receipt of documents between school and from Schools Division Office.
- The school should focus on designing sustainable program that will maintain good implementation and development in SLAC, INSET, and other team development because the learning and growth of the school are the responsibility of the school's internal services.

RECOMMENDATION

The summary of results and conclusions of this study suggest the following recommendations:

- It is recommended for the school to benchmark the current school`s process in accomplishing, collecting, filing, recording, and monitoring of client feedbacks. Identify areas for improvement and create an appropriate and systematized process that based on Citizen`s Charter. Selection of appropriate person-in-charge that will handle feedback and complaints is highly recommended **(See Appendix C).**
- It is recommended to improve the process of issuances of special order for service and time credits particularly in signing the transmittal letter and the required releasing of document within two working days upon receipt of documents between from Schools Division Office.

- The school should focus on designing sustainable program that will maintain good implementation and development in SLAC, INSET, and other team development. Also, the school should strengthen strategic effort that focusing on skill gaps that may be affecting or contributing to the performance of the school.
- The top management should implement a systematic Quality Management System based on the Citizen`s Charter. The proposed program of implementation by the researchers entitled “U.P.R.I.S.E” **U**pgraded **P**rogram for **R**einforcement of **I**.S.O (International Organization of Standardization) for **S**chool-Quality **E**nhancement System, is subjected for the approval. Upon the implementation, the program should undergo evaluation and if needed, the program should be modified according to the needs of the school **(See Appendix B).**
- Future researchers may conduct parallel study on Department of Education Citizen’s Charter focusing on the school services in the areas of borrowing and returning books from and to the school library, distribution of printed self-learning modules in distance learning modality, enrollment (default), enrollment (online), issuance of school forms, certifications, and other school permanent records, issuance of requested documents in Certified True Copy (CTC) and photocopy, etc.

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UTILIZING "PROJECT NumeRO" FOR THE ADVANCEMENT OF NUMERACY SKILLS AMONG LEARNERS WITH NO MASTERY IN FOUR FUNDAMENTAL OPERATIONS

by

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ABSTRACT

Numeracy skills are basic mathematical skills that include a range of abilities to understand and analyze numerical information in a variety of contexts. With all the challenges and obstacles in improving the numeracy skills of the learners in Pasong Buaya II Elementary School, this study aimed at enhancing the numeracy skills of learners with absolutely no mastery on basic operations in Mathematics. Quasi-experimental one group pretest-posttest was used as research design. Purposive sampling was utilized to Grade 4 to 6 pupils who belong to the category *absolutely no mastery. "Project **NumeRO** (**Nume**racy skills **R**emediation program specifically, on four (4) fundamental **O**perations*)" was used as intervention. The findings showed that the pretest scores of the three levels were lower than the posttest scores. There was significant difference in the pretest and posttest scores of Grade four learners with the p-value of 0.00184986, Grade Five with a p-value of 0.0002866, and Grade Six with a p-value of 0.00084957.

The study demonstrates that Project NumeRO significantly improved numeracy skills across Grades four, five, and six, affirming its effectiveness as an intervention.

Teachers should incorporate innovative tools like property-based flashcards and personalized drill cards into mathematics instruction, prioritize efforts for numeracy skills remediation for low numerate learners, foster parental and community involvement to create a supportive environment for mathematics education, and conduct further research on the long-term impact of inclusive learning strategies on mathematical achievement.

Keywords: *Numeracy Skills, Remediation Program, Teaching Strategies, Inclusivity, Mathematics Education, Property-based Flashcards, Personalized Drill Cards*

CONTEXT AND RATIONALE

Numeracy skills are basic mathematical skills that include a range of abilities to understand and analyze numerical information in a variety of contexts. In the Philippine education, the focus of the curriculum for the young learners in the primary levels focus on numeracy and literacy skills. Numeracy skills are the foundation of all future Mathematics studies (Pitogo,Oco 2023). Early development of numeracy skills is important to young learners especially in the Primary Levels.

There are several factors that hinder primary learners from learning the basic operations. Hamak (2019) said that most Filipino learners, when performing the operations, used retrieving from memory or recalling of the operations. This method affects the learning of skills. Moreover, when the learners cannot solve problems in math, they use rudimentary methods.

Biswas (2015) stated that emotional characteristics influence learners' study behaviors and attitudes, which are further referred to as their study orientations. The bulk of this study focused on how these factors affect learning.

Children's early numeracy outcomes set the foundation for mathematics learning in their future school years according to Cheung et al. (2018).

Mononen et al. (2014) stated that the pedagogical components of the interventions: setting, duration, numeracy content used for intervention training and progress measurement, conductor and professional developmental support offered, and instructional design features showed promising effect of improving the early numeracy skills of at-risk children.

Results found that all students showed a significant increase in early numeracy skill acquisition after receiving the intervention package. When unable to solve problems involving number facts, they resort to more rudimentary methods which subsequently result in difficulties in performing tasks involving multi-digit numbers. One major challenge encountered in performing number operations is retrieving mathematics facts from memory. Research supports the finding that retrieval deficits for these types of learners are persistent (Geary, 1993).

For learners, it is crucial to understand the fundamental math operations of addition, subtraction, multiplication, and division. These procedures provides the foundation for more complicated mathematical ideas and problem-solving techniques. The mastering of fundamental operations is essential for learners for the following main reasons: Building a strong mathematical foundation, Real-life applications, Problem-solving abilities, Numerical fluency and mental math, Preparation for higher-level mathematics, Cognitive development, and Mathematical communication.

A solid foundation for mathematical proficiency, problem-solving skills, numerical fluency, mathematical communication, success in advanced mathematics, and real-world applications make it imperative for learners to master the fundamental math operations. Learners gain the fundamental skills and competencies required for their mathematical development and future success by acquiring a solid understanding of these procedures.

Findings and issues with learners' numeracy abilities in grades four through six include weak mental math skills. Many students have trouble with mental math, which entails executing calculations without a lot of written or electronic assistance. They might struggle with fundamental addition, subtraction, multiplication, and division, which would make it harder for them to solve problems quickly and perform mathematical operations as efficiently.

Another problem is the lack of mathematical communication skills. Learners

may find it difficult to express their mathematical reasoning and thinking in an effective manner. They might struggle to explain their solutions, analyze and portray mathematical data, or even articulate their methods for addressing problems.

Not addressing the gap may lead to math anxiety. Learners' confidence and interest in mathematics can be impacted by the problem mentioned above. It could result in unpleasant feelings, the avoidance of math-related tasks, and impaired numeracy ability.

DepEd MATATAG*:* Bansang Makabata, Batang Makabansa agenda of Vice President of the Republic of the Philippines and Secretary of Education Sara Z. Duterte states that Improvement of Numeracy Program is one of its priority in Education. This study is also anchored on the DepEd Imus City Project BILANG upskilling Batang Imusenyo, Linangin! Angat sa Numeracy, ang Galing!) which focuses on resolving basic education challenges and reskilling.

Project NumeRO started as a critically reflective pedagogy to address the problem of numeracy and to help students of Pasong Buaya II Elementary School regain their lost numeracy skills specifically in four fundamental operations. This will give a way to comprehend mathematical developments and produce outcomes for the intervention's objective of eliminating evidence-based illiteracy. It is a school-led initiative to address numeracy loss and learning challenges in performing fundamental mathematical facts and operations. It is included in the School Improvement Plan as one of the Priority Need Areas. After the pandemic that caused numeracy loss, this strives to make every learner numerate.

In this context, the study seeks to fill knowledge gaps by emphasizing the method of learner profiling for deficiencies in the fundamental numeracy abilities needed to complete the assignment. This research will help establish a methodical flow for recovering numeracy deficiency among absolutely no mastery learners in the intermediate level. The study's findings would be a significant help to learners who struggle with math learning difficulties as they battle the current educational obstacles.

Statement of the Problem

This study determines the effectiveness of utilizing Project NumeRO for the advancement of numeracy skills among absolutely no mastery learners.

Specifically, this study sought to answer the following questions:

1. What are the scores in the assessment before and after NumeRO was given?
2. Is there a significant improvement in the pre and post-test scores of the learners using NumeRO?
3. What course of action can be suggested to further improve the performance of the learners in the conduct of Project NumeRO?

Innovation, Intervention and Strategy

Project NumeRO utilized the Crafted Drill Cards where flashcards were created based on specific aspects of operations and provided exercises that matched each targeted property. Each card showcased a different property and its corresponding examples. Crafted Drill Cards were created for each level based on their needs according to the assessment results. Each level was provided the Crafted Drill Card during the intervention program.

Remedial teachers followed the weekly implementation plan of Project NumeRO in teaching the mathematical concepts needed by the learners as stated in

Table 1 below. The intervention program was implemented for five months or twenty (20) weeks. Post-test was conducted every after the end of intervention per operations or every after five (5) weeks of utilization or quarterly. All learners who cannot cope up with the topic will retain and will be given other activities before they can proceed to the next mathematical operation so that no learner will be left behind.

Table 1 Project NumeRO Weekly Implementation Plan

Grade Level	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Grades IV-VI	Adding 0, 1, & 2 to a number	Adding 1-digit by1-digit number	Adding 2-digit by1-digit number	Adding 2-digit number by 2-digit number w/o regrouping	Adding 2-digit number by 2-digit number w/ regrouping	Subtracting 0 & 1 from a number Subtracting a number by itself	Subtracting 1-digit by 1-digit number	Subtracting 2-digit by 1-digit number	Subtracting 2-digit number by 2-digit number w/o regrouping	Subtracting 2-digit number by 2-digit number w/ regrouping
	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20
	Zero property on multiplication	Identity property of multiplication	Multiplying 1-digit by 1-digit number	Multiplying 2-digit number by 1-digit number	Multiplying 2-digit number by 2-digit number	Dividing 0 by any number property	Division by 1 property	Dividing by itself property	Dividing 1-digit number by 1-digit number	Dividing 2-digit number by 1-digit number

ACTION RESEARCH METHODS

A. Research Design

This study used a Quasi-experimental- one group pretest-posttest research design where the same variable is measured in one group of participants before (pre-test) and after (posttest) a treatment is administered. Since the participants of this study was identified after the initial findings and the programs aimed at enhancing the skills of the learners in basic operations, the skills were tested prior the intervention that served as the pretest. After intervention in each operation, posttest was conducted to see the improvement.

B. Participants and/or Other Sources of Data and Information

Purposive sampling was used in this research. Purposive sampling is the process of selecting sample by taking the subject that is not based on the level or area, but it is taken based on the specific purpose. The participants were identified as Absolutely No Mastery in the four fundamental operations (addition, subtraction, multiplication, and division). 133 learners out of the 488 learners in grades 4, 5 and 6 were selected to participate in this project. Broken down, the participants are counted as follows: 97 learners from 206 Grade 4 students, 17 from the 124 learners in Grade 5 and 19 out of 158 in Grade 6. For Grade 6 students, no learner fell under Absolutely No Mastery in addition.

Table 2. Population of learners for intervention

OPERATIONS	GRADE 4	GRADE 5	GRADE 6	TOTAL
	206	124	158	
ADDITION	5	2	0	
SUBTRACTION	7	3	1	
MULTIPLICATION	20	5	4	
DIVISION	65	7	14	
	97	17	19	133

C. Data Gathering Methods

1. The study utilized the window cards provided by the Schools Division of Imus City. as assessment tool. The pre-test and post-test of learners' numeracy skills were conducted using the assessment tools in order to collect the necessary quantitative data.
2. The teachers administered the pre-test, identified the sampling and prepared the master list of learners under absolutely no mastery level based on the assessment results.
3. The researchers conducted the orientation to teachers, parents, and project NumeRO beneficiaries.
4. Parents' permits were secured after the conduct of parents' and learners' orientation.
5. Remediation schedules were posted to inform the learners and their parents.
6. The weekly remediation program of Project NumeRO was implemented.
7. The teachers conducted the weekly progress monitoring based on the implementation plan.
8. Post-tests were administered by the teachers every five (5) weeks within its 20-week implementation.

D. Data Analysis

The writing activity output of the students was evaluated using these tools. T-tests are a parametric statistical technique that tests the difference between two means. Mean refers to the average score of a given set of values. It is obtained by getting the sum of all scores divided by the number of total values. Standard deviation (SD) is the square root of variance which is a helpful indicator of the variation within the data, and needs to present alongside the mean (Barott 2017). This study utilized the mean and standard deviation to get the findings for question number one and t-test to get the answer for research question number two.

DISCUSSION OF RESULTS AND REFLECTION

1. The average scores of Grades 4 to 6 in the pretest and posttest

Table 3. Average Score of learners in the pre and posttests

OPERATIONS	GRADE 4		GRADE 5		GRADE 6	
	PRE-TEST	POSTTEST	PRE-TEST	POSTTEST	PRE-TEST	POSTTEST
ADDITION	2.8	43.6	4	56.5	0	0
SUBTRACTION	2.57	44.42	3.66	55.33	3	47
MULTIPLICATION	2.6	31.3	3.4	54	3.5	46.75
DIVISION	1.81	54.81	0.375	39.62	1.92	51.14

The table presents the average score of learners in the pretest and posttest, during and after the intervention was employed. The pretest average scores of Grade Four in addition: 2.8, subtraction- 2.57, multiplication- 2.6 and division- 1.81 are lower than the posttest average scores with 43.6, 44.42, 32.3, and 54.81 respectively. The average scores of Grade Five learners also in pretest in addition 4, subtraction- 3.66, multiplication- 3.4, and division 0.375 are lower than the posttest average scores of

56.5, 55.33. 54, 39.62 respectively. Moreover, the average scores of Grade Six learners in the pretest in subtraction- 3, multiplication-3.5, division-1.92 are lower than the posttest average scores with 47, 46. 75 and 51.14 respectively.

This data show that the treatment approach during the intervention appeared to have an effect on learners' numeracy advancement.

These results provide strong support for the effectiveness of the intervention involving property-based flashcards and personalized drill cards in enhancing arithmetic skills. The increase in arithmetic skills among the experimental group is substantial and suggests that these innovative tools played a pivotal role in improving learners' mathematical abilities

2. Is there a significant difference in the pretest and posttest scores after the intervention?

Table 4. Significant Difference in the Pretest and Posttest Average Scores

OPERATIONS	GRADE 4			GRADE 5			GRADE 6		
	PRE-TEST	POSTTEST	sig diff	PRE-TEST	POSTTEST	sig diff	PRE-TEST	POSTTEST	sig diff
ADDITION	2.8	43.6		4	56.5				
SUBTRACTION	2.57	44.42	0.00184986	3.66	55.33	0.0002866	3	47	
MULTIPLICATION	2.6	31.3		3.4	54		3.5	46.75	0.00084957
DIVISION	1.81	54.81		0.375	39.62		1.92	51.14	

Table 4 presents the average scores to determine the significant difference between the pretest and posttest for each grade level in the fundamental operations.

The pretest and posttest scores were taken for comparative purposes. T-test was executed to statistically examine whether there was a significant difference between the pretest and posttest after the intervention was performed. The table reveals that there is significant difference in the learners' pretest and posttest. Grade four learners with the p-value of 0.00184986, Grade Five with a p-value of 0.0002866, and Grade Six with a p-value of 0.00084957. The significant one tailed is lower than the alpha level of .05.

3. What course of action can be suggested to further improve the performance of the learners in the conduct of Project NumeRO?

Table 5. Population of learners with absolutely no mastery after the intervention

OPERATIONS	GRADE 4		GRADE 5		GRADE 6	
	N=206		N=124		N=158	
	PRE	POST	PRE	POST	PRE	POST
ADDITION	5	0	2	0	0	0
SUBTRACTION	7	0	3	0	1	0
MULTIPLICATION	20	2	5	0	4	0
DIVISION	65	5	7	0	14	0
TOTAL	97	7	17	0	19	0

At the start of the intervention, the total number of participants for Grade four, with absolutely no mastery in all operations was 97, Grade five with 17, and Grade six with 19. After the intervention, grade four has the total retention of 7, 2 for multiplication, 5 for division. On the other hand, Grades five and six have zero (0)

retention in all operations after the intervention was conducted.

Thus, the remaining learners with absolutely no mastery in multiplication and division will be remediated continuously until significant improvement is observed and became numerates at the end of the school year. On the other hand, those who have shown great improvement will be given continuous drill for further retention of skills and follow through activities will be incorporated to their classroom activities.

CONCLUSION, LIMITATION, AND IMPLICATIONS

Findings from this study have shown that numeracy skills of the learners in the four fundamental operations improved significantly. The improvement was absolute in the Grades 5 and 6. Unfortunately, 5 learners from Grade 4 showed no improvement in multiplication and division after 20 weeks of intervention. It can be safe to say that Project NumeRO proved to significantly effective as intervention in enhancing the numeracy skills of the learners.

Implications of this study, teachers in the lower grades may address the gap earlier using the Crafted Drill Cards. It is evident that with the use of NumeRO, the learners could improve their numeracy skills during the early stage. Project NumeRO can be crafted for primary students for gradual development of their numeracy skills.

It is noted that the limitation of this study is the length of time in which the intervention program was conducted (20 weeks). The monitoring of skill development is evidently short. Moreover, the analysis of numeracy skills may start from Grades 1 to 3 in order to further evaluate the gradual development of skills. Unfortunately, the development of numeracy among Grade 6 students cannot be monitored.

RECOMMENDATIONS

It is recommended that teachers incorporate property-based flashcards and personalized drill cards into their mathematics instruction. These innovative tools have demonstrated their effectiveness in improving arithmetic skills. Providing access to these resources can engage learners and enhance their understanding of mathematical concepts.

It is also highly recommended that teachers handling low numerates learners were encouraged to render extra efforts for numeracy skills remediation.

Schools and educators should encourage parental and community involvement in supporting students' mathematics education. Collaboration between schools, parents, and communities, as suggested by the research findings, can create a supportive environment that enhances learning outcomes.

Further research should be conducted to explore the long-term impact of property-based flashcards, personalized drill cards, and inclusive learning strategies on mathematics achievement. Longitudinal studies can provide insights into whether these interventions lead to sustained improvement in mathematical skills throughout learners' academic journeys.

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