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Foreword

Science informs policy and decision-making processes congruent to the sustainable affairs of living in society. For example, educators facilitated academic deliverables constructed on scientific data to promote functional literacy and lifelong learning. Policy-makers also create responsive public policies for political, sociocultural, or economic equilibrium when underpinned with evidence-based decisions. Researchers demonstrate that science has a crucial role to play to contribute and shape better social outcomes. Thus, to maximize the credibility of science, the ASEAN Multidisciplinary Research Journal Volume No. 5, Issue No. 6 ventured on the visibility of science in the educational landscape.

Using a descriptive and developmental method of research, Villanueva and De Vera surveyed the multiple intelligences of the students to propose activities that may be utilized to design lessons and target the students' least mastered genres in literature. Findings showed that the students dominantly demonstrate visual-spatial, bodily-kinesthetic, and verbal-linguistic intelligence. The authors recommend utilization of an instructional design in teaching literature that is anchored to the student's dominant multiple intelligence. Pasana et al. also determined the level of self-efficacy of the college students in selected Philippine Higher Education Institutions and compared it with their self-efficacy results during senior high school years. The authors concluded that an increase in the students' self-efficacy is attributable to the implementation of the K to 12 Basic Education Curriculum in the Philippines. De Vera and Queroda tested the effects of co-curricular activities on the learning competencies of intermediate learners. It was found out that the co-curricular activities do not contribute to the enhancement of learning competencies due to the problems in time management, costly activities, etc. However, the researchers recommend the school to monitor the conduct of co-curricular activities and create mechanisms to mitigate the said struggles of the students.

To investigate the teachers' job satisfaction, Molano gathered data from the Second Congressional District of Pangasinan and found that the teachers are satisfied with their job and are very satisfied with the work-related personal factors. On the contrary, the teachers are least satisfied with their salary, so this is a point for consideration among policymakers. Lastly, Malvecino and Ventayen described the teachers' perception of the benefits of multimedia games as a pedagogical tool to assist the cognitive and affective skill development of the learners. The Junior High School teachers perceived that multimedia games can provide cognitive and affective benefits to the learners.

The researchers herein formulated studies that can contribute to the validity of scientific research for improving the educational system. Thus, may we carry on fervor in our epistemic beliefs that evidence and veracity propose explanations for understanding the truth in Science. By so doing, we may be able to improve and sustain scientific practices, not just educational, political, health, legal, cultural, economic, or social, but the system in its entirety.

CATHY MAE D. TOQUERO
Mindanao State University
Incoming Director for Publications
Fiscal Year 2021, PARESSU, Inc

Message to Readers

Despite this pandemic, I hope that you are all physically and mentally fit. We all know that having perseverance during these difficult times is good, but do not forget to wear your smile and to count your blessings. With this blessed organization, I am thankful to be a part of those minds behind this who are willing to help and train future researchers. As one of the fruits of leadership, intellect, and hard work, it is an honor to showcase this issue that serves as one of the achievements of PARESSU, Inc.

To the readers, honestly, I was once a nobody, a typical student, but because of research through those people who helped me to be the better version of myself especially Kuya Jun. I was able to hit one piece of the domino that started to change my life one step at a time. I realized that it is not only a subject for us to complete, but also a way to show our ideas, capabilities and love for other people. It does not matter if it is a complex study or not as long as it positively impacts society. It is not too late; everything has its limitations but we do not need to delimit ourselves in soaring greater heights. Research is now a part of me, and I want this to impart with you. Research can provide solutions in this world full of uncertainties. I hope that you will learn more than before and always wear your smile. Thank you and God bless.

ADRIAN R. MANAOIS
Outgoing JUREP President
Incumbent Corporate Secretary
PARESSU, Inc

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Development of Multiple Intelligence-Based Instructional Design

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Abstract

Several studies have found out that students vary immensely in terms of interest, skill and in intelligence that definitely contributed to their perspectives, participation and performance in academic matters. Students though differ from each other, certainly looking for activities and exciting tasks where they can learn the lesson and to where they can apply their intelligences. Allowing the students to choose and do task which interests them and at the same time they can mobilize their intelligences could surely increase their participation and performance especially to the genres of literature that they are low performing. Thus, this study focused on the development of instructional design that is multiple intelligence-based that could be used to teach the least mastered genres of literature.

This study used the descriptive and developmental method of research. In identifying the multiple intelligences of the student-respondents, a survey questionnaire was administered to 214 Grade 9 students from the randomly selected sections of Alaminos City National High School, Alaminos City, Pangasinan.

Findings showed that the student-respondents' prevailing multiple intelligences are Visual-Spatial, Bodily-Kinesthetic and Verbal-Linguistic. They are also low performing in poem and short story genres of literature. The series of lesson plan as the developed instructional design is anchored to the prevailing intelligences of the students that could be used to help the student-respondents improve their learnings in their least mastered genres of literature.

Keywords *– Instructional Design, Literary Genres, Multiple Intelligences*

INTRODUCTION

No matter how close the physical features, mannerisms, behaviors, and other characteristics, still, no two individuals are the same. Same goes through with the students. They vary immensely in terms of interest, skill, learning style and in intelligence that definitely contribute to their perspectives, participation and performance in academic matters.

Many countries counting Philippines included the English language as a second language in school syllabus and curricula. The Department of Education order No. 36, Series of 2006, specified that all secondary level shall utilized English language as the primary medium of teaching. In teaching English, literature is part of it. Literature refers to the written works that are categorized as fiction or non-fiction, poetry or prose, and being recognized according to genre that have intellectual and ingenious value which appeals to readers. In the K to 12 English Curriculum Guide for Grade 9, it is very evident in the Content Standard that Anglo-American Literature plays a vital role in enhancing the self, valuing other people, connecting to the world and preserving unchanging values in a changing world. Though literature is a good means to teach lessons, still, there is low participation and low performance in the part of students in different genres brought about by the activities to test their understanding that are very common and uninteresting such as short quiz, seatwork, assignment done in school, and the like. Activities that limit students and restrict them to what they can do to show their understanding.

Students though differ from each other, certainly looking for activities and exciting tasks where they can learn the lesson and to where they can apply their intelligences. Allowing the students to choose and do task which interests them and at the same time they can relate to could surely increase their participation and performance. The Multiple Intelligences (MI) by Howard Gardner is of great help to answer the challenges the teachers are now facing since this theory highlighted that each person has unique ways of learning and definitely has prevailing intelligences.

Researchers supported the implications of Gardner's MI theory as the different studies revealed that students were adversely affected by the outdated system of education and by not embracing the MI approach in teaching. The study conducted with different English proficiency are placed together, revealed that the approaches and materials that worked for other students are not appropriate for the others [1]. Therefore, teachers should use an instructional design that stimulates students to have positive attitude toward learning. Morgan indicated in his research that differentiated instruction inspired by various intelligences benefits students provided that it is crafted by knowledgeable teachers [2].

Instructional designs are vital to increase the value of learning. ID developed by teachers founded by students' strengths allow students to have independence to do their learning undertakings [3]. Multiple intelligence – based instructional designs allow students to show their strengths and perform satisfactorily on a wide range of tasks. Teacher should provide and utilize ID that could mobilize the different intelligences of students [4]. The ID that greatly serve as a guide and became part of every teacher in delivering subject matter is a lesson plan. Lesson plan is the guide and backbone of teachers. Aside from delivering lesson, constructing lesson plans is every teacher's central responsibility.

It is an observation to the Grade 9 students of Alaminos City National High School of being not comfortable in learning the English subject especially literature as evident in their low scores in their quizzes. Public schools like Alaminos City National High School which belongs to the category of mega-school has a great number of students. The Grade 9 class itself has eighteen sections and each section has more than fifty students. It only means that teachers need to provide differentiated activities to assess the big number of students. The challenge lies in the hands of the English teachers not only to convince students not to be hesitant in learning the English subject but most especially to think of exciting and engaging activities that could cater to the different interests and at the same time respond to the intelligences of the diverse students to ensure greater participation and higher performance. Therefore, the teacher-researcher will develop an instructional design, compilation of lesson plans anchored to the dominant and prevailing multiple intelligences of the student-respondents having differentiated activities that would cater to the diversity of students and will address to the low performance in literature lessons. The compilation

of lesson plans contains various activities to assess understanding and deviate from the usual quiz-type formative assessment. The ID to be developed is based on the various existing instructional designs, also considers the characteristics an ID should have as mentioned above.

OBJECTIVES OF THE STUDY

The purpose of this research is to develop an Instructional Design based on the learners' three dominant or prevailing Multiple Intelligences in teaching the least mastered genres of literature in Grade 9 of Alaminos City National High School.

Specifically, this study aimed to:

1. Determine the profile of the Grade 9 students in terms of:
    a. Mean average in all subjects; and,
    b. Prevailing multiple intelligence.
2. Find genres of literature that are least mastered by the Grade 9 students.
3. The correlation of the students' multiple intelligence and mean average grade.
4. Develop instructional design based on the prevailing multiple intelligences and the least mastered genres.

MATERIALS AND METHODS

The descriptive-developmental design is employed in this study. The researcher utilized this method to present and expound facts adequately and precisely. The purpose of this study is to know the new truth, to gather information, to classify and to present data. It provide accurate interpretation of findings according to the standard/assessment set by research. The descriptive method is convenient in establishing the level of multiple intelligences of the respondents. The developmental research design was employed since the main goal of the stud was to produce an instructional design based on students' dominant or prevailing multiple intelligences.

Respondents of the Study

The respondents of the study are the middle and lower sections of the Grade 9 class of Alaminos City National High School of Alaminos City Division, Alaminos City, Pangasinan during the school year 2019-2020.

Sampling

The simple random sampling is utilized to identify the student-respondents of this study. The teacher-researcher randomly selected four sections from the eighteen sections of the Grade 9 class. Here are the randomly selected sections: 9-Onyx (54 students), 9-Opal (54 students), 9-Amethyst (53 students), and (-Sapphire (53) students with the total of 214 student-respondents.

Research Instrument

The researcher used checklist type as instrument in getting and collecting information about the problem. The survey questionnaire is focused on the multiple intelligences of the Grade 9 students. The checklist used is adapted by the researcher, it is the instrument developed Walter McKenzie.

Data Gathering Procedure

This study looked for the mean average grade of the student-respondents to see if there is a significant relationship of students' prevailing multiple intelligence and mean average grade. In getting the mean average grade of the student-respondents, the teacher-researcher uses the report card of the students last school year or during their Grade 8 year.

This study also identified the prevailing multiple intelligences of the Grade 9 student-respondents from the randomly selected middle and lower sections with the use of survey-questionnaire that is being adopted by the teacher-researcher that served as the basis for the content of the lesson plans as the instructional design to be produced.

The data needed for the least mastered genres of literature are known through the scores of the students in the formative assessment in every lesson about literary texts featuring the different genres. The formative assessments are based on the Cognitive Domains of Benjamin Bloom, which is reviewed by his former student, Lorin Anderson and effected some changes.

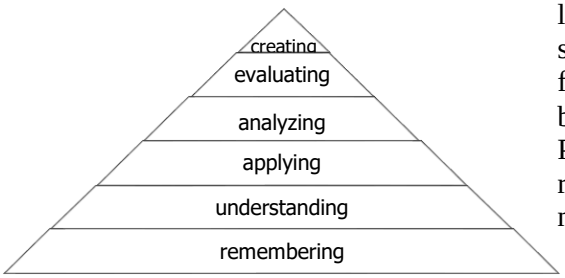

Fig. 1. Cognitive Learning Objective Arranged Hierarchically

The formative assessment used to assess students' mastery in the lesson about literary texts featuring the different genres is a 10-item quiz having the same number of items in each level of cognitive domain to clearly identify what is the least mastered genres of literature.

The letter of approval is duly sign and be approved by the thesis adviser. The questionnaire is administered and retrieved personally by the researcher. Prior to floating of the questionnaires to the respective respondents of the study, the researcher secured permits from the Schools Division Superintendent of Alaminos City Division and the School Principal of Alaminos City National High School.

The questionnaire is distributed to the Grade 9 students who belong to the randomly selected middle and lower sections of Alaminos City National High School. The researcher guided the students in answering the questionnaire. The analysis is based on the quantitative descriptions of the population's responses to the questionnaires. After the accomplished copies of questionnaires were retrieved, the raw data were treated statistically in order to come up with the findings of the study.

The researcher applied the following statistical instrument to analyze and to evaluate the data gathered:

Problem 1 dealt on knowing the mean average grade in all subjects of the student-respondents during their previous year, also, on the assessment of Multiple Intelligences. The computation for the MI is based on the instrument developed Walter McKenzie.

Problem 2 dealt on determining the genres of literature that are least mastered by the Grade 9 students. The scores of the student-respondents in formative assessment in various genres were the basis.

Problem 3 dealt on finding the significant relationship of students' multiple intelligence and mean average grade.

Problem 4 dealt on identifying what instructional design could be developed based on the prevailing multiple intelligences and the least mastered genres.

RESULTS AND DISCUSSION

This chapter lays the analysis, interpretation and explanation of data for the study conducted. The discussion will start on the profile of the Grade 9 students as the respondents of this study in terms of their mean average grade in all subject area as well as their prevailing or dominant multiple intelligences. Next is the least mastered genres of literature of the respondents. Then, if there are significant relationships between the respondents' prevailing multiple intelligences and their mean average grade in all subject areas. Lastly, is the instructional design to be developed which is a multiple intelligence – based that could be used to address the least mastered genres in literature.

Profile of the Respondents in terms of their Mean Average Grade

The profile in terms of mean average in all subjects was gathered through the report card of the students last school year or during their Grade 8 year. For the students' mean average in all subjects, it was described statistically using mean, skewness and standard deviation.

Table 1 presents the academic performances of the students in terms of their mean average grade in all subject areas, namely: English, Filipino, Mathematics, Science, Araling Panlipunan (AP), Edukasyon sa Pagpapakatao (ESP), Technology and Livelihood Education (TLE), and MAPEH (Music, Arts, Physical Education, Health).

The subjects that have the highest mean average grade among the eight subjects are Health (84.97), one of the sub-components of MAPEH, and Edukasyon sa Pagpapakatao (83.88).

Table 1. Academic Performance of the Respondents

Test Statistic	Subject										
	Fil.	Eng.	Math	Sci.	AP	ESP	TLE	Music	Arts	P.E	Health
Mean	81.74	81.13	79.71	79.76	81.19	83.88	82.11	81.24	80.67	81.88	84.97
Std. Dev.	4.21	3.53	3.27	3.20	3.76	4.47	3.68	3.36	3.30	3.79	5.53
Variance	17.71	12.50	10.70	10.21	14.13	19.97	13.55	11.30	10.86	14.33	20.33
Skewness	0.122	-0.092	0.646	0.266	0.226	-0.036	0.093	0.205	0.298	-0.009	-0.046
Std. Error of Skewness	0.166	0.166	0.166	0.166	0.167	0.166	0.166	0.168	0.168	0.168	0.167
Minimum	75	75	75	75	75	75	75	75	75	75	75
Maximum	93	88	89	89	91	94	91	91	93	94	88

Gardner stated that students should be encouraged to be well-rounded for it is only then that happiness are more likely to emerge, a feeling that a true healthy person feels. Well-being is being taught and inculcated to students in Health [5].

It is also found out that students can actively engage if they can relate their learnings into life [6]. Lessons and values about life are being emphasized in Edukasyon sa Pagpapakatao.

Profile of the Respondents in terms of their Prevailing Multiple Intelligences

The profile in terms of prevailing multiple intelligence was retrieved using questionnaire. The data is described statistically using the frequency and percentage distribution.

Table 2 displays the eight multiple intelligences pioneered by Howard Gardner which are arranged from prevailing intelligences among the two hundred fourteen student-respondents down to the less prevailing.

Table 2. Respondents' Multiple Intelligences

Intelligence	f	%
Visual	175	81.78
Kinetic	170	79.44
Verbal	168	78.50
Existential	56	26.17
Interpersonal	53	24.77
Musical	51	23.83
Naturalist	42	19.63
Logical	35	16.36
Intrapersonal	34	15.89

It could be gleaned on the table that respondents do have multiple intelligences. Moran et al. (2006) emphasized that students are potentially smart or intelligent in a several ways Moran et al. [7]. Moreover, Gardner stated that all have the variety of intelligences and just only vary on how easily and how quickly specific intelligences develop [8].

The three prevailing intelligences of the respondents are the Visual-Spatial Intelligence with 175 responses or 81.78 percent, Bodily-Kinesthetic Intelligence with 170 responses or 79.44 percent and Verbal-Linguistic Intelligence with 168 responses or 78.50 percent.

On the other hand, the two less prevailing intelligences are the Intrapersonal with 34 responses 15.89 percent and the Logical-Mathematical with 35 responses or 16.36 percent. One of the intelligences that greatly associated with emotions is the Intrapersonal Intelligence.

Study pointed out that personality domain and emotional intelligence were predictors that strongly correlate in academic performance [9]. Also, Mathematical intelligence strongly influenced the participants' performance and was found to be weaker in learners with a high reading ability and vice versa.

Least Mastered Genres of Literature

The data gathered are based from the result of quizzes of the respondents in their lessons featuring the different genres of literature. Data are described statistically using the mean, skewness and standard deviation.

Table 3 displays respondents' scores in the quiz in different genres of literature such as poem, epic, lyric, short story and essay. It could be gleaned on table that poem and short story are the two least mastered genres. They have the least number of students who passed in the given quiz. Quiz passers are based on the Department of Education Order 8 series of 2015, the Policy Guidelines on Classroom Assessment for the K to 12 which states that, K to

12 Basic Education Program (BEP) utilizes grading system which is standards and competency-based in which the minimum grade needed is 75. Thus, in a ten-item quiz, the passing score is 7.5 or 7.

Descriptors	Grading Scale	Remarks
Outstanding	90 – 100	Passed
Very Satisfactory	85 – 89	Passed
Satisfactory	80 – 84	Passed
Fairly Satisfactory	75 – 79	Passed
Did not meet expectations	Below 75	Failed

Fig. 2. Department of Education Learners' Progress Report

Along poem, there are only 7 passers, while in short story there are only 14 students who passed the quiz. Poem is a genre that usually contain figurative language and has implied meaning, the possible indicators why students have low scores in this genre. Meanwhile, short story is the genre that uses unacquainted or unfamiliar words, likely the reason why students also have low scores in this genre.

Table 3. Scores in Quizzes of the Grade 9 Students

Scores	poem	epic	lyric	short story	essay	number of passers
10						
9		5	7		5	17
8	1	26	33	2	34	96
7	6	45	52	12	61	176
6	31	71	80	35	59	
5	34	56	36	40	47	
4	46	11	6	46	8	
3	42			38		
2	35			32		
1	19			9		
0						
Total Number of Students	214	214	214	214	214	

The identified major problem of the students in dealing reading texts is the reading comprehension skills affected by language usage. In addition, language is one of the accounts in dealing with various texts.

Table 4 reveals that among the genres of literature featured in respondents' lessons, the two least mastered genres are the poem (3.77) and short story (4.12) as shown by the mean average scores of the respondents based on the results of their quiz-type formative assessments in various genres.

In terms of skewness, poem (0.083) and short story (0.041) are the two most positively skewed genres which means that more respondents got scores below the mean. Whereas, in terms of standard deviation, though poem and short story have the closest SD which are 1.64 (poem) and 1.63 (short story), the SD still shows that the mean score of the quiz is reliable to measure the students' performance because the SD are close among genres with only a matter of point setting apart each genres.

Table 4 Performance in Literature of the Grade 9 Students

test statistic	poem	epic	lyric	short story	essay
Mean	3.77	6.16	6.43	4.12	6.37
Std. Deviation	1.64	1.16	1.12	1.63	1.18
Skewness	0.083	0.317	0.209	0.041	-0.015

Std. Error of Skewness	0.166	0.166	0.166	0.166	0.166
Kurtosis	-0.821	-0.446	-0.380	-0.771	-0.530
Std. Error of Kurtosis	0.331	0.331	0.331	0.331	0.331
Minimum	1.00	4.00	4.00	1.00	4.00
Maximum	8.00	9.00	9.00	8.00	9.00

If English lessons were taught and delivered by teachers in a conventional way, and when content is presented to students in a traditional style, students are not easily reached out. Teacher is having hard time in reaching a student in the more conventional linguistic styles or ways of teaching.

Relationships between Students' Multiple Intelligence and Mean Average Grade

The correlation between the respondents' prevailing MI and mean average in subject areas concern with the dominant intelligences are described statistically using Eta Squared and p-Value.

Table 5 shows the prevailing multiple intelligences of the respondents which are Visual-Spatial, Bodily-Kinesthetic, and Verbal-Linguistic. Looking to the subject areas in which these intelligences are associated, the Visual-Spatial Intelligence and Bodily-Kinesthetic Intelligence are related to MAPEH (Music, Arts, Physical Education, Health) specifically in the areas Arts and Physical Education, and the Verbal-Linguistic Intelligence is associated with languages subjects, the English and Filipino.

Table 5. Relationship between the Respondents' Multiple Intelligence and Their Academic Performance

Variable	Eta Squared	p-Value
Naturalistic	0.050	0.540
Musical	0.057	0.421
Logical	0.063	0.315
Existential	0.030	0.875
Interpersonal	0.023	0.935
Kinesthetic	0.021	0.966
Verbal	0.023	0.949
Intrapersonal	0.028	0.899
Visual	0.029	0.892

Respondents' performance is tested as a whole and not separately that is why Eta Squared is used to treat it. On the other hand, the p-Value is used to see the level of significance of the data. If the p-Value is higher than 0.05, it means that it is not significant. Therefore, it could be gleaned on the table that there are no significant relationship between the mean average grade or the academic performance of the students to their prevailing multiple intelligences.

Students' dominant intelligences are not only brought by the content presented and taught in school through subject areas but also drawn from other factors outside school and academic concerns that greatly contribute in strengthening students' intelligences. Genetic, personal preference and cultural upbringings influenced how an individual utilizes and develops their intelligence inclinations. Also, humans are not going to develop new intelligences, instead, the existing intelligences are the ones being mobilized for new intentions or purposes.

Multiple Intelligence – Based Instructional Design

The prevailing multiple intelligences of the respondents are Visual-Spatial Intelligence, Bodily-Kinesthetic Intelligence, and Verbal-Linguistic Intelligence. Considering to the subject areas in which these intelligences are associated, the Visual-Spatial Intelligence and Bodily-Kinesthetic

Intelligence are related to MAPEH (Music, Arts, Physical Education, Health) specifically in the areas Arts and Physical Education, and the Verbal-Linguistic Intelligence is associated with languages subjects, the English and Filipino. However, student do not excel in the subject areas in which their prevailing intelligences are associated. There are no significant relationship between the mean average grade or the academic performance of the students to their prevailing multiple intelligences.

Teaching through multiple intelligence has been found to increase motivation and achievement in classroom assessment. MI-based learning is also helpful in terms of heightening students' achievement levels and developing positive attitudes toward learning [11].

In order to implement MI activities at its best, teachers should understand first the different intelligences. Teacher should know and understand first the nine intelligences in order for the teacher to implement effectively the theory of MI in their classroom, they must first understand the nine intelligences. The teacher then can based the lessons in students' strengths. Teachers could use students' intelligence as foundation in crafting lessons and planning and learnings activities in the classroom [12]. Instruction should be fashioned and crafted by detailed knowledge regarding students' particular strengths, needs, and areas for development.

Instructional design inspired and anchored to students' prevailing multiple intelligences could help improve students' performance. The ID that greatly serve as a guide and became part of every teacher in delivering subject matter is a lesson plan. One of the ways to cater students' strengths is teacher should provide and use ID that can be viewed as their blueprint to conduct and facilitate various learning tasks or activities by accommodating distinct intelligences of students [10].

The idea is not to devise nine different activities at the same time to target each of the intelligences. Select a few intelligences to aim at in one lesson or activity. Eyeing or aiming one or more of the intelligences into daily lesson plan undertakings and asserted that many teachers already included MI in their lesson plans without realizing it [13].

Table 6 shows the recommended activities as forms of assessment which are anchored to prevailing multiple intelligences of the students to where they can show their understanding and learning in poem and short story being the least mastered genres.

Table 6. Recommended Activities for the Least Mastered Genres Anchored to Prevailing Multiple Intelligences

Least Mastered Genres (1-5 Poem, 6-10 Short Story)	Prevailing Multiple Intelligences	Recommended Activities in LP as ID
1.The Seven Ages of Man *by William Shakespeare*	Verbal-Linguistic Bodily-Kinesthetic Visual-Spatial	Make a short spoken poetry, Devise a word game Make an interpretative dance, Make a skit Make an illustration Make a scrapbook
2. Psalm of Life	Verbal-Linguistic	Recite a choric speech,

by Henry Wadsworth Longfellow	Bodily-Kinesthetic Visual-Spatial	Write a letter to self Present interpretative dance, Perform a skit Write a calligraphy, Take a photo
3. Mother to Son *by Langston Hughes*	Verbal-Linguistic Bodily-Kinesthetic Visual-Spatial	Make a dialogue, Write a letter of appreciation Present a short skit, Facilitate "charade" Create a comic strip, Draw based on the poem
4. The Man with a Hoe *by Edwin Markham*	Verbal-Linguistic Bodily-Kinesthetic Visual-Spatial	Make a slogan, Conduct an interview Dance a folksong, Present a short play Make an illustration, Do jar / stone painting
5. Sonnet 29 *by George Santayana*	Verbal-Linguistic Bodily-Kinesthetic Visual-Spatial	Write a sonnet, Recite a sonnet as spoken poetry Show a short skit, Devise a game Create display, Make a small bulletin board
6. The Gift of Magi *by O. Henry*	Verbal-Linguistic Bodily-Kinesthetic Visual-Spatial	Elaborate through paragraphs, Compose a concrete poetry Re-enact a scene, Choreograph a 2-minute dance Make a gift , Make a diorama
7. The Day of Destiny *by Sir Thomas Malory*	Verbal-Linguistic Bodily-Kinesthetic Visual-Spatial	Write a blurb, Make a graphic organizer Re-enact a scene, Character portrayal Create a comic strip, Design a cover page
8. Thank You, Ma'am *by Langston Hughes*	Verbal-Linguistic Bodily-Kinesthetic Visual-Spatial	Write a short essay, Write a letter of thanks Make act of kindness, Perform a dance Make a portrait, Write in calligraphy a quotation
9. The Tell-Tale-Heart *by Edgar Allan Poe*	Verbal-Linguistic Bodily-Kinesthetic Visual-Spatial	Write a blurb, Act as news reporter Perform a monologue, Re-enact a scene Create illustration, Draw favourite scene in the story
10. The Lottery *by Shirley Jackson*	Verbal-Linguistic Bodily-Kinesthetic	Write own version of the story, Act as news reporter Make a short play, Change ending through role

	Visual-Spatial	play Create a story book, Make an illustration

CONCLUSION AND RECOMMENDATION

There are 214 Grade 9 students who have the highest academic performance in one of the sub-components of MAPEH, the Health and the other one is the Edukasyon sa Pagpapakatao (ESP). In addition, the 3 prevailing intelligences of the student-respondents are the Visual-Spatial, Bodily-Kinesthetic, and Verbal-Linguistic.

The least mastered genres of literature are the poem and short story as the student-respondents failed in those genres. Thus, the two genres were the basis for the development of the ID which were anchored to respondents' prevailing MI's; the respondents are picture smart, body smart and word smart.

The Visual-Spatial Intelligence (being picture smart) and Bodily-Kinesthetic Intelligence (being body smart) are related to MAPEH (Music, Arts, Physical Education, Health) specifically in the areas Arts and Physical Education; and the Verbal-Linguistic Intelligence (word smart) is associated with languages subjects, the English and Filipino. However, there are no significant relationship between the mean average grades or the academic performance of the students to their prevailing multiple intelligences since the p-Value is higher than 0.05, which only means that the two are not significant.

The instructional design that became very vital for the teachers in delivering every lesson is the lesson plan. Lesson plan is an instructional design that teachers used and greatly relay on in helping students attain higher level of achievement in academic performances.

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

1. The 214 Grade 9 student-respondents are body smart and people smart as evident in their high academic performance in MAPEH and ESP subjects.

2. The Grade 9 students performed low in both poem and short story genres.

3. The Grade 9 student-respondents are picture smart, body smart, and word smart but does not have excellent grades in subjects associated with their areas of intelligence. Hence there are no significant relationships between the two profiles of the respondents, the mean average grade and prevailing MI.

4. Lesson plan as Instructional Design that contains Multiple Intelligences activities could better accommodate learnings of the students since lessons are anchored on the students' prevailing intelligences.

Students though differ from each other, certainly looking for activities and exciting tasks where they can learn the lesson and to where they can apply their intelligences. Students' different ways of learnings are brought about by their intelligences or to the things that they can do well and where they can excel. Allowing the students to choose and do task which interests them and at the same time they can relate to could surely increase their participation and performance.

The following suggestions are given based on the conclusions drawn from the study:

1. It is suggested to prepare hands-on activities that could enhanced the three prevailing multiple intelligences of the students. For the verbal-linguistic intelligence, teacher may use writing poems, stories and scripts, debate, storytelling, interview, word games, etc. as activities. For bodily-kinesthetic intelligence, teacher may use dance recital, role playing, presenting skit, re-enactment of scenes, game requiring body movements, etc. as activities. And for visual-spatial intelligence, teacher may use illustrating/drawing, creating scrapbook, taking photo, designing, making diorama, etc. as activities.

2. Teachers are encouraged to utilized performance-based tools to assess the students in the content of least mastered genres of literature, which are the poem and short story.

3. It is recommended for the teachers to expose students in other forms of assessment tools which are more activity-driven. Teachers may also design their own assessment tools that are activity-driven

which could be the basis of their assessment.

4. Teachers are insinuated to utilize instructional design that is anchored to student's prevailing multiple intelligences.

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Self-Efficacy among Engineering and Fisheries Technology Students in Region I, Philippines

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Abstract
Today, self-efficacy is considered a vital factor towards college education the belief to be able to something becomes the new trend. This study aimed to determine the level of self-efficacy of college students in selected Philippine Higher Education Institutions after the full implementation of the K to 12 Basic Education Curriculum, and compare it with their self-efficacy results in senior high school years in order to provide new insights for educational policies in the Philippines. A survey-questionnaire on self-efficacy, with a Cronbach's alpha of 0.84, was administered to five hundred thirty two college students from three state universities in the Philippines who are graduates of K to 12 Basic Education Curriculum. Findings revealed that the respondents are 'Very Confident' in their self-efficacy along the eight areas assessed. The respondents have an increasing self-efficacy in this ascending order: Enlisting Parental and Community Support Efficacy > Self-Efficacy in Enlisting Social Resources > Self-Efficacy in Meeting Others' Expectations >, and Self-Efficacy in Self-Regulated Learning > Self-Assertive Efficacy > Self-Efficacy in Academic Achievement > Self-Regulatory Efficacy > and Social Self-Efficacy. Findings suggest that the level of self-efficacy of the college students have increased. If age, and hence, maturity, was seen to have no association with self-efficacy, then, it can be inferred that the increase in self-efficacy of the respondents can be attributed to their being a graduate under the K to12 Basic Education Curriculum in the Philippines. Thus, educational policy has to pay attention on how to increase the self-efficacy of senior high school students to further improve tertiary education.

1. INTRODUCTION

Has K to 12 helped increase the level of self-efficacy of Filipino college students? The K to 12 Program [in the Philippines] covers **Kindergarten and 12 years of basic education (six years of primary education, four years of Junior High School, and two years of Senior High School [SHS])** to provide sufficient time for mastery of concepts and skills, develop lifelong learners, and prepare graduates for tertiary education, middle-level skills development, employment, and entrepreneurship [1]. As of this year, the K to 12 Filipino graduates are in their second year in tertiary education, and they are expected to have finished units in general education as well as introductory courses for their field of specialization. Thus, it can be said that this year is an opportune time to re-visit them for reflection about K to 12 implementation in the country.

Educators have long recognized that students' beliefs about their academic capabilities play an essential role in their motivation to achieve, but self-conceptions regarding academic performance initially proved difficult to measure in a scientifically valid way. Initial efforts to study students' self-beliefs gave little attention to the role of environmental influences, such as specific features of performance contexts or domains of academic functioning. In the late 1970s, a number of researchers began to assess self-beliefs in a more task-specific way, and one of the most important of these efforts focused on self-efficacy [2]. Self-efficacy is "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations." In other words, self-efficacy is a person's belief in his or her ability to succeed in a particular situation. Bandura described these beliefs as determinants of how people think, behave, and feel [3]. Achievement motivation may also be improved through the improvement of self-efficacy [7]. While college enrollment rates continue to skyrocket, suggesting greater student access to higher education, programs are needed to develop student skills that facilitate academic success [4]. In a study conducted in Pangasinan, Philippines in 2016 among senior high school students *(n=260)*, their self-efficacy in their respective strands was found to be 'Moderately Confident' [5]. A study conducted in Tacloban City, Philippines in 2016 also revealed that the senior high school students *(n=150)* had a 'moderate level' of self-efficacy [6]. It seems both warranted and prudent to conclude that research findings over these past 20 years have strengthened Bandura's claim that self-efficacy beliefs play an influential role in human agency. The clear implication that emerges from this conclusion is that researchers and school practitioners should look to students' self-beliefs about their academic capabilities, for they are important components of motivation, self-regulation, and academic achievement. Findings from this line of inquiry should continue to provide a powerful contribution to educational practice, policy, and theory [9]. Thus, there is a need to re-visit the self-efficacy of Filipino college students.

1.1 Objectives of the Study

The present study aimed to determine the level of self-efficacy of Filipino college students who are K to 12 graduates in order to reflect on the impact of K to 12 Basic Education Curriculum in their tertiary education. Specifically, it determined the self-efficacy of the respondents along the following areas of self-efficacy: Self-Efficacy in Enlisting Social Resources, Self-Efficacy for Academic Achievement, Self-Efficacy for Self-Regulated Learning, Self-Regulatory Efficacy, Self-Efficacy to Meet Other's Expectations, Social Self-Efficacy, Self-Assertive Efficacy, and Self-Efficacy for Enlisting Parental and Community Support.

1.2 Impact of the Study to Research Community

To date, no paper which attempts to determine the self-efficacy of Filipino college students who are K to 12 Graduates and relate it with past research data is published and is available on-line. The

impact of the study rests on the assumption that there is a need to re-visit available data on self-efficacy of college students to help enhance the quality of tertiary education.

2. METHODOLOGY

2.1 Respondents of the Study

The respondents of the study included five hundred thirty two (532) students from three highly performing universities in the Philippines. Initially, there were five hundred eighty (580) respondents, but forty-eight of the questionnaires were omitted from the list because they are not graduates in the K to 12 Basic Education Curriculum which was implemented in the Philippines. The courses of these students range from various courses including Engineering, Fisheries and Aquatic Sciences. They are a combination of first year and second year college students.

2.2 Instrumentation

The instrument which was used as a data-gathering tool was a survey-questionnaire. The questionnaire was adopted from the study of Camara, 2018 [5], with modifications to appropriately address concerns in college like the use of 'course' instead of 'strand', among others. The survey-questionnaire had thirty-eight (38) questions and the respondents would rate themselves as to their level of confidence in accomplishing each of the thirty-eight items in the survey-questionnaire. Further, the survey-questionnaire opened with a section asking for their participation with a consent form section, and a reiteration of the confidentiality of their identity following laws related to privacy in the Philippines.

2.3 Data-gathering Procedure

The researcher sought permission from the university Presidents and/or Chancellors of the three universities in the Philippines, through the College Deans and/or Campus Executive Directors. The researcher received the approval letter to administer the questionnaires. Due to the distance the researcher needed to travel to simultaneously administer the survey-questionnaires, he tasked eight (8) trained researchers from PARESSU, Inc in his capacity as the incumbent president.. The trained researchers administered the survey-questionnaires simultaneously during the 1st semester of School Year 2019-2020. The trained researchers gathered all the survey-questionnaires administered. There were five-hundred eighty questionnaires gathered, and were later trimmed down to 532 because 48 of the questionnaires were answered by non-K to 12 graduates. The survey-questionnaires were all coded from 001 to 532 by the secretariat of PARESSU, Inc. After coding, the survey-questionnaires were submitted for encoding in SPSS 21 by the resident statistician of the same national organization in the Philippines. PARESSU, Inc is Philippine Association of Research Practitioners, Educators, and Statistical Software Users, Inc.

2.4 Statistical Treatment

The data in the 534 survey-questionnaires were all encoded and analyzed in SPSS 21. Mean and Standard Deviation were employed to statistically treat the data. The Print Output of the 532 questionnaires was kept by the secretariat of PARESSU, Inc with the Archive Code K12_02019.

3 RESULTS AND DISCUSSION

Self-Efficacy Among K-to-12-graduate Filipino College Students *(n=532)*

Table 1. Mean and standard deviations on the level of self-efficacy among Filipino college students in terms of *'Self-Efficacy Enlisting Social Resources' (n=532)*

Self-Efficacy in Enlisting Social Resources	*M*	*sd*	Interpretation
I can ask instructors to help me when I get stuck in schoolwork.	2.93	*1.09*	Confident
I can ask another student to help me when I get stuck in schoolwork.	3.72	*0.97*	Very Confident
I can ask an adult to help me when I have social problems.	3.01	*1.13*	Confident
I can ask a friend to help me when I have social problems.	3.45	*1.08*	Very Confident
Weighted Mean	**3.28**	***1.07***	**Confident**

Table 1 shows that, generally, the respondents are 'Confident' in enlisting social resources *(M=3.28;sd=1.07).* Further, the table shows that the respondents are very confident in asking another student for help when stuck with schoolwork or a friend when experiencing social problems. Moreover, though interpreted as 'confident', the respondents rated themselves with 2.93 in their confidence to ask their instructors for help when stuck with school work. The same is observed on their confidence to ask adults to help them in social problems. Interestingly, that 'they can ask another student to help them when they get stuck with schoolwork' has the least spread out standard deviations which implies that the students have very similar answers – very confident – in asking another classmates for help.

Table 2. Mean and standard deviations on the level of self-efficacy among Filipino college students in terms of *'Self-Efficacy in Academic Achievement' (n=532)*

Self-Efficacy in Academic Achievement	*M*	*sd*	Interpretation
I can learn the general education subjects in my course.	3.63	*0.91*	Very Confident
I can learn the major subjects in my course.	3.58	*0.98*	Very Confident
I can learn the technical (applied) subjects in my course.	3.41	*0.94*	Very Confident
Weighted Mean	***3.54***	***0.94***	**Very Confident**

Table 2 reveals that, generally, the respondents are 'Very Confident' in their self-efficacy in academic achievement *(M=3.54;sd=0.94).* Further, the table shows that the respondents are very confident in learning their general education subjects, the major subjects, and the technical or applied subjects in their respective courses. Interestingly, the standard deviations of all the means are less than 1, less spread are the scores which implies all the respondents did have very similar rating. Another interesting idea is that the statement 'they can learn the general education subjects' received the highest mean rating, and is the least spread out in the standard deviation. If K to 12 Basic Education Curriculum aimed to prepare students for tertiary education, this is a good implication that the K to 12 BEC did help prepare college students for general education as part of tertiary education.

Table 3. Mean and standard deviations on the level of self-efficacy among Filipino college students in terms of *'Self-Efficacy in Self-Regulated Learning' (n=532)*

Self-Efficacy in Self-Regulated Learning	*M*	*sd*	Interpretation

I can finish my homework by deadlines.	3.71	*1.09*	Very Confident
I can study my lessons even if there are other interesting things to do.	3.39	*0.95*	Confident
I always concentrated on school subjects during class.	3.28	*0.92*	Confident
I can take good notes during class instruction.	3.30	*1.01*	Confident
I can use the library to get information for class assignments.	3.09	*1.07*	Confident
I always plan my schoolwork for the day.	3.33	*0.99*	Confident
I organize my school works.	3.33	*0.96*	Confident
I remember well information presented in class and textbooks.	3.14	*0.86*	Confident
I arrange a place to study without distractions.	3.36	*1.05*	Confident
I can get myself to do school works.	3.51	*0.90*	Very Confident
Weighted Mean	***3.34***	***0.98***	**Confident**

Table 3 displays that, generally, the respondents are 'Confident' in their self-efficacy in self-regulated learning *(M=3.34;sd=0.98)*. The table further shows that the idea that 'they can get themselves to do school works' receive the second highest mean rating and lowest standard deviation which implies that their answers are very similar to one another. Surprisingly, the idea that 'they can finish their homework by deadlines' received the highest mean rating but received the highest spread out scores as well. This implies that while majority of the respondents answered 'very confident' in that area, some of the respondents answered in the opposite extreme side.

Table 4. Mean and standard deviations on the level of self-efficacy among Filipino college students in terms of *'Self-Regulatory Efficacy' (n=532)*

Self-Efficacy in Self-Regulatory Efficacy	***M***	***sd***	**Interpretation**
I can resist pressures to do things in school that can get me in trouble	3.36	*1.00*	Confident
I can stop myself from skipping school when I feel bored or upset.	3.61	*1.23*	Very Confident
I can resist pressure to smoke cigarettes.	4.13	*1.24*	Very Confident
I can resist pressure to drink beer.	4.01	*1.19*	Very Confident
I can control my temper.	3.60	*1.05*	Very Confident
Weighted Mean	***3.74***	***1.14***	**Very Confident**

Table 4 shows that, generally, the respondents are 'Very Confident' in their self-regulatory efficacy. The respondents rated their belief to resist pressure from smoking cigarettes, drinking beer, skipping school, and controlling their temper with 'Very Confident", as well, though it can be noted that the ratings are spread out as revealed in their standard deviations. This implies that while majority of the respondents are very confident to resist, still a few are not able to. Interestingly, the students can resists doing things that will get them to trouble had the lowest mean rating, and the least spread scores which implies that the scores concentrate at the center.

Table 5. Mean and standard deviations on the level of self-efficacy among Filipino college students in terms of *'Self-Efficacy in Meeting Others' Expectations' (n=532)*

Self-Efficacy in Meeting Others' Expectations	***M***	***sd***	**Interpretation**

I live up to what my parents expect of me.	3.45	*0.95*	Very Confident
I live up to what my instructors expect of me.	3.06	*0.97*	Confident
I live up to what my peers expect of me.	3.19	*0.96*	Confident
I live up to what I expect of myself.	3.56	*1.10*	Very Confident
Weighted Mean	***3.32***	***1.00***	**Confident**

Table 5 shows that, generally, the respondents are 'Confident' in their self-efficacy in meeting others' expectations. The table shows that the respondents have an increasing confidence in meeting the expectations of the following: instructors > peers > parents > self. Means show that they are very confident to meet the expectations of their parents and their own selves, while confident to meet the expectations of their instructors and peers. This pattern suggests an increasing 'knowledge' of what others expect of them and they tend to achieve it, i.e. they are very confident to meet their own expectation because they know themselves and they are in their 'own' selves all the time. They meet the expectations of their parents because they know them very well and they have spent most of their lives with them. They are confident to meet the expectations of their peers or classmates because they hang out along well together. They are still confident to meet the expectations of their instructors, yet receiving the lowest mean rating, because their instructors inform them of what do they expect from the instructors relative to their subjects. This patter, further, applies a continuous chain of possible acceptance in times of failure. Some self-efficacy researchers [10] have suggested that teachers should pay as much attention to students' perceptions of competence as to actual competence, for it is the perceptions that may more accurately predict students' motivation and future academic choices. Further, Bandura emphasized that comparisons with peers are important determinants of self-efficacy beliefs [10].

Table 6. Mean and standard deviations on the level of self-efficacy among Filipino college students in terms of *'Social Self-Efficacy' (n=532)*

Self-Efficacy in Social Self-Efficacy	***M***	***sd***	**Interpretation**
I can make and keep friends of the opposite sex.	3.89	*1.07*	Very Confident
I can make and keep friends of the same sex.	3.97	*0.99*	Very Confident
I can carry on with communications with others.	3.70	*1.01*	Very Confident
I can work well in a group.	3.60	*1.01*	Very Confident
Weighted Mean	***3.79***	***1.02***	**Very Confident**

Table 6 reveals that, generally, the respondents are 'Very Confident' in their social self-efficacy. The respondents have a 'very confident' belief that they can work well in a group > communicate with others > keep friends with opposite sex > and keep friends of the same sex. This pattern of confidence between the students – male and female students alike - supports the literature [8] that 'there is no significant difference in social and emotional self-efficacy across gender'.

Table 7. Mean and standard deviations on the level of self-efficacy among Filipino college students in terms of *'Self-Assertive Efficacy' (n=532)*

Self-Assertive Efficacy	***M***	***sd***	**Interpretation**
I can express my opinions even when my classmates disagree with me	3.38	*1.02*	Confident
I stand up for my myself when I feel I am	3.56	*1.02*	Very Confident

being treated unfairly.			
I can get others to stop annoying me or hurting my feelings.	3.42	*1.07*	Very Confident
I can refuse someone who is asking me to do something inconvenient	3.54	*1.06*	Very Confident
Weighted Mean	***3.48***	***1.04***	**Very Confident**

Table 7 reveals that, generally, the respondents are 'Very Confident' in their self-assertive efficacy. In contrast to some studies [12], research suggests students who enjoyed a higher self-efficacy had lower aggression. It was suggested that [11] people who obtain a high self-efficacy, have an accurate knowledge of their abilities, enjoy a real social connection, and are capable of controlling and managing their emotions, in addition, they show a less aggressive behavior. Interestingly, the idea 'of expressing opinions even amidst disagreement' received the lowest mean rating – a direct contrast on what concepts already available in literature. It is noteworthy to note that while the statements under self-assertive efficacy have high mean ratings, their standard deviations are higher than 1 (more spread) implying that some respondents answered the direct opposite.

Table 8. Mean and standard deviations on the level of self-efficacy among Filipino college students in terms of *'Enlisting Parental and Community Support' (n=532)*

Enlisting Parental and Community Support	***M***	***sd***	**Interpretation**
I can get my parents to help me with an academic problem	3.03	*1.11*	Confident
I can get my siblings to help me with an academic problem	2.93	*1.20*	Confident
I can ask my parents to take part in school activities in college	2.94	*1.18*	Confident
I can get people outside the school to be interested in school activities	3.08	*1.09*	Confident
Weighted Mean	***3.00***	***1.15***	**Confident**

Table 8 presents that, generally, the respondents are 'Confident' in enlisting parental and community support. The mean ratings under this self-efficacy are generally lower compared to the other areas of self-efficacy. Further, the standard deviations are visibly spread. This implies that the respondents have widely spread out answers when asked about whether they can enlist the help of their parents or siblings for help with an academic problem, or to take part in school activities. Findings of a study among elementary pupils revealed [13] that parents' contribution to their children's education has a consistent and positive effect on academic achievement and on the self-concept. In the study, the sense of academic achievement in Table 2 *(M=3.54, Very Confident)* of the respondents are proofs that college students believe they can achieve even with a comparably low, yet still 'confident' mean ratings, under self-efficacy in enlisting parental and community support.

Table 9. Mean and standard deviations on the general level of self-efficacy among Filipino college students *(n=532)*

Area of Self-Efficacy	***M***	***sd***	**Interpretation**

Self-Efficacy in Enlisting Social Resources	3.28	*1.07*	Confident
Self-Efficacy in Academic Achievement	3.54	*0.94*	Very Confident
Self-Efficacy in Self-regulated Learning	3.34	*0.98*	Confident
Self-Regulatory Efficacy	3.74	*1.14*	Very Confident
Self-Efficacy in Meeting Others' Expectations	3.32	*1.00*	Confident
Social Self-Efficacy	3.79	*1.02*	Very Confident
Self-Assertive Efficacy	3.48	*1.04*	Very Confident
Enlisting Parental and Community Support Efficacy	3.00	*1.15*	Confident
Weighted Mean	***3.44***	***1.04***	**Very Confident**

Finally, Table 9 summarizes all the eight (8) areas of Self-Efficacy of Bandura that were examined in this study involving 532 college student respondents. The table shows that the respondents are generally 'Very Confident' *(M=3.44;sd=1.04)*. Further, the respondents have 'Very Confident' self-efficacy in the following areas, arranged in ascending rating: Self-Assertive Efficacy *(M=3.48;sd=1.04)* > Self-Efficacy in Academic Achievement *(M=3.54;sd=0.94)* > Self-Regulatory Efficacy *(M=3.74;sd=1.14)* > and Social Self-Efficacy *(M=3.79;sd=1.02)*. Furthermore, the respondents have 'Confident' self-efficacy in the following areas, arranged in ascending order: Enlisting Parental and Community Support Efficacy *(M=3.00;sd=1.15)* > Self-Efficacy in Enlisting Social Resources *(M=3.28;sd=1.07)* > Self-Efficacy in Meeting Others' Expectations *(M=3.32;sd=1.00)* >, and Self-Efficacy in Self-Regulated Learning *(M=3.34;sd=0.98).* Senior High School students surveyed in 2016 in Pangasinan, Philippines [5], who were Grade 11 Senior High School students that time , showed 'moderate confidence' in their self-efficacy. The same batch of then Grade 11 senior high school students are the now second year college students surveyed, and their self-efficacy along the eight areas remarkably went with high mean ratings interpreted as 'Very Confident'. A study involving one hundred fifty Grade 11 students surveyed in 2016 in Tacloban City, Philippines [6] showed a 'moderate level of self-efficacy among the respondents. The study [6] further showed that age and self-efficacy are not associated. This implies that the increase in self-efficacy of college students is not generally associated with age, but, among other possible reasons, because they underwent the K to 12 Basic Education Program in the Philippines.

4 CONCLUSIONS AND RECOMMENDATIONS

The researcher concludes that the Filipino K-to-12-graduate college students are 'Very Confident' along the eight areas of self-efficacy as measured in the study. Further, the respondents have increasing degree of confidence in their self-efficacy mean ratings as follows: Enlisting Parental and Community Support Efficacy > Self-Efficacy in Enlisting Social Resources > Self-Efficacy in Meeting Others' Expectations >, and Self-Efficacy in Self-Regulated Learning > Self-Assertive Efficacy > Self-Efficacy in Academic Achievement > Self-Regulatory Efficacy > and Social Self-Efficacy. Survey of reviewed literature and the findings of the study reveal that the level of self-efficacy of the cohort respondents – Grade 11 senior high school students in the year 2016 and second year college students in the year 2019 – have an increased level of self-efficacy *(M=2.14, 'Moderately Confident', c2016 < M=3.44, 'Very Confident', c2019)*. If age, and hence, maturity, was seen to have no association with self-efficacy [6], then, it can be inferred that the increase in self-efficacy of the respondents can be attributed to their being a graduate under the K to12 Basic Education Curriculum in the Philippines.

With these conclusions and implications, the researcher recommends continuous study on

the self-efficacy of college students in their own locality with consideration of other factors like cultural background, ethnical consideration, and gender-based issues in order to ensure the making of a stronger, goal-driven, and industry-ready Filipino college graduate. Further, while self-efficacy has been widely regarded already as predictor of success, caution has to be made in attempting to raise the self-efficacy of students by excessive and unrealistic praise to students. Bandura – the lead author of the concept of Self-efficacy – [9] emphasized that 'mastery experience' is the most influential source of self-efficacy, and this has implications in educational practice like improving students' self-beliefs in order to improve achievement which is the belief of Self-enhancement proponents. However, educational policies may focus on the important task of raising competence *and* confidence through 'authentic mastery experiences' which is the belief of Social cognitive theorists. The belief of this researcher, and his recommendation, is to find an association between multiple intelligences and level of self-efficacy of students per field of study in order to ascertain the level of praise, competence, and confidence that an educational institution will consider as 'policy' in helping students increase their self-efficacy.

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Effects of Extra Curricular and Co-curricular Activities to the Academic Performance of Intermediate Pupils

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Abstract: This study was made to determine the effects of extra and co-curricular activities to the academic performance of intermediate pupils in Binmaley I District, Binmaley, Pangasinan. Public schools in the elementary level in Binmaley District 1 are mostly with big campuses with standard number of pupils and sample teaching force. Majority of the schools holds 5-7 co-curricular activities. More so, the majority of the learners participate in the co-curricular activities in school, district, division and regional levels. The participation of the learners to the co-curricular activities contributes to attaining their learning competencies. The school profile has not related to the extent of contribution of the majority of the co-curricular activities to pupils' learning competencies. Among the top problems encountered by the learners in participating Co-Curricular activities dwell on the pupils' struggle with time management, short attention span, costly activities, the difficulty of coping up and tardiness. Based on the findings and conclusions, it is recommended that public elementary schools should sustain the conduct of co-curricular activities and explore more innovative and interactive activities to reach out to more learners. They should also promote and give more emphasis on the participation of co-curricular activities. Further, since profile variables do not affect the extent of contribution of the majority of the co-curricular activities to pupils' learning competencies, it should be part of the curriculum for good.

Keywords: co-curricular activities, extracurricular activities, intermediate pupils, academic performance

INTRODUCTION

The main purpose of this study was to examine the effects of extra and co-curricular activities on an intermediate pupil's academic performance. Specifically, does participation in extra and co-curricular activities have a positive effect on pupil academic well-being? This study was supposed to promote research that supports pupil achievement in the field of education. Teachers and academicians have continuously conducted research to improve pupil achievement for decades. Teachers simply want their pupils to be successful, achieve, and excel academically. This study was conducted in Binmaley I District at Elementary Schools. Teachers were used as participants in this study [1].

In education, the measure of success is academic performance based on the curricular foundation and standards of the institution. Since good education is vital to success, efforts should be made to monitor, document and analyze student work to encourage them further. The challenge of extra and co-curricular activities for the learner provides a way to improve and develop skills, since these activities are relevant to their acquisition of knowledge, skills, and even desired attitudinal changes [2].

OBJECTIVES OF THE STUDY

This study determined the effects of co-curricular activities on the academic performance of intermediate pupils in Binmaley I District, Binmaley, Pangasinan, Philippines.

Specifically, this study identified the profile of pupils in terms of type of school, number of learners, teachers, extra and co-curricular organization and the number of extra and co-curricular activities participated by the students, the extent of contribution of the extra and co-curricular activities to the attainment of learning competencies of scouting, journalism, mathematics enhancement, science quest and camp, leadership development, athletic meet, arts and talent competition, the problems encountered by the pupils in participating extra and co-curricular activities as perceived by the teachers and the significant relationship between the extent of contribution of extra and co-curricular activities to the learning competencies and their profile variables.

MATERIALS AND METHODS

The descriptive method of research was used in the study [9]. Purposive sampling technique was used in determining the respondents who are from the public elementary teachers in Binmaley I district, Binmaley, Pangasinan. The research instrument that was used in gathering the data is a questionnaire distributed and retrieved by the researcher. The data gathered were analyzed and interpreted using frequency counts, percentages, mean, Chi-square Test Statistic and Spearman's rho Correlation.

RESULTS AND DISCUSSION

Table 2 shows that there are 26 respondents in the big elementary schools in Binmaley I District in Pangasinan, and which consists of 52% of the overall number. The medium schools consist of 19 or 38%, and there are 5 small schools or 10%. This implies that majority of the schools are big and can accommodate more pupils in the district since they have more teachers.

Majority of the schools have less than 500 learners. This comprises 28 or 56% of the schools. On the other hand, 18 or 36% of the schools have 501 – 1000 learners while there are 4 or 8% of the schools that have above 1000 learners.

There are 29 or 58% of the schools that have 10-20 teachers. On the other hand, 11 or 22% have less than ten teachers, 6 or 12% have 20-30 teachers, and 4 or 8% have more than 30 teachers.

There are 31 or 62% of schools that have 5-7 co-curricular organisations. On the other hand,

there are 11 or 22% that have 8 and above, and 8 or 16% of the schools have 2-4 co-curricular organisations.

On the school level, 29 or 58% of the schools have 8 and above co-curricular activities being attended by the pupils. On the other hand, 17 or 34% have 5-7, and 4 or 8% of the schools have 3-4 co-curricular activities participated in by the pupils.

On the district level, there are 27 or 54% of the schools have 3-4 co-curricular activities being attended by the pupils. On the other hand, 10 or 20% have 8, and above, 6 or 12% of the schools have 3-4, and 4 or 8% have 1 -2 co-curricular activities attended by the pupils.

On the division level, there are 23 or 46% of the schools have 8 and above co-curricular activities being attended by the pupils. On the other hand, 17 or 34% have 5-7, 9 or 18% have 1-2, and 4 or 8% of the schools have 8 and above co-curricular activities participated by the pupils.

On the regional level, there are 29 or 58% of the schools have 5-7 co-curricular activities being attended by the pupils. On the other hand, 18 or 36% have 1-2, 9 and 11 or 22% of the schools have 3-4 co-curricular activities participated by the pupils.

Table 2
Profile of the Binmaley I District Schools

Profile Variables	Frequency	Per cent
1. Type of School		
Small	5	10.0
Medium	19	38.0
Big	26	52.0
2. Number of learners		
Below 500	28	56.0
501 – 1000	18	36.0
Above 1000	4	8.0
3. Number of Teachers		
Below 10	11	22.0
10– 20	29	58.0
20– 30	6	12.0
Above 30	4	8.0
4. Number of Extra and Co-curricular organization		
2– 4	8	16.0
5– 7	31	62.0
8 and above	11	22.0
5. Number of Extra and Co-curricular Activities Participated by Pupils		
A. School Level		
3 – 4	4	8.0
5 – 7	17	34.0
8 and above	29	58.0
B. District Level		
1 – 2	4	8.0
3 – 4	6	12.0
5 – 7	27	54.0
8 and above	13	26.0
C. Division Level		
1 – 2	9	18.0
3 – 4	23	46.0
5 – 7	10	20.0
8 and above	4	8.0
Total	46	92.0
D. Regional Level		
1 – 2	18	36.0
3 – 4	11	22.0
5 – 7	29	58.0
E. National Level		
1–2	20	40.0

Descriptive Equivalent: 5-Very Highly Contributory; 4-Highly Contributory; 3-Contributory; 2-Contributory; 1-Does not Contribute at all

Table 3

The extent of Contribution of Scouting to the Attainment of Learning Competencies

A. Scouting The learners…	Extent of Contribution				
	5	**4**	**3**	**2**	**1**
1. Learn to be a productive citizen of our country.	**24 (48%)**	19 (38%)	7 (14%)	0	0
2. Learn to formulate and regain the values that are now deterioratin g due to	15 (30%)	**28 (56%)**	6 (12%)	0	0

	many factors.					
3.	**Learn to stem away vices and bad influences of drugs and peers.**	**21 (42%)**	20 (40%)	9 (18%)	0	0
4.	**Learn to be dynamic and show interest in studies.**	20 (40%)	**21 (42%)**	8 (16%)	1 (2%)	0
5.	**Learn how to be a community service provider.**	21 (42%)	**23 (46%)**	5 (10%)	0	0
	Overall Extent of Contribution	**44.8 %**	**Highly Contributory**			

Descriptive Equivalent: 5-Very Highly Contributory; 4-Highly Contributory; 3-Contributory; 2-Contributory; 1-Does not Contribute at all

Table 3 reveals the results on the extent of contribution of co-curricular activity specifically on scouting to the attainment of learning competencies.

Overall, the extent of contribution of co-curricular activity specifically on scouting to the attainment of learning competencies is highly contributory as shown in the overall weighted mean of 44.8%.

Specifically, the scouting indicators which receive the very highly contributory are the learners learn to be a productive citizen of our country and learn to stem away vices and bad influences of drugs and peers based on frequency counts and percentage of 24 or 48% and 21 and 42%, respectively. On the other hand, the scouting indicators which receive the highly contributory are learn to formulate and regain the values that are now deteriorating due to many factors, learn to be dynamic and show interest in studies, and learn how to be community service provider based on frequency counts and percentage of 28 or 56%, 21 or 42%, and 23 or 46%, respectively.

The results were possible because the Scouting Movement, through the Boy Scouts of the Philippines (BSP) and the Girl Scouts of the Philippines (GSP), is an effective program in the leadership and value formation of every child. The main objective of this program is consistent with the Department's mission to enhance, support, and develop boys and girls into well-rounded individuals with exemplary character. The BSP and the GSP have, so far, produced leaders who are true to the Scout Oath and Law or Girl Scout Promise and Law
[1]

Table 4

The extent of Contribution of Journalism to the Attainment of Learning Competencies

B. Journalism The learners…		**Extent of Contribution**				
		5	**4**	**3**	**2**	**1**
1.	**Compose a clear and coherent sentence using appropriate grammatical structures.**	12 (24%0	**21 (42%)**	13 (26%)	4 (8%)	0
2.	**Plan a composition using an outline / other graphic organizers.**	8 (16%)	**24 (48%)**	14 (28%)	4 (8%)	0
3.	**Revise writing for clarity and correct spelling.**	11 (22%)	**24 (48%)**	11 (22%0	4 (8%)	0
4.	**Clarify the meaning of words using dictionaries and thesaurus.**	11 (22%)	**21 (42%)**	14 (28%)	4 (8%)	0

5.	**fill-out forms accurately and efficiently (bio-data, application forms, etc.)**	13 (26%)	**21 (42%)**	13 (26%)	3 (6%)	0
	Overall Extent of Contribution	**44.4 %**	**Highly Contributory**			

Descriptive Equivalent: 5-Very Highly Contributory; 4-Highly Contributory; 3-Contributory; 2-Contributory; 1-Does not Contribute at all

Table 4 discloses the results on the extent of contribution of co-curricular activity, specifically on journalism to the attainment of learning competencies.

In general, the extent of contribution of co-curricular activity specifically on journalism to the attainment of learning competencies is highly contributory as shown in the overall weighted mean of 44.4%.

This is possible since the number of campus publications in the Philippines now has exceeded 1,000 – with the College Editors Guild of the Philippines (CEGP) having counts 750 member-publications. The guild is the oldest and broadest intercollegiate alliance of student publications in the Asia-Pacific, with many student publications that continue the tradition and the role of analysing pressing social issues [2].

Table 5

The extent of Contribution of Mathematics Enhancement to the Attainment of Learning Competencies of Learning

C. Mathematics Enhancement The learners…		**Extent of Contribution**				
		5	4	3	2	1
1.	**Divide decimals up to 2 decimal places by 10, 100 and 1000 mentally.**	19 (38%)	**26 (52%)**	5 (10%)	0	0
2.	**Formulate the rule in finding the nth term using different strategies (looking for a pattern, guessing and checking, working backwards)**	17 (34%)	**20 (40%)**	13 (26%)	0	0
3.	**Perform the basic operations on integers.**	17 (34%)	**19 (38%)**	13 (26%)	1 (2%)	0
4.	**Solve word problems involving average, rate and speed .**	16 (32%)	**20 (40%)**	12 (24%)	2 (4%)	0
5.	**Perform an experiment and record outcomes.**	18 (36%)	**21 (42%**	11 (22%)	0	0
	Overall Extent of Contribution	**42.4%**	**Highly Contributory**			

Descriptive Equivalent: 5-Very Highly Contributory; 4-Highly Contributory; 3-Contributory; 2-Contributory; 1-Does not Contribute at all

Table 5 presents the results on the extent of contribution of co-curricular activity specifically on Mathematics enhancement to the attainment of learning competencies.

Taken as a whole, the extent of contribution of co-curricular activity specifically on Mathematics enhancement to the attainment of learning competencies is highly contributory as shown in the overall weighted mean of 42.4%.

More particularly, the Mathematics enhancement indicators which receive the very highly contributory are learners divide decimals up to 2 decimal places by 10, 100 and 1000 mentally, perform experiment and record outcomes, formulate the rule in finding the nth term using different strategies (looking for a pattern, guessing and checking, working backwards), solve word problems involving average, rate and speed and perform the basic operations on integers based on frequency counts and percentage of 26 or 52%, 21 or 42%, 20 or 40%, 20 or 40%, and 19 or 38%, respectively.

Learners may perceive that Mathematics is the key to opportunity. No longer just the language of science, mathematics now contributes to direct and fundamental ways to business, finance, health, and defence. For students, it opens doors to careers. For citizens, it enables informed decisions.

Table 6

The extent of Contribution of Science Quest and Camp to the Attainment of Learning Competencies

D. Science Quest and Camp The learners…	Extent of Contribution				
	5	**4**	**3**	**2**	**1**
1. Construct a model of the solar system showing the relative sizes of the planets and their relative distances from the Sun.	11 (22%)	**26 (52%)**	12 (24%)	1 (2%)	0
2. Demonstrate rotation and revolution of the Earth using a globe to explain day and night and the sequence of seasons.	20 (40%)	**22 (44%)**	8 (16%)	0	0
3. Enumerate what to do before, during and after an earthquake and volcanic eruptions.	**25 (50%)**	18 (36%)	7 (14%)	0	0
4. Learn to operate in a competitive environment.	12 (24%)	**23 (46%)**	15 (30%)	0	0
5. Describe the components of a scientific investigation.	12 (24%)	**22 (44%)**	16 (32%)	0	0
Overall Extent of Contribution	**44.4 %**	**Highly Contributory**			

Descriptive Equivalent: 5-Very Highly Contributory; 4-Highly Contributory; 3-Contributory; 2-Contributory; 1-Does not Contribute at all

Table 6 exposes the results on the extent of contribution of co-curricular activity specifically on Science Quest and Camp to the attainment of learning competencies.

Looking at its entirety, the extent of contribution of co-curricular activity specifically on Science Quest and Camp to the attainment of learning competencies is highly contributory as shown in the overall weighted mean of 44.4%.

Be more precise, the Science Quest and Camp indicator which receives the very highly contributory is learners enumerate what to do before, during and after the earthquake and volcanic eruptions based on frequency counts and percentage of 25 or 50%. On the other hand, the Science Quest and Camp indicators which receive highly contributory are learners construct a model of the solar system showing the relative sizes of the planets and their relative distances from the sun, learn to operate in a competitive environment, demonstrate rotation and revolution of the Earth using a globe to explain day and night and the sequence of seasons, and describe the components of a scientific investigation, based on the frequency counts and percentage of 26 or 52%, 23 or 46%, 22 or 44%, and 22 or 44%, respectively.

[3] stated that with the UN-led celebration of the International Year of Youth from August 2010 to August 2011 there has been a renewed interest in young people and the vital role they can play in important issues, such as disaster risk reduction (DRR). This study aims to examine the potential of science clubs as a vehicle for youth participation in DRR in the Philippines. This implies that participating in Science clubs are easier to market due to its benefits and opportunities for the learners.

Table 7

The extent of Contribution of Leadership Development to the Attainment of Learning Competencies

E. Leadership Development The learners…	Extent of Contribution				
	5	**4**	**3**	**2**	**1**

1.	**Have a great facility in his language of communication.**	16 (32%)	**20 (40%)**	13 (26%)	1 (2%)	0
2.	**Are full of enthusiasm and powerful drives that are responsible for his accomplishments.**	16 (32%)	**20 (40%)**	12 (24%)	2 (4%)	0
3.	**Are mentally and emotionally mature.**	17 (34%)	**21 (42%)**	8 (16%)	4 (8%)	0
4.	**Are well-rounded from the standpoint of interests and aptitudes.**	16 (32%)	**21 (42%0**	10 (20%)	3 (6%)	0
5.	**Are endowed with bountiful intelligence, especially when compared with his followers.**	**20 (40%)**	16 (32%)	12 (24%)	2 (4%)	0
Overall Extent of Contribution		**39.2%**	**Highly Contributory**			

Descriptive Equivalent: 5-Very Highly Contributory; 4-Highly Contributory; 3-Contributory; 2-Contributory; 1-Does not Contribute at all

Table 7 shows the results on the extent of contribution of co-curricular activity specifically on leadership development to the attainment of learning competencies.

Generally, the extent of contribution of co-curricular activity specifically on leadership development to the attainment of learning competencies is highly contributory as shown in the overall weighted mean of 39.2%.

More so, the leadership development indicator which receives the very highly contributory is learners are endowed with bountiful intelligence, especially when compared with his followers based on frequency counts and percentage of 20 or 40%. On the other hand, the leadership development indicators which receives highly contributory are learners have great facility in his language of communication, are full of enthusiasm and powerful drives that are responsible for his accomplishments, are mentally and emotionally mature, and are well-rounded from the standpoint of interests and aptitudes, based on the frequency counts and percentage of 20 or 40%, 20 or 40%, 21 or 42%, and 21 or 42%, respectively.

Based on the survey conducted at Fort Bonifacio High School in Makati, it contradicts the findings that some of the students don't feel the student government organisation. They are having second thoughts if there is such an organisation maybe the reason why half of the students answered that they have a second thoughts to participate or not to join any of the activities. The survey also shows that half of the students are not satisfied with the student government's work and performance. It means that the student government officer's performance is not enough to satisfy the students [4]

Table 8

The extent of Contribution of Athletic Meet to the Attainment of Learning Competencies

F. Athletic Meet The learners…		Extent of Contribution				
		5	**4**	**3**	**2**	**1**
1.	**Learn skills like teamwork, self-discipline and communication.**	**25 (50%)**	19 (38%)	6 (12%)	0	0
2.	**Have the opportunities to develop their talents.**	**25 (50%)**	20 (40%)	5 (10%)	0	0

3.	**Learn to manage their lifelong healthy habits.**	15 (30%)	**24 (48%)**	11 (22%)	0	0
4.	**Are motivated to perform well academically.**	19 (38%)	**22 (44%)**	9 (18%)	0	0
5.	**Learn solidarity and school pride.**	22 (44%)	**23 (46%)**	5 (10%)	0	0
	Overall Extent of Contribution	**43.2%**	**Highly Contributory**			

Descriptive Equivalent: 5-Very Highly Contributory; 4-Highly Contributory; 3-Contributory; 2-Contributory; 1-Does not Contribute at all

Table 8 depicts the results on the extent of contribution of co-curricular activity specifically on an athletic meet to the attainment of learning competencies.

By and large, the extent of contribution of co-curricular activity specifically on an athletic meet to the attainment of learning competencies is highly contributory as shown in the overall weighted mean of 43.2%.

The findings support the results of the study of [5], which revealed that there was a significant relationship between sports participation and academic success of the student-athletes. Sports participation improved athletes' perceptions on academic excellence, mental processes and becoming more logical and patient. A significant improvement regarding class attendance of the student-athletes was also noticed.

Table 9

The extent of Contribution of Arts and Talent Competition the Attainment of Learning Competencies

G. Arts and Talent Competition The learners…		**Extent of Contribution**				
		5	**4**	**3**	**2**	**1**
1.	**Sing self-composed melodies.**	9 (18%)	**19 (38 %)**	18 (36%)	3 (6%)	1 (2%)
2.	**Identify different textures vocal, solo voice, solo voice with accompaniment, duet, partner songs, round songs and instrumental solo and ensemble.**	12 (24%)	**19 (38 %)**	14 (28%)	5 (10 %)	0
3.	**Apply skills in lay-outing and photo editing using new technologies in making a poster.**	11 (22%)	**19 (38 %)**	18 (36%)	2 (4%)	0
4.	**Apply composition skills to produce a printed photograph for a simple photo essay.**	14 (28%)	15 (30%)	**19 (38 %)**	2 (4%)	0
5.	**Participate in school/district/ exhibit and culminating activity in celebration of the National Arts Month (February).**	8 (16%)	**21 (42 %)**	15 (30%)	6 (12 %)	0
	Overall Extent of Contribution	**37.2 %**	**Highly Contributory**			

Descriptive Equivalent: 5-Very Highly Contributory; 4-Highly Contributory; 3-Contributory; 2-Contributory; 1-Does not Contribute at all

Table 9 portrays the results on the extent of contribution of co-curricular activity, specifically on arts and talent competition to the attainment of learning competencies.

On the whole, the extent of contribution of co-curricular activity specifically on arts and talent competition to the attainment of learning competencies is highly contributory as shown in the overall weighted mean of 37.2%.

The results may be possible because the importance of drama and performing arts in education is significant [6]. This is also similar to arts and talent competition. Whether children have the opportunity to perform in theatre productions or help out behind the scenes, participating in arts and talent competition not only engages with the creative side of the brain, it also provides an ideal balance in students' patterns of study. It's easy for children to become swamped in a sea of theory, which is why subjects that offer practical learning are essential.

Table 10
Significant Relationship Between the Extent of Contribution of Extra and Co-Curricular Activities to Pupils' Learning Competencies and School Profile in Terms Type of School

Extra and Co-Curricular Activities	Chi-square Statistic	df	Sig.	Effect Size	Sig.
A. Scouting	14.253*	4	.007	.351*	.015
B. Journalism	21.658*	6	.001	.454*	.002
C. Mathematics Enhancement	10.638*	4	.031	.308*	.049
D. Science Quest and Camp	4.949	4	.293	.219	.308
E. Leadership Development	12.547	6	.051	.339	.075
F. Athletic Meet	5.628	4	.229	.228	.266
G. Arts and Talent Competition	10.235	6	.115	.291	.204

** Significant at .05 level*

Consequently, as shown in Table 10, there is no significant relationship between the extent of contribution to some of the co-curricular activities and the type of school. In particular, the concerned co-curricular activities as correlated to the type of school are Science Quest and Camp with .031 level of significance, leadership development with .051 level of significance, athletic meet with .229 level of significance, and arts and talent with .115 level of significance. All mentioned values are above the .05 level of significance. Therefore, the hypothesis is accepted.

This implies that the type of school has no effect on the extent of contribution to the co-curricular activities by the pupils as mentioned above.

Table 11

Significant Relationship Between the Extent of Contribution of the Extra and Co-Curricular Activities to Pupils' Learning Competencies in Terms Number of Learners, Number of Teachers, and Number of Extra and Co-Curricular Organization

Extra and Co-Curricular Activities	Number of Learners		Number of Teachers		Number of Co-curricular organization	
		Sig.		Sig.		Sig.
A. Scouting	.454**	.001	.210	.143	-.041	.776
B. Journalism	.521**	.000	.346*	.014	-.343*	.015
C. Mathematics Enhancement	.403**	.004	.047	.748	.213	.137

D. Science Quest and Camp	.304*	.032	.122	.400	.120	.407
E. Leadership Development	.398**	.004	.176	.223	-.159	.269
F. Athletic Meet	.274	.054	.012	.936	.058	.689
G. Arts and Talent Competition	.297*	.036	.171	.235	-.205	.153

** Significant at .05 level*

On the Number of Learners

As depicted in Table 11, there is a significant relationship between the extent of contribution to almost all co-curricular activities to pupils' learning competencies and the number of learners. In particular, the concerned co-curricular activities as correlated to the number of learners are scouting with .001 level of significance, journalism with .000, and Mathematics enhancement with .004 level of significance, Science Quest and Camp with .032 level of significance, leadership development with .004 level of significance, and arts and talent competition with .036. All mentioned values are below the .05 level of significance. Hence, the hypothesis is rejected. This implies that the number of learners affects on the extent of the contribution of the co-curricular activities to pupils learning competencies.

On the Number of Teachers

As illustrated in Table 11, there is a significant relationship between the extent of contribution of the co-curricular activity to pupils' learning competencies and the number of teachers. In particular, the concerned co-curricular activity as correlated to the number of teachers is journalism with .014 level of significance which, is below the .05 level of significance. Hence, the hypothesis is rejected. This implies that the number of teachers affects on the contribution of the curricular activity (Journalism Activities) to the pupils' learning competencies.

On the Number of Extra and Co-Curricular Organization

As displayed in Table 11, there is a significant relationship between the extent of contribution of one co-curricular activity to pupils' learning competencies and the number of teachers. In particular, the concerned co-curricular activity as correlated to the number of teachers is journalism with .015 level of significance, which is below the .05 level of significance. Hence, the hypothesis is rejected. This implies that the number of the co-curricular organization affects on the extent of contribution of the co-curricular activity to the pupils' learning competencies.

Table 12
Significant Relationship Between the Extent of Contribution of One Co-Curricular Activity To Pupils' Learning Competencies and School Profile in Terms the Number of Co-Curricular Activities Participated by Learners

Extra and Co-Curricular Activities	School Level		District Level		Division Level		Regional Level	
		Sig.		Sig.		Sig.		Sig.
A. Scouting	.108	.456	-.008	.956	.195	.195	.180	.349
B. Journalism	-.175	.223	-.128	.378	.161	.285	.213	.267
C. Mathematics Enhancement	.009	.951	-.163	.259	.293	.048	.087	.653

D. Science Quest and Camp	.15 7	.27 7	.185	.197	.182	.226	-.143	.458
E. Leadership Development	-.049	.735	-.014	.921	.193	.199	.171	.375
F. Athletic Meet	.122	.400	-.002	.986	.097	.523	-.042	.830
G. Arts and Talent Competition	.178	.217	.073	.617	.068	.652	-.049	.799

** Significant at .05 level*

As indicated in Table 12, there is no significant relationship between the extent of contribution of one co-curricular activity to pupils' learning competencies and the number of Co-Curricular Activities participated by learners in district level. In particular, the concerned co-curricular activities as correlated to the number of learners are scouting with .956 level of significance, journalism with .378, and Mathematics enhancement with .259 level of significance, Science Quest and Camp with .197 level of significance, leadership development with .921 level of significance, athletic meet with .986 level of significance, and arts and talent competition with .617. All mentioned values are above the .05 level of significance. Hence, the hypothesis is accepted.

This implies that the number of co-curricular activities participated by learners in the district level has no affect extent of contribution of one co-curricular activity to pupils' learning competencies.

CONCLUSIONS AND RECOMMENDATIONS

There is a significant relationship between the extent of contribution of co-curricular activities to the learning competencies and school profile. Public elementary schools in Binmaley I District, Pangasinan are dominated by big schools with less number of pupils and with sufficient number of teachers. [7] [8] Majority of the schools hold 5-7 co-curricular activities. More so, the learners are well-exposed to co-curricular activities in school, district, division and regional levels. The participation of the learners in the co-curricular activities contributes in attaining their learning competencies. The school profile does not affect the extent of contribution of the majority of the co-curricular activities to pupils' learning competencies.

Public elementary schools should sustain the conduct of co-curricular activities and explore more innovative and interactive activities to reach out to more learners. Public elementary schools should promote and give more opportunities for the participation of co-curricular activities. . Since profile variables do not affect the extent of contribution of the majority of the co-curricular activities to pupils' learning competencies, it should be part of the curriculum for good. Public elementary schools should create a program that will focus on the implementation and monitoring of co-curricular activities to lessen the occurrence of expected problems such as time management, attention span, financial, tardiness and coping mechanism to name a few.

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WORK-RELATED VARIABLES AND JOB SATISFACTION OF SECONDARY MATHEMATICS TEACHERS

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Abstract – *Teacher satisfaction should be a concern for those who desire effective schools and this is one the premises this study is grounded on. The researcher believes that for schools to be effective, administrators need to look at some personal attributes of teachers and its relationship to the level of job satisfaction of these teachers. This study focused on determining the level of job satisfaction of secondary mathematics teachers in Second Congressional District of Pangasinan and whether this level is affected by some work – related variables. Based on the data gathered and results generated, majority of the teacher respondents are female, married, relatively new in the present school where they teach, are not new in the teaching profession, holders of a bachelor's degree, teaches three to four subjects. It was also found in the study that the teachers are generally satisfied with their job and they are very satisfied with the work-related personal factors in their job as teachers. They are also least satisfied with the factor on salary or compensation they receive as teachers while they are most satisfied with the factor on their attitude towards work and their personality as a teacher. Moreover, it was found in the study that of the seven work – related variables considered in this study, the level of job satisfaction of the teachers is dependent on sex and salary. As a result of the findings and conclusions of this study, it was recommended that school administrators must put into consideration sex and salary in giving teaching assignments and tasks to their teachers. They must also continually monitor their teachers' job satisfaction. Furthermore, policy makers should put into consideration the work – related variables of teachers in securing their job satisfaction.*

Keywords – *Work – related variables, Job satisfaction, Mathematics teachers*

INTRODUCTION

The job satisfaction of an individual describes how content he or she is with his or her job. It is popularly believed that the more content people are with their job, the more satisfied they are said to be. It is sometimes mistaken motivation because of the link between them but they are not the same [1]. Job satisfaction though, may be influenced by the motivation employees have for their job. Other influences on satisfaction include: management style, culture, employee involvement, empowerment, and autonomous work groups.

Job satisfaction has been defined as a pleasurable emotional state resulting from the appraisal of one's job; an affective reaction to one's job; and an attitude towards one's job. It is pleasant feeling resulting from the perception that one's job allows for the fulfilment of one's important job values [2].

Kaur (2012) has argued that job satisfaction is an attitude but points out that researchers should clearly distinguish the objects of cognitive evaluation which are affect (emotion), beliefs, and behaviors [3]. This definition suggests that employees must form attitudes towards their jobs by taking into account their feelings, their beliefs, and their behaviors.

Job satisfaction is a complex and multifaceted concept, which can mean different things to different people. It is an attitude, an internal state that could be associated with a personal feeling of achievement, either quantitative or qualitative [4].

Job satisfaction of every individual may depend on different variables that may affect people in different ways, but one thing is definite
– it is one aspect that has to be considered by employers if they intend to keep their employees. It is sometimes considered as an outcome of the interaction of different variables, some of which may be are personal attributes to the employee, existing work conditions, remunerations derived from work, relationship with co-workers, among others.

Almost every institution and organization nowadays have their departments and instruments to monitor the job satisfaction of their employees. These organizations promote job satisfaction in order to prevent their employees from experiencing withdrawal behaviors which is driven by dissatisfaction with one's job [5]. They invest in activities and studies that would look at how satisfied or dissatisfied their employees are, in relation to some factors related to their work. Various studies were also undertaken to determine variables that affect job satisfaction. Some have looked at factors such as organizational involvement, locus of control, age, identification with role, dual career families, and commitment to organization. Others have examined stress, type A behavior, coping strategies, participation in decision making, procedural justice, emotional exhaustion, race, and education [6].

Job satisfaction is a very important attribute which is frequently measured by organizations. This measure of an employee's job satisfaction may provide employers and administrators a qualitative and quantitative report of the employee's reactions to his job. This report may include information related to rate of pay, work responsibilities, variety of tasks, promotional opportunities, the work itself and co-workers; which the employers and administrators may found useful.

According to Ventayen (2017), employee satisfaction is supremely important in an organization because it is what productivity depends on. If your employees are satisfied, they would produce superior quality performance in optimal time and lead to growing profits. Satisfied employees are also more like to be creative and innovative and come up with breakthroughs that allow an institution to grow and change positively with time and changing market [7].

In educational system job, satisfaction plays a very vital role for every teacher. The relevance of job satisfaction is very crucial to the long-term growth of any educational system around the world [8]. As a result, job satisfaction of teachers has been one of the popular topics among researchers in the different parts of the

globe. Most of such researches were conducted to give light to whatever relationship that exists between and among some work – related factors such as the personal attributes of a teacher, and job satisfaction.

Unfortunately, there has been no universally accepted result regarding how job satisfaction relates to some factors. As a result of this ambiguous relationship, continues study and re-examination of previous results must be done. This study strives to determine the relationships of some work – related variables of teachers to their job satisfaction, keeping also in mind the value of knowing these relations have for educational institutions.

OBJECTIVES OF THE STUDY

This study determined the level of job satisfaction of secondary mathematics teachers of Lingayen I District and if it is affected by some work – related variables.

Specifically, it sought to answer the following sub-problems:

[4] What is the profile of the teachers in terms of the following work – related variables:
- Sex,
- Civil Status,
- Length of Service,
- Educational Attainment,
- Salary, and
- Number of subject(s) taught?

[5] What is the level of job satisfaction of the teachers in terms of the following work – related factors:
- Internal:
  - a.1 Salary,
  - a.2 Staff/ peer relationship
  - a.3 School condition,
  - a.4 School discipline
  - a.5 Administrative treatment, and
  - a.6 Parental involvement; b. External:
  - b.1 legal mandates/ policies from DepEd, and
  - b.2 public perception
- c. Personal:
  - c.1 Attitude/ personality,
  - c.2 Stress, and
  - c.3 Coping mechanism?

[7] Is there a significant relationship between the work – related variables and the level of job satisfaction of teachers in terms of some work – related factors?

MATERIALS AND METHODS

Methods

The descriptive research method was used in this study. Descriptive research design gives a better and deeper understanding of a phenomenon on the basis of an in-depth study of the phenomenon. It describes phenomena as they exist. It is also used to identify and obtain information on the characteristics of a particular issue. It is undertaken to ascertain and describe the characteristics of the issue [9].

The data needed in the study came from the 142 mathematics teachers from the secondary schools in Second Congressional District.

Materials

The study used questionnaire developed by the researcher to gather the data needed. This instrument solicited the personal information and level of job satisfaction of the teachers.

Validation of the instrument was done by seeking the help of secondary mathematics teachers who are not members of the teacher respondents. They were asked to go over the instrument and give comments to the content. Revisions of the questionnaire were done based on the comments and suggestions of the teachers.

To analyze and interpret the data, the researcher used the following statistical tools: percentage, charting, weighted mean, t – test, and ANOVA.

RESULTS AND DISCUSSION

Profile of the Teachers

Figures 1 to 7 contain the profile of the teachers in terms of the work – related variable

specified in the study. The number of teachers per work – related variable and corresponding percentage are also contained in the figures.

Figure 1: Distribution of Respondents in terms of Sex

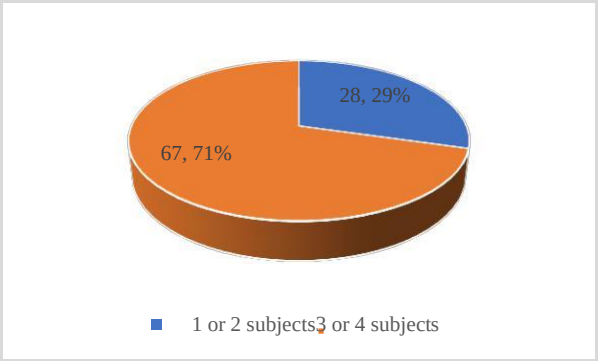

Figure 1 shows the majority or 86% of the teacher respondents are female while only 14% of them are male.

Figure 2: Distribution of Respondents in terms of Civil Status

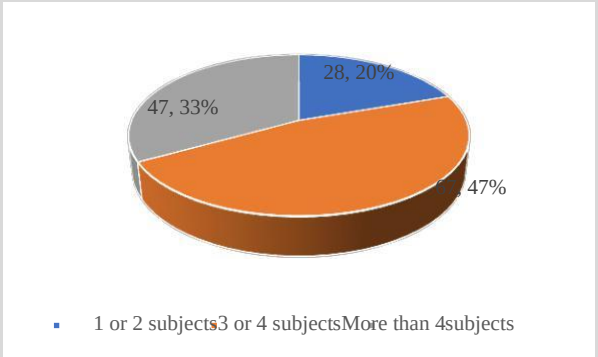

Figure 2 shows that majority or 68% of the teacher respondents are married, 31% are single, and only 1% of them are separated.

Figure 3: Distribution of Respondents in terms of their Length of Service in their Present School

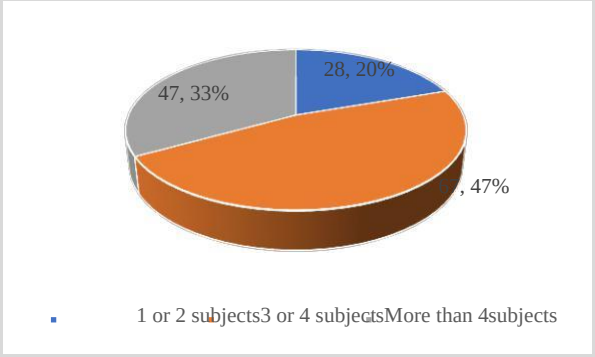

Figure 3 shows that majority or 44% of the teacher respondents are relatively new, i.e. they have been with their present school for a period of five years or less, 32% have been with their present school for more than 10 years, and only 24% of them are with their present school for more than five years but less than 10 years.

Figure 4: Distribution of Respondents in terms of their Length of Service in the Teaching Profession

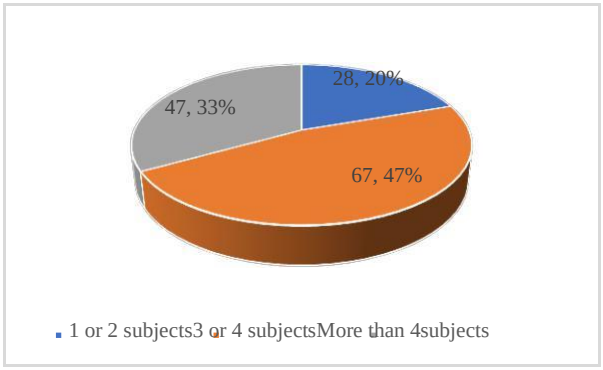

Figure 4 shows that majority or 42% of the teacher respondents are not new in the teaching profession, i.e. they have been in the profession for a period of more than 10 years, 33% have been in the teaching profession for five years or less, and only 25% of them are in the profession for more than five years but less than 10 years.

Figure 5: Distribution of Respondents in terms of their Educational Attainment

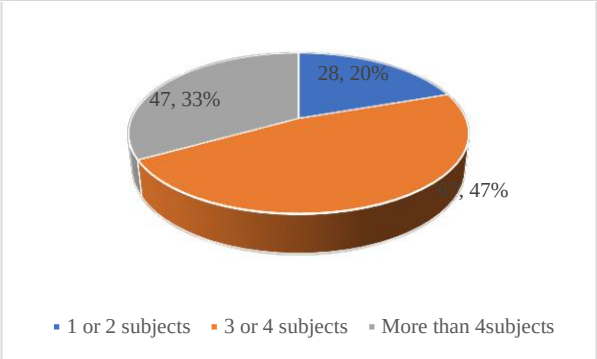

Figure 5 shows that majority or 56% of the teacher respondents are holders of a bachelor's degree,

35% of them are holders of a master's degree, and only 8% of them are holders of a doctoral degree.

Figure 6: Distribution of Respondents in terms of their Salary

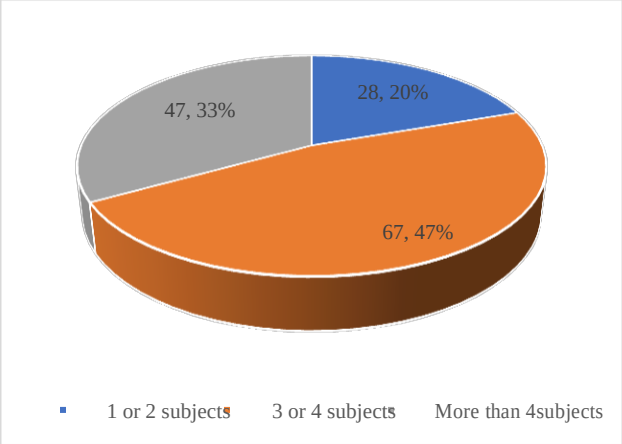

Figure 6 shows that majority or 49% of the teacher respondents are receiving a net income of more than 10,000 pesos but less than or equal to 15,000 pesos; 24% of them are receiving a salary of 10,000 pesos or less; 20% of them are receiving a salary of more than 15,000 pesos but less than or equal to 20,000 pesos; while only 6% of them are receiving a salary more than 20,000 pesos.

Figure 7: Distribution of Respondents in terms of the Number of Subjects they Teach

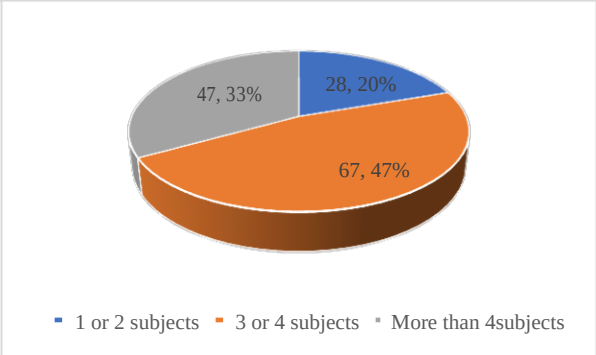

Figure 7 shows that majority or 47% of the teacher respondents teach three or four subjects, 33% teach more than four subjects, and only 20% of them teach one or two subjects.

Tables 1 to 4 contain the level of job satisfaction of the secondary mathematics teachers in terms of the work – related factors specified in the study.

Table 1 contains the mean level of job satisfaction of the teachers in terms of the internal work – related factors. The weighted mean per factor and overall weighted mean of all internal factors are also found in the table.

Table 1: Job Satisfaction of the Secondary Mathematics Teachers in terms of the Internal Work – Related Factors

Internal Work – Related Factors	WM	DE
a. The salary or compensation I receive as a teacher.	2.97	S
b. The relationship I have with my colleagues, the administration, and the school staffs.	3.61	VS
c. The condition in my school including all facilities in the school relevant to my needs as a teacher and as a person.	3.37	S
d. The discipline in my school, including the discipline of the students, my colleagues, the school administrators, and other people in the school/	3.28	S
e. The way school administrators treat me.	3.67	VS
f. The way parents involve themselves with my school work.	3.46	S
Weighted Mean (WM) for Internal Factors	**3.39**	**S**

Level of Job Satisfaction

Legend:	4.51 – 5.00	(VMS)	Very Much Satisfied
	3.51 – 4.50	(VS)	Very Satisfied
	2.51 – 3.50	(S)	Satisfied
	1.51 – 2.50	(SS)	Slightly Satisfied
	0 – 1.50	(NS)	Not Satisfied

Table 1 shows that teachers are generally satisfied with the internal factors of their job as indicated by the overall weighted mean of 3.39. It is further shown in the table that of the internal factors, the teachers are most satisfied with the

way administrators treat them as indicated by the highest weighted mean of 3.67 while they are least satisfied with their salary as indicated by the lowest weighted mean of 2.97. This result in a way is similar to the findings of Abd-El-Fattah (2010) where teachers are only partially satisfied with their present compensation [10]. Kumar (2016) also
gathered similar finding regarding the satisfaction of employees and their salary [11]. The result implies that the salary or compensation of the teachers when improved will result to their becoming more satisfied with their job as teachers which in the long run may result to them becoming better teachers.

Table 2: Job Satisfaction of the Secondary Mathematics Teachers in terms of the External Work – Related Factors

External Work – Related Factors	WM	DE
a. The way legal mandates and/ or policies from DepEd affect my school work	3.47	S
b. The way the public perceives my work and the school I belong to.	3.48	S
Weighted Mean (WM) for Internal Factors	**3.48**	**S**

Legend:			
	4.51 – 5.00	(VMS)	Very Much Satisfied
	3.51 – 4.50	(VS)	Very Satisfied
	2.51 – 3.50	(S)	Satisfied
	1.51 – 2.50	(SS)	Slightly Satisfied
	0 – 1.50	(NS)	Not Satisfied

Table 2 shows that the teachers are generally satisfied with the external factors of their job as indicated by the overall weighted mean of 3.48. It is further shown in the table that the external factors, the teachers are most satisfied with the way public perceives their work and the school they belong to as indicated by the highest weighted mean of 3.48 while they are least satisfied with the way legal mandates and/ or policies from DepEd affect their school work as indicated by the lowest weighted mean of 3.47.

Table 3: Job Satisfaction of the Secondary Mathematics Teachers in terms of the Personal Work – Related Factors

Personal Work – Related Factors	WM	DE
a. My attitude towards work and personality as a teacher.	3.84	VS
b. The positive way stress affects my school work.	3.65	VS
c. The things I do to cope with problems, difficulties, and stress brought about by work.	3.55	VS
Weighted Mean (WM) for Internal Factors	**3.68**	**VS**

Legend:			
	4.51 – 5.00	(VMS)	Very Much Satisfied
	3.51 – 4.50	(VS)	Very Satisfied
	2.51 – 3.50	(S)	Satisfied
	1.51 – 2.50	(SS)	Slightly Satisfied
	0 – 1.50	(NS)	Not Satisfied

Table 3 shows that the teachers are generally very satisfied with the personal factors of their job as indicated by the overall weighted mean of 3.68. It is further shown in the table that the personal factors, the teachers are most satisfied with their attitude towards work and personality as indicated by the highest weighted mean of 3.84 while they are least satisfied with the things they do to cope with problems, difficulties, and stress brought about by their work as a teacher as indicated by the lowest weighted mean of 3.55.

This is consistent with Filipino people are known for which is having a positive attitude in almost all situations. The teachers may not be satisfied with all other aspects of their job but they still have a positive attitude towards their work. Moreover, the result gathered in a way is consistent with the findings of Collie & Martin (2015) where teachers needs are satisfied, it promotes their psychological well – being and enables optimal functioning and performance. On the contrary, when teacher's environment or personality style does not afford these kinds of experiences, they fail to thrive [12].

Table 4: Overall Job Satisfaction of the Secondary Mathematics Teachers

Work – Related Factors	WM	DE
a. Internal Factors	3.39	S
b. External Factors	3.48	S
c. Personal Factors	3.68	VS
Weighted Mean (WM) for Internal Factors	**3.52**	**VS**

Legend:

4.51 – 5.00	(VMS)	Very Much Satisfied
3.51 – 4.50	(VS)	Very Satisfied
2.51 – 3.50	(S)	Satisfied
1.51 – 2.50	(SS)	Slightly Satisfied
0 – 1.50	(NS)	Not Satisfied

Table 4 shows that the teachers are generally very satisfied with their job as indicated by the overall weighted mean of 3.52. It is further shown in the table that the teachers are also satisfied with the internal and external work – related factors of their job as indicated by the weighted means 3.39 and 3.48 respectively, while they are very satisfied with the personal work – related factors of their job as teachers as indicated by the weighted mean of 3.68.

Relationship between the Work – Related Variables and the Level of Job Satisfaction

Table 5 contains the pairs of variables compared and the existing relationship found after the application of the appropriate test statistics. The computed values and the corresponding critical values at 5% significance level are also found in the table.

Table 5: Relationship between the Variables Compared Based on the Computed and Critical Values

Variables Compared	Computed Value	Critical Value at α=5%	Relationship
Sex and Job Satisfaction	2.48	1.81	Dependent
Civil Status and Job Satisfaction	3.08	3.32	Not Dependent
Length of Service in Present School and Job Satisfaction	0.05	3.32	Not Dependent
Length of Service in Teaching Profession and Job Satisfaction	0.10	3.32	Not Dependent
Educational Attainment and Job Satisfaction	1.82	3.32	Not Dependent
Salary and Job Satisfaction	3.21	2.84	Dependent
Number of Subjects Handled and Job Satisfaction	2.63	3.32	Not Dependent

Table 5 shows that of the seven pairs considered in the study, two pairs yielded a dependent relationship.

It can be seen in the table that sex and job satisfaction of a teacher are dependent on each other based on the computed value of 2.48 which is greater than the critical value of 2.23 at 5% significance level. This result implies that the level of satisfaction of male teachers is different from those of the female teachers. The positive t-value actually implies that male teachers are more satisfied than the female teachers. This implies that teachers are no exemption from the so – called gender schemas by Tasner, Mihelic, & Ceplak (2017) where people have their preconceived beliefs or ideas about the nature of men and women, their traits, attitudes, behaviors, and preferences [13].

It can also be seen in the table that salary and job satisfaction of a teacher are dependent on each based on the computed value of 3.21 which is greater than the critical value of 2.84 at 5% significance level. This result is consistent with the findings of Chaudhry, Sabir, Rafi, & Kalyar (2011) where the level of satisfaction of employees is affected by their salaries [14]. This result is also similar with the findings of Hughes (2016) where they found that teachers' salary is negatively linked to their job satisfaction [15].

CONCLUSIONS AND RECOMMENDATIONS The following conclusions were drawn based on the findings made:

[10] Majority of the teacher respondents are female, married, relatively new in the present school where they teach, are not new in the teaching profession, holders of a bachelor's degree, teaches three to four subjects.

[11] Secondary Mathematics Teachers are generally satisfied with their job and they are very satisfied with the work-related personal factors in their job as teachers. They are also least satisfied with the factor on salary or compensation they receive as teachers while they are most satisfied with the factor on their attitude towards work and their personality as a teacher.

[12] Of the seven work – related variables considered in this study, the level of job satisfaction of the teachers is dependent on sex and salary.

Based on these conclusions, the following recommendations are provided in this study:

U. School administrators must put into consideration sex and salary in giving teaching assignments and tasks to their teachers. They must also continually monitor their teachers' job satisfaction.

2. Policymakersshouldputinto consideration the work – related variables of teachers in securing their job satisfaction.

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Utilization of Multi-Media Games as a Pedagogical Approach

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Abstract – *Quality education is anchored on the effectiveness of pedagogical skills of the teachers who are at the forefront of the thrust of the Department of Education. This study aimed to determine the effectiveness of multimedia games as a pedagogical tool in improving the cognitive and affective skills of the learners. Descriptive method of research was employed with the questionnaire as the main data-gathering instrument. Data gathered were subjected to descriptive and inferential treatment. Moreover, this study made use of the frequency counts and percentages for the profiling of the students. Also, frequency counts, mode and weighted mean were employed to establish the utilization level of gadgets, media apps/game apps, perceived cognitive and affective benefits. In addition, chi-square test and Cramers V or Phi tests were used as effect sizes to measure strength of relationship of profile variables to gadget and media games utilization level; perceived cognitive and affective benefits level. Stratified random sampling was employed in this study. Such sampling design helped the researcher determine a total of 169 teachers with different specializations such as English, Mathematics, Science and Technology and Livelihood Education (TLE) who served as respondents in this study. The Junior High School teachers perceived that multimedia games can give high cognitive and affective benefits. They perceived that media games were highly beneficial to the cognitive or brain development of the learners and there was a potential high affective benefits of students when exposed to media games.*

Keywords – *affective benefits, cognitive benefits, multimedia games, pedagogical approach*

INTRODUCTION

Teachers are at the forefront of delivering quality instruction. They have to be innovative and resourceful in the pedagogical arena because this is the main thrust of the Department of Education. Regardless of how teachers perform this noble act in the classroom, what really matters is at the end of the day, students learn the different competencies that they have to learn on that particular class hour.

Pedagogy is the art, science, or profession of teaching thus, teaching is both an art and science. As an art, this requires teachers to think out of the box and exert conscious use of skill and creative imagination. Scholars from several disciplines have convincingly advocated the merits of video games as a pedagogical tool and recently, there has been a great deal of interest in the use of video games for education because of the high level of engagement of players **[1].**This allows teachers to make use of any resource materials that can be used as instructional materials that will fit to the competency learners need to learn and master. As a science, this demands a study of the process or procedure that a teacher has to go through.

The current technology boom has created a generation of "digital natives" .These are the people whose daily lives are always entangled around technologies consisting of young adults and teenagers. This indirectly affects the students' motivation and engagement level in the classrooms. This leads to boredom and anxiety for these students leading to a detachment to the schools, and the teachers **[2].**

In our modern day with the new technological advancement of societies, traditional games of old times have been replaced by electronic games and in similar manner, dramatic representations of old have been transformed into role-playing in simulation environments. Hence, electronic games and simulations have been parts of contemporary formal education.

A primary application of the interactive multimedia for instruction allows the learners to control the material at their own pace and keep their own individual interests, needs, and cognitive processes. The basic objective of interactive multimedia material is not so much to replace the teacher so to change the teacher's role entirely. As such, multimedia must be extremely well designed and sophisticated enough to mimic the best teacher, by combining in its design the various elements of the cognitive processes and the best quality of the technology.

OBJECTIVES OF THE STUDY

This study aimed to determine the perceived effectiveness of multi-media games as a pedagogical tool in the student learning in Junior High School and the perceived level of effectiveness of multimedia games to student learning in Junior High School. It also shed light on the utilization level of gadgets and multimedia games of Junior High School teachers in their subject areas. It also addressed the significant relationship on the profile variables of the secondary teachers on the utilization level of gadgets and multimedia games and the perceived cognitive and affective benefits of using multimedia games and other game applications among junior high school teachers. Furthermore, it also delved into the significant relationship on the profile variables of the secondary teachers on perceived level of cognitive benefits and affective benefits of online games.

This study was conducted to provide teachers relevant knowledge on how they can make use of multi-media games to make learning more engaging and to properly guide them about the different multi-media games and game applications available today that they can choose from to suit to every learning activity.

This effort addressed the issue on how students in general become aware of the advantages that they can get from playing multi-media games especially the different skills that can be developed and parents become more involved and hands on in guiding their children about the

proper use of modern technology particularly multi-media games and other game applications.

School heads and administrators upon the results of this study are properly guided on the creation, issuance, and implementation of guidelines and policies about the use of these multi-media games and other game applications as part of the classroom observation tool (COT) among teachers and prioritize seminars and trainings that would further enhance the digital skills of the teachers making them adept 21st century teachers who cater to the needs of the 21st century learners in the field of Information and Communication Technology arena.

MATERIALS AND METHODS

This study used descriptive method to establish the utilization of multimedia games as a pedagogical approach as perceived by the English, Mathematics, Science, and Technology and Livelihood Education (TLE) teachers of Alaminos City National High School, Alos National High School, San Vicente National High School, and Telbang National High School.

In survey method research, participants answered questions administered through interviews or questionnaires [9] [10] [11]. After participants answered the questions, researchers described the responses given. In order for the survey to be both reliable and valid it is important that the questions are constructed properly.

This study used survey questionnaire as an instrument to gather data about the profile of the respondents, multimedia games that respondents are familiar with and use in teaching English, Mathematics, Science, and Technology and Livelihood Education and the perceived cognitive and affective benefits of multimedia games.

All data gathered were summarized, encoded and organized by using Social Packages for Social Sciences (SPSS) software and Spreadsheet. These were presented in tabular forms [12].

RESULTS AND DISCUSSION

Table 1
Level of utilization of gadgets
(n=169)

Gadgets	VHU	VU	MU	RU	VRU	WM	Rank
Android phone	58	**60**	42	7	2	3.98	2
Laptop	**84**	52	27	4	2	4.25	1
Desktop	41	47	**48**	16	17	3.47	3
Tablet	26	43	**59**	23	18	3.21	4
Overall Mean		**3.37 HU**					

5- Very Highly Used (VHU) 4-Highly Used (HU)
3- Moderately Used (MU)2- Rarely Used (RU)
1- Very Rarely Used (VRU)

Result on the utilization of gadgets among the high school teachers in Alaminos City Schools Division is shown on Table 1. The gadgets considered for exploration in this study are android phones, laptops, desktops, and tablets which are the usual tools nowadays. Among the four identified gadgets, laptop was very highly used by the teachers (84), followed by the android phones (60) which was high utilization rating.

Two gadgets – desktop and tablets are only moderately used as marked by their highest frequency counts. In general, the utilization level of all the gadgets secured a high utilization level laptop being the highly used because most teachers do have laptops not only as tool in the classroom setting but also an ally in preparing reports to be submitted as well.

The demands of teaching profession in public is not only limited to pedagogy but there are also others reports to be submitted that's why laptop is very essential. E class records or electronic class records are what teachers use in recording the scores as well as in computing the grades of learners per quarter.

Android phone comes next for very obvious reason- communication means. Also, with android phones, teachers download games and play these multimedia games or game apps on their phones.

Level of Utilization of Multimedia Games There are a lot of multimedia games

readily available for use in the internet. These multimedia games are not only limited for purely playing but there are those that may ignite and enhance cognitive or affective skills of the students specific to subject areas. Hence, the researcher had compiled game apps which teachers are most familiar with and usually used by the teachers per subject areas. And these were scrutinized to deduce the teacher's level of utilization on game apps. Results are exhibited in Tables 3 to 7.

Table 2
Level of utilization of multimedia games in English (n=49)

English Related Game Apps	VHU	HU	MU	RU	VRU	WM	Rank
Wordscapes	**19**	16	10	4	0	4.02	3
	38.8%	32.7%	20.4%	8.2%	0.0%		
Picross	6	9	22	8	4	3.1	11
	12.2%	18.4%	44.9%	16.3%	8.2%		
Word Cross Puzzle	9	17	**18**	4	1	3.59	6
	18.4%	34.7%	36.7%	8.2%	2.0%		
Word Charm	4	9	**21**	13	2	3	12
	8.2%	18.4%	42.9%	26.5%	4.1%		
Word Search Pro	11	9	**21**	6	2	3.43	8
	22.4%	18.4%	42.9%	12.2%	4.1%		
Password	5	14	**17**	10	2	3.14	9.5
	10.2%	28.6%	34.7%	20.4%	4.1%		
Scrabble	**24**	12	10	2	1	4.14	1
	49.0%	24.5%	20.4%	4.1%	2.0%		
Scrabble upwords	**18**	14	8	5	1	3.69	5
	36.7%	28.6%	16.3%	10.2%	2.0%		
Text Twist	**19**	14	11	3	2	3.92	4
	38.8%	28.6%	22.4%	6.1%	4.1%		
Word Zigzag	5	14	**18**	8	3	3.14	9.5
	10.2%	28.6%	36.7%	16.3%	6.1%		
Four words 1 pic	**21**	15	11	2	0	4.12	2
	42.9%	30.6%	22.4%	4.1%	0.0%		
Catch phrase	5	10	**18**	12	4	3	13
	10.2%	20.4%	36.7%	24.5%	8.2%		
Word Connect	10	14	**16**	8	1	3.49	7
	20.4%	28.6%	32.7%	16.3%	2.0%		
Overall Mean			**3.52 HU**				

5- Very Highly Used (VHU)4-Highly Used (HU)3-
Moderately Used(MU)2- Rarely Used (RU)1- Very
Rarely Used (VRU)

The "game apps" considered in this study under English subject are exhibited in Table 2. Forty nine (49) English teachers were asked on their utilization level on the different media games. Records show that the following five (5) multi-media games registered a "very high utilization" rating: Wordscapes, Scrabble, Scrabble Upwords, Text Twist and Four Words 1 Pic while the remaining "game apps" were moderately used as expressed by the highest registered
frequency counts or simply the "mode".

These top 5 commonly played multimedia games in English enhance and improve vocabulary of learners making them more adept in their writing and speaking skills. Good communication skill is anchored on wide range and grasp of active vocabulary and these word game app mix in fun with learning elements to give players an amusing time that can educate gamers while they entertain them after all, learning should be fun.

In general, the English related media games secured a weighted mean of 3.52, hence, there is a "high" utilization level.

Table 3
Level of utilization of multimedia games in Mathematics
(n=39)

Math Related Game Apps	VHU	HU	MU	RU	VRU	WM	Rank
						3.3	1

Sudoku	3	15	15	4	2	3	
	7.7 %	38.5 %	38.5 %	10.3 %	5.1 %		
Toon Math	2	4	24	5	4	2.87	8
	5.1 %	10.3 %	61.5 %	12.8 %	10.3 %		
Math Game Pyramid	2	9	19	6	2	3	6
	5.1 %	23.1 %	48.7 %	15.4 %	5.1 %		
Math Riddles and Puzzles	3	16	13	4	3	3.31	2
	7.7 %	41.0 %	33.3 %	10.3 %	7.7 %		
Mental Math Master	3	13	14	6	3	3.18	3
	7.7 %	33.3 %	35.9 %	15.4 %	7.7 %		
Math Game Playmind	2	10	17	7	3	3.03	4.5
	5.1 %	25.6 %	43.6 %	17.9 %	7.7 %		
Threes!	2	11	16	6	4	3.03	4.5
	5.1 %	28.2 %	41.0 %	15.4 %	10.3 %		
Math x Math	1	10	17	7	4	2.92	7
	2.6 %	25.6 %	43.6 %	17.9 %	10.3 %		
Overall Mean			3.08 MU				

5- Very Highly Used (VHU) 4-Highly Used (HU)3-
Moderately Used (MU) 2- Rarely Used (RU) 1- Very Rarely Used (VRU)

Mathematics teachers were asked on the level of utilization of the different math related game apps. The table above shows that only two out of eight or 25% of the games were highly used. These two game apps are Sudoku and Math riddles and puzzles. The remaining game apps Toon Math, Math Game Pyramid, Mental Math Master, Math Game Playmind, Threes!, and Math x Math are only moderately used.

Considering the overall mean utilization rating (3.08), Mathematics related game apps are moderately used in their classes. Since Mathematics is highly technical in nature, maybe some of the game apps were found inappropriate to use in teaching some topics, or since the Mathematics teachers are serious so, they don't usually get down with using Math games. .

Table 4
Level of utilization of multimedia games in Science
(n=38)

Science Related GameApps	VHU	RU	MU	RU	VRU	WM	Rank
Ecodefenders	3	9	**15**	4	7	2.92	2
	7.9%	23.7 %	39.5 %	10.5 %	18.4 %		
Power Up	2	10	**14**	6	6	2.89	3
	5.3%	26.3 %	36.8 %	15.8 %	15.8 %		
Global warming Interactive	10	6	**13**	4	5	3.32	1
	26.3 %	15.8 %	34.2 %	10.5 %	13.2 %		
You Make Me Sick	3	7	**17**	4	7	2.87	4
	7.9%	18.4 %	44.7 %	10.5 %	18.4 %		
Overall Mean			**3.00 MU**				

5- Very Highly Used (VHU) 4-Highly Used (HU)3-Moderately Used (MU)2- Rarely Used (RU)1- Very rarely used (VRU)

Only four science related game apps were considered in this study. These are Ecodefenders, Power up, Global Warming Interactive, and You Make Me Sick. The 38 Science teachers had mutually answered a "moderate" utilization of all the game apps related to Science. It was also found out that a relatively similar number of Science teachers answered highe r and lower utilization rating.

Table 5
Level of utilization of multimedia games in TLE
(n=43)

TLE Related Game Apps	VHU	HU	MU	RU	VRU	WM	Rank
SimCity Build-it	2	13	**19**	5	4	3.09	3
	4.7%	30.2 %	44.2 %	11.6 %	9.3%		
Build your own dream house	5	12	**17**	5	4	3.21	1.5
	11.6 %	27.9 %	39.5 %	11.6 %	9.3%		
Princess nail salon	4	5	**17**	8	9	2.7	9
	9.3%	11.6 %	39.5 %	18.6 %	20.9 %		
Princess hair salon	5	4	**17**	8	9	2.72	8
	11.6 %	9.3%	39.5 %	18.6 %	20.9 %		
Beauty						2.9	5

make-up salon	7	5	**17**	6	9	5	
	16.3 %	11.6 %	39.5 %	14.0 %	20.9 %		
Street Food Maker	3	10	**15**	8	7	2.86	6.5
	7.0%	23.3 %	34.9 %	18.6 %	16.3 %		
Fruit Slice	4	13	**18**	4	4	3.21	1.5
	9.3%	30.2 %	41.9 %	9.3%	9.3%		
Burger Shop	3	12	**14**	9	5	2.98	4
	7.0%	27.9 %	32.6 %	20.9 %	11.6 %		
Dinner Tycoon	3	9	**15**	9	7	2.81	6.5
	7.0%	20.9 %	34.9 %	20.9 %	16.3 %		
Overall Mean			**2.95**	**MU**			

5- Very Highly Used (VHU)4-Highly Used (HU)3-
Moderately Used (MU)2- Rarely Used (RU)
1- Very Rarely Used (VRU

The commonly used game apps in TLE are Build Your Own Dream House and Fruit Slice.

A similar study found out that Fruit Slice was the most utilized game applications under the strand of Food Technology by the high school students **[3].**

SimCity Build-It allows learners to build and design a city of their own and it tests their planning and engineering skills.

The three game applications were moderately used by the teachers. On the other hand, Beauty Makeup Salon, Princess Nail Salon and Princess Hair Salon are simulations under Beauty Care were also moderately used.

Summary of the level of utilization of multimedia games by subject areas

Table 6
Summary of the Utilization Level of Multimedia Games
(Game Apps) by Subjects Areas

Game Applications by Subjects Areas	WM	DR	Rank
English	3.52	HU	1
Mathematics	3.08	MU	2
Science	3.00	MU	3
TLE	2.95	MU	4

5- Very Highly Used (VHU) 4-Highly Used (HU)3-Moderately Used (MU)2- Rarely Used (RU) 1- Very Rarely Used (VRU)

The table above shows the summary of the utilization level of the teachers by subject areas. Results show that game apps related to English were highly utilized as proven by the computed weighted mean of 3.52. Whereas, the game apps related to Mathematics, Science, and TLE garnered weighted means: 3.08, 3.00 and 2.95 respectively which exclaims a "moderate" level of utilization. The lowest utilization mean (2.95) was in TLE. This may be attributed to the practical importance of actual demonstration than gadget simulation.

Relationship of game application utilization level and profile of high school teachers

Similarly, the "game apps" utilization level and the profile variables of the high school teachers was tested using chi-square test. Results of the test are revealed on Table 8.

Table 7
Relationship of Game Application Utilization and Profile Variables of High School Teachers

	Profile Variables	Chi Square	Sig.	Effect Size	Sig.
Game Apps	Sex	12.56*	0.01	0.27*	0.01
	Age	7.67	0.81	0.12	0.82
	Position	14.05	0.30	0.17	0.29
	Specialization	19.82	0.07	0.20	0.07
	Civil Status	4.078	0.85	0.10	0.90
	Educational Attainment	41.84*	0.00	0.52*	0.00

*significant at .05 level

By employing the chi-square test, age, position, specialization and civil status were found to have no significant relationship with the game apps utilization of high school teachers. This is due to the obtained chi-square values with larger p-values (p>.05). With such values, we can say that we were not able to gather enough evidence to support relationship among the profile variables with the game utilization level. Hence, leads to the acceptance of the null hypothesis.

On the other hand, the variables sex and educational attainment recorded chi-square values of 12.56 and 41.84 respectively. The computed p-values for both variables obtained less than .05 level of significance. Thus, we say that sex and educational attainment are related to game apps utilization level. Furthermore, sex obtained a significant effect size of 0.273 which signifies a **weak relationship** whereas the educational attainment garnered an effect size of .524. Such effect value was appraised by Guilford's (1956) to have a **moderate, substantial relationship**.

LEVEL OF PERCEIVED COGNITIVE AND AFFECTIVE BENEFITS OF MULTIMEDIA GAMES

There are three major areas of focus for teaching and learning that teachers aim to develop. These are cognitive, affective and psychomotor.

Digital commercial games were developed primarily for fun, entertainment and recreation, while the main aims of games-based learning and serious games are learning and behavior change **[4**].

The researcher has focused only on the perceived cognitive and affective benefits of the students primarily multimedia games that contribute to the development of the brain and heart of the students.

The level of cognitive and affective benefits as perceived by the high school teachers are reflected on Table 8 and 9. The frequency counts, mode and weighted mean results were used as bases in the findings of this study.

Perceived Level of Cognitive Benefits Depending on the specific game and the educational context, these games may have general motivation effects or effects that increase the general level of cognitive stimulation and activity. On an intellectual level, game experience may improve system thinking including the enhanced combination of multiple concepts and/ or introduce failures as a new learning device **[5].**

Cognitive pertains to the brain - thought processes, including remembering, problem solving, decision making and others. In this study, perceived benefits in the different cognitive skills are exhibited in table 8.

Table 8
LEVEL OF PERCEIVED COGNITIVE BENEFITS OF MULTIMEDIA GAMES

Perceived cognitive benefits of multi-media games	VH	H	M	L	VL	WM
1.Multi-media games sustain attention of the learners.	30 17.8 %	59 34.9 %	**65** **38.5%**	8 4.7 %	7 4.1%	3.57
2.Multi-media inhibit one's own response to distractions.	26 15.4 %	58 34.3 %	**68** **40.2%**	14 8.3 %	3 1.8%	3.53
3.Multi-media games promote the ability to change what learners think about.	30 17.8 %	**67** **39.6 %**	53 31.4%	14 8.3 %	5 3.0%	3.61
4.Multi-media games enhance the ability to switch ways of thinking.	26 15.4 %	**68** **40.2 %**	59 34.9%	13 7.7 %	3 1.8%	3.6
5.Multi-media games develop the ability to multitask.	38 22.5 %	**58** **34.3 %**	53 31.4%	14 8.3 %	6 3.6%	3.64
6.Multi-media games promote the ability to organize information.	23 13.6 %	**68** **40.2 %**	61 36.1%	14 8.3 %	3 1.8%	3.56
7.Multi-media games enhance ability of the human brain to anticipate future actions.	25 14.8 %	**77** **45.6 %**	48 28.4%	14 8.3 %	5 3.0%	3.61
8.Multi-media games enhance the ability to remember instructions.	32 18.9 %	**73** **43.2 %**	44 26.0%	15 8.9 %	5 3.0%	3.66
9.Multi-media games provide opportunities to bring various real-life situations.	34 20.1 %	**58** **34.3 %**	55 32.5%	15 8,9 %	7 4.1%	3.57
10.Multi games serve as tailored teaching materials for acquisition and retention of knowledge.	39 23.1 %	**64** **37.9 %**	49 29.0%	14 8.3 %	3 1.8%	3.72
11.Multi-media games make the learners think about the problems and arrive at the solution.	37 21.9 %	**62** **36.7 %**	50 29.6%	16 9.5 %	4 2.4%	3.66
Overall Mean			**3.61**	**H**		

5- Very High (VH)4-High (H)3- Moderate (M) 2- Low (L) 1- Very Low (VL)

Table 8 shows that teachers perceived that the use of media games can give

"moderate" benefits on the sustenance of attentions of learners and think about tasks over a period of time and promote response inhibitions.

On the other hand, majority believed that multimedia games can give **high** benefits on the following: enhancement of cognitive flexibility; promotion of cognitive control; develop multiple simultaneous attention or ability to multitask; promote category formation; pattern recognition; enhance working memory; provide opportunities to bring real-life situations and makes the learners think about problem solution fast.

These players appear to have a better conscious control of their attention and exhibit a better cognitive flexibility and multisensory temporal processing [**6]**.

In general, the calculated overall mean is 3.61. Thus, it is perceived that media games are **highly beneficial** to the cognitive or brain development of the learners.

Perceived Level of Affective Benefits

A burgeoning field of research has begun to document the impact of video game play on cognition. However, many are considering the potential of these games for social and emotional learning, too [**7].**

In order to produce highly skilled, knowledgeable, specialized, globally competent professionals , teachers have to rear also the "heart" related characteristics of the students to ensure a grown up peace abiding citizen of the country who would become building blocks of a strong nation.

Game-based may not only enhance the cognitive aspect but may also as well nurture the affective domain of the learners. **[8]**

Table 9
LEVEL OF PERCEIVED AFFECTIVE BENEFITS OF MULTIMEDIA GAMES

Perceived affective benefits of multi-media games	VH	H	M	L	VL	Mean
1. Multi-media games make learners feel they are progressing.	29	57	**66**	11	6	3.54
	17.2%	33.7%	39.1%	6.5%	3.6%	
2. Multi-media games reinforce that failure is not a setback.	31	**63**	54	19	2	3.6
	18.3%	37.3%	32.0%	11.2%	1.2%	
3. Multi-media games allow students to see the interrelationship of tactics and strategy.	24	**73**	52	14	6	3.56
	14.2%	43.2%	30.8%	8.3%	3.6%	
4. Multi-media games help students learn about following procedure.	41	**58**	52	15	3	3.7
	24.3%	34.3%	30.8%	8.9%	1.8%	
5. Multi-media games help students become independent thinkers.	37	52	**59**	16	5	3.59
	21.9%	30.8%	34.9%	9.5%	3.0%	
6. Multi-media games help learners gain self-confidence.	44	47	**60**	15	3	3.67
	26.0%	27.8%	35.5%	8.9%	1.8%	
7. Multi-media games help students learn the value of perseverance.	47	50	**55**	12	5	3.72
	27.8%	29.6%	32.5%	7.1%	3.0%	
8. Multi-media games help learners understand value of patience.	43	50	**56**	12	8	3.64
	25.4%	29.6%	33.1%	7.1%	4.7%	
9. Multi-media games help students appreciate the value of hard work and reward.	47	44	**62**	12	4	3.7
	27.8%	26.0%	36.7%	7.1%	2.4%	
10. Multi-media games help learners become resourceful and innovative.	48	**53**	50	15	3	3.76
	28.4%	31.4%	29.6%	8.9%	1.8%	
Overall Mean		**3.65**		**H**		

5- Very High (VH)4-High (H)3- Moderate (M) WM= Weighted Mean2- Low (L)1- Very Low (VL)

In this note, the researcher also studied the level of affective benefits of students in using media games as perceived by the teachers. Recorded data reveal that the students can attain moderate benefits on the following as suggested

by the obtained mode or with the highest occurrence/ response rate: hone student abilities while achieving interim or alternate goals (66); help students become more confident and independent thinkers who are more prepared to take on large projects (59); help learners gain self-confidence and boost their self-esteem by allowing them to finish a task that they started (60); help students learn the value of perseverance as they progress from one level to the next (55); help learners understand and practice the value of patience as they slowly and continuously go through the different steps until they finish the assigned task (56); help students learn and appreciate the value of hard work and reward (62).

On the other hand, data speak that the following can be some **"high"** affective benefits of students when they are exposed to media games: reinforce the fact that failure is not a setback nor an outcome but indication that more skill building is needed (63); leads students to major goal allowing students to see the interrelationship of tactics and strategy (73); help students learn about following procedure and the value of alternative paths (58); and help learners become resourceful and innovative as they try several attempts and different strategies (53). In addition, there were only few teachers who believed that media games can give very low benefits to the affective development of the students in general.

In conclusion, a computed weighted mean of 3.65 entails that there is a potential **high affective benefits** of students when exposed to media games. An experimental study on this matter is highly encouraged to prove such assertion in the different subject areas.

RELATIONSHIP ON PROFILE VARIABLES OF HIGH SCHOOL TEACHERS ON PERCEIVED LEVEL OF COGNITIVE AND AFFECTIVE BENEFITS

The relationship between the perceived cognitive benefits level of students and the profile variables of teachers was also studied. Results of the chi-square tests are presented on Table 10.

Table 10
Relationship of Perceived Cognitive Benefits Level and
Profile Variables of Secondary Teachers

	Profile Variables	Chi Square	Sig	Effect Size	Sig
Cognitive Benefit Level	Sex	2.81	0.59	0.132	0.57
	Age	24.41*	0.02	0.217*	0.021
	Position	6.54	0.86	0.109	0.917
	Specialization	16.12	0.186	0.165	0.316
	Civil Status	6.16	0.629	0.128	0.703
	Educational Attainment	18.97	0.271	0.161	0.351

*significant at .05 level of significance

The perceived level of cognitive benefits and the profile of variables like sex, position, specialization, civil status, and educational attainment recorded a chi-square value that has p-values greater than .05. Hence, statistically speaking, the evidences recorded are not enough to support relation between the profile variables mentioned earlier and the perceived cognitive benefits level.

Additionally, results from table 10 denote that age and perceived cognitive benefits level are related as expressed by the tabulated chi-square statistic (24.41) and highly significant p-value (0.02). Furthermore, the effect size (.217) obtained

[4] significant p-value (.017). This supports the relationship between the two variables. Such relationship according to Guilford's (1956) has a small or weak relationship.

Table 11

Relationship of Perceived Affective Benefit Level and Profile Variables of Secondary Teachers

	Profile Variables	Chi Square Statistic	Sig	Effect Size	Sig
Affective BenefitSex Level		4.54	0.34	0.16	0.043
	Age	26.17*	0.01	0.22*	0.015
	Position	12.96	0.37 2	0.152	0.455
	Specialization	19.54	0.07 6	0.196	0.076
	Civil Status	10.67	0.22 1	0.178	0.217
	Educational Attainment	18.51	0.29 5	0.158	0.395

*significant at .05 level

Table 11 shows the test results for the perceived level of affective benefits and profile variables are shown. Similar results were drawn in the relationship of perceived cognitive benefits level and profile variables with the perceived affective cognitive benefits level to profile.

Meanwhile, age and affective benefits are statistically related since the obtained chi-square statistic value (26.17) has a p-value less than .05. Moreover, the effect size of .22 has attained a significant p-value of (.015). With this result the relationship was described to be significant weak/small according to Cohen (1988)**.**

CONCLUSION AND RECOMMENDATION

There is high utilization level of gadgets among the junior high school teachers in Alaminos City Division particularly on the use of laptop as gadget while multimedia games related to various subjects have moderate level of utilization.

The junior high school teachers perceived that multimedia games can give high cognitive and affective benefits.

Specialization and level of utilization of gadgets are related. Sex and educational attainment are related to utilization of multimedia games. Age is significantly related to perceived cognitive and affective level of benefits.

Specialization, civil status, and educational attainment differed significantly in the overall gadgets and utilization level of multimedia games of the junior high school teachers.

The Junior High School teachers may study the use of multimedia games and gadgets to establish effectiveness of such pedagogical strategy through an experimental research.

All Junior High School teachers should undergo trainings on multimedia games appropriate to their respective specializations.

School administrators should start investing more on technology (gadgets) and may encourage their teachers to utilize the use of media games in their class [11].

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