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Research Article

Utilization and Knowledge of Teachers and Students on Computer Technology: Basis for Ict Intervention Program

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ABSTRACT

The study was conducted to determine utilization and knowledge of teachers and students on Computer Technology in Zone I, Division of Zambales during the School Year 2019-2020. The sample population of the study was be limited to the use of twenty (20) teachers and two hundred seventy-five (275) students from selected secondary schools of DepEd at Zone I, Division of Zambales. The researcher framed this study based on the descriptive research design in order to gather pertinent data with regards to the presentation of the demographic profile of respondents and in the evaluation and analysis of responses made by both teacher-and student-respondents to determine both the utilization and knowledge on Computer Technology in classrooms in terms of teaching and learning, as mandated by the DepEd K-12 academic program as to provide for quality education in modern society. It also indicated that the level of significant difference on the perceptions of the respondents on utilization and knowledge of both students and teachers on the application of computer technology in classroom instruction may vary when they are grouped based on profile variables and based on categories of availability of resources, teaching styles and student knowledge in the use of computers. Furthermore, this study finds that there is no significant difference on the perceptions of the student-respondents and teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to availability of resources; to teachers teaching styles; and to knowledge of students on the use of technology.

Keywords*: Computer technology, Cruz, ICT intervention program, Knowledge, Sta. Zambales*

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Introduction

Applications of Information Technology in the education sector is also referred as educational technologies [1]. In this paper, Information Technology in education refers to computers and other information and communication technologies that when applied to the teaching process, can significantly change the traditional education. Examples of these information technologies in education include computer technologies used to generate course materials such as word processing, presentation programs, database programs, electronic mails, websites, blogs, social networking sites etc. Information Technologies can be used by teachers for lesson planning, electronic research purposes, for recording and presenting classes online etc. [2]. Governments in most developing countries especially in Asian region initiated many national programs to introduce computers into educational institutes [3]. Supplying free tablets to school students in Thailand is a recent example. With the help of governments, educational institutions made substantial financial investments in the field of IT so that the recent educational technologies can be accessible for the next generation. In return, teachers are expected to be prepared and motivated in teaching in technology rich environments. The aim is to use the Information and Communication Technologies to improve the quality of education and teaching and learning process. Considering the critical role educators play in return of these substantial investments, more detailed research is necessary to fully examine the teachers and students needs on the use of computer technology.

Significance of the Study

This study will benefit schools to determine the teachers' and students' utilization and knowledge on the use of computer technology and serve as a basis for an ICT Intervention Program. More precisely, this had provided benefits and advantages to the following entities:

To the *Administrator*, this study may help them provide aspects vital for teaching and learning. This may serve as basis in extending or asking help from the school. This will also help them in getting insights of the implementations of the new strategies in teaching and to provide ICT tools for learning.

To the *Teachers*, this study will help to support teachers' leadership style and teaching strategies. By knowing his learners, he can adopt a change in the educational system. He will know what is expected of him in taking over a new class; he knows what he is expected to do, what quality and amount of work he must strive for, in teaching his class.

To the *Parents,* this study will help them realize their vital role in educating their children by reinforcing what has been taught in the classroom which would be beneficial in achieving optimum growth and development of their children.

To the *Students,* this study will serve as a basis to abreast on the use of new technologies to improve their performance in school

Future Research. This study may help them discover/interpret new knowledge when they conduct similar study.

Statement of the Problem

This study was conducted to determine the teachers' and students' needs on the use of computer technology in Zone I, Division of Zambales during the School Year 2019-2020.

Specifically, the researcher seeks answers to the following questions:

1. What is the profile of the student – respondents in terms of:
   1.1 Age;
   1.2 Sex;
   1.3 family monthly income; and
   1.4 academic performance.
2. What is the profile of the teacher– respondents in terms of:
   2.1 age;
   2.2 sex;
   2.3 civil status;
   2.4 family monthly income;
   2.5 highest educational attainment;
   2.6 number of years teaching; and
   2.7 relevant trainings.
3. How do the students' respondents perceive the utilization and knowledge on the application of computer technology in classrooms with regards to the following?
   3.1 Availability of Resources

3.2 Teachers' Teaching Styles
3.3 Knowledge on the Use of Technology

4. How do the students' respondents perceive the utilization and knowledge on the application of computer technology in classrooms with regards to the following?
   4.1 Availability of Resources
   4.2 Teachers' Teaching Styles
   4.3 Knowledge on the Use of Technology
5. Is there a significant difference on the perceive utilization and knowledge of the teachers' respondents on the application of computer technology when grouped to their profile variable as to:
   5.1 Availability of Resources;
   5.2 Teachers' Teaching Styles;
   5.3 Knowledge on the Use of Technology?
6. Is there a significant difference on the perceive utilization and knowledge of the teachers' respondents on the application of computer technology when grouped to their profile variable as to:
   6.1 Availability of Resources;
   6.2 Teachers' Teaching Styles;
   6.3 Knowledge on the Use of Technology?
7. Is there a significant difference on the responses of the two groups of respondents in terms of:
   7.1 Availability of Resources;
   7.2 Teachers' Teaching Styles;
   7.3 Knowledge on the Use of Technology?

Scopes and Limitations

The study was limited to the teachers' and students' utilization and knowledge on the use of computer technology in classrooms in terms of teaching and learning for ICT Intervention Program during the School Year 2019-2020.

The subject of the study were the teachers and students from the following Sta. Cruz District: SCSHS (Sta. Cruz South High School) and SFHS (San Fernando High School). Candelaria District: Uacon Integrated School and Pamibian Integrated School. Masinloc District: Taltal National High School and San Salvador High School.

Methods

Research Design

The Descriptive survey and documentary analysis method of research were used in gathering data for this study. This is a design to ascertain the status of existing conditions. A questionnaire checklist was used to gather the needed data on the factors associated to the teachers' and students' needs on the use of computer technology.

In as much as this research study deals with a certain group of teachers and students, descriptive method is very much applicable and suited to the study.

Respondents and Location

The respondents were 20 teachers and 275 students of the 3 districts in Zone I, Division of Zambales, Zone I comprises the districts of Sta. Cruz, Candelaria, and Masinloc. In the Sta. Cruz District, the researcher has made used of sample respondents coming from Sta. Cruz South High School and San Fernando High School. In the Candelaria District, questionnaires were distributed to selected respondents coming from Uacon Integrated School and Lauis High School. Lastly, from the Masinloc District, the researcher selected Bamban National High School and Taltal National High School as locale of this study.

Table 1, as illustrated below, shows that among the teacher-respondents from secondary schools of the Sta. Cruz District; seven (7) or 35 %, six (6) or 30 % of the said respondents are from the Candelaria District, and of the teacher-respondents from secondary schools from Masinloc District; seven (7) or 35 %.

Table 1. Distribution of Respondents

District	Teacher		Student	
	Frequency	Percentage	Frequency	Percentage
Sta. Cruz	7	35	100	36
Candelaria	6	30	75	28
Masinloc	7	35	100	36
Total	20	100	275	100

Furthermore, Table 1 also specifically provide for the distribution of the student-respondents used in this study was based on its respective district. This table indicates that: there are one hundred (100) or 36% student-respondents were from Sta. Cruz District; another one hundred (100) or 36% student-respondents were from the Masinloc District; and seventy-five (75) or 28% were student-respondents from Candelaria District.

Instruments

Questionnaire. The survey questionnaire checklist is the main instrument used to gather data in this study. The questionnaire consisted of two parts: Part I-is the profile of students' respondents which focused on their age, sex, monthly family income of parents, and their average grade in Mathematics, Science, and English and the profile of the teachers' respondents included the age, sex, civil status, length of service, monthly family income, educational attainment, and seminars/trainings attended. Part II included the perceptions of the teachers and students towards the factors associated to teachers' and students' utilization and knowledge on the application of computer technology with regards to the availability of resources, teaching styles, and knowledge of the teacher on the use of technology.

The researcher adopted the questionnaire used by Rose Young in her research paper entitled "Using Technology Tools in the Public-School Classroom". The questionnaire was shown to the adviser to ensure that significant variables were incorporated.

A dry run was conducted at Sta. Cruz South High School to determine the validity of the instrument.

Data Collection

The researcher asked permission from the office of the Schools Division Superintendent, District Supervisor and Administrators of the Different District Schools of Zone I. The researcher distributes the questionnaire to the teachers and students and requested them to indicate their perceptions regarding the factors associated to the teachers' and students' utilization and knowledge on the application of computer technology and retrieved after a week, assuring respondents that all information will be treated with utmost confidentiality and the respondents who prefer to conceal their identity on the questionnaire will be rewarded with the same respect and honor.

Data gathered were tallied, tabulated, analyzed, and interpreted accordingly. IBM SPSS software was used in the tabulation and statistical treatment of the data gathered using the survey questionnaire. Specifically, the researcher has made used of frequency counts, percentages, mean, ranking, average weighted mean for descriptive statistical treatment, whereas the F-test (Oneway ANOVA) and the T-test were used as treatment to determine significant difference among groups and draw inferences.

Frequency. This was employed to determine the frequency counts and percentage distribution of personal related variables of the respondents in statement of the problem 1 and 2 using the formula:

Formula:

P = f/n X 100

Where :

P = percentage

f = frequency

N = total number of respondents

Percentage (%). To answer the questions of the study related to disclosing the ratio distribution as to the respondents' personal profile, percentage was used. Specifically, it is used to describe the profile variables of sample respondents as based on the frequency distribution of gathered data in terms of age, sex, family monthly income, and academic performance-for student-respondents; and in terms of age, sex, civil status, family monthly income, highest educational attainment, number of years teaching, and relevant trainings-for the teacher-respondents.

Formula: $P = \frac{F}{N}$ x 100

2. **Weighted Arithmetic Mean.** This statistical treatment was used to determine the average of the following variables: age, family monthly income, academic performance, number of years teaching, and the number of relevant trainings of teachers.

Formula: $WAM = \frac{\sum fx}{N}$

Where:
WAM = Weighted Arithmetic Mean
$\sum f^x$ = summation of the product of f and x
x = weight of each portion
f = frequency
N = number of respondents

3. **Likert Scaling.** For meaningful interpretation of the results on the perception of both teacher-respondents and student-respondents on the availability of computer technology resources at home and for school use, the following 4-point Likert Scale was used.

To qualitatively describe the perceived utilization and knowledge on the application of computer technology in classrooms with regards to teachers' teaching styles, the following 4-point Likert Scale was used:

The interpretation on the utilization and knowledge in the application of computer technology in classrooms in relation to the knowledge of the students and teachers on the use of technology was interpreted by making use of the following 4-point Likert Scale:

5. **F-test (Oneway ANOVA)**. It is a collection of statistical models, and their associated procedures, in which the observed variance is partitioned into components due to different explanatory variables. This will be used to test the significant difference in the perceived utilization and knowledge on the application of computer technology as based on the profile-variables of student-respondents (Problem statement 4 and 5). Data were computed using the IBM-SPSS statistical software.

6. **t-Test (for Independent Sample Mean)**- This statistical treatment was used in finding the significant difference on the responses of the two groups of respondents (Problem statement 6).

Results and Discussion

This chapter presents the results and interpretation of the findings based on collected data, related literature and studies, and the researcher's observations and actual experience.

I. Profile of the Students' Respondents

I.1. In terms of age

Table II shows the frequency and percentage distribution of the student-respondents as to age.

Table 2. Frequency and Percentage Distribution of the Student-Respondents' Profile in terms of age

Age	Frequency	Percent
18	1	0.40
17	6	2.20
16	49	17.80
15	143	52.00
14	74	26.90
13	2	0.70
12	0	0.00
11	0	0.00
Total	**275**	**100.00**
Mean = 14.95		

For the age, more than half (143 or 52.00%) of the student-respondents used in this study are of the age 15 years old; followed by 74 (26.90%) students who are 14 years old; and then there are 49 (17.80%) of the total number of student-respondents used are 16 years old. There are six (6) or 2.20% of the student-respondents used are 17 years old, 2 (0.70%) students are 13 years old and one (1) or 0.40% of the student-respondents is of the age 18 years. In addition, the mean age of the student-respondents used in this study is 14.95 years old. This table indicates that the majority (that is, more than 95% of the student population) of student-respondents used in this study are 2nd year to 4th year junior high school students.

I.2. In terms of sex

Table 3 shows the frequency and percentage distribution of the student-respondents as to sex.

Table 3. Frequency and Percentage Distribution of the Student-Respondents' Profile in terms of sex

Sex	Frequency	Percent
Male	113	41.10
Female	162	58.90
Total	**275**	**100.00**

With regards for the sex, there are one-hundred sixty-two (162) or 58.90% of the student-respondents are female; and the rest, that is, one hundred thirteen (113) or 41.10% of the student sample population are male. This indicates that there are almost equal numbers of male and female respondents that are used in this study.

I.3. In terms of family income

Table IV. Frequency and Percentage Distribution of the Student-Respondents' Profile in terms of family income

Family Monthly Income	Frequency	Percent
21,000-above	23	8.40
16,000-20,000	18	6.50
11,000-15,000	68	24.70
5,000 below	166	60.40
Total	**275**	**100.00**
Mean = 10,843.64		

Table IV shows the frequency and percentage distribution of the student-respondents as to their family monthly income. As it is showed in the table that the calculated average or mean family monthly income of the students used in this study is Php 10,843.64. Of the total number of student-respondents used in this study: there are 166 (60.40%) whose family monthly income falls under Php 5,000 and below; 68 (24.70%) students belong to the family whose monthly income ranges from Php 11,000 to Php 15,000; followed by 23 (8.40%) of the student-respondents whose family monthly income falls under Php 21,000 and above; and lastly, there are 18 (6.50%) student-respondents have a family monthly income of Php 16,000-20,000.

I.4. In terms of family income academic performance

Table 5 shows the frequency and percentage distribution of the student-respondents as to academic performance.

Table V. Frequency and Percentage Distribution of the Student-Respondents' Profile in terms of Academic Performance

Academic Performance	Math		Science		English	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
96-100	9	3.30	4	1.50	7	2.50
91-95	62	22.50	95	34.50	76	27.60
86-90	90	32.70	84	30.50	101	36.70
81-85	68	24.70	77	28.00	61	22.20
75-80	46	16.70	15	5.50	30	10.90
Total	**275**	**100.00**	**275**	**100.00**	**275**	**100.00**
Mean	**86.46**		**87.90**		**87.38**	

As shown in the table as for the academic performance of these students in Mathematics: there are ninety (90) or 32.70% of the respondents have 86-90 grade ratings; sixty-eight (68) or 24.70% of the student-respondents falls under the 81-85 grade ratings; there are sixty-two (62) or 22.50% of the respondents have grades in between 91 to 95; forty-six (46) or 16.70% of these student-respondents whose grades are 75 to 80; lastly, there are 9 (3.30%) students have grades that fall under the 96-100 rating performance. The mean academic performance of these student-respondents in the subject Math is 86.46.

With regards to the academic performance of these students in Science: there are ninety-five (95) or 34.50% of the respondents have 91-95 grade ratings; eighty-four (84) or 30.50% of the student-respondents falls under the 86-90 grade ratings; there are seventy-seven (77) or 28.00% of the respondents have grades in between 81 to 85; fifteen (15) or 16.70% of these student-respondents whose grades are 75 to 80; and lastly, there are 4 (1.50%) students have grades that fall under the 96-100 rating performance. The mean academic performance of these student-respondents in the subject Science is 87.90.

This shows that there are one hundred one (101) or 36.70% of the respondents have 86-90 grade ratings; seventy-six (76) or 27.60% of the student-respondents falls under the 91-95 grade ratings; there are sixty-one (61) or 22.20% of the respondents have grades in between 81 to 85; thirty (30) or 10.90% of these student-respondents whose grades are 75 to 80; and lastly, there are seven (2.50%) students have grades that fall under the 96-100 rating performance. The mean academic performance of these student-respondents in the subject English is 87.38.

II. Profile of the Teacher-Respondents

II.1 In Terms Of Age

As for the age, out of 20 teacher-respondents, fourteen (14) or 70.00% of these respondents are 31 to 40 years old; two (2) or 10.00% of these respondents are 21-30 years old, the same is true for those respondents who are of the age 51-60 years old; There is one (5.00%) teacher-respondents who is 61 years of age and above and another one (5.00%) respondent who is of the age 41-50 years old. Table 3 shows that the mean age of teachers who are selected as respondents are of the age 38.5 years old.

Table VI. Frequency and Percentage Distribution of the Teacher-Respondents' Profile in terms of age

Age	Frequency	Percent
61-above	1	5.00
51-60	2	10.00
41-50	1	5.00
31-40	14	70.00
21-30	2	10.00
Total	**20**	**100.00**
Mean = 38.50		

These findings with regards to age-profile of respondents are similar to the findings in the study of Ebal (2008), she concluded that the majority (51.11%) of the teachers in schools belonged to the age bracket 31-40 years old. This shows that teachers who are employed to teach in the secondary school level are young adults who are in the prime of their teaching life. This also implies that since this study have determined that population of secondary school teachers are generally young (31-40 years old, mean age of 38.5 years old) means that the teaching force at present time is considered computer literate and are more interested in using computer technology during classroom instruction.

II.2 In terms of sex

As for the sex, out of 20 teacher-respondents selected for this study, there are sixteen (80.00%) are female and four (20.00%) are

male. This shows that there is more female who are vocationally inclined to pursue in the teaching profession as compared to that of male population.

Table VII. Frequency and Percentage Distribution of the Teacher-Respondents' Profile in terms of sex

Sex	**Frequency**	**Percent**
Male	4	20.00
Female	16	80.00
Total	**20**	**100.00**

The results are in consonance with the statistics given by the Philippine Commission on Women. Data as of July 2010 on the licensed professional women reveal that there is more female which is 67% higher than male. Of the total 1,860, 901 professional women, teachers accounted for the highest percentage at 44 percent (819,377). Moreover, data also shows that in school year 2008-2009, 89.58 percent of the public elementary school teachers are female while only 10.42 percent are male teachers. In public secondary schools, 77.06 percent are female while only 22.94 percent are male teachers.

II.2 In terms of civil status

Table VIII. Frequency and Percentage Distribution of the Teacher-Respondents' Profile in terms of civil status

Civil Status	**Frequency**	**Percent**
Single	4	20.00
Married	16	80.00
Widowed	0	0.00
Total	**20**	**100.00**

With regards to civil status, there were sixteen (16) or 80.00% of the teacher-respondents' population who were married and four (4) or 20.00% of these respondents comprised those who were single. Previous studies on teacher' profile revealed that the majority are married. Gone are the days when teachers stay single to devote more time to their profession.

II.1 In terms of family income

Table IX. Frequency and Percentage Distribution of the Teacher-Respondents' Profile in terms of family income

Family Monthly Income	Frequency	Percent
31-000-above	6	30.00
26000-30000	2	10.00
21000-25000	8	40.00
20000-below	4	20.00
Total	20	100.00
Mean = 25,500.00		

Of the total number of teacher-respondents used in this study: there are eight (40.00%) whose family monthly income falls under Php 21,000 – 25,000; six (30.00%) teachers belong to the family whose monthly income ranges from Php 31,000 and above; followed by four (20.00%) of the teacher-respondents whose family monthly income falls under Php 20,000 and below; and lastly, there are two (10.00%) teacher-respondents have a family monthly income of Php 26,000-30,000. Table 3 also showed tt the calculated average or mean family monthly income of the teacher-respondents is Php 25,500.

II.1 In terms of highest educational attainment

Table X also showed the distribution of the teacher-respondents based on their highest educational attainment. Of the twenty (20) teacher-respondents used in this study, there are ten (50.00%) of these are Baccalaureate Degree Holder with Masters' units; five (25.00%) are respondents are Baccalaureate Degree holder; there are three (15.00%) respondents who have Master's Degree; one (5.00%) respondent with a Doctoral Degree and another one (5.00%) respondent that has a Master's Degree with Doctoral units.

Table X. Frequency and Percentage Distribution of the Teacher-Respondents' Profile in terms of highest educational attainment

Highest Educational Attainment	Frequency	Percent
Doctoral Degree	1	5.00
Master's w/ Doctoral Units	1	5.00
Master's Degree	3	15.00
Baccalaureate w/ Master's Units	10	50.00
Baccalaureate Degree	5	25.00
Total	**20**	**100.00**

It can be said therefore, that the teacher-respondents, used herein, are educationally qualified and are equipped with the necessary skills and knowledge on the integration of computer technology to provide for quality instruction. Consistent to this result were the findings of Makahnu (2012) and Amado's (2009), stating that teacher respondents were highly qualified since they are Baccalaureate Degree holder with Master's units to Master's Degree holder.

II.1 In terms of numbers of years teaching

Table XI. Frequency and Percentage Distribution of the Teacher-Respondents' Profile in terms of number of years teaching

Number of Years Teaching	Frequency	Percent
20-above	2	10.00
16-20	1	5.00
11-15	2	10.00
6-10	5	25.00
0-5	10	50.00
Total	**20**	**100.00**
Mean = 7.75		

As for the length (number of years) of service, ten (50%) respondents have been in service for 5 years and below; five (25.00%) respondents were teaching from 6 to 10 years; there are two (10.00%) respondents are teaching from 11 to 15 years; two (10.00%) respondents who are teaching in schools for the duration of at least 20 years in service; and lastly, there is one (5.00%) respondent who are teaching from 16 to 20 years. These teacher-respondents have provided an average number of years of teaching (length of service) of 7.75 years. Since the majority of these respondents are highly hired teachers and/or teachers who practices the teaching profession that is less than 5 years, this implies that teachers used in this study are more capable of using computer technology for classroom teaching and management.

II.2 In terms of relevant trainings

Table XII. Frequency and Percentage Distribution of the Teacher-Respondents' Profile in terms of relevant trainings

Relevant Trainings	Frequency	Percent
16-above	2	10.00
11-15	1	5.00
6-10	5	25.00
1-5	11	55.00
0	1	5.00
Total	**20**	**100.00**
Mean = 6.10		

As for the number of relevant (local) trainings/seminars attended, there are eleven (55.00%) teachers who have attended 1-5 seminars/trainings; five (25.00%) have attended 6-10 seminars/trainings; in addition, there are two (10.00%) teacher-respondents have attended more than 16 seminars and trainings in the local level. These is one (5.00%) among these teachers have attended 11-15 seminars and trainings. Lastly, there is one respondent that used in this research that has not attended a single seminar/training in the local level.

As for the number of relevant (regional) trainings/seminars attended, there are fourteen (70.00%) teachers who have attended 1-5 seminars/trainings; four (20.00%) have attended no seminars/trainings; in addition, there are one (5.00%) teacher-respondents have attended 11 to 15 seminars and trainings in the regional level.

As for the number of relevant (national) trainings/seminars attended, there are ten (50.00%) teachers who have not attended any seminars/trainings in the national level; nine (45.00%) have attended 1 to 5 seminars/ trainings; in addition, there are one (5.00%) teacher-respondents have attended 11 to 15 seminars and trainings in the national level.

2. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms by the Student Respondents

2.1. Availability of Resources

Table 13 shows the perception of the student-respondents on the utilization and knowledge on the application of computer technology in classroom as to the availability of resources. Among the statement indicators that were utilized by the researcher to collect data coming from the student-respondents, the following are statement indicators that are qualitatively described as "Not Available" and is provided an overall average weighted mean of 2.48.

Indicator 9 stated as "Mobile phone with Internet access" obtained an average weighted mean of 3.19 and ranked 1st. Indicator 10 stated as "Portable music or video player (Mp3/Mp4 player)" was computed to have an average weighted mean of 2.76 and comes 2nd in ranking.

Table XIII. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms as to Availability of Resources

Availability of Resources	Weighted Mean	Qualitative Description	Rank
1. Desktop computer without Internet access	2.52	Available	6
2. Desktop computer with internet access	2.60	Available	4
3. Non-internet-connected laptop, tablet PC, netbook or mini notebook computer	2.37	Not available	7.5
4. Internet-connected laptop, tablet PC, netbook or mini notebook computer	2.73	Available	3

Availability of Resources	Weighted Mean	Qualitative Description	Rank
5. E-reader (a device to read books and newspapers on screen)	2.28	Not available	9
6. Video gaming system (e.g. Xbox, PlayStation, Wii)	1.92	Not available	11
7. Handheld games console (e.g. PSP, NintendoDS)	1.93	Not available	10
8. Mobile phone without Internet access	2.37	Not available	7.5
9. Mobile phone with Internet access	3.19	Available	1
10. Portable music or video player (Mp3/Mp4 player)	2.76	Available	2
11. Camcorder or digital camera (to record video)	2.55	Available	5
Overall Weighted Mean	**2.48**	**Not available**	

At rank 3 is indicator 4 stated as "Internet-connected laptop, tablet PC, netbook or mini notebook computer" it was provided to have an average weighted mean of 2.73. Indicator 2 stated as "Desktop computer with internet access" was provided with an average weighted mean 2.60 and ranked 4th. Statement indicator 11 stated as "Camcorder or digital camera (to record video)" was provided an average weighted mean of 2.55 and is at ranked 5. At rank 6 is the indicator 1 stated as "Desktop computer without Internet access", it was calculated to have an average weighted mean of 2.52.

Indicator 3 which states that "Non-internet-connected laptop, tablet PC, netbook or mini notebook computer" and indicator 8 which states that "Mobile phone without Internet access", both are given an average weighted mean of 2.37. Indicator 5 stated as "E-reader (a device to read books and newspapers on screen)" is provided with an average weighted mean of 2.28. Indicator 7 which states "Handheld games console (e.g. PSP, NintendoDS)" was calculated to produce an average weighted mean of 1.93 and ranked 10. In addition, Indicator 6 stated as "Video gaming system (e.g. Xbox, PlayStation, Wii)" was given an average weighted mean of 1.92 and was ranked 11th. Indicator-statements number's 3, 8, 5, 7, and 6 are provided with a qualitative description of "Not Available".

II.2 Teachers' Teaching Styles

Table 14, as indicated below, shows the student-respondents perception and responses on the utilization and knowledge on the application of computer technology in classrooms as to the teacher's teaching styles.

Table 14 shows the following indicator-statements (with regards to the teacher's teaching styles) are provided with a qualitative description of "Always Need(ed)": Indicator 5 that states "Prepare exercises and tasks for students" was provided weighted mean of 3.36 and is ranked 1st. Indicator 1 that states "Browse / search the internet to collect information to prepare lessons" was computed to produce a weighted mean of 3.35 and is ranked 2nd. Lastly, indicator 3 that states "Use applications to prepare presentations for lessons (e.g. microsoft outlook, visio, excel, powerpoint, word, publisher)" was provided a weighted mean of 3.32 and was ranked 3rd.

Indicator 12 stated as "Use an online dictionary or encyclopedia (Wikipedia, etc.)" obtained an average weighted mean of 3.20 and ranked 4th.

Table XIV. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms as to Teachers' Teaching Styles

Teachers' Teaching Styles	Weighted Mean	Qualitative Description	Rank
1. Browse / search the internet to collect information to prepare lessons	3.35	Always Need	2
2. Browse or search the internet to collect learning material or resources to be used by students during lessons	3.02	Often Need	5

Teachers' Teaching Styles	Weighted Mean	Qualitative Description	Rank
3. Use applications to prepare presentations for lessons (e.g. microsoft outlook, visio, excel, powerpoint, word, publisher)	3.32	Always Need	3
4. Create his/her own digital learning materials for students	2.94	Often Need	8
5. Prepare exercises and tasks for students	3.36	Always Need	1
6. Post homework for students on the school website	2.64	Often Need	12.5
7. Use ICT to provide feedback and/or assess students' learning	2.86	Often Need	10
8. Evaluate digital learning resources in the subject he/she teach	2.95	Often Need	7
9. Communicate online with parents	2.69	Often Need	11
10. Download/upload/browse material from the school's website or virtual learning environment / learning platform	2.91	Often Need	9
11. Look for online professional development opportunities	2.60	Often Need	14
12. Use an online dictionary or encyclopedia (Wikipedia, etc.)	3.20	Often Need	4
13. Take part in online group discussions or forums	2.64	Often Need	12.5
14. Watch video clips, download music, games, software from the Internet	2.97	Often Need	6
Overall Weighted Mean	**2.96**	**Often Need**	

Indicator 2 stated as "Browse or search the internet to collect learning material or resources to be used by students during lessons" was computed to have an average weighted mean of 3.02 and comes 5th in ranking. At rank 6 is indicator 14 stated as "Watch video clips, download music, games, software from the Internet" it was provided to have an average weighted mean of 2.97. Indicator 8 stated as "Evaluate digital learning resources in the subject he/she teach" was provided with an average weighted mean 2.95 and was ranked 7th. Statement indicator 4 stated as "Create his/her own digital learning materials for students" was provided an average weighted mean of 2.94 and is at rank 8. At rank 9 is the indicator 10 stated as "Download/upload/browse material from the school's website or virtual learning environment / learning platform", it was calculated to have an average weighted mean of 2.91. Indicator 7 which states that "Use ICT to provide feedback and/or assess students' learning" is given an average weighted mean of 2.86. Indicator 9 stated as "Communicate online with parents" is provided with an average weighted mean of 2.69. Indicator 6 which states "Post homework for students on the school website" was calculated to produce an average weighted mean of 2.64 and ranked 12.5. Indicator 13 which states "Take part in online group discussions or forums" was calculated to produce an average weighted mean of 2.64 and ranked 12.5. Lastly, Indicator 11 stated as "Look for online professional development opportunities" was given an average weighted mean of 2.60 and was ranked 14th.

The perception of student-respondents on utilization and knowledge on the application of computer technology in classrooms as teachers' teaching styles was computed to have an overall weighted mean equal to 2.96 and is qualitatively described as "Often Need(ed)". This implies that the application of computer technology in classroom use is "OFTEN NEEDED" specifically in the preparation of exercise and tasks for students, in the collection of important and updated data which will be used in the preparation of lessons, and in the use of computer applications in the presentation of lessons.

2.2. Knowledge of the Students on the Use of Technology

Table XV. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms as to Knowledge of the Student on the Use of Technology

No	Knowledge of the Student on the Use of Technology	Weighted Mean	Qualitative Description	Rank
1	Produce a text using a word processing programme	3.33	High Knowledge	1
2	Use emails to communicate with others	3.12	Moderate Knowledge	5.5
3	Capture and edit digital photos, movies, or other graphics	3.12	Moderate Knowledge	5.5
4	Edit text online containing internet links and images	2.93	Moderate Knowledge	14
5	Create a database	2.72	Moderate Knowledge	18
6	Edit a questionnaire online	2.77	Moderate Knowledge	17
7	Email a file to someone, another student or teacher	3.00	Moderate Knowledge	10
8	Organise computer files in folders and subfolders	2.99	Moderate Knowledge	11
9	Use a spreadsheet	2.86	Moderate Knowledge	16
10	Use a spreadsheet to plot a graph	2.94	Moderate Knowledge	13
11	Create a presentation with simple animation functions	3.19	Moderate Knowledge	3
12	Create a presentation with video or audio clips	3.20	Moderate Knowledge	2
13	Participate in a discussion forum on the internet	2.87	Moderate Knowledge	15
14	Create and maintain blogs or web sites	2.55	Moderate Knowledge	19
15	Participate in social networks	2.96	Moderate Knowledge	12
16	Download and install software on a computer	3.04	Moderate Knowledge	9
17	Download or upload curriculum resources from/to websites or learning platforms for students to use	3.05	Moderate Knowledge	8
18	Teach students how to behave safely online	3.17	Moderate Knowledge	4
19	Teach students how to behave ethically online	3.10	Moderate Knowledge	7
	Overall Weighted Mean	**2.99**	**Moderate Knowledge**	

Table XV, as indicated below, shows the student-respondents perception and responses on the utilization and knowledge on the application of computer technology in classrooms as to the knowledge of the student on the use of technology.

As based on the data tabulated in Table 6, it shows that the respondents have indicated that

personally they considered themselves to have "High Knowledge" with respect to the capability of "producing a text using a word processing program" (Indicator1), this was given weighted mean of 3.33 and was considered ranked 1st.

Other indicator-statements with regards to the measurement and evaluation of the needs on the application of computer technology in classroom as based on the knowledge of students on the use of technology were qualitatively described as "MODERATE KNOWLEDGE".

Indicator 12 stated as "Create a presentation with video or audio clips" obtained an average weighted mean of 3.20 and ranked 2nd. Indicator11 stated as "Create a presentation with simple animation functions" was computed to have an average weighted mean of 3.19 and comes 3rd in ranking. At rank 4 is indicator 18 stated as "Teach students how to behave safely online" it was provided to have an average weighted mean of 3.17. Indicator 2 stated as "Use emails to communicate with others" and Indicator 3 which states that "Capture and edit digital photos, movies or other graphics", these indicators are provided with an average weighted mean of 3.12 and were at rank 5.5th. Indicator 19 stated as "Teach students how to behave ethically online" was provided with an average weighted mean 3.10 and was ranked 7th.

Statement indicator 17 stated as "Download or upload curriculum resources from/to websites or learning platforms for students to use" was provided an average weighted mean of 3.05 and is at rank 8. At rank 9 is the indicator 16 stated as "Download and install software on a computer", it was calculated to have an average weighted mean of 3.04. Indicator 7 which states that "Email a file to someone, another student or teacher" is given an average weighted mean of 3.00 and was at rank 10. Indicator 8 stated as "Organize computer files in folders and subfolders" is provided with an average weighted mean of 2.99 and is considered 11th in ranking. Indicator 15 which states "Participate in social networks" was calculated to produce an average weighted mean of 2.96 and ranked 12. Indicator 10 which states "Use a spreadsheet to plot a graph" was calculated to produce an average weighted mean of 2.94 and ranked 13. Indicator 4 stated as "Edit text online containing internet links and images" was given an average weighted mean of 2.93 and was ranked 14th. Indicator 13 stated as "Participate in a discussion forum on the internet" was given an average weighted mean of 2.87 and was ranked 15th. Indicator 9 stated as "Use of spreadsheet" was given an average weighted mean of 2.94 and was ranked 16th. Indicator 6 stated as "Edit a questionnaire online" was given an average weighted mean of 2.77 and was ranked 17th. Indicator 5 stated as "Create a database" was given an average weighted mean of 2.72 and was ranked 18th.

Table 15 shows that the students respondents' response on the utilization and knowledge on the application of computer technology in classrooms as to the knowledge of the student on the use of technology was provided with an overall weighted mean of 2.99 and is qualitatively described as "MODERATE KNOWLEDGE". This implies that students considered themselves having moderate knowledge and skills on the use of computer technology, thus the teacher are provided opportunities to hone these skills and knowledge of students.

III. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms by the Teacher Respondents

III.1. Availability of Resources

Table 16 shows the perception of the teacher-respondents on the utilization and knowledge on the application of computer technology in classroom as to the availability of resources.

Table XVI. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms as to Availability of Resources

No	Availability of Resources	Weighted Mean	Qualitative Description	Rank
1	Desktop computer without Internet access	2.80	Available	4.5

No	Availability of Resources	Weighted Mean	Qualitative Description	Rank
2	Desktop computer with internet access	2.70	Available	6
3	Non-internet-connected laptop, tablet PC, net-book or mini notebook computer	2.80	Available	4.5
4	Internet-connected laptop, tablet PC, netbook or mini notebook computer	3.00	Available	2
5	E-reader (a device to read books and newspapers on screen)	1.75	Not available	9
6	Video gaming system (e.g. Xbox, PlayStation, Wii)	1.40	Unavailable	10.5
7	Handheld games console (e.g. PSP, NintendoDS)	1.40	Unavailable	10.5
8	Mobile phone without Internet access	2.90	Available	3
9	Mobile phone with Internet access	3.55	Very Much Available	1
10	Portable music or video player (Mp3/Mp4 player)	2.65	Available	7
11	Camcorder or digital camera (to record video)	2.20	Not available	8
	Overall Weighted Mean	**2.47**	**Not available**	

Among the statement indicators that were utilized by the researcher to collect data coming from the teacher-respondents, the following are statement indicators that are qualitatively described as "Not Available" and is provided an overall average weighted mean of 2.47.

Indicator 9 stated as "Mobile phone with Internet access" obtained an average weighted mean of 3.55 and ranked 1st. Indicator 9 is qualitatively described as" Very Much Available". Indicator 4 stated as "Internet-connected laptop, tablet PC, netbook or mini notebook computer" was computed to have an average weighted mean of 3.00 and comes 2nd in ranking. At rank 3 is indicator 8 stated as "Mobile phone without Internet access" it was provided to have an average weighted mean of 2.90. Indicator 1 stated as "Desktop computer without Internet access" and Indicator 3 stated as "Non-internet-connected laptop, tablet PC, netbook or mini notebook computer" have both provided a weighted mean of 2.80 and are 4.5th in ranking. Indicator 2 stated as "Desktop computer with internet access" was provided with an average weighted mean 2.60 and ranked 6th. Statement indicator 10 stated as "Portable music or video player (Mp3/Mp4 player)" was provided an average weighted mean of 2.65 and is at ranked 7. At rank 8 is the indicator 11 stated as "Camcorder or digital camera (to record video)", it was calculated to have an average weighted mean of 2.20.

Indicator 5 stated as "E-reader (a device to read books and newspapers on screen)" is provided with an average weighted mean of 2.28 and is 9th in ranking. Indicator 7 which states "Handheld games console (e.g. PSP, NintendoDS)" was calculated to produce an average weighted mean of 1.40 and ranked 10.5. The same is true for, Indicator 6 stated as "Video gaming system (e.g. Xbox, PlayStation, Wii)" was given an average weighted mean of 1.40 and was ranked 10.5th.

Indicator-statements number's 1, 2, 3, 4, 8 and 10 are provided with a qualitative description of "Available". While Indicators 5 and 11 are described as "Not Available". Indicator number 6 and 7 are described as "Unavailable".

III.2. Teachers' Teaching Styles

Table 17, as indicated below, shows the teacher-respondents perception and responses on the needs on the application of computer technology in classrooms as to the teacher's teaching styles.

Table XVII. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms as to Teachers' Teaching Styles

No	Teachers' Teaching Styles	Weighted Mean	Qualitative Description	Rank
1	Browse / search the internet to collect information to prepare lessons	3.70	Always Need	1
2	Browse or search the internet to collect learning material or resources to be used by students during lessons	3.65	Always Need	2.5
3	Use applications to prepare presentations for lessons (e.g. microsoft outlook, visio, excel, powerpoint, word, publisher)	3.55	Always Need	4.5
4	Create his/her own digital learning materials for students	3.30	Always Need	6
5	Prepare exercises and tasks for students	3.65	Always Need	2.5
6	Post homework for students on the school website	2.15	Sometimes Need	14
7	Use ICT to provide feedback and/or assess students' learning	2.80	Often Need	11
8	Evaluate digital learning resources in the subject he/she teach	3.05	Often Need	9
9	Communicate online with parents	2.50	Often Need	12
10	Download/upload/browse material from the school's website or virtual learning environment / learning platform	3.10	Often Need	7
11	Look for online professional development opportunities	3.05	Often Need	9
12	Use an online dictionary or encyclopedia (Wikipedia, etc.)	3.05	Often Need	9
13	Take part in online group discussions or forums	2.40	Sometimes Need	13
14	Watch video clips, download music, games, software from the Internet	3.55	Always Need	4.5
	Overall Weighted Mean	**3.11**	**Often Need**	

Table XVII shows that: "browsing / searching the internet to collect information to prepare lessons" (WM=3.70, Rank 1); "Browse or search the internet to collect learning material or resources to be used by students during lessons " (WM=3.65, Rank 2.5); "Prepare exercises and tasks for students" (WM=3.65, Rank 2.5); "Use applications to prepare presentations for lessons (e.g. microsoft outlook, visio, excel, powerpoint, word, publisher)" (WM=3.55, Rank 4.5); "Watch video clips, download music, games, software from the Internet" (WM=3.55, Rank 4.5); and "Create his/her own digital learning materials for students" (WM=3.30, Rank 6) are practices and skills which are deemed "Always Need(ed)" in order to enhance the teaching capability of teachers upon the use of and integration of computer technology in classroom teaching.

Furthermore, teacher-respondents have perceived that application of computer technology in classroom teaching enhances the capability of classroom teachers, thus identifies the following as indicators that are "Often Need(ed)" in the realization of such above mentioned facts: use ICT to provide feedback and/or assess students' learning (WM= 2.80, Rank 11); evaluate digital learning resources in the subject he/she teach (WM=3.05, Rank 9); communicate online with parents (WM= 2.50,

rank 12); and, download/upload/browse material from the school's website or virtual learning environment / learning platform (WM = 3.10, Rank 7).

In addition, teacher-respondents have perceived that application of computer technology in classroom teaching enhances the capability of classroom teachers, thus identifies the following as indicators that are "Often Need(ed)" in the realization of such above mentioned facts: look for online professional development opportunities (WM=3.05, Rank 9); and the use an online dictionary or encyclopedia (WM= 3.05, Rank 9).

It is also determined that the practice of giving post homework for students on the school website (WM=2.15, Rank 14) and taking part in online group discussions or forums (WM=2.40, Rank 13), are "Sometimes Need(ed)" to provide for intellectual practices and feedback mechanism which in-turn enhance the teaching-learning process.

III.3. Knowledge of the Teachers on the Use of Technology

Table 18, as indicated below, shows the teacher-respondents perception and responses on the utilization and knowledge on the application of computer technology in classrooms as to the knowledge of the student on the use of technology.

The study has also found out that "moderate knowledge" is deemed necessary on editing of text on link containing links and images (indicator 4, weighted mean = 2.90, rank 15), the practice of using a spreadsheet to plot a graph (indicator 10, weighted mean = 3.15, rank 14), and in the participation in a discussion forum on the internet (indicator 13, weighted mean = 2.65, rank 16).

Furthermore, this study has also found out that "little knowledge" is deemed necessary on creating a database (indicator 5, weighted mean = 2.05, rank 19), the practice of editing questionnaires online (indicator 6, weighted mean = 2.35, rank 17.5), and in the practice of creating and maintaining blogs or web sites (indicator 14, weighted mean = 2.35, rank 17.5).

Table 9 showed that the teacher-respondents perception and responses on the utilization and knowledge on the application of computer technology in classrooms as to the knowledge of the student on the use of technology provide for an overall-weighted mean of 3.13, that is qualitatively described as "Moderate Knowledge".

Table XVIII. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms as to Knowledge of the Teacher on the Use of Technology

No	Knowledge of the Student on the Use of Technology	Weighted Mean	Qualitative Description	Rank
1	Produce a text using a word processing programme	3.40	High Knowledge	6
2	Use emails to communicate with others	3.50	High Knowledge	3
3	Capture and edit digital photos, movies or other graphics	3.30	High Knowledge	9.5
4	Edit text online containing internet links and images	2.90	Moderate Knowledge	15
5	Create a database	2.05	Little Knowledge	19
6	Edit a questionnaire online	2.35	Little Knowledge	17.5
7	Email a file to someone, another student or teacher	3.50	High Knowledge	3
8	Organise computer files in folders and subfolders	3.55	High Knowledge	1
9	Use a spreadsheet	3.50	High Knowledge	3

No	Knowledge of the Student on the Use of Technology	Weighted Mean	Qualitative Description	Rank
10	Use a spreadsheet to plot a graph	3.15	Moderate Knowledge	14
11	Create a presentation with simple animation functions	3.45	High Knowledge	5
12	Create a presentation with video or audio clips	3.35	High Knowledge	7.5
13	Participate in a discussion forum on the internet	2.65	Moderate Knowledge	16
14	Create and maintain blogs or web sites	2.35	Little Knowledge	17.5
15	Participate in social networks	3.30	High Knowledge	9.5
16	Download and install software on a computer	3.25	High Knowledge	12
17	Download or upload curriculum resources from/to web-sites or learning platforms for students to use	3.35	High Knowledge	7.5
18	Teach students how to behave safely online	3.25	High Knowledge	12
19	Teach students how to behave ethically online	3.25	High Knowledge	12
	Overall Weighted Mean	**3.13**	**Moderate Knowledge**	

IV. Analysis of Variance on the Difference in the Perceived Utilization and Knowledge of Student-Respondents on the Application of Computer Technology when Grouped According to their Profile Variables as to Availability of Resources

IV.1. Availability of Resources

Table XIX. Difference in the Perceived Utilization and Knowledge on the Application of Computer Technology when Grouped According to their Profile Variables as to Availability of Resources

Profile Variable	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Age	Between Groups	5.34	5	1.07	3.44	0.01	Ho is rejected Significant
	Within Groups	83.38	269	0.31			
	Total	88.72	274				
Sex	Between Groups	0.04	1	0.04	0.13	0.72	Ho is accepted Not Significant
	Within Groups	88.68	273	0.33			
	Total	88.72	274				
Family Monthly Income	Between Groups	4.22	3	1.41	4.51	0.00	Ho is rejected Significant
	Within Groups	84.50	271	0.31			
	Total	88.72	274				
Academic Performance in Mathematics	Between Groups	7.35	4	1.84	6.09	0.00	Ho is rejected Significant
	Within Groups	81.37	270	0.30			
	Total	88.72	274				
	Between Groups	2.08	4	0.52	1.62	0.17	Ho is accepted

Profile Variable	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Academic Performance in Science	Within Groups	86.64	270	0.32			Not Significant
	Total	88.72	274				
Academic Performance in English	Between Groups	6.19	4	1.55	5.07	0.00	Ho is rejected Significant
	Within Groups	82.53	270	0.31			
	Total	88.72	274				

Table XIX shows the computed F-value and sig. value that results after statistically treating the data gathered from this study. This table shows the analysis of variance making use of the F-test to determine if there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the availability of resources when grouped according to profile variables. Specifically, teacher-respondents' data responses based on the availability of resources were tested for difference when the respondents are grouped based on profile variables.

Table XIX shows that significant values computed for sex (0.72) and academic performance in science (0.17) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the student-respondents on the perceived utilization and knowledge on the application of computer technology as to the student knowledge on the use of technology when grouped according to sex and academic performance in science. Student-respondents' perceptions with reference to their profile variables implicates no significant difference, Results obtained could be attributed in the similarity of knowledge and experiences of such respondents in relation to the applicability and use of computer technology in classroom teaching practices.

With respect to the computed sig. value when respondents are grouped based on age (0.01), family monthly income (0.00), academic performance in mathematics (0.00) and academic performance in English (0.00), it shows that the alpha 0.05 level of significance is higher compared to the computed findings based on age, family monthly income, academic performance in mathematics and academic performance in English; by these results, it indicate that there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according age. Furthermore, analysis also shows that there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according to family monthly income, academic performance in mathematics and academic performance in English.

IV.2. Teachers' Teaching Styles

Table XX. Difference in the Perceived Utilization and Knowledge on the Application of Computer Technology when Grouped According to their Profile Variables as to Teachers' Teaching Style

Profile Variable	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Age	Between Groups	9.87	5	1.98	8.47	0.00	Ho is rejected Significant
	Within Groups	62.69	269	0.23			
	Total	72.57	274				
Sex	Between Groups	0.37	1	0.37	1.41	0.24	Ho is accepted
	Within Groups	72.20	273	0.26			

	Total	72.57	274				Not Significant
Family Monthly Income	Between Groups	1.02	3	0.34	1.29	0.28	Ho is accepted Not Significant
	Within Groups	71.55	271	0.26			
	Total	72.57	274				
Academic Performance in Mathematics	Between Groups	5.36	4	1.34	5.39	0.00	Ho is rejected Significant
	Within Groups	67.20	270	0.25			
	Total	72.57	274				
Academic Performance in Science	Between Groups	2.73	4	0.68	2.64	0.03	Ho is rejected Significant
	Within Groups	69.84	270	0.26			
	Total	72.57	274				
Academic Performance in English	Between Groups	1.45	4	0.36	1.38	0.24	Ho is accepted Not Significant
	Within Groups	71.12	270	0.26			
	Total	72.57	274				

Table XX shows the computed F-value and sig. value that results after statistically treating the data gathered from this study. This table shows the analysis of variance making use of the F-test to determine if there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the teachers' teaching styles when grouped according to profile variables. Specifically, teacher-respondents' data responses based on the teachers' teaching styles were tested for difference when the respondents are grouped based on profile variables.

Table XX shows that significant values computed for sex (0.24), family monthly income (0.28), and academic performance in English (0.24) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the student-respondents on the perceived utilization and knowledge on the application of computer technology as to the teachers' teaching styles when grouped according to sex, family monthly income and academic performance in English. Student-respondents' perceptions with reference to their profile variables implicates no significant difference, Results obtained could be attributed in the similarity of knowledge and experiences of such respondents in relation to the applicability and use of computer technology in classroom teaching practices.

With respect to the computed sig. value when respondents are grouped based on age (0.00), academic performance in mathematics (0.00) and academic performance in science (0.03), it shows that the alpha 0.05 level of significance is higher compared to the computed findings based on age, academic performance in mathematics, and academic performance in science; by these results, it indicate that there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according age. Furthermore, analysis also shows that there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the teachers teaching styles when grouped according to age, academic performance in mathematics and academic performance in science.

4.3. Knowledge of the Student on the Use of Technology

Table XXI. Difference in the Perceived Utilization and Knowledge on the Application of Computer Technology when Grouped According to their Profile Variables as to Knowledge of the Student on the Use of Technology

Profile Variable	Sources of Variation	Sum of Squares	Df	Mean Square	F	Sig.	Interpretation
Age	Between Groups	10.14	5	2.03	7.31	0.00	Ho is rejected Significant
	Within Groups	74.63	269	0.28			
	Total	84.76	274				
Sex	Between Groups	0.35	1	0.35	1.12	0.29	Ho is accepted Not Significant
	Within Groups	84.42	273	0.31			
	Total	84.76	274				
Family Monthly Income	Between Groups	0.90	3	0.30	0.97	0.41	Ho is accepted Not Significant
	Within Groups	83.87	271	0.31			
	Total	84.76	274				
Academic Performance in Mathematics	Between Groups	6.23	4	1.56	5.36	0.00	Ho is rejected Significant
	Within Groups	78.53	270	0.29			
	Total	84.76	274				
Academic Performance in Science	Between Groups	5.52	4	1.38	4.70	0.00	Ho is rejected Significant
	Within Groups	79.25	270	0.29			
	Total	84.76	274				
Academic Performance in English	Between Groups	2.01	4	0.50	1.64	0.16	Ho is accepted Not Significant
	Within Groups	82.75	270	0.31			
	Total	84.76	274				

Table XXI shows the computed F-value and sig. value that results after statistically treating the data gathered from this study. This table shows the analysis of variance making use of the F-test to determine if there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the student knowledge on the use of technology when grouped according to profile variables. Specifically, teacher-respondents' data responses based on the student knowledge on the use of technology were tested for difference when the respondents are grouped based on profile variables.

Table XXI shows that significant values computed for sex (0.29), family monthly income (0.41), and academic performance in English (0.16) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the student-respondents on the perceived utilization and knowledge on the application of computer technology as to the students' knowledge on the use of technology when grouped according to sex, family monthly income and academic performance in English. Student-respondents' perceptions with reference to their profile variables implicates no significant difference, Results obtained could be attributed in the similarity of knowledge and experiences of such respondents in relation to the applicability and use of computer technology in classroom teaching practices.

With respect to the computed sig. value when respondents are grouped based on age (0.00), academic performance in mathematics (0.00) and academic performance in science (0.03), it shows that the alpha 0.05 level of significance is higher compared to the computed findings based on age, academic performance in mathematics, and academic performance in

science; by these results, it indicate that there exists a significant difference in the perceived needs of the student-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according age. Furthermore, analysis also shows that there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the students' knowledge on the use of technology when grouped according to age, academic performance in mathematics and academic performance in science.

V. Analysis of Variance on the Difference in the Perceived Utilization and Knowledge of the Teachers- Respondents on the Application of Computer Technology when Grouped According to their Profile Variable as to:

V.1. Availability of Resources

Table XX shows the computed F-value and sig. value that results after statistically treating the data gathered from this study. This table shows the analysis of variance making use of the F-test to determine if there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the application of computer technology as to the availability of resources when grouped according to profile variables. Specifically, teacher-respondents' data responses based on the availability of resources were tested for difference when the respondents are grouped based on profile variables.

Table XX shows that significant values computed for age (0.72), sex (0.22), civil status (0.77), family monthly income (0.59), highest educational attainment (0.83), number of years teaching (0.46), relevant local trainings/seminars attended (1.00), relevant regional trainings/seminars attended (0.57), and relevant national trainings/seminars attended (0.56) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to the availability of resources when grouped according to age, sex, civil status, family monthly income, highest educational attainment, number of years teaching, relevant local trainings/seminars attended, relevant regional trainings/seminars attended, and relevant national trainings/seminars attended.

Table XX. Difference in the Perceived Utilization and Knowledge on the Application of Computer Technology as to Availability of Resources when Grouped According to Teachers' Profile

Profile Variable	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Age	Between Groups	0.43	4	0.11	0.52	0.72	Ho is accepted Not Significant
	Within Groups	3.05	15	0.20			
	Total	3.47	19				
Sex	Between Groups	0.29	1	0.29	1.65	0.22	Ho is accepted Not Significant
	Within Groups	3.18	18	0.18			
	Total	3.47	19				
Civil Status	Between Groups	0.02	1	0.02	0.09	0.77	Ho is accepted Not Significant
	Within Groups	3.45	18	0.19			
	Total	3.47	19				
Family Monthly Income	Between Groups	0.35	3	0.12	0.59	0.63	Ho is accepted Not Significant
	Within Groups	3.12	16	0.20			
	Total	3.47	19				
	Between Groups	0.31	4	0.08	0.37	0.83	Ho is accepted Not Significant
	Within Groups	3.16	15	0.21			

Profile Variable	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Highest Educational Attainment	Total	3.47	19				
Number of Years Teaching	Between Groups	0.71	4	0.18	0.96	0.46	Ho is accepted Not Significant
	Within Groups	2.77	15	0.18			
	Total	3.47	19				
Relevant Trainings/ Seminars Attended (Local)	Between Groups	0.04	4	0.01	0.04	1.00	Ho is accepted Not Significant
	Within Groups	3.43	15	0.23			
	Total	3.47	19				
Relevant Trainings/ Seminars Attended (Regional)	Between Groups	0.40	3	0.13	0.69	0.57	Ho is accepted Not Significant
	Within Groups	3.07	16	0.19			
	Total	3.47	19				
Relevant Trainings/ Seminars Attended (National)	Between Groups	0.23	2	0.12	0.60	0.56	Ho is accepted Not Significant
	Within Groups	3.24	17	0.19			
	Total	3.47	19				

Teacher-respondents' perceptions with reference to their profile variables implicates no significant difference, Results obtained could be attributed in the similarity of knowledge and experiences of such respondents in relation to the applicability and use of computer technology in classroom teaching practices.

V.2. Teachers' Teaching Styles

Table XXIII shows the computed F-value and sig. value that results after statistically treating the data gathered from this study. This table shows the analysis of variance making use of the F-test to determine if there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the application of computer technology as to the teachers' teaching styles when grouped according to profile variables. Specifically, teacher-respondents' data responses based on the teachers' teaching styles were tested for difference when the respondents are grouped based on profile variables.

Table XXIII shows that significant values computed for age (0.36), sex (0.11), civil status (0.76), family monthly income (0.85), highest educational attainment (0.41), number of years teaching (0.95), relevant local trainings/seminars attended (0.59), relevant regional trainings/seminars attended (0.14), and relevant national trainings/seminars attended (0.09) were higher than (0.05) alpha level of significance.

Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to the teachers teaching styles when grouped according to age, sex, civil status, family monthly income, highest educational attainment, number of years teaching, relevant local trainings/seminars attended, relevant regional trainings/seminars attended, and relevant national trainings/seminars attended.

Table XXIII. Difference in the Perceived Utilization and Knowledge on the Application of Computer Technology as to Teachers' Teaching Styles when Grouped According to Teachers' Profile

Profile Variable	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Age	Between Groups	0.61	4	0.15	1.17	0.36	Ho is accepted Not Significant
	Within Groups	1.96	15	0.13			
	Total	2.58	19				
Sex	Between Groups	0.36	1	0.36	2.88	0.11	Ho is accepted Not Significant
	Within Groups	2.22	18	0.12			
	Total	2.58	19				
Civil Status	Between Groups	0.01	1	0.01	0.10	0.76	Ho is accepted Not Significant
	Within Groups	2.56	18	0.14			
	Total	2.58	19				
Family Monthly Income	Between Groups	0.12	3	0.04	0.26	0.85	Ho is accepted Not Significant
	Within Groups	2.46	16	0.15			
	Total	2.58	19				
Highest Educational Attainment	Between Groups	0.57	4	0.14	1.06	0.41	Ho is accepted Not Significant
	Within Groups	2.01	15	0.13			
	Total	2.58	19				
Number of Years Teaching	Between Groups	0.12	4	0.03	0.18	0.95	Ho is accepted Not Significant
	Within Groups	2.46	15	0.16			
	Total	2.58	19				
Relevant Trainings/Seminars Attended (Local)	Between Groups	0.42	4	0.11	0.73	0.59	Ho is accepted Not Significant
	Within Groups	2.16	15	0.14			
	Total	2.58	19				
Relevant Trainings/Seminars Attended (Regional)	Between Groups	0.73	3	0.25	2.13	0.14	Ho is accepted Not Significant
	Within Groups	1.84	16	0.12			
	Total	2.58	19				
Relevant Trainings/Seminars Attended (National)	Between Groups	0.64	2	0.32	2.78	0.09	Ho is accepted Not Significant
	Within Groups	1.94	17	0.11			
	Total	2.58	19				

Teacher-respondents' perceptions with reference to their profile variables implicates no significant difference, Results obtained could be attributed in the similarity of knowledge and experiences of such respondents in relation to the applicability and use of computer technology in classroom teaching practices.

V.3. Knowledge of the Student on the Use of Technology

Table 24 shows the computed F-value and sig. value that results after statistically treating the data gathered from this study. This table shows the analysis of variance making use of the F-test to determine if there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the

application of computer technology as to the knowledge of student on the use of technology when grouped according to profile variables. Specifically, teacher-respondents' data responses based on the availability of resources were tested for difference when the respondents are grouped based on profile variables.

Table 24 shows that significant values computed for age (0.01), sex (0.45), civil status (0.52), family monthly income (0.83), highest educational attainment (0.70), number of years teaching (0.00), relevant local trainings/ seminars attended (0.51), relevant regional trainings/seminars attended (0.21), and relevant national trainings/seminars attended (0.31) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to the student knowledge on the use of technology when grouped according profile.

Table XXIV. Difference in the Perceived Utilization and Knowledge on the Application of Computer Technology as to Knowledge of the Student on the Use of Technology when Grouped According to Teachers' Profile

Profile Variable	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Age	Between Groups	3.22	4	0.81	5.09	0.01	Ho is rejected Significant
	Within Groups	2.38	15	0.16			
	Total	5.60	19				
Sex	Between Groups	0.18	1	0.18	0.59	0.45	Ho is accepted Not Significant
	Within Groups	5.42	18	0.30			
	Total	5.60	19				
Civil Status	Between Groups	0.13	1	0.13	0.43	0.52	Ho is accepted Not Significant
	Within Groups	5.47	18	0.30			
	Total	5.60	19				
Family Monthly Income	Between Groups	0.30	3	0.10	0.30	0.83	Ho is accepted Not Significant
	Within Groups	5.30	16	0.33			
	Total	5.60	19				
Highest Educational Attainment	Between Groups	0.73	4	0.18	0.56	0.70	Ho is accepted Not Significant
	Within Groups	4.87	15	0.33			
	Total	5.60	19				
Number of Years Teaching	Between Groups	3.45	4	0.86	6.03	0.00	Ho is rejected Significant
	Within Groups	2.15	15	0.14			
	Total	5.60	19				
Relevant Trainings/ Seminars Attended (Local)	Between Groups	1.04	4	0.26	0.86	0.51	Ho is accepted Not Significant
	Within Groups	4.55	15	0.30			
	Total	5.60	19				
Relevant Trainings/Seminars Attended (Regional)	Between Groups	1.35	3	0.45	1.70	0.21	Ho is accepted Not Significant
	Within Groups	4.25	16	0.27			
	Total	5.60	19				
Relevant Trainings/Seminars Attended (National)	Between Groups	0.71	2	0.36	1.24	0.31	Ho is accepted Not Significant
	Within Groups	4.88	17	0.29			
	Total	5.60	19				

Teacher-respondents' perceptions with reference to their profile variables implicates no significant difference, Results obtained could be attributed in the similarity of knowledge and experiences of such respondents in relation to the applicability and use of computer technology in classroom teaching practices.

With respect to the computed sig. value when respondents are grouped based on sex (0.01) and number of years teaching (0.00), it shows that the alpha 0.05 level of significance is higher compared to the computed findings based on sex and number of years teaching. by these results, it indicates that there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according to sex. Furthermore, analysis also shows that there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according to the number of years teaching.

VI. T-Test on the Difference in the Perceptions of the Two Groups of Respondents

VI.1. Availability of Resources

Table 25, as shown below, shows the use of t-test in comparing statistically the mean responses of teacher- and student-respondents as based on the perceived utilization and knowledge on the application of computer technology as to the availability of resource.

Table XXV Difference between Teachers' and Students' Perceived Utilization and Knowledge on the Application of Computer Technology as to Availability of Resource

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Equal variances assumed	0.03	20	0.98	0.01	0.24	-0.49	0.50
Equal variances not assumed	0.03	15.18	0.98	0.01	0.24	-0.50	0.51

Table 25 shows that the significant value, that is 0.98 (2-tailed test) on either equal variance are assumed or not is higher than alpha level of significance (0.05). Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the student-respondents and teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to availability of resources.

VI.2. Teachers' Teaching Styles

Table 26, as shown below, shows the use of t-test in comparing statistically the mean responses of teacher- and student-respondents as based on the perceived utilization and knowledge on the application of computer technology as to the teachers teaching styles.

Table XXVI. Difference between Teachers' and Students' Perceived Utilization and Knowledge on the Application of Computer Technology as to Teachers' Teaching Styles

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Equal variances assumed	-0.97	26	0.34	-0.15	0.15	-0.46	0.17
Equal variances not assumed	-0.97	19.82	0.35	-0.15	0.15	-0.46	0.17

Table XXVI shows that the significant value, that is 0.34 (2-tailed test) on either equal variance are assumed or not is higher than alpha level of significance (0.05). Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the student-respondents and teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to teachers teaching styles.

VI.3. Knowledge of the Student on the Use of Technology

Table XXVII shows the use of t-test in comparing statistically the mean responses of teacher- and student-respondents as based on the perceived utilization and knowledge on the application of computer technology as to the knowledge of students on the use of technology.

Table XXVII. Difference between Teachers' and Students' Perceived Utilization and Knowledge on the Application of Computer Technology as to Knowledge of the Student on the Use of Technology

	t	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**95% Confidence Interval of the Difference**	
						Lower	**Upper**
Equal variances assumed	-1.17	36	0.25	-0.13	0.11	-0.36	0.10
Equal variances not assumed	-1.17	24.13	0.25	-0.13	0.11	-0.36	0.10

Table XXVII shows that the significant value, that is 0.25 (2-tailed test) on either equal variance are assumed or not is higher than alpha level of significance (0.05). Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the student-respondents and teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to knowledge of students on the use of technology.

Conclusion

Summary

This research identified the teacher and student utilization and knowledge on the application of computer technology among selected secondary schools in Zone I, Division of Zambales during the school year 2019-2020, where data on demographic profile of the respondents and perception with regards to the problem at hand were gathered and analyzed. This study employed a descriptive research design and

have made used of a survey questionnaire as the main instrument for data gathering. Descriptive and inferential statistics were employed as statistical tools.

1. Profile of the Student-Respondents

1.1. Age. More than half (143 or 52.00%) of the student-respondents used in this study are of the age 15 years old; followed by 74 (26.90%) students who are 14 years old; and then there are 49 (17.80%) of the total number of student-respondents used are 16 years old.

1.2. Sex. There is one-hundred sixty-two (162) or 58.90% of the student-respondents are female; and the rest, that is, one hundred thirteen (113) or 41.10% of the student sample population are male.

1.3. Family Monthly Income. The calculated average or mean family monthly income of the students used in this study is Php 10,843.64. Of the total number of student-respondents used in this study: there are 166 (60.40%) whose family monthly income falls under Php 5,000 and below; 68 (24.70%) students belong to the family whose monthly income ranges from Php 11,000 to Php 15,000; followed by 23 (8.40%) of the student-respondents whose family monthly income falls under Php 21,000 and above; and lastly, there are 18 (6.50%) student-respondents have a family monthly income of Php 16,000-20,000.

To provide for the academic performance of the student-respondents used in this study, the researcher has made used of the grades of these students in the subjects: Mathematics, Science and English.

1.4. Academic Performance. With regards to the academic performance of these students in Science: there are ninety-five (95) or 34.50% of the respondents have 91-95 grade ratings; eighty-four (84) or 30.50% of the student-respondents falls under the 86-90 grade ratings; there are seventy-seven (77) or 28.00% of the respondents have grades in between 81 to 85; fifteen (15) or 16.70% of these student-respondents whose grades are 75 to 80; and lastly, there are 4 (1.50%) students have grades that fall under the 96-100 rating performance. The mean academic performance of these student-respondents in the subject Science is 87.90.

2. Profile of the Teacher-Respondents

2.1. *Age.* As for the age, out of 20 teacher-respondents, fourteen (14) or 70.00% of these respondents are 31 to 40 years old; two (2) or 10.00% of these respondents are 21-30 years old, the same is true for those respondents who are of the age 51-60 years old; There is one (5.00%) teacher-respondents who is 61 years of age and above and another one (5.00%) respondent who is of the age 41-50 years old. This study showed that the mean age of teachers who are selected as respondents are of the age 38.5 years old.

2.2. *Sex.* As for the sex, out of 20 teacher-respondents selected for this study, there are sixteen (80.00%) are female and four (20.00%) are male.

2.3. *Civil Status.* With regards to civil status, there were sixteen (16) or 80.00% of the teacher-respondents' population who were married and four (4) or 20.00% of these respondents comprised those who were single.

2.4. *Family Monthly Income***.** Of the total number of teacher-respondents used in this study: there are eight (40.00%) whose family monthly income falls under Php 21,000 – 25,000; six (30.00%) teachers belong to the family whose monthly income ranges from Php 31,000 and above; followed by four (20.00%) of the teacher-respondents whose family monthly income falls under Php 20,000 and below; and lastly, there are two (10.00%) teacher-respondents have a family monthly income of Php 26,000-30,000. The calculated average or mean family monthly income of the teacher-respondents is Php 25,500.

2.5. *Highest Educational Attainment.* Of the total number of teacher-respondents used in this study: there are eight (40.00%) whose family monthly income falls under Php 21,000 – 25,000; six (30.00%) teachers belong to the family whose monthly income ranges from Php 31,000 and above; followed by four (20.00%) of the teacher-respondents whose family monthly income falls under Php 20,000 and below; and lastly, there are two (10.00%)

teacher-respondents have a family monthly income of Php 26,000-30,000. The calculated average or mean family monthly income of the teacher-respondents is Php 25,500.

2.6. *Number of Years Teaching. As* for the length (number of years) of service, ten (50%) respondents have been in service for 5 years and below; five (25.00%) respondents were teaching from 6 to 10 years; there are two (10.00%) respondents are teaching from 11 to 15 years; two (10.00%) respondents who are teaching in schools for the duration of at least 20 years in service; and lastly, there is one (5.00%) respondent who are teaching from 16 to 20 years. These teacher-respondents have provided an average number of years of teaching (length of service) of 7.75 years.

2.7. *Relevant Trainings/Seminars Attended (Local).* As for the number of relevant (local) trainings/seminars attended, there are eleven (55.00%) teachers who have attended 1-5 seminars/trainings; five (25.00%) have attended 6-10 seminars/trainings; in addition, there are two (10.00%) teacher-respondents have attended more than 16 seminars and trainings in the local level. These is one (5.00%) among these teachers have attended 11-15 seminars and trainings. Lastly, there is one respondent that used in this research that has not attended a single seminar/training in the local level. As for the number of relevant (regional) trainings/seminars attended, there are fourteen (70.00%) teachers who have attended 1-5 seminars/trainings; four (20.00%) have attended no seminars/trainings; in addition, there are one (5.00%) teacher-respondents have attended 11 to 15 seminars and trainings in the regional level. As for the number of relevant (national) trainings/seminars attended, there are ten (50.00%) teachers who have not attended any seminars/trainings in the national level; nine (45.00%) have attended 1 to 5 seminars/trainings; in addition, there are one (5.00%) teacher-respondents have attended 11 to 15 seminars and trainings in the national level.

3. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms by Student-Respondents

3.1. Availability of Resources

Among the statement indicators that were utilized by the researcher to collect data coming from the student-respondents, the following are statement indicators that are qualitatively described as "Not Available" and is provided an average weighted mean of 2.48.

Indicator 9 stated as "Mobile phone with Internet access" obtained an average weighted mean of 3.19 and ranked 1st. Indicator 10 stated as "Portable music or video player (Mp3/Mp4 player)" was computed to have an average weighted mean of 2.76 and comes 2nd in ranking. At rank 3 is indicator 4 stated as "Internet-connected laptop, tablet PC, netbook or mini notebook computer" it was provided to have an average weighted mean of 2.73. Indicator 2 stated as "Desktop computer with internet access" was provided with an average weighted mean 2.60 and ranked 4th. Statement indicator 11 stated as "Camcorder or digital camera (to record video)" was provided an average weighted mean of 2.55 and is at ranked 5. At rank 6 is the indicator 1 stated as "Desktop computer without Internet access", it was calculated to have an average weighted mean of 2.52.

Indicator 3 which states that "Non-internet-connected laptop, tablet PC, netbook or mini notebook computer" and indicator 8 which states that "Mobile phone without Internet access", both are given an average weighted mean of 2.37. Indicator 5 stated as "E-reader (a device to read books and newspapers on screen)" is provided with an average weighted mean of 2.28. Indicator 7 which states "Handheld games console (e.g. PSP, NintendoDS)" was calculated to produce an average weighted mean of 1.93 and ranked 10. In addition, Indicator 6 stated as "Video gaming system (e.g. Xbox, PlayStation, Wii)" was given an average weighted mean of 1.92 and was ranked 11th. Indicator-statements number's 3, 8, 5, 7, and 6 are provided with a qualitative description of "Not Available".

3.2. Teachers' Teaching Styles

This study shows the following indicator-statements (with regards to the teacher's teaching styles) are provided with a qualitative description of "Always Need(ed)": Indicator 5

that states "Prepare exercises and tasks for students" was provided weighted mean of 3.36 and is ranked 1st . Indicator 1 that states "Browse / search the internet to collect information to prepare lessons" was computed to produce a weighted mean of 3.35 and is ranked 2nd. Lastly, indicator 3 that states "Use applications to prepare presentations for lessons (e.g. microsoft outlook, visio, excel, powerpoint, word, publisher)" was provided a weighted mean of 3.32 and was ranked 3rd.

Indicator 12 stated as "Use an online dictionary or encyclopedia (Wikipedia, etc.)" obtained an average weighted mean of 3.20 and ranked 4th. Indicator 2 stated as "Browse or search the internet to collect learning material or resources to be used by students during lessons" was computed to have an average weighted mean of 3.02 and comes 5th in ranking. At rank 6 is indicator 14 stated as "Watch video clips, download music, games, software from the Internet" it was provided to have an average weighted mean of 2.97. Indicator 8 stated as "Evaluate digital learning resources in the subject he/she teach" was provided with an average weighted mean 2.95 and was ranked 7th. Statement indicator 4 stated as "Create his/her own digital learning materials for students" was provided an average weighted mean of 2.94 and is at rank 8. At rank 9 is the indicator 10 stated as "Download/upload/browse material from the school's website or virtual learning environment / learning platform", it was calculated to have an average weighted mean of 2.91. Indicator 7 which states that "Use ICT to provide feedback and/or assess students' learning" is given an average weighted mean of 2.86. Indicator 9 stated as "Communicate online with parents" is provided with an average weighted mean of 2.69. Indicator 6 which states "Post homework for students on the school website" was calculated to produce an average weighted mean of 2.64 and ranked 12.5. Indicator 13 which states "Take part in online group discussions or forums" was calculated to produce an average weighted mean of 2.64 and ranked 12.5. Lastly, Indicator 11 stated as "Look for online professional development opportunities" was given an average weighted mean of 2.60 and was ranked 14th.

The perception of student-respondents on utilization and knowledge on the application of computer technology in classrooms as teachers' teaching styles was computed to have an overall weighted mean equal to 2.96 and is qualitatively described as "Often Need(ed)". This implies that the application of computer technology in classroom use is OFTEN NEEDED specifically in the preparation of exercise and tasks for students, in the collection of important and updated data which will be used in the preparation of lessons, and in the use of computer applications in the presentation of lessons.

3.3. *Knowledge of the Student on the Use of Technology*

This study shows that the respondents have indicated that personally they considered themselves to have "High Knowledge" with respect to the capability of "producing a text using a word processing program" (Indicator1), this was given weighted mean of 3.33 and was considered ranked 1st.

Other indicator-statements with regards to the measurement and evaluation of the utilization and knowledge on the application of computer technology in classroom as based on the knowledge of students on the use of technology were qualitatively described as "MODERATE KNOWLEDGE". Indicator 12 stated as "Create a presentation with video or audio clips" obtained an average weighted mean of 3.20 and ranked 2nd. Indicator11 stated as "Create a presentation with simple animation functions" was computed to have an average weighted mean of 3.19 and comes 3rd in ranking. At rank 4 is indicator 18 stated as "Teach students how to behave safely online" it was provided to have an average weighted mean of 3.17. Indicator 2 stated as "Use emails to communicate with others" and Indicator 3 which states that "Capture and edit digital photos, movies or other graphics", these indicators are provided with an average weighted mean of 3.12 and were at rank 5.5th. Indicator 19 stated as "Teach students how to behave ethically online" was provided with an average weighted mean 3.10 and was ranked 7th.

Statement indicator 17 stated as "Download or upload curriculum resources from/to

websites or learning platforms for students to use" was provided an average weighted mean of 3.05 and is at rank 8. At rank 9 is the indicator 16 stated as "Download and install software on a computer", it was calculated to have an average weighted mean of 3.04. Indicator 7 which states that "Email a file to someone, another student or teacher" is given an average weighted mean of 3.00 and was at rank 10. Indicator 8 stated as "Organize computer files in folders and subfolders" is provided with an average weighted mean of 2.99 and is considered 11th in ranking. Indicator 15 which states "Participate in social networks" was calculated to produce an average weighted mean of 2.96 and ranked 12. Indicator 10 which states "Use a spreadsheet to plot a graph" was calculated to produce an average weighted mean of 2.94 and ranked 13. Indicator 4 stated as "Edit text online containing internet links and images" was given an average weighted mean of 2.93 and was ranked 14th. Indicator 13 stated as "Participate in a discussion forum on the internet" was given an average weighted mean of 2.87 and was ranked 15th. Indicator 9 stated as "Use of spreadsheet" was given an average weighted mean of 2.94 and was ranked 16th. Indicator 6 stated as "Edit a questionnaire online" was given an average weighted mean of 2.77 and was ranked 17th. Indicator 5 stated as "Create a database" was given an average weighted mean of 2.72 and was ranked 18th.

This study shows that the student-respondents response on the utilization and knowledge on the application of computer technology in classrooms as to the knowledge of the student on the use of technology was provided with an overall weighted mean of 2.99 and is qualitatively described as "MODERATE KNOWLEDGE". This implies that students considered themselves having moderate knowledge and skills on the use of computer technology, thus the teacher are provided opportunities to hone these skills and knowledge of students.

4. Perceived Utilization and Knowledge on the Application of Computer Technology in Classrooms by Student-Respondents of Teachers Respondents

4.1. Availability of Resources

Among the statement indicators that were utilized by the researcher to collect data coming from the teacher-respondents, the following are statement indicators that are qualitatively described as "Not Available" and is provided an overall average weighted mean of 2.47.

Indicator 9 stated as "Mobile phone with Internet access" obtained an average weighted mean of 3.55 and ranked 1st. Indicator 9 is qualitatively described as "Very Much Available". Indicator 4 stated as "Internet-connected laptop, tablet PC, netbook or mini notebook computer" was computed to have an average weighted mean of 3.00 and comes 2nd in ranking. At rank 3 is indicator 8 stated as "Mobile phone without Internet access" it was provided to have an average weighted mean of 2.90. Indicator 1 stated as "Desktop computer without Internet access" and Indicator 3 stated as "Non-internet-connected laptop, tablet PC, netbook or mini notebook computer" have both provided a weighted mean of 2.80 and are 4.5th in ranking. Indicator 2 stated as "Desktop computer with internet access" was provided with an average weighted mean 2.60 and ranked 6th. Statement indicator 10 stated as "Portable music or video player (Mp3/Mp4 player)" was provided an average weighted mean of 2.65 and is at ranked 7. At rank 8 is the indicator 11 stated as "Camcorder or digital camera (to record video)", it was calculated to have an average weighted mean of 2.20.

Indicator 5 stated as "E-reader (a device to read books and newspapers on screen)" is provided with an average weighted mean of 2.28 and is 9th in ranking.

Indicator 7 which states "Handheld games console (e.g. PSP, NintendoDS)" was calculated to produce an average weighted mean of 1.40 and ranked 10.5. The same is true for, Indicator 6 stated as "Video gaming system (e.g. Xbox, PlayStation, Wii)" was given an average weighted mean of 1.40 and was ranked 10.5th.

Indicator-statements number's 1, 2, 3, 4, 8 and 10 are provided with a qualitative description of "Available". While Indicators 5 and 11 are described as "Not Available". Indicator number 6 and 7 are described as "Unavailable".

4.2. *Teachers' Teaching Styles*

This study shows that: "browsing / searching the internet to collect information to prepare lessons" (WM=3.70, Rank 1); "Browse or search the internet to collect learning material or resources to be used by students during lessons" (WM=3.65, Rank 2.5); "Prepare exercises and tasks for students" (WM=3.65, Rank 2.5); "Use applications to prepare presentations for lessons (e.g. microsoft outlook, visio, excel, powerpoint, word, publisher)" (WM=3.55, Rank 4.5); "Watch video clips, download music, games, software from the Internet" (WM=3.55, Rank 4.5); and "Create his/her own digital learning materials for students"(WM=3.30, Rank 6) are practices and skills which are deemed "Always Need(ed)" in order to enhance the teaching capability of teachers upon the use of and integration of computer technology in classroom teaching.

Furthermore, teacher-respondents have perceived that application of computer technology in classroom teaching enhances the capability of classroom teachers, thus identifies the following as indicators that are "Often Need(ed)" in the realization of such above mentioned facts: use ICT to provide feedback and/or assess students' learning (WM= 2.80, Rank 11); evaluate digital learning resources in the subject he/she teach (WM=3.05, Rank 9); communicate online with parents (WM= 2.50, rank 12); and, download/upload/browse material from the school's website or virtual learning environment / learning platform (WM = 3.10, Rank 7).

In addition, teacher-respondents have perceived that application of computer technology in classroom teaching enhances the capability of classroom teachers, thus identifies the following as indicators that are "Often Need(ed)" in the realization of such above mentioned facts: look for online professional development opportunities (WM=3.05, Rank 9); and the use an online dictionary or encyclopedia (WM= 3.05, Rank 9).

It is also determined that the practice of giving post homework for students on the school website (WM=2.15, Rank 14) and taking part in online group discussions or forums (WM=2.40, Rank 13), are "Sometimes Need(ed)" to provide for intellectual practices and feedback mechanism which in-turn enhance the teaching-learning process.

4.3.*Knowledge of the Student on the Use of Technology*

The respondents have indicated that personally they considered themselves to have "High Knowledge" with respect to the following indicators:

(1) the practice organizing computer files in folders and subfolders (indicator 8), this was provided with a weighted mean of 3.55 and 1st in ranking;
(2) the practice of sending emails (indicator 7), this was provided with a weighted mean of 3.50 and 3rd in ranking;
(3) the use of spreadsheets (indicator 9), this was provided with a weighted mean of 3.50 and 3rd in ranking;
(4) the creation of a lecture presentation that makes use of animations (indicator 11), this was provided with a weighted mean of 3.45 and 5th in ranking;
(5) the creation of a lecture presentation that makes use of audio and video files (indicator 12), this was provided with a weighted mean of 3.35 and 7.5th in ranking;
(6) the practice of downloading or uploading curriculum resources from/to websites or learning platforms for students to use (indicator 17), this was provided with a weighted mean of 3.35 and 7.5th in ranking;
(7) participation in social networks (indicator 15), this was provided with a weighted mean of 3.30 and 9.5th in ranking;
(8) downloading and installing softwares (indicator 16), this was provided with a weighted mean of 3.25 and 12th in ranking; and,
(9) teaching students how to behave safely (indicator 18) and ethically (indicator 19) online, this was provided with a weighted mean of 3.25 and 12th in ranking.

The study has also found out that "moderate knowledge" is deemed necessary on editing of text on link containing links and images (indicator 4, weighted mean = 2.90, rank 15), the practice of using a spreadsheet to plot a graph (indicator 10, weighted mean = 3.15, rank 14), and in the participation in a discussion forum on the internet (indicator 13, weighted mean = 2.65, rank 16).

Furthermore, this study has also found out that "little knowledge" is deemed necessary on creating a database (indicator 5, weighted mean = 2.05, rank 19), the practice of editing questionnaires online (indicator 6, weighted mean = 2.35, rank 17.5), and in the practice of creating and maintaining blogs or web sites (indicator 14, weighted mean = 2.35, rank 17.5).

The teacher-respondents' perception and responses on the utilization and knowledge on the application of computer technology in classrooms as to the knowledge of the student on the use of technology provide for an overall-weighted mean of 3.13, that is qualitatively described as "Moderate Knowledge".

5. Analysis of Variance on the Difference in the Perceived Utilization and Knowledge of Student-Respondents on the Application of Computer Technology when Grouped According to their Profile Variable

5.1. *Availability of Resources.*

The significant values computed for sex (0.72) and academic performance in science (0.17) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the student-respondents on the perceived utilization and knowledge on the application of computer technology as to the student knowledge on the use of technology when grouped according to sex and academic performance in science. Student-respondents' perceptions with reference to their profile variables implicates no significant difference.

With respect to the computed sig. value when respondents are grouped based on age (0.01), family monthly income (0.00), academic performance in mathematics (0.00) and academic performance in English (0.00), it shows that the alpha 0.05 level of significance is higher compared to the computed findings based on age, family monthly income, academic performance in mathematics and academic performance in English; by these results, it indicate that there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according age. Furthermore, analysis also shows that there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according to family monthly income, academic performance in mathematics and academic performance in English.

5.2. Teachers' Teaching Styles.

The significant values computed for sex (0.24), family monthly income (0.28), and academic performance in English (0.24) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the student-respondents on the perceived utilization and knowledge on the application of computer technology as to the teachers' teaching styles when grouped according to sex, family monthly income and academic performance in English. Student-respondents' perceptions with reference to their profile variables implicates no significant difference.

With respect to the computed sig. value when respondents are grouped based on age (0.00), academic performance in mathematics (0.00) and academic performance in science (0.03), it shows that the alpha 0.05 level of significance is higher compared to the computed findings based on age, academic performance in mathematics, and academic performance in science; by these results, it indicate that there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according age. Furthermore, analysis also shows that there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the teachers teaching styles when grouped according to age, academic performance in mathematics and academic performance in science.

5.3. *Knowledge of the Student on the Use of Technology.*

The significant values computed for sex (0.29), family monthly income (0.41), and

academic performance in English (0.16) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the student-respondents on the perceived utilization and knowledge on the application of computer technology as to the students' knowledge on the use of technology when grouped according to sex, family monthly income and academic performance in English. Student-respondents' perceptions with reference to their profile variables implicates no significant difference.

With respect to the computed sig. value when respondents are grouped based on age (0.00), academic performance in mathematics (0.00) and academic performance in science (0.03), it shows that the alpha 0.05 level of significance is higher compared to the computed findings based on age, academic performance in mathematics, and academic performance in science; by these results, it indicate that there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according age. Furthermore, analysis also shows that there exists a significant difference in the perceived utilization and knowledge of the student-respondents on the application of computer technology as to the students' knowledge on the use of technology when grouped according to age, academic performance in mathematics and academic performance in science.

6. Analysis of Variance on the Difference in the Perceived Utilization and Knowledge of the Teachers-Respondents on the Application of Computer Technology when Grouped According to their Profile Variable

6.1. *Availability of Resources.*

The significant values computed for age (0.72), sex (0.22), civil status (0.77), family monthly income (0.59), highest educational attainment (0.83), number of years teaching (0.46), relevant local trainings/seminars attended (1.00), relevant regional trainings/seminars attended (0.57), and relevant national trainings/seminars attended (0.56) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the teacher-respondents on the perceived needs on the application of computer technology as to the availability of resources when grouped according to age, sex, civil status, family monthly income, highest educational attainment, number of years teaching, relevant local trainings/seminars attended, relevant regional trainings/seminars attended, and relevant national trainings/seminars attended. Teacher-respondents' perceptions with reference to their profile variables implicates no significant difference.

6.2. *Teachers' Teaching Styles.*

The significant values computed for age (0.36), sex (0.11), civil status (0.76), family monthly income (0.85), highest educational attainment (0.41), number of years teaching (0.95), relevant local trainings/seminars attended (0.59), relevant regional trainings/seminars attended (0.14), and relevant national trainings/seminars attended (0.09) were higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to the teachers teaching styles when grouped according to age, sex, civil status, family monthly income, highest educational attainment, number of years teaching, relevant local trainings/seminars attended, relevant regional trainings/seminars attended, and relevant national trainings/seminars attended. Teacher-respondents' perceptions with reference to their profile variables implicates no significant difference.

6.3. Knowledge of the Student on the Use of Technology.

The significant values computed for age (0.01), sex (0.45), civil status (0.52), family monthly income (0.83), highest educational attainment (0.70), number of years teaching (0.00), relevant local trainings/seminars attended (0.51), relevant regional trainings/seminars attended (0.21), and relevant national trainings/seminars attended (0.31) were

higher than (0.05) alpha level of significance. Therefore, the null hypothesis is accepted. There is no significant difference on the perceptions of the teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to the student knowledge on the use of technology when grouped according to age, sex, civil status, family monthly income, highest educational attainment, number of years teaching, relevant local trainings/seminars attended, relevant regional trainings/seminars attended, and relevant national trainings/seminars attended. Teacher-respondents' perceptions with reference to their profile variables implicates no significant difference.

With respect to the computed sig. value when respondents are grouped based on sex (0.01) and number of years teaching (0.00), it shows that the alpha 0.05 level of significance is higher compared to the computed findings based on sex and number of years teaching. by these results, it indicates that there exists a significant difference in the perceived utilization and knowledge of the teacher-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according to sex. Furthermore, analysis also shows that there exists a significant difference in the perceived needs of the teacher-respondents on the application of computer technology as to the knowledge of student on the use of technology when grouped according to the number of years teaching.

7.T-Test on the Difference in the Perceptions of the Two Groups of Respondents

7.1. *Availability of Resources.*

The significant value, that is 0.98 (2-tailed test) on either equal variance are assumed or not is higher than alpha level of significance (0.05). There is no significant difference on the perceptions of the student-respondents and teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to availability of resources.

7.2. *Teachers' Teaching Styles.*

The significant value, that is 0.34 (2-tailed test) on either equal variance are assumed or not is higher than alpha level of significance (0.05). There is no significant difference on the perceptions of the student-respondents and teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to teachers teaching styles.

Knowledge of the Student on the Use of Technology. The significant value, that is 0.25 (2-tailed test) on either equal variance are assumed or not is higher than alpha level of significance (0.05). There is no significant difference on the perceptions of the student-respondents and teacher-respondents on the perceived utilization and knowledge on the application of computer technology as to knowledge of students on the use of technology.

Conclusion

Based on the findings, the researcher concluded that:

1. The student-respondents are female of the age 15 years old. She is a member of a family whose monthly income is Php 10,843.64.
2. The mean academic performance of these student-respondents in the subject Math is 86.46; 87.90 in Science subjects and 87.38 in English subject.
3. The teacher-respondents of this study are female whose age falls under the age bracket 31-40 years old.
4. The teacher-respondents are married whose family monthly income is Php 25,500. She is a graduate of a baccalaureate degree with master's units and has been teaching in schools for at most 5 years.
5. Teacher-respondents used in this study have attended utmost 5 trainings/seminars locally, have also attended utmost 5 regional seminars/trainings and have no national seminars to go to.
6. The student-respondents have perceived the utilization and knowledge on the application of computer technology in classroom based on the availability of resources as" not available".
7. The student-respondents have perceived the utilization and knowledge on the application of computer technology in classroom based on the teachers teaching styles as "often need".

8. The student-respondents have perceived the utilization and knowledge on the application of computer technology in classroom based on the student knowledge in the use of technology as "moderate knowledge".
9. The teacher-respondents have perceived the utilization and knowledge on the application of computer technology in classroom based on the availability of resources as" not available".
10. The teacher-respondents have perceived the utilization and knowledge on the application of computer technology in classroom based on the teachers teaching styles as "often need".
11. The teacher-respondents have perceived the utilization and knowledge on the application of computer technology in classroom based on the student knowledge in the use of technology as "moderate knowledge".

Recommendation

1. Educational technology programmes should focus on enabling educational change, not delivering technology. In doing so, programmes should provide adequate support for teachers and aim to capture changes in teaching practice and learning outcomes in evaluation.
2. Teachers should support proposals that further develop successful practices or that address gaps in evidence and understanding.
3. Teachers should discourage proposals that have an emphasis on technology over education, weak programmatic support or poor evaluation.
4. In design and evaluation, value-for-money metrics and cost-effectiveness analyses should be carried out.

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