# ELEMENTARY SCHOOL TEACHERS IN EDUKASYONG PANTAHANAN AT PANGKABUHAYAN: INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PROFICIENCY AND COMPETENCIES

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**Abstract**

This study aimed to determine the level of elementary school teachers" ICT proficiency and its effects on learners" competencies in Edukasyong Pantahanan at Pangkabuhayan in the District of Santa Cruz, Laguna. Specifically the study attempted to answer the following: what is the teachers" ICT proficiency level with regards to attitudes, knowledge, skills, and utilization. It also aimed to answer the learners" ICT competencies in EPP relative to using powerpoint presentation, spreadsheets, and word document, and if there is a significant relationship between the elementary school teachers" ICT proficiency and the learners" competencies in EPP.

Simple random sampling technique was used in the selection of the respondents. Data were gathered from forty (40) elementary educators from the Department of Education (DepEd) Division of Laguna, District of Santa Cruz. A survey questionnaire with a modified Likert scale was adopted and used to gather data.

The gathered data was statistically computed and analyzed using the frequency, mean, standard deviation, and Pearson r formulas in describing the direction of the relationship between the teachers" ICT proficiency and learners" ICT skills and competencies.

Findings of the study revealed that the Edukasyong Pantahanan at Pangkabuhayan Teachers" ICT proficiency based on high knowledge, attitudes, skills, and utilization range from high to very high; the learners" ICT skills and competencies in a word documents, spreadsheets,

and PowerPoint presentations were moderately high; and there is no significant relationship between the teachers" ICT proficiency and learners" ICT skills and competencies.

It is concluded that there is no significant relationship between the teachers" ICT skills and competencies. Therefore the hypotheses were accepted.

It is recommended that the proper supervision on the implementation of digitalization of the Philippines" educational system to cope with the demands of the 21st century and along with the teachers" training, the government may also strive to update the ICT infrastructure and allow the learners to have physical manipulation of the gadgets to achieve real-time experience.

## 1. Main

## Text

## Introduction

The onset of globalization ushered in the era of unprecedented changes brought about by the advent of information and communication technology (ICT). Its rapid leap compounded everyone"s life and sometimes it threatens one"s capacity of keeping abreast of infinite innovation.

However, at present information and communication technologies (ICT) are believed to play salient roles in workplaces business, education, entertainment, and other areas of endeavor. Moreover, ICT is acknowledged by many people as a catalyst for change such as change in working conditions, handling and exchanging information, teaching methods, learning approaches, scientific research, and all other activities one desires to assume. ICTs truly are making dynamic changes in society (Ratheeswari, 2018).

As we journey along in this digital era, ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st century skills. ICT improves teaching and learning and its importance for teachers in performing their role of creators of pedagogical

environments. ICT helps teachers to present their lessons attractively to enable the learners to learn at any level of educational programs. ICT helps to keep pace with the latest developments with the help of different technologies included in it.

Amidst this positive regard and testimonies written extensively on varied literature sources concerning the use of ICT to improve learning, a counter research- based report also exists. As documented, education has not been maximizing the use of ICT in the classroom nor integrating them into their lessons in the classroom. Those issues range from the school culture, teachers" barriers, finance, leadership, curriculum, and ethical issues. Those problems are experienced by both developed and developing countries.

This issue is a source of challenge to the researcher, the reason why she ventures in this particular study.

**Background of the Study**

The role of Information and Communications Technology (ICT) in education has become evident and necessary at this time of Pandemic. It is a known fact that teachers have started using ICT in teaching their students and attending trainings and seminars on the how ICT can be implemented in their classroom. Information and Communication Technology (ICT) is introduced at the elementary level in a subject called "Edukasyong Pantahanan at Pangkabuhayan". Teachers were on the verge of getting acquainted and knowledgeable about ICTs functionality. It could have been a great breakthrough had it not put to a halt. Now, teachers are educating minds through modalities that could make continuity of learning possible, but their skills are still raw to be used effectively in managing lessons online.

Santa Cruz district, having the largest number of teachers and pupils faces a major challenge in the sudden shift from on-site to online learning. At the moment, more students preferred to go for modular for different reasons. Some decide to continue interacting with their

teachers online. The coming to view of modular mode of instruction does not remove the issue on online learning. It is still difficult to get through with. This points out that implementing ICT in class is not an easy and simple matter without proper knowledge and training and it greatly affects delivery of lessons and transfer of learning. Not to mention the fact that only few schools are offering online classes. Not all teachers are being trained and empowered to implement technology driven programs. Because of this, greater percentage of teachers are being held back due to lack of confidence and motivation to teach their students online and they get stuck believing in their familiarity and expertise in traditional way of teaching. Teachers" proficiency or whatever raw knowledge is not empowered to a greater height.

Several government initiatives were conceived and carried out to improve the current public elementary and secondary school education systems through the use and application of ICT. It provided public and district school offices with computer-based management and operation support tools that aimed to make the school more efficient and productive with their work.

The implementation of the DepEd Computerization Program (DCP) to provide public schools with appropriate technologies that would enhance the teacher-learning process and meet the challenges of the 21st Century was carried out. Later, the Department of Education implemented the Enhanced Basic Education Information System, an online facility for encoding, storage, and report generation of all school information such as enrolment, resource inventories, and special programs. These initiatives are all aligned with the Millennium Development Goals and the Education for All Movement. These have resulted in increased adoption of ICT across the educational system. dynamic computerization of the public school system is expected to be carried out.

Amidst these efforts, still, the current state of Philippine education cum integration of ICT in the classroom instruction remains weak. This study was conceived to determine the elementary school teachers" ICT proficiency and how these proficiencies are translated into the learners" competencies in „Edukasyong Pantahanan at Pangkabuhayan" (EPP). Perhaps with this knowledge, all education stakeholders may be provided with real and actual scenarios on the ground.

**Theoretical Framework**

This study is anchored on the following theories which may be considered to understand the flow of the study.

In the 80s, Ajzen and Fishbein developed the Theory of Reasoned Action (TRA) model which is premised on actual behavior (AB) as its main variable. It was adopted by Trafimow (2016) who defined AB as an individual"s observable response in a given situation with respect to a given target. AB is postulated to be determined by behavioral intention (BI), which is defined as the cognitive representation of an individual"s readiness to perform intended behavior. TRA theorizes that BI, in turn, is jointly determined by the individual"s attitude toward the behavior (ATB) in question and the pertinent subjective norm (SN). According to the principle in the theory, ATB is the degree to which a person has a favorable or unfavorable evaluation orappraisal of the behavior in question, while SN is the perceived social pressure to perform or not to perform the behavior. ATB is influenced by behavioral beliefs and evaluation (bbe). Behavioral beliefs (bb) are the individual subjective probability that performing the target behavior will result in consequences, and evaluation (e) is a rating of the desirability of the outcome (Trafimow, 2016). The author asserted that individuals are rational decision-makers who constantly calculate and evaluate the relevant behavioral beliefs (bb) in the process of determining their ATB. TRA theorizes that SN is influenced by normative beliefs and motivation

to comply (nbmc). Normative beliefs (nb) are the likelihood that important individuals or group approve or disapprove of performing a given behavior, and motivation to comply (mc) is the extent to which the individual wants to comply with the wishes of the referent other. This theory may help in understanding the EPP teachers" behavior in integrating or not integrating the ICT into their teaching.

The Technological Acceptance Model (TAM) also developed in the 80s by Davis but adopted in the work of Hu, Griffin, and Bertuleit (2016) has actual system use (ASU) as the main variable. The theory defined ASU as an individual"s observable usage of a particular system (e.g. technology). ASU is a direct function of behavioral intention to use (BIU) a technology, which is initially defined as the degree to which a person has formulated conscious plans to perform or not to perform some specific future behavior.

ATU is an individual"s positive or negative feeling about performing the target behavior, while PU is the degree to which a person believes that using a particular system would enhance his or her job performance (Hu et al,2016). PU is influenced by perceived ease of use (PEU), which was defined as the degree to which a person believes that using a particular technology

would be free from effort. It further suggests that ATU is determined jointly by PU and PEU.

TAM theorizes that in turn, each of PU and PEU is influenced by external variables (e.g. system characteristics, development process, and training). However, other explanatory variables notwithstanding, the proponents of TAM posit that PU and PEU are the two fundamental determinants of ASU. They argue that if users find technology useful and easy to use, then they develop a positive attitude toward using (ATU) this technology. All of these will eventually lead to the behavioral intention to use (BIU) the technology and finally the actual use of the technology (ASU).

These theories are appropriate fit for this study since whether the teacher utilize the ICT or not in their teaching it is premised on external factors such as the availability of the gadget, the provision of the sustained internet signal, the support of the education administrators, and the like factors.

**Conceptual Framework**

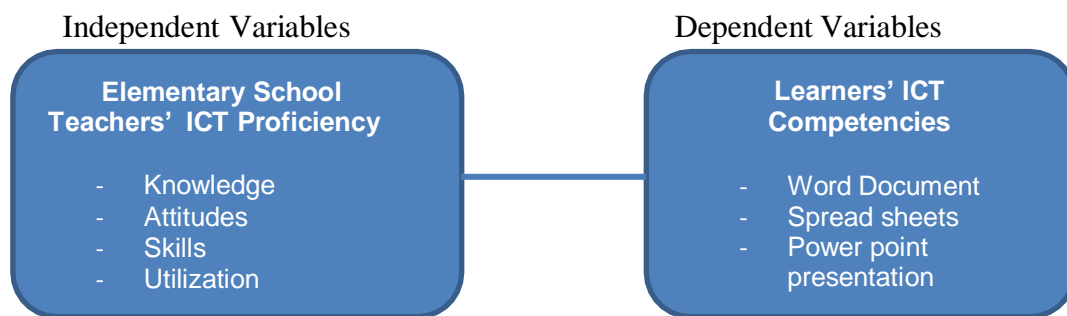The conceptual framework of the study is illustrated below.



**Figure 1. The Conceptual Framework of the Study**

There are two boxes, namely: Independent variables and the other one is dependent variable. Under the independent variable is theelementary school teachers" ICT proficiency with sub variables, such as – knowledge, skills, attitudes, and utilization. The dependent variables are the learners" ICT competencies in EPP based on: word document, spreadsheets and power point presentation. The independent variables are connected with a one – tailed arrow to the dependent variables which means that the elementary school teachers" ICT proficiency is related to the learners" ICT competencies in EPP.

**Statement of the Problem**

The primary aim of the study was to determine the level of elementary school teachers" ICT proficiency and its effects on learners" competencies in "Edukasyong Pantahanan at Pangkabuhayan" in the District of Santa Cruz, Laguna. Specifically, the study attempted to answer the following problems:

1. What is the teachers" ICT proficiency level with regards to the following:

1. attitudes;

2. knowledge;

3. skills;

4. utilization?

2. What is the learners‟ ICT competencies in EPP relative to:

1. power point presentation;

2. spreadsheets;

3. word document?

3. Is there a significant relationship between the elementary school teachers‟ ICT proficiency and the learners‟ competencies in EPP?

4. What recommendations can be forwarded to improve the teachers‟ ICT proficiency and enhance the learners‟ competencies in EPP?

**Methodology**

This study used the descriptive research method being the most commonly used method in educational research. This is the preferred method because it is objective in data collection, quantifies variables, and describes phenomena using number to characterize them. Saunders et al (2009) assert that concepts, variables, and hypotheses are chosen before the study begins and remain fixed throughout the study in a static design. McMillan and Schumacher (2001) explain that quantitative methodology uses a deductive form of logic where theories and hypotheses are tested for cause and effect.

The respondents of this study were the forty (40) teachers from the seventeen (17) elementary schools of the Department of Education (DepEd) teaching Edukasyong Pantahanan at Pangkabuhayan in located in the District of Santa Cruz, Division of Laguna. To determine the population, the researcher sought the master list of elementary schools located in the District of

Santa Cruz, Laguna. Likewise, the researcher sought the advice of the university statistician on whether there is a need to use Sloven''s approach in determining the total respondents needed in this study. First, the researcher determined the number of elementary schools in the District of Santa Cruz and the number of teachers in a particular school. From the total number of teachers, Sloven was applied to determine the sample population in the study. It was then divided into the number of schools to determine the number of respondents per school without prejudice whether that school is a big school or a small one.

The researcher first drafted a request letter addressed to the Schools Division Superintendent and countersigned by her adviser, and endorsed by the College Dean. Stipulating the intention of the study and the data needed for it. Once the Schools Division Superintendent accedes to the request, an endorsement letter was issued to the concerned District

Supervisor. (Box 2). Together with the letter of endorsement, a copy of the Survey Questionnaire was attached. After that, the District Supervisor endorsed the same set of communication to the principal of concerned schools (Box 3).With the consent of the School Principal, the researcher distributed the survey questionnaire using google forms. (Box 4). After several weeks after the distribution of the survey questionnaire, the researcher started collecting the answered survey questionnaire (Box 5). These collected survey questionnaires were inspected to whether they were properly answered. Once properly inspected and assured that these were properly answered, the researcher started encoding of data for processing and when everything else was done, these processed data were sent to the statistician for statistical treatment.

Survey questionnaire is the main data gathering instrument. This instrument was developed by the researcher based on the materials reviewed and adopted from a previous study conducted in Malaysia by Basarkegar and Singhavi (2017). The researcher

requested permission from the authors to use the questionnaire in the current study. Part 1 of the questionnaire requires the respondents to answer the questions about their socio-demographic characteristics and part ll of the questionnaire is about the respondents" use of ICT tools in the classroom teaching-learning process.

**Results and Discussions**

**Teachers' ICT Proficiency Level**

ICT proficiency refers to the ability to utilize digital technology, its software programs, and tools to access information and communicate with each other.

In this study, the researcher aimed to determine the relationship between the teacher"s ICT proficiency level in terms of knowledge, attitudes, skills, and utilization and learners" competencies in word documents, spreadsheets, and PowerPoint presentations which was determined by weighted mean and standard deviation.

**Table 1. Teachers ICT Proficiency Level with Regards to Knowledge**

| STATEMENT | Mean | SD | Remarks |
|---|---|---|---|
| 1. I know computers and their functions. | 4.55 | 0.71 | Strongly Agree |
| 2. I can do simple repairs on my computer. | 3.63 | 0.87 | Agree |
| 3. I install software on my own | 3.70 | 0.88 | Agree |
| 4. I can create teaching aids with the computer | 4.23 | 0.86 | Strongly Agree |
| 5. I search for teaching aids on the Internet | 4.60 | 0.50 | Strongly Agree |
| **Grand Mean** | **4.14** | | |
| **Interpretation** | **High** | | |

Table 1 presents the teacher"s ICT proficiency level with regards to knowledge was high denoted by the grand (M=4.14). This means that the respondents strongly agree that they are knowledgeable about ICT technology.

The respondents strongly agree that they can search for teaching aids on the internet, which gained the highest (M=4.60, SD=0.50). However, they agree that they can do a simple repair on my computer, it obtained the least (M=3.63, SD=0.87). This implies that the respondents exhibit knowledge and understanding of information and communication technology.

This finding is supported by the statement made by Ghavifekr and Rosdy (2015), that in an age of computers, the sooner pupils become familiar with technology, the better. While researching and resourcing technology products and equipment can prove time-consuming, it is worth the effort. ICT can save teachers time and inspire pupils further to learn. The above findings simply collaborate with the previous findings of the researchers mentioned above.

**Table 2. Teachers ICT Proficiency Level with Regards to Attitudes**

| STATEMENT | Mean | SD | Remarks |
|---|---|---|---|
| 1. I feel comfortable with the idea of the computer as a tool in teaching and learning. | 4.68 | 0.47 | Strongly Agree |
| 2. The use of computers in teaching-learning ease my work. | 4.68 | 0.47 | Strongly Agree |
| 3. If something goes wrong with my computer, I know how to fix it. | 3.90 | 0.74 | Agree |
| 4. The idea of using a computer in teaching and learning makes me optimistic. | 4.65 | 0.48 | Strongly Agree |
| 5. The use of computers as a learning tool excites me. | 4.68 | 0.47 | Strongly Agree |
| **Grand Mean** | **4.52** | | |
| **Interpretation** | **Very High** | | |

The preceding table 2 summarizes the teachers" attitudes toward ICT. It can be observed that the teachers have a very positive attitude toward ICT as supported by the grand mean (M= 4.52). This means that the teachers possess a healthy and positive attitude toward using ICT platforms in the class as tools in teaching-learning processes.

The respondents claimed that they are comfortable with using ICT as a tool for teaching and learning (M=4.68, SD = 0.47). Likewise, the respondents strongly agree that computers

helped them ease their work in teaching-learning (M= 4.68; SD= 0.47); Respondents also believed and strongly agree that the use of computers as a learning tool excites them (SD= 4.68; 0.47). The respondents also claimed and strongly agree that they are optimistic about using computers in teaching and learning (M=4.65; SD=0.48). However, on the issue of whether they can fix their gadgets when something went wrong, the respondents agree (M-3.90; SD= 0.74) that they can do it. While the mean is quite lower than the rest of the indicators still the overall result showed that the teachers have positive attitudes toward ICT.

The preceding findings are supported by the claim that internal factors relating to teachers" beliefs and attitudes have been shown to be prerequisites for the successful implementation and use of ICT in schools (Badia et al., 2013; Erdogan, 2011; Kubiatko, 2013; Kusano et al., 2013; Oye et al., 2014; Petko, 2012). A belief „can be understood as a subjective element of knowledge that an individual considers true and important in relation to a specific subject" and as „bound up with a person"s past history, emotions, and personal values" (Petko, 2012). Teachers" attitudes and beliefs would therefore seem to be crucial with regard to innovations in schools, especially those that combine pedagogics and technology.

Table 3 summarizes the skills of teacher-respondents in the use of ICT. As presented in the table, the respondents" ICT skills may be described as „very high" (GM = 4.21) where the respondents claimed that they are skillful in operating and manipulating the ICT gadgets and related platforms.

The teacher–respondents admitted and strongly agree that they can perform basic troubleshooting like scanning for viruses, shutting down and /or restarting a computer (M= 4.63; SD=0.67); Likewise, the respondents admitted that they can modify the text, images, sounds, videos, or other data on the computer to enrich their lesson (M= 4.30; Sd= 0.72); The

respondents Also claimed that they can design lessons through their computer to maximize

students" learning (M=4.30; SD=0.72).

**Table 3. Teachers ICT Proficiency Level with Regards to Skills**

| STATEMENT | Mean | SD | Remarks |
|---|---|---|---|
| 1. I am skillful in computer operation. | 4.10 | 0.50 | Agree |
| **2.** I can very well install current software in my computer unit. | 3.73 | 1.13 | Agree |
| **3.** I can modify the text, images, sounds, videos, or other data on the computer to enrich my lesson for the day. | 4.30 | 0.72 | Strongly Agree |
| **4.** I can design lessons through my computer to maximize students" learning. | 4.30 | 0.72 | Strongly Agree |
| **5.** I can do basic troubleshooting like scanning for viruses and/or shutting down and restarting a computer. | 4.63 | 0.67 | Strongly Agree |
| **Grand Mean** | **4.21** | | |
| **Interpretation** | **Very High** | | |

However, while the respondents claimed that they are skillful in computer operation

(M=4.10; SD= 0.50), they also honestly admitted that they can very well install current software

in their computer unit (M= 3.73; SD= 1.13), but further observation of the data manifest that the

last indicator earned the lowest mean in the five indicators. This could mean that teacher-

respondents are not skillful in ICT operation.

Given that those with fewer years of experience had higher levels of knowledge and more

positive attitudes, as ICT experience increases, their attitudes also improve, which is a very

important result as it shows that teacher training will be a significant factor in the effective use of

ICT in the learning-teaching process. Although most of the teachers received computer courses,

it is difficult to say that they are good enough to use ICT.

In a related view, Cruz and Diaz (2016) highlighted the need for teachers to be trained

in the application of digital competence in the classroom to improve their skills.

Accordingly, teachers who have received training that combined technical aspects of the use of

technological tools and pedagogical aspects regarding their instructional application in learning activities had a better ICT teacher training profile based on UNESCO standards. The results suggest that further work is required in terms of incorporating information and communication technologies in education into teacher training programs, whether in education faculties as part of the initial training or on courses organized by public and private education institutions that promote continuing professional development in order to develop digital competence among teachers.

**Table 4. Teachers ICT Proficiency Level with Regards to Utilization**

| STATEMENT | Mean | SD | Remarks |
|---|---|---|---|
| 1. I can use PowerPoint in my class. | 4.80 | 0.50 | Strongly Agree |
| 2. I can use email to communicate with other teachers and students. | 4.48 | 1.13 | Strongly Agree |
| 3. I can create a document in Microsoft Word. | 4.78 | 0.72 | Strongly Agree |
| 4. I can print a document in Microsoft Word. | 4.88 | 0.72 | Strongly Agree |
| 5. I can use formulas in the spreadsheet. | 4.25 | 0.67 | Strongly Agree |
| **Grand Mean** | **4.63** | | |
| **Interpretation** | **Very High** | | |

Table 4 highlights the respondents‟ ICT utilization and it manifests that the respondents have a very high level of ICT utilization (M=4.63) which means that the respondents have utilized ICT gadgets and their functions at the maximum.

As shown in Table 4, the respondents claimed that they can print a document in Microsoft Word (M= 4.88; SD=0.72); They can also use PowerPoint in their class (M=4.80;

SD= 0.50); they can create a document in Microsoft Word (M=4.78; SD= 0.72); they can also use emails to communicate with other teachers and students (4.48; SD= 1.13); and also use formulas in the spreadsheets (M= 4.25; SD= 0.67). Based on the data, it is obvious that the respondents are showing a maximum utilization of basic ICT functions.

This finding is supported by the work of Hidayah et al (2015) who believed that teachers have a good perception of the utilization of ICT in learning activities. However, implementing ICT-based media is not optimal. Therefore, it is important for teachers to continually improve their capabilities and enrich their knowledge related to the use of ICT through training, whether held by schools or other institutions so that teachers can vary teaching methods or strategies.

Uyulol and Sahin (2014) have the opinion that teachers play a significant role in integrating information and communication technology (ICT) in schools, and motivated teachers reflect higher levels of ICT use in their classrooms. Based on this statement, it can be said that the respondents are motivated teachers since they showed high level of ICT utilization. However, it can also be stated that more concrete encouragement, support, and opportunities must be developed to increase teachers' motivation to improve the level and quality of ICT use in classrooms.

**Learners' ICT Competencies**

ICT competency refers to the confidence and critical use electronic, media, leisure and communication.

In this study, the researcher aims to determine the relationship between the learners" ICT competencies in word documents, spreadsheets, and PowerPoint presentations and the teachers" proficiency in terms of attitudes, knowledge, skills and utilization which was determined by weighted mean and standard deviation.

**Table 5. Level of learner's ICT Competencies in EPP Relative to Word Document**

| STATEMENT | Mean | SD | Remarks |
|---|---|---|---|
| 1. Can enter a text or word in a document. | 4.10 | 0.50 | Agree |
| 2. Can insert image or picture. | 3.28 | 1.13 | Moderately Agree |
| 3. Can make a table. | 2.65 | 0.72 | Moderately Agree |
| 4. Can edit or format existing documents. | 2.80 | 0.72 | Moderately Agree |
| 5. Can save a word document. | 2.90 | 0.67 | Moderately Agree |
| **Grand Mean** | **3.15** | | |
| **Interpretation** | **Moderately High** | | |

Table 5 summarizes the learners" competencies in operating word documents as reported by their teachers. The overall mean generated by the learners" competencies in operating word documents (M=3.15) can be described as moderately high. This means that the learners were exposed to word documents but they have not acquired the knowledge and skills needed to show competence in operating word documents.

Though it was claimed that the learners can enter a text or word in a document (M= 4.10, SD =0.50) or insert a picture or image (M= 28; SD=1.13), other indicators under the word document - Can save a word document. (M=2.90; SD= 0.67); Can edit or format existing documents (M= 2.80; SD= 0.72) and can make a table (M= 2.67; SD 0.72). This finding simply confirms that despite the acquired ICT knowledge, skills, and utilization of the teachers, it barely translates learning among the students.

This finding simply confirmed the results of Zhang"s (2013) study which shows that the ICT use in teaching and learning indicated that teachers have a positive attitude regarding the use of ICT in teaching and learning; teachers have some knowledge about ICT use in teaching and learning, but they have not well integrated their ICT knowledge and skills into teaching and learning and that explains the moderately high students" performance.

**Table 6. Level of learner's ICT Competencies in EPP Relative to Spread Sheets**

| STATEMENT | Mean | SD | Remarks |
|---|---|---|---|
| 1. Can enter data in a row or column. | 3.23 | 0.58 | Moderately Agree |
| 2. Can format a cell. | 2.98 | 0.58 | Moderately Agree |
| 3. Can create new or additional sheets. | 2.70 | 0.65 | Moderately Agree |
| 4. Can make a graph in excel. | 1.93 | 0.42 | Disagree |
| 5. Can save an excel workbook. | 3.13 | 0.56 | Moderately Agree |
| **Grand Mean** | **2.79** | | |
| **Interpretation** | **Moderately High** | | |

Table 6 showcases the learners" competencies in constructing spreadsheets. As shown in the table above, based on teachers" perspectives learners registered a grand mean of (M= 2.97) which can be interpreted as moderately high. This means that learners have not totally developed skills and competencies related to the construction of spreadsheets.

Among the indicators, while teachers perceived learners can enter data in a row or column (M= 3.23; SD= 0.58), and can save an excel workbook (M=3.13; SD=0.56), teachers disagree that their learners can make a graph in excel (M= 1.93; SD = 0.42). This means that learners have not developed skills and competencies in some areas related to spreadsheets. According to Technohella (2019), schools should prepare students for the future by teaching them spreadsheet skills. A spreadsheet is an electronic ledger commonly used by people in the workplace to store information and manipulate it to make informed decisions. The worksheet is divided into alphabetic columns and numeric rows. One of the most popular spreadsheet programs is Microsoft Excel.

Spreadsheet skills allow students to organize, calculate, graph and analyze data. These skills provide a critical foundation in preparation for future studies and the workplace. Today, many careers require knowledge of how to use a spreadsheet program. Moreover, integrating the use of spreadsheets into the curriculum targets mathematical learning objectives. By having your

students organize data into a worksheet and manipulate it, your students acquire essential skills needed for future life.

**Table 7. Level of learner's ICT Competencies in EPP Relative to PowerPoint Presentation**

| STATEMENT | Mean | SD | Remarks |
|---|---|---|---|
| 1. Can create a basic slide show. | 3.15 | 0.77 | Moderately Agree |
| 2. Can insert images or pictures in a slide. | 3.28 | 0.64 | Moderately Agree |
| 3. Can add video/s in a slide. | 2.28 | 0.72 | Disagree |
| 4. Can add animation and transition in a slideshow | 2.10 | 0.67 | Disagree |
| 5. Can present a slide show. | 2.63 | 0.74 | Moderately Agree |
| **Grand Mean** | **2.69** | | |
| **Interpretation** | **Moderately High** | | |

Table 7 summarizes the learners" skills in PowerPoint presentations. Based on the teachers" perspectives, the learners" PowerPoint Presentation skills can be described as moderately high (M= 2.69). This means that learners have not developed enough skills related to PowerPoint presentations.

Though the teachers admitted that learners can insert images or pictures in a slide (M=3.28; Sd= 0.64) and create a basic slide show (M=3.15; Sd= 0. 77), the same teachers disagree that students can add video/s in a slide (M=2.28; SD= 0. 72) and can add animation and transition in a slide show (M= 2.10; SD =0.67); However, teachers also moderately agree that learners can present a slide show 9Mthey (M= 2. 63; SD= 0.74). Overall, it can be assumed that learners have not acquired enough skills in PowerPoint presentations.

The preceding finding can be explained by Agbo (2015) who opined that ICT may facilitate independent self-paced learning, but the potential of ICT may not be optimized if there is no shift in the learning and teaching paradigm. In fact, teachers play an important role in the teaching/learning paradigm shift. Teachers must understand the potential role of technology in education and they should become effective agents to be able to make use of technology in the classroom. The proliferation of technologies has complicated the teaching-learning process and

finding the best ways of integrating technology into classroom practices is one of the challenges the to 21st-century teachers face. Effectively integrating ICT into learning systems is much more complicated than providing computers and securing a connection the Internet.

As Abu Manshour (2019) claimed that using PowerPoint presentations may encourage students and improve their achievement. It may enhance learning by providing a better understanding and comprehension of the subjects as well as by providing different methods, ways, and techniques within the same slide. This variety of techniques within the same slide like adding pictures, sounds, colors, and animations could join all kinds of learners ( kinesthetic, auditory, and visual) and give them all the chance to be active learners and raise their interest in learning.

**Significant Relationship between the Elementary School Teachers' ICT Proficiency and Learners' Competencies**

Minitab 14 was used in computing the data gathered and treating them statistically using Pearson''s Correlation Coefficient. The computed p-values were compared to the level of significance at 0.05 to determine the significant relationship between the elementary school teachers'' ICT proficiency and learners'' competencies.

**Table 8. Significant Relationship between Elementary School Teachers'**
**ICT Proficiency and Learners' Competencies relative to Word**
**Document**

| Variables | | r-value | Degree of Correlation | p-value | Analysis |
|---|---|---|---|---|---|
| Knowledge | | 0.214 | Weak | 0.185 | Not Significant |
| Attitude | Word | 0.038 | Negligible | 0.817 | Not Significant |
| Skills | Document | 0.145 | Negligible | 0.373 | Not Significant |
| Utilization | | 0.093 | Negligible | 0.569 | Not Significant |

*significant at .05 level of significance

| Range | Degree of Correlation |
|---|---|
| ±.0.81 – ±.1.00 | Very Strong |
| ±.0.61 – ±.0.80 | Strong |
| ±.0.41 – ±.0.60 | Moderate |
| ±.0.21 – ±.0.40 | Weak |
| ±0.00 – ±.0.20 | Negligible |

Table 8 presents the relationship between elementary school teachers''

ICT proficiency and learners" competencies relative to word documents.

At a glance, elementary school teachers" ICT proficiency showed no significant relationship to the word document competency of the learners. Teachers" knowledge of ICT and learners" word document competency obtained a weak correlation based on r-value (0.214) and p-value (0.185) which was lower than the 0.05 level of significance supporting the result of the analysis. Besides, teachers" ICT proficiency in terms of attitude, skills, and utilization and learners" word document proficiency all obtained a negligible correlation as implied by the R-values ranging (from 0.038 to 0.145) and the p-values (0.373 to 0.817) which were higher than 0.05 level of significance that affirms the result of the analysis. This further expounds that the respondents" evaluation of their proficiency in information and communication technology is not associated with the learners" ability in utilizing the word document. In this regard, we can accept the stated hypothesis that there is no significant relationship between teachers" ICT proficiency and students" ICT skills and competencies.

This finding implies that teachers" proficiency in terms of attitude, skills, and utilization has no impact on learners" word document proficiency meaning that though how proficient the teachers are in ICT this cannot be transferred among learners because proficiency has to be develop yet overtime.

**Table 9.  Significant  Relationship  between  the  Elementary  School**

Table 9 presents the relationship between elementary school teachers" ICT proficiency and learners" competencies relative to word documents.

**Teachers' ICT Proficiency and the Learners' Competencies relative to Spreadsheet**

| Variables | | r-value | Degree of Correlation | p-value | Analysis |
|---|---|---|---|---|---|
| Knowledge | Spreadsheet | 0.075 | Negligible | 0.648 | Not Significant |
| Attitude | | 0.145 | Negligible | 0.371 | Not |

| | | | | Significant |
|---|---|---|---|---|
| Skills | 0.024 | Negligible | 0.884 | Not Significant |
| Utilization | 0.047 | Negligible | 0.772 | Not Significant |

*significant at .05 level of significance

| Range | Degree of Correlation |
|---|---|
| ±.0.81 – ±.1.00 | Very Strong |
| ±.0.61 – ±.0.80 | Strong |
| ±.0.41 – ±.0.60 | Moderate |
| ±.0.21 – ±.0.40 | Weak |
| ±0.00 – ±.0.20 | Negligible |

From an initial appreciation of the data, elementary school teachers" ICT proficiency showed no significant relationship to the spreadsheet competency of the learners. Teachers" knowledge of ICT and learners" spreadsheet competency obtained a weak correlation based on r-value (0.075) and p-value (0. 648) which was lower than the 0.05 level of significance supporting the result of the analysis. Besides, teachers" ICT proficiency in terms of attitude, skills, and utilization and learners" spreadsheet proficiency all obtained a negligible correlation as implied by the R-values ranging (from 0.024 to 0.145) and the p-values (0.371 to 0.844) which were higher than 0.05 level of significance that affirms the result of the analysis. This further expounds that the respondents" evaluation of their proficiency in information and communication technology is not associated there is no significant relationship between the teachers" ICT proficiency and with the learners" ability in developing a spreadsheet. The hypothesis that the learners" ICT skills and competencies is accepted.

This finding implies that teachers" proficiency in ICT is independent of learners" ability in developing a spreadsheet. Like what is said in the previous pages, developing ICT proficiency among learners is only acquired through constant application of learned knowledge. Learning the skill can be possible but developing proficiency needs constant application of what has been learned.

**Table 10. Significant Relationship between the Elementary School Teachers' ICT Proficiency and the Learners' Competencies relative to PowerPoint Presentation**

| Variables | | r-value | Degree of Correlation | p-value | Analysis |
|---|---|---|---|---|---|
| Knowledge | | 0.101 | Negligible | 0.534 | Not Significant |
| Attitude | PowerPoint Presentation | 0.109 | Negligible | 0.505 | Not Significant |
| Skills | | 0.103 | Negligible | 0.526 | Not Significant |
| Utilization | | 0.048 | Negligible | 0.769 | Not Significant |

*significant at .05 level of significance

| Range | Degree of Correlation |
|---|---|
| ±.0.81 – ±.1.00 | Very Strong |
| ±.0.61 – ±.0.80 | Strong |
| ±.0.41 – ±.0.60 | Moderate |
| ±.0.21 – ±.0.40 | Weak |
| ±0.00 – ±.0.20 | Negligible |

Table 9 presents the relationship between elementary school teachers" ICT proficiency and learners" competencies relative to word documents.

Preliminary appreciation of the data, showed that elementary school teachers" ICT proficiency showed no significant relationship to the PowerPoint Presentation competency of the learners. Teachers" knowledge of ICT and learners" PowerPoint Presentation competency obtained a negligible correlation based on r-value (0.101) and p-value (0. 534) which was lower than the 0.05 level of significance supporting the result of the analysis.

Besides, teachers" ICT proficiency in terms of attitude, skills, and utilization and learners" PowerPoint Presentation proficiency all obtained a negligible correlation as implied by the R-values ranging (from 0.048 to 0.109) and the p-values (0.505 to 0.769) which were higher than 0.05 level of significance that affirms the result of the analysis. This further expounds that the respondents" evaluation of their proficiency in information and communication technology is not associated with the learners" ability in developing a PowerPoint Presentation. The hypothesis that there is no significant relationship between the teachers" ICT proficiency and the learners" ICT skills and competencies is accepted.

This finding implies that teachers" proficiency in ICT is independent of learners" ability in developing a powerpoint presentation. Like what is said in the previous pages, developing ICT proficiency among learners is only acquired through constant application of learned knowledge. Learning the skill can be possible but developing proficiency needs constant application of what has been learned.

**Summary**

The primary aim of the study was to determine the level of elementary school teachers" ICT proficiency and its effects on learners" competencies in "Edukasyong Pantahanan at Pangkabuhayan in the District of Sta Cruz, Laguna. Specifically, the study attempted to answer the teachers" ICT proficiency level with regards to attitudes, knowledge, skills, and utilization. It also aimed to answer the learners" ICT competencies in EPP relative to using powerpoint presentation, spreadsheets, and word document, its significant relationship between the elementary school teachers" ICT proficiency and the learners" competencies in EPP. And lastly, the recommendations that can be forwarded to improve the teachers" ICT proficiency and enhance the learners" competencies in EPP.

**Conclusions**

Based on the summary and findings of the study, the following conclusions can be generated:

The Edukasyong Pantahanan at Pangkabuhayan Teachers" ICT proficiency based on knowledge, attitudes, skills, and utilization range from high to very high. The learners" ICT skills and competencies in word documents, spreadsheets, and PowerPoint presentations were moderately high. There is no significant relationship between the teachers" ICT proficiency and learners" ICT skills and competencies. Therefore the hypothesis was accepted.

## Recommendation

Based on the findings and conclusions the following recommendations are forwarded:

1. To sustain the high and very high teachers" ICT proficiency, the

Department of Education, be it national, regional, division or district may strive to continue providing relevant training and workshops for teachers on the latest trends in Information and Communication Technology.

2. The Department of Education at all levels may also organize training on ways of integrating ICT in all curricular areas at all levels so that teachers may develop higher ICT proficiency and can learn to apply them in the classroom to enhance learners" ICT skills and competencies.

3. The national government can at all times earmark the budget for the improvement of ICT infrastructure across the country at all levels to manifest the seriousness of digitalizing the Philippines" educational system.

4. Proper supervision on the implementation of digitalization of the Philippines" educational system from the Department of Education and Department of Information, Communications and technology to cope with the demands of the $21^{st}$ century.

5. Along with the teachers" training, the government may also strive to update the ICT infrastructure and allow the learners to have physical manipulation of the gadgets to achieve the real time experience.

6. A similar study is encouraged to be undertaken considering a wider scope of the respondents to enable to arrive at more robust results.

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