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ICT SKILLS AND TEACHING PERFORMANCE OF EAST II, DIVISION OF CAGAYAN DE ORO CITY

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ICT Literacy Skills, Teachers' Performance, Spreadsheets, PowerPoint

ABSTRACT

This described the prevailing condition of teachers' ICT literacy skills and teaching performance among the fifty-two (52) Senior High School at East ll District, Cagayan de Oro City, the School Year 2020-2021. Specifically, it sought to find answers to the following: the level of ICT literacy skills utilized by the teachers in terms of ICT Basics, Word Processing, Spreadsheet, Presentation Information, and Communication, and Computer Ethics and Security; the level of teachers' performance for the School Year 2020-2021; and the significant difference between the teachers' ICT literacy skills and teaching performance. This study employed a descriptive research design to determine the significance. In addition, an adapted questionnaire was used from the Philippine National ICT Competency Standard (NICS) for Teachers of Commission on Information and Communication Technology and Philippine Professional Standards for Teachers (PPST) of SY 2020-2021 of DepEd Order No. 042 s. 2017. The results showed that teachers have very high literacy skills in Word Processing. Also, the teaching performance of teachers is at an outstanding level. Further, a significant difference was registered between teachers' ICT literacy skills and performance. Therefore, it is recommended that teachers must at times improve their literacy skills in Spreadsheets, Presentations, Ethics, and Security for better outcomes and usage of ICT at work and in personal activities.

INTRODUCTION

The utilization and use of Information and Communication Technology (ICT) in basic education curriculum is a positive leap towards globalization of Philippine education in which each learner is given the opportunity to avail of comprehensive information and at the same time develop interconnectedness in the hybrid education responsive to the learning needs of the millennium.

Information and Communication Technology plays an indispensable role in the lives of the end-users for educational use, especially in performing individual or group tasks, and has enhanced learning outcomes. Teachers nowadays are aware that they have to keep abreast with the use of new technology. Exploring the different computers and Internet software could help them search for topics relevant to their lessons.

Technology is utilized to innovate teaching and learning processes. It helps transform learning through its capabilities as the source of knowledge, a medium to transmit content, and a means of interaction and dialogue. Particularly computers and the internet resources are means to empower the users for educational changes and improvement by using and utilizing various information and resources from different portals to cultivate authenticity and actuality of learning conditions.

This is why it is generally accepted as a contemporary tool that enables teachers to enhance teaching approaches and methodologies that influence and facilitate individual and group task performance. Furthermore, integration of IICT implementation can impact student learning when teachers are digitally literate and understand how to integrate it into the curriculum. This is supported by the Republic Act No. 10844, an act creating the department of information and communications technology, defining its powers and functions appropriating fund as stated in Section 6, the formulation of policies and initiatives, in coordination with the Department of Education to develop and promote it in education consistent with the national goals and objectives and responsive to the human resource needs. Moreover, it will calibrate teachers to the global requirement to replace traditional teaching methods with technology-based teaching and learning tools and facilities (https://www.official gazette.gov.ph).

Furthermore, this is supported by the issuance of DepEd Order No. 78 s. 2010, on Guidelines on the Implementation of the DepEd Computerization Program (DCP), the Department of Education supports these goals by providing computers to schools through the DepEd Computerization Program. DCP aims to provide public schools with appropriate technologies to enhance the teaching-learning process and meet the challenges of the 21st century. In addition, this program shall respond to the computer backlog of public schools by providing them with hardware and software and training on simple troubleshooting (https://www.deped.gov.ph).

According to Rodrigo (2019), information technology use and utilization in the Philippine classroom makes teaching and learning more engaging and productive because it gives a chance to the teachers and learners to operate, store, control, and retrieve data other than to promote self-regulated and active learning. Tomaro (2018) added that the modernization efforts of the Department of Education had included the computerization project and the school of the future project. This modernization project aimed to implement information technology for upgrading teaching and learning processes, as well as in school leadership and management.

However, public school teachers today are resilient and irrepressible in using technology resources in their classes to help students gain the advantage of the hybrid education modality to enhance learning. But as observed, several difficulties act as barriers and prevent teachers from integrating ICT into the classroom, such as lack of practical training, lack of time for professional development to learn about the new technologies, and lack of time to explore technologies such as the internet and social networking services and insufficient access to the ICT resources. Therefore, with the given premise, the researcher is interested in determining the relationship between teachers' ICT literacy skills and their teaching performance.

Conceptual Framework

This study is anchored in the concept of The National ICT Competency Standards (NICS) for Teachers and Philippine Professional Standards for Teachers (PPST), which is enclosed in the DepEd Order No. 42, s. 2017, otherwise known as National Adoption and Implementation of the Philippine Professional Standards for Teachers. The National ICT Competency Standards (NICS) for Teachers describes the skills, competency outcomes, and supporting knowledge a teacher has. In addition, it provides the performance indicators to evaluate the level of expertise and competence to apply ICT in the educational setting. This is important considering that ICT is viewed as a change agent for education in today's learning environment.

Another framework is the Philippine Professional Standards for Teachers (PPST) defines teacher quality in the Philippines. DepEd Order No. 42, s. 2017, otherwise known as National Adoption and Implementation of the Philippine Professional Standards for Teachers, was issued to recognize the importance of Philippine standards in the continuing professional development and advancement of teachers based on the principle of lifelong learning. Based on the premise of lifelong learning, the DepEd emphasizes the relevance of professional standards in teachers' continued professional growth and improvement. It is committed to assisting teachers and recognizes the unambiguous evidence that effective teachers are critical to increasing student achievement. Quality teaching is required for quality learning (www.deped.gov.ph).

Methodology

This study employed a descriptive research design to determine the significance of ICT Literacy Skills on the Performance of teachers. Descriptive design is a procedure in quantitative research in which it measures the degree of association between two or more variables using the statistical procedure of correlational analysis.

It described the prevailing condition of teachers' ICT literacy skills and teachers' performance in Senior High School at East ll District, Cagayan de Oro City. The teachers' ICT literacy skills are as follows: ICT basics, word processing, spreadsheets, presentations information and communication, and computer ethics and security and as well the teachers' performance School Year 2020-2021.

The name Agusan means in Visayan a place of strong flowing water. The headwaters of the mighty Agusan River are in Bukidnon. Some prehistoric artifacts have been recovered at several sites along this river. Like Iponan, Agusan was among the places established by the Recollect missionaries as a 'visita' in 1674. It was also a part of the Partido de Cagayan in 1818 and when Cagayan de Misamis became the new capital of the Misamis Province in 1871, this barangay together with Iponan and Gusa became its visitas.

In 1884, it became one of the ten barrios of Cagayan. It was in Agusan that travelers start their journey to Bukidnon via an old road built by the Spaniards. But this was closed indefinitely when the Americans constructed the Sayre Highway from Barangay Puerto to Bukidnon in the late 1920s.

Agusan is the site of two important events that occurred in two historical war. On the hills near the river, Capt. Vicente Roa y Racines and most of his men belonging to the 1st Company of the Mindanao Battalion perished in a bloody battle against the Americans on May 14, 1900. A national historical marker was unveiled on the battle site by the National Historical Commission of the Philippines (formerly National Historical Institute) on the centenary of the Battle of Agusan Hill.

On May 10, 1945, the Regimental Combat Team of the 40th Division of the US Army landed unopposed on the beaches of barangays Agusan and Bugo. From there, they pushed southward to link up with the troops of the US 31st Division in Impalutao, Bukidnon, where they fought for the last time a battle with the Japanese and defeated them.

Today, Gusa is not the sleepy barangay of yore. It is a prosperous and highly urbanized area of the city. So, with Agusan. While Iponan is a place that has several new residential subdivisions and is known for promoting its cultural heritage through its annual festivals. Gusa East II houses the following schools: Agusan National High School, Tablon National High School, Puerto National High School, Bugo National High School and Balubal National High School.

The respondents of this study were the fifty-two (52) East ll District Senior High School teachers, particularly in Agusan National High School, Tablon National High School, Puerto National High School, Bugo National High School, Balubal National High School, Division of Cagayan de Oro City, the School Year 2020-2021.

The researcher utilized the complete enumeration method from which the information was obtained from every unit of the entire population since the respondents were only a few. This method allowed the researcher to gather accurate and most reliable data. Table A displays the number of teachers from each school.

The survey questionnaire that used in gathering the needed data from the respondents was adapted from the Philippine National ICT Competency Standard (NICS) for Teachers of Commission on Information and Communication Technology and Philippine Professional Standards for Teachers (PPST) of DepEd Order No. 042 s. 2017.

Part ll was the respondent's performance rating for the School Year 2020-2021.

The procedure underwent the following process:

The letter of approval from the Schools Division Superintendent of Cagayan de Oro was given to the principals of Agusan National High School, Tablon National High School, Puerto National High School, Bugo National High School, and Balubal National High School to conduct the study. Upon the principal's permission, the researcher distributed the questionnaires to the respondents for them to answer via Google Form due to the IATF protocol. It was assured with confidentiality of the answers of the respondents. Finally, it was collected, tabulated, and analyzed to determine the objective of the study.

There was no validity and reliability undertaken in this study because the questionnaires used were standards. The researcher used the National ICT Competency Standards (NICS) for Teachers and Philippine Professional Standards for Teachers (PPST), which is enclosed in the DepEd Order No. 42, s. 2017, otherwise known as National Adoption and Implementation of the Philippine Professional Standards for Teachers. The National ICT Competency Standards (NICS) for Teachers describes the skills, competency outcomes, as well as supporting knowledge that a teacher has. In addition, it provides the performance indicators to evaluate the level of knowledge and competence to apply ICT in the educational setting. This is very important considering that ICT is viewed as a change agent for education in today's learning environment.

Another is the Philippine Professional Standards for Teachers (PPST), which defines teacher quality in the Philippines, DepEd Order No. 42, s. 2017, otherwise known as National Adoption and Implementation of the Philippine Professional Standards for Teachers. The data survey on the respondents' literacy skills on ICT and teaching performance was analyzed using descriptive statistics such as Mean, Frequency, and Standard Deviation. In addition, T-test was used to determine the significant difference in Information,

Communication, and Technology Competency and Performance among the fifty-two (52) Senior High School at East ll District, Cagayan de Oro City, SY 2020-2021.

Results and Discussions

Problem 1. What is the level of ICT literacy skills utilized by the teachers in terms of:

Table 1

Literacy Skills in ICT Basics

Indicator	Mean	SD	Interpretation
1. Identify and define the functions of the main components (i.e., monitor, CPU, keyboard, mouse) of the computer	3.85	0.36	Highly Literate
2. Identify and define the functions of the computer peripherals (i.e., printer, scanner, modem, digital camera, speaker, etc.)	3.44	0.54	Highly Literate
3. Properly connect main components, configure peripherals and install drivers when required	3.62	0.60	Highly Literate
4. Understand the basic functions of the operating system.	3.15	0.80	Literate
5. Configure computer settings of various software and hardware	3.58	0.70	Highly Literate
6. Organize and manage computer files, folders, and directories	3.40	0.50	Highly Literate
7. Use storage devices (i.e., hard disk, diskette, CD, flash memory, etc.) for storing and sharing computer files. Create back-ups for important files.	3.75	0.44	Highly Literate
8. Protect the computer from viruses, spyware, adware, malware, hackers, etc.	3.40	0.66	Highly Literate
Overall Mean	**3.52**	**0.58**	**Highly Literate**

Note: 1.00-1.79 Not Literate, 1.80-2.59 Less Literate, 2.60-3.39 Literate, 3.40-4.19 Highly Literate, 4.20-5.00 Very Highly Literate

Table 1 shows the level of ICT literacy skills of the teachers in terms of ICT Basics with an overall Mean rating of **4.52 (SD=0.58),** described as **Very Highly Literate**. This means that teachers can identify the computer peripherals such as the printer, scanner, modem, digital camera, and speaker and define the main parts of the computer. In addition, they can also configure computer settings of various software and hardware, organize and manage computer, files, folders, and directories, create back-ups for important files, configure computer settings of various software and hardware, protect the computer from viruses, spyware, adware, malware, hackers, etc. Moreover, Seven (7) out of eight (8) or 88% of the indicators were rated at the Highly Literate Level, while one (1) out of eight (8) indicators or 22% were at Less Literate.

Nowadays, teachers are making their Self-Learning Modules (SLM) which suggest that they are oriented with a computer. As such, DepEd Order No.78, series of 2010, entitled Guidelines on the Implementation of the DepEd Computerization Program (DCP), also presents one of the objectives to raise the ICT literacy of learners, pupils, and students, teachers, and school heads. Hence, the organization is doing its best to address the needs of these people. Various seminars and training have been created for the teachers to gain basic knowledge of computers making the teachers literate.

Moreover, teachers should be introduced to a variety of computer applications, such as the Basic Computer System, Google Drive Application, Graphic Tablet, PHET Simulations, and others. The teachers create lessons that include technology. They should be able to use computer-aided applications to create well-written documents and databases. Teachers should integrate multimedia instruction in their various classrooms to help pupils concertize abstract concepts and process abilities. This could boost students' academic performance. Genita (2017) believes that they ought to be able to use communication tools to display information visually, aesthetically, and artistically

On the same table, Indicator 1, "identify and define the functions of the main components (i.e., monitor, CPU, keyboard, mouse) of the computer, "got the highest mean of **4.85 (SD=0.36),** described as **Very Highly Literate**. This means that teachers can manipulate their computers well. This indicates that the making of the module and even the making of the grades is easy.

Along this line, Mackare and Jansone (2018) talked about how the use of current technology is growing in the process of learning new things and how it has increased options for e-studying. They have discovered that there are ambiguities with regard to every formatting parameter. To learn more about users' behaviors and preferences with regard to various text formatting options for e-study materials, a survey was created. Application and browser studies on the font type, size, and color defaults imposed by developers in the most widely used applications and browsers. Juario (2022) further stressed that teachers' mastery of word processing is not a surprise as these skills are the most used and practiced among teachers in their duties at work.

However, indicator 4, "Understand the basic functions of the operating system," got the lowest Mean of **4.15 (SD=0.80),** described as **Highly Literate**. This means that the teachers knew less about controlling the computer's backing store and peripherals, transferring programs in and out of memory,organizing the use of memory between programs, organizing processing time between programs and users, and maintaining the security and access rights of users (https://www.google.com/search?q=function+of+an+operating+system).

The study of Ghavifekr et al. (2016) determined the following critical concerns and challenges that prevented teachers from effectively using ICT tools: limited accessibility and network connection, limited technical support, inadequate training, time constraints, and a lack of teacher competency. The results suggest that more teachers are using computers in the classroom with instructional software to provide pupils with presentations or demonstrations. They enjoy using the computer to obtain student outcomes and monitor their development.

Thus, to ensure that all teachers can use technology for teaching, education institutions need to continually update and reform teacher preparation and professional development. This advancement has significantly influenced and permeated not just the lives of kids and teenagers but also educators. It is crucial for teachers to adapt to change, especially when technology advances, as this is considered as being vital to improving students' academic achievement (Kamala, 2021).

Table 2

Literacy Skills in Word Processing

Indicator	Mean	SD	Interpretation
1. Use a word processor to enter and edit text and images	3.52	0.54	Highly Literate
2. Format text, control margins, layout, and tables	4.67	0.51	Very Highly Literate
3. Print, store, and retrieve text documents from a word processor	4.58	0.54	Highly Literate
4. Apply section breaks for the succeeding page	3.67	0.51	Highly Literate
5. Create a new template based on an existing template	4.58	0.57	Highly Literate
6. Change font face, style, size, color	4.71	0.54	Very Highly Literate
7. Insert a character, word, sentence, or small amount of text	4.48	0.54	Very Highly Literate
8. Specify paper size and orientation	3.54	0.61	Very Highly Literate
Overall Mean	**4.22**	**0.55**	**Very Highly Literate**

Note: 1.00-1.79 Not Literate, 1.80-2.59 Less Literate, 2.60-3.39 Literate, 3.40-4.19 Highly Literate, 4.20-5.00 Very Highly Literate

Table 2 displays the ICT literacy skills of the teachers in terms of Word Processing, with an overall Mean rating of **4.22 (SD=0.55)** described as **Very Highly Literate**. This means that teachers are good. This implies that teachers can format text, control margins, layout, print, store, retrieve text documents, apply section breaks, create a new template, and specify paper orientation. As observed among teachers, they can layout programs and activities in the school. On the other hand, teachers are effective in their explanations when using technology and view technology as useful in making demonstrations easier and in achieving lesson objectives. Moreover, Four (4) out of eight (8) or 50% of the indicators were rated at the Very Highly Literate Level, while four (4) out of eight (50) or 50% were rated at the Highly Literate Level.

According to the finding of Guillo (2017), it is evident and observable in the study that teachers nowadays use word processors because it allows them to encode and save documents and print easily. The documents can be copied through a flash drive or external

drive, which provides an external memory for the computer and can conveniently take the saved documents anywhere and anytime. It is an important tool for educational purposes in this digital world. Moreover, it aids in making notes. The teacher prepares notes with diagrams, graphs, tables, smart art, etc., which helps the learners to learn and motivate. Ogbonna et al. (2019) found that teaching word processing using synchronous and asynchronous e-learning modes considerably increased students' practical word processing skills acquisition.

Indicator 6," Change font face, style, size, color," got the highest Mean of **4.71 (SD=0.54),** described as Very highly literate, while the lowest rated Indicator 1," Use a word processor to enter and edit text and images with the mean of **3.52 (SD=0.54)** described as **Highly Literate**. This means in the use of word processing programs, the teachers, in general, are literate, but there are still areas of the program that the teachers need to master in order to fully use and enjoy the advantages that the program offers and can be utilized. This implies that teachers display mastery in the manipulation of their computers as to font face, style, size, and color. This may imply that they can make clear and appealing worksheets for the learners.

According to the studies of Dablo (2021) and Wabe (2021), word processing skills are one of the most mastered skills of teachers. In addition, most of the reports and outputs submitted are usually in word processing format making teachers more familiar with the software used as well as its functions.

In the same line, Ogbonna et al. (2019) research revealed that the acquisition of practical word processing skills rose significantly when word processing was taught utilizing synchronous and asynchronous e-learning modes. Again, it was determined that one of the first computer literacy skills applications was taught in schools or learned by individuals. This time that asynchronous learning is preferred for pace-paced learning, which is made possible through e-learning for a large audience of learners. The researchers advised school administrators to support teachers in using these synchronous and asynchronous e-learning delivery methods for successful word-processing training.

On the other hand, the indicator " Use a word processor to enter and edit text and images " got a mean of **3.52 (SD=0.54),** described as **Highly Literate.** This means that the teachers need more practice in editing text and images. This implies that they have to explore more in enhancing prints or images on their worksheets for the learners. The study of Mondina (2022) encourages the teachers to master their ICT skills in making presentations as it can be utilized with various outputs like lesson presentations and even in making certificates. Alejandro (2019) further stated that mastery in making presentations makes the teaching and learning process more lively and interesting. Oco (2022) further stressed that making presentations must be mastered by the teachers as this can be of great advantage to using during synchronous and asynchronous classes or sessions.

Table 3

Literacy Skills in Spreadsheets

Indicator	Mean	SD	Interpretation
1. Use a calculation spreadsheet to enter data, sort data, and format cells into tables	3.60	0.60	Highly Literate
2. Make computation, use formula, and create graphs using spreadsheets	3.50	0.70	Highly Literate
3. Print and store data tables using a spreadsheet application	3.63	0.66	Highly Literate
4. Modify column width and row height	3.21	0.61	Highly Literate
5. Create different types of charts/graphs based on given data .	3.44	0.70	Highly Literate
6. Use the basic mathematical functions (add, subtract, multiply, divide, etc.) in a spreadsheet	3.42	0.70	Highly Literate
7. Adjust page scaling to fit worksheet contents on one page or on a specific number of pages	3.29	0.72	Highly Literate
8. Select a cell, a range of cells, range of non-adjacent cells, an entire worksheet, entire row, an entire column	3.27	0.70	Highly Literate
Overall Mean	3.42	0.67	Highly Literate

Note: 1.00-1.79 Not Literate, 1.80-2.59 Less Literate, 2.60-3.39 Literate, 3.40-4.19 Highly Literate, 4.20-5.00 Very Highly Literate

Table 3 illustrates the literacy skills of the teachers in terms of Spreadsheets with an overall Mean rating of **3.42 (SD=0.67),**

described as **Highly Literate.** Moreover, Eight (8) out of eight (8) or 100% of the indicators were rated at the Highly Literate Level. This means that teachers' level of literacy in using spreadsheets programs is at a Highly Literate Level. This implies that the teachers can manipulate the use of spreadsheets in their grades or lesson. Furthermore, it is observed that when teachers are equipped with knowledge in spreadsheets, they comply with their work requirements faster than those who do not have a background in spreadsheets.

Although both numbers and text can be entered, spreadsheet software, most notably Microsoft Excel, offers an interactive matrix of cells used mostly to make computations on data. The fill function, which enables one to apply the same function to several cells while transposing the referenced cells as you fill up, down, or across, is particularly significant. The first thing to remark is that using this technology doesn't require language learning because of the user-friendly display and input interface. However, technology in the teacher education classroom has the potential to greatly enhance lessons by allowing teachers to experiment with computer-enhanced approaches to teaching and learning(Payne & Dituri,2019).

On the other hand, the highest rated indicator," Print and store data tables using a Spreadsheet application," got the highest Mean of **3.63 (SD=0.66),** described as **Highly Literate.** This means that the teachers can transfer files using the spreadsheet. This implies that by using the spreadsheet, they can print properly, they can manipulate the page layout ribbon, and print. Catam-isan (2019) stressed that manipulating spreadsheets makes the life of teachers easy in terms of encoding scores and in making student grades. However, the researcher further stressed that mastery of spreadsheets requires training and seminars as it involves complicated actions, especially in making formulas. Munez (2020) further revealed that using spreadsheets is still one of the ICT skills teachers find themselves at a weak or average level.

Meanwhile, the lowest rated indicator was “Modify column width and row height,” with the Mean of **3.21 (SD=0.61)** described as **Highly Literate**. This means that the teachers can use spreadsheets but not adjust columns and rows. This implies that the teachers need more hands-on to identify the height and width. However, this is one of a teacher's skills because grades, as inputted in excel, have margins and spaces to adjust.

Catam-isan (2019) stressed that manipulating spreadsheets makes the life of teachers easy in terms of encoding scores and making student grades. However, the researcher further stressed that mastery of spreadsheets requires training and seminars as it involves complicated actions, especially in making formulas. Munez (2020) further revealed that using spreadsheets is still one of the ICT skills that teachers find themselves at a weak or average level.

Table 4

Literacy Skills in Presentations

Indicator	Mean	SD	Interpretation
1. Use a presentation package to add text and sequence a presentation	3.40	0.69	Highly Literate
2. Enhance slide presentations by adding sound, customizing animation and inserting images	3.52	0.58	Highly Literate
3. Modify new slide with a specific layout	2.44	0.67	Literate
4. Add text to the presentation	3.48	0.67	Highly Literate
5. Insert a picture or an image into a slide	3.52	0.64	Highly Literate
6. Add preset text, image animation effects to slides	2.41	0.72	Literate
7. Start a slide show	3.50	0.64	Highly Literate
8. Make visual effects by animating the text slides and objects	2.42	0.69	Literate
Overall Mean	**3.09**	**0.66**	**Literate**

Note: 1.00-1.79 Not Literate, 1.80-2.59 Less Literate, 2.60-3.39 Literate, 3.40-4.19 Highly Literate, 4.20-5.00 Very Highly Literate

Table 4 illustrates the literacy skills of the teachers in terms of Presentations, with an overall Mean rating of **3.09 (SD=0.66)** described as **Literate**. This means that teachers are only at the literate level, which is second to the highest level. Moreover, five (5) out of eight (8) or 63% were at the Highly literate Level, and three 93) out of eight (8) or 37% were rated at Literate Level. This further implies that teachers improved a lot with their layout in terms of presenting visuals. As observed, this skill does not only apply in their respective classrooms but also to different school activities. The teaching and learning process has changed as a result of multimedia presentation-aided instruction. This method of instruction is more efficient and easier to understand. Its multi-sensory capabilities awaken the learners' senses in many ways. It is a cutting-edge and efficient teaching and learning tool since it supports students' motivation for learning and aids in their comprehension of the material delivered. It aids in the efficient presentation of knowledge by

teachers. Instead of being passive learners, students actively participate in the teaching and learning process (Shah & Khan,2015).

The indicators" Enhance slide presentations by adding sound, customizing animation and inserting images" and "Insert a picture or an image into a slide"' got the highest Mean of **3.52 (SD=0.58)** and **3.52 (SD=0.64)** described as **Highly Literate** were rated with highest, respectively while indicator "Add preset text, image animation effects to slides" was rated lowest with **Literate level**. This means that in terms of literacy skills in making presentations, the teachers are experts in adding animations and effects to make their created reports more interesting and attractive. This indicates that the teachers can present an attractive layout or presentation. The study of Mondina (2022) encourages the teachers to master their ICT skills in making presentations as it can be utilized with various outputs like lesson presentations and even in making certificates. Alejandro (2019) further stated that mastery in making presentations makes the teaching and learning process more lively and interesting.

Moreover, the indicator," Add preset text, image animation effects to slides," got the lowest with the Mean of **2.41(SD=0.72),** described as **Literate.** This means that the teachers can not manage to enhance animation to slides with accompanying text. This implies that the teachers simply can play slides but not animated.

Accordingly, teaching and learning have been changed by the use of this advancement, according to Kimwaga (2021). When teachers use this to enhance their lessons, students with a variety of learning preferences are able to achieve their full learning potential. In addition, it helps students become more self-reflective, independent, and self-regulated in their learning process. It also enables the delivery of virtual instruction to pupils outside of the traditional classroom setting. The widespread consensus is that this advancement can empower educators and students, inspire change, and support the growth of 21st Century skills.

Table 5

Literacy Skills in Information and Communication

Indicator	Mean	SD	Interpretation
1. Connect to the internet via dial-up or LAN	2.56	0.64	Literate
2. Configure and use Web browsers and Help application	2.33	0.62	Literate
3. Send and receive emails with attachments, manage emails and use LAN and Web-based mail servers	3.44	0.61	Highly Literate
4. Effectively use synchronous and asynchronous web-based communication tools like instant messengers, voice, and teleconferencing	2.19	0.77	Literate
5. Connect and use shared printers, shared folders and other devices within a network.	2.46	0.61	Literate
6. Effectively use search engines, web directories, and bookmarks.	4.52	0.61	Very Highly Literate
7. Download and install relevant applications including freeware, shareware, updates, patches, viewers, and support applications.	2.73	0.49	Literate
8. Use online and offline help facilities for troubleshooting, maintenance and updating of applications	2.37	0.60	Literate
Overall mean	**2.83**	**0.62**	**Highly Literate**

Note: 1.00-1.79 Not Literate, 1.80-2.59 Less Literate, 2.60-3.39 Literate, 3.40-4.19 Highly Literate, 4.20-5.00 Very Highly Literate

Table 5 shows the literacy skills of the teachers in terms of Information and Communication with an overall Mean rating of **2.83 (SD=0.62),** described as **Highly Literate.** Moreover, Two (2) out of eight (8) or 25% of the indicators were rated Very Highly Literate, while six (6) out of eight (8) were rated at Literate Level. This means that teachers are at the literate or second to the highest level in terms of their capacity to use ICT for communication and Information.

Computer communications and modern learning technologies can significantly influence the formation of new content for education and the modification of organizational forms and teaching methods. Nowadays, new educational technologies and modern

conditions for social development require significant changes in the training of future teachers as specialists in the pedagogical area, raising the requirements for the quality of the educational process can be observed, which certainly influences the formation of professional training and students' information competence. Paced learning is best done asynchronously (Ogbonna et al.,2019).

Indicator 7," Download and install relevant applications including freeware, shareware, updates, patches, viewers, and support applications, got the highest Mean of **4.73 (SD=0.49)** at the **Very highly literate Level**. This means that the teachers manifest the skill relevant to the application to enhance their teaching. This implies that they use the varied application in the presentation of their lesson. Furher, Oco (2022) claimed that teachers' skills in using ICT, specifically in information and communication and making presentations, are vital to teaching and learning. In the time of the pandemic, wherein students' movements are restricted, they can be best communicated and assisted via virtual classes like synchronous and asynchronous learning and via social network sites like Facebook and Google. This was also evident in the studies of Catam-isan (2019) and Munez (2020), which yielded similar results.

While Indicator 4, "Effectively use synchronous and asynchronous web-based communication tools like instant messengers, voice, and teleconferencing," got the lowest with a Mean of **2.19 (SD=0.77)** described as **Literate Level**. This means that teachers' capacity to use ICT features like conducting synchronous and asynchronous learning is only at Literate Level. This means that this area should be given emphasis, especially in the implementation of modular distance learning wherein students need assistance, and these features can be of great use.

Oco (2020) stressed that in modular distance learning, wherein students are not reading in this type of modality while others are still fully developed as independent learners, providing assistance can be done via synchronous and asynchronous learning. That is why teachers are encouraged to master their skills in this area. Moreover, Felizarta (2022) claimed that the better performance of the students is a reflection also of the better performance of the teacher. Thus, the extra efforts of teachers are rewarding and fulfilling.

Table 6

Literacy Skills in Computer Ethics and Security

Indicator	Mean	SD	Interpretation
1. Recognize that when an individual creates something on a computer, the created work is that person's property	3.69	0.47	Highly Literate
2. Show respect for privacy and cyber etiquette, phone etiquette, and similar use of technology	3.37	0.63	Literate
3. Explain the use of anti-virus software	2.56	0.61	Literate
4. Scan computer for viruses	2.31	0.61	Literate
5. Respond to cyber security issues involving computing devices of all forms	2.48	0.67	Literate
6. Back up data, and software to a removable storage device	2.44	0.61	Literate
7. Secure my own computer with antivirus and personal password	3.56	0.57	Highly Literate
8. Understand and explain the basic concepts of Intellectual Property Rights	2.44	0.64	Literate
Overall Mean	2.86	0.60	Literate

Note: 1.00-1.79 Not Literate, 1.80-2.59 Less Literate, 2.60-3.39 Literate, 3.40-4.19 Highly Literate, 4.20-5.00 Very Highly Literate

Table 6 shows the teachers' literacy skills in Computer Ethics and Security, with an overall Mean rating of **2.86 (SD=0.60)** described as **Literate**. This means that teachers need a lot of information drive and classes to understand the dos and don'ts of using ICT services in terms of Ethics and Security. Moreover, Two (2) out of eight (8) or 25% of the indicators were rated at Highly Literate Level, while six (6) out of eight (8) of the hands were at Literate Level. Moreover, Maglangit (2021) supported that teachers know about cyber security laws, and even the use of social media is still limited, resulting in teachers posting messages that sometimes can lead them to trouble. Nevertheless, incorporating the professional and ethical foundations associated with the instructional strategy and application in technology adoption shows how humans, with all their potential, can significantly contribute to society at large by developing their skills and improving their capacities for the wise and appropriate utilization of technological tools.

Cyberattacks still plague the education industry, and they are becoming worse. Schools have become increasingly susceptible to cyber-attacks as a result of the increased use of technology for instruction, learning, and maintaining school operations in today's remote settings. This is due to the fact that teachers and students who learn online operate in less regulated contexts outside of the classroom and that cyberattacks are common, particularly on the part of students who have less parental and educational

oversight. This is why it is important to educate parents, instructors, and students about how to protect themselves from these types of cyber-attacks. Cybersecurity has been built to assist each person in being secure and protected from this kind of problem online (Huda,2018).

Indicator 1," Recognize that when an individual creates something on a computer, the created work is that person's property," got the highest Mean of **3.69 (SD=0.47),** described as a **Very Highly Literate Level.** This means that the teachers respect individual property rights. This implies that the teachers aspire to create an original output if not asking for professional permission on the use of material. Therefore, every intellectual creation, including literary works, artistic innovations, inventions, designs, symbols, names, images, computer code, etc., is covered by intellectual property rights. Copyright, trademark, and patent law all fall under the purview of intellectual property law, which was established to safeguard creators.

More so, chances, objectives, and lifelong endeavors are fundamentally shaped by access to ideas and to their physical manifestations. The manner in which concepts and information are gathered and modified has undergone a significant change as a result of the exponential growth of computer technology and digital networks. Many "concept anarchists," including hackers, cyberpunks, programmers, internet users, and others, advocate for total access to all information. Many policies which argue that intellectual works are social, not individual products, reflect this later viewpoint. It is asserted that these latter views against intellectual property have resulted in a surge in copyright infringement and global piracy (Moore, 2017).

Meanwhile, Indicator 4, "Scan computer for viruses," got the lowest with a **Mean of 2.31 (SD=0.61),** described as **Literate Level.** This means that teachers' higher level of learning and capacity in terms of security and ethics must be emphasized to help teachers be protected from hacking and other illegal online activities.

According to Dablo (2021), several teachers lost essential files on their emails and social media accounts as they suffered from security breaches and hacking. This was because their passwords were easy to decipher, while others forgot to log out while accessing their accounts at computer shops. Nacua (2022) further stressed that teachers are prone to invasion of privacy and legal sanctions as they are not well versed in higher ICT skills and laws regarding social media utilizations and postings.

Hence, everyone has a moral obligation to keep the public safe and refrain from spreading false information that can endanger them. Additionally, one should not make dishonest websites or online posts intended to financially exploit individuals, such as enticing them to buy goods and services that are unlikely to benefit them and could harm their emotional, physical, or financial well-being (Reamer, 2018).

Table 7

Summary of ICT Literacy Skills

ICT Skills	Mean	SD	Interpretation
ICT Basics	3.52	0.58	Highly Literate
Word Processing	4.22	0.55	Very Highly Literate
Spreadsheets	3.42	0.67	Highly Literate
Presentations	3.09	0.66	Literate
Information and Communication	2.83	0.62	Highly Literate
Ethics and Security	2.86	0.60	Literate
Overall Mean	**3.32**	**0.61**	**Very Highly Literate**

Note: 1.00-1.79 Not Literate, 1.80-2.59 Less Literate, 2.60-3.39 Literate, 3.40-4.19 Highly Literate, 4.20-5.00 Very Highly Literate

Table 7 displays the summary of the ICT literacy skills of the teachers. It showed an overall Mean of **3.32 (SD=0.61),** interpreted as **Very Highly Literate**. One (1) out of six (6) or 17% of the ICT skills was rated as Very Highly Literate. Three (3) out of six (6) or 50% of the ICT skills were rated as **Highly Literate,** while the remaining two (2) or 33% were at **Literate Level**. This means that teachers can utilize their ICT skills to do their work at school much easier and faster, but skills still need enhancement for high mastery or skills.

As mentioned by Cote and Milliner (2018), the teachers recognize that digital technology can support and augment classroom practices and are committed to improving their digital literacies. Video lectures with short-answer quizzes significantly improve students' ability to solve novel problems. They recommend that teachers use teacher's talking head videos with interpolated short-answer quizzes in the future practice of video-recorded lecturing. It means that in order for the teachers to create a video or audio lesson, one should have technical knowledge, skills, and equipment to be used creating a video or audio lesson since creating one is very time-consuming and requires many things to consider, such as the content, language, scriptwriting, planning, ethical considerations.

Word Processing is the highest rated ICT skill, with the Mean of **4.22 (SD=0.55)** interpreted as **Very Highly Literate**. This means that the teachers can perform the simple operation in the computer system to produce output for teaching and learning. According to Guillo (2017) when teachers were found to be very much capable of using a word processor to enter and edit text and images while students were bared to be proficient in identifying and defining the functions of computer peripherals including printer, scanner, modem, digital camera, speaker and others. Since the K-12 was implemented, the Department of Education was starting to focus on the

teachers' skills to meet the new curriculum's goals and objectives. They conducted training, seminars, and workshops for the teachers to be skillful, and teachers use these educational tools (word, excel, and ppt) daily in their classroom, making the teachers use those educational tools.

Along the same line, one good account in the helpful computer program called word processing is used to make documents, including letters, reports, newsletters, tables, brochures, and web pages. Users can use it to add images, tables, and charts to documents and check the grammar and spelling of such pages. It is a talent that is typically taught as the first competence in computer science classes at schools. The ability to learn a specific task or function to an expert level is called skill acquisition. Learning to do previously new movements includes cognitive and physical processes, which is a long developmental process. The fundamentals of word processing are what allows someone to become computer literate.

Moreover, the lowest rated ICT skills are Ethics and Security, with the Mean of **2.86 (SD=0.60)** interpreted as **Literate Level**. This means that necessary adjustments are needed to intensify teachers' knowledge, especially on ethics and security to protect themselves from public bashing, lost files, and even worse, being sued for defamation.

According to Maglangit (2021), teachers' knowledge of laws and regulations about cyber security and even the use of social media is still limited, resulting in teachers posting messages that sometimes can lead them to trouble. Juario (2022) further stressed that teachers' mastery in word processing is not a surprise as these ict skills are the most used and practiced among teachers in their duties at work. Oco (2022) further stressed that making presentations must be mastered by the teachers as this can be of great advantage to using during synchronous and asynchronous classes or sessions.

Problem 2. What is the level of teachers' performance for the SY 2020-2021?

Table 8

Teachers' Performance

Interval	Description	F	%	Mean	SD	Interpretations
4.500 – 5.000	Outstanding	42	80%			
3.500 – 4.499	Very Satisfactory	5	10%			
2.500 – 3.499	Satisfactory	5	10%	4.645	0.86	Outstanding
1.500 – 2.499	Unsatisfactory	0	0%			
1.000 – 1.499	Poor	0	0%			
Total		52	100%			

Note: F=Frequency, %=Percent

Table 8 reads teachers' performance in East ll District, the School Year 2020-2021. It revealed that forty-two (42) out of fifty-two (52) or 80% of the teacher-respondents were rated Outstanding during the school year. Meanwhile, five (5) out of fifty-two (52) or 10% of the teachers' performance was at the Very Satisfactory level, and five (5) out of fifty-two (52) or 10% of the teachers' performance was at Satisfactory Level.

The overall mean of teachers' performance was **4.645 (SD=0.86),** interpreted as **Outstanding**. This means that most of the teachers' performance was at the highest level of performance set by the Department of Education. This indicates that the teachers are performing at their best despite the few slacking. However, according to Oco et al. (2022), although the majority of the teachers are still performing, few choose to be contented with performance at a satistactory level that is necessary to be given attention to make them more inspired and motivated. On the other hand, Wabe (2021) stressed that few teachers have difficulty adapting to the needs and requirements in obtaining higher performance rating and decides just to have the passing marks. Felizarta (2022) further stated that teachers that aspire to promotions are most likely to perform better to obtain high-performance ratings while others are not.

Like Kimwaga, Merillo, and Domingo (2019) found that teachers overwhelmingly concur that integration is a key instrument for improving the teaching and learning process. Furthermore, the majority of teachers in this study firmly believed that using ICT would help their pupils learn more since the lessons are more exciting and engaging.

According to Talibilm (2020), technology plays a significant role in the educational sector and has been a global trend-setter in educational institutions. It offers certain distinctive and enhanced student learning processes and encourages great teaching strategies. It has long been accepted wisdom; it has improved learning opportunities for pupils and altered traditional teaching practices.

Problem 3. Is there a significant difference between the teachers' ICT literacy skills and teachers' performance?

Table 9

Test Significance on ICT Skills and Performance

Skills	Computed T	P-Value	Decision	Interpretation
ICT Basics	3.264	0.001	Reject Ho_1	Significant
Word Processing	4.168	0.001	Reject Ho_1	Significant
Spreadsheets	3.241	0.001	Reject Ho_1	Significant
Presentations	3.286	0.001	Reject Ho_1	Significant
Information and Communication	2.402	0.001	Reject Ho_1	Significant
Ethics and Security	5.364	0.000	Reject Ho_1	Significant

Note: Critical T value is 1.984 and Alpha at 0.05 level of significance

Table 9 displays the Test of Difference on ICT Skills and Performance of teachers. Data reveals significant differences in all literacy skills studied in this research regarding the teachers' performance. ICT Basic generated t-value of 3.264(P-value=0.001), Word Processing with t-value of 4.168 (P-value=0.001), Spreadsheets with t-value of 3.241 (P-value=0.001), Presentations with t-value of 3.286 (P-value of 0.001), Information and communication with t-value of 2.402 (p-value=0.001) and Ethics and Security with t-value of 5.364 (P-value=0.000) all significant at 0.05 level of significance. Thus, the null hypothesis is rejected. This implies that the ICT skills of teachers are vital in performing their duties and responsibilities at school and as a teacher. This indicates that ICT skills help the teachers in making their outputs and reports much better in quality and content and have the chance to finish and submit them on time.

This confirms the study of Oco (2022), who claimed that teachers' skills in using ICT, specifically in Information and Communication, Making Presentations, and Word Processing are vital to teaching and learning. Moreover, in times of pandemic, wherein students' movements are restricted, they can be best communicated and assisted via virtual classes like synchronous and asynchronous learning and via social network sites like Facebook and Google. This was also evident in the studies of Catam-isan (2019) and Munez (2020), which yielded similar results.

The Secretary of the Department of Education, Leonor Magtolis Briones, emphasized the significance of integrating Information and Communications Technology in both teaching and governance for the delivery of quality, accessible, relevant and liberating basic education for Filipino learners. The Secretary stated that in order to fulfill these goals, teachers and non-teaching staff handling ICT-related issues must attend training, particularly those who completed their studies when technology was not as advanced as it is now.

Conclusions

1. The level of ICT literacy skills utilized by the Senior High teachers in East ll District got the highest Mean in Word processing. This means that the teachers can identify the computer peripherals.

2. On the level of teachers' performance, most of the teachers in East ll District got an outstanding performance rating for the School Year 2020-2021. This means that most of the teachers' performance was at the highest level of performance set by the Department of Education. This indicates that the teachers are performing at their best despite the few that were slacking.

3. Significant difference in teachers' ICT literacy skills and teachers' performance was disclosed. This implies that the ICT skills of teachers are vital in performing their duties and responsibilities at school and as a teacher. Further, the ICT skills help the teachers make their outputs and reports much better in quality and content and finish and submit them on time.

Recommendations

1. The teachers need more mastery of the skill, particularly on spreadsheets and presentations such as modifying column width and row height, using basic mathematical functions like add, subtract, multiply, and divide and creating different types of charts/graphs based on given data. The teachers must, at times, use spreadsheets and presentations other than Word Application since this is much needed in drafting grades and other related school work that needs data presentation. Further, the use of a computer laboratory can be a good venue for peer tutorials.

2. The teachers be enhanced technological skills. They must adapt to change significantly when technology advances, as this is vital to improving students' academic achievement.

3. Performance of teachers can be affected by their ICT literacy skills. Therefore mastery of other aspects of ICT skills must be obtained to avoid delays in submitting reports and needed outputs.

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