Computer Literacy of Public School Teachers

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Abstract—The study aims to find out how computer-literate teachers are in public schools. This research employed a descriptive methodology. With the help of a survey questionnaire, information was gathered from elementary school teachers at Calanutan ES, Junior High School teachers at Palina East NHS, and Senior High School teachers at Urdaneta City NHS. The study's conclusions revealed that the teachers' computer literacy is above average. If the teachers are arranged in groups based on the greatest level of education they have attained, the results again demonstrate a considerable difference. It was determined that the teachers' computer literacy extended beyond simple activities to include more difficult ones. Consequentially, it is advised that educational institutions hold computer literacy workshops with advanced training skills in the various key areas that address the current level of computer literacy among teachers to further improve their abilities and help them keep up with the swift advancement of technologies as teaching tools. It is also advised that teachers actively participate in any computer literacy training sessions or lectures.

Indexed Terms— Computer, Education, Literate Teachers, Teaching Tools, Training Skills

I. INTRODUCTION

The ability to read and write has given way to literacy as a social activity that enables people to engage with the outside world and learn new things. The ability to understand, use, and communicate with a variety of technological and technical information is known as technical literacy. It requires a broad variety of skills and expertise related to technology and applications. In the current digital era, computer literacy is becoming more and more important for participation in the workforce, education, and daily life (Widhanarto, et al., 2023). Meanwhile, because today's children have diverse learning preferences, integrating technology into the classroom has become essential rather than optional. Consequently, teachers have taken on a more significant part in education than they did in the past. As a result, computer literacy has become increasingly important to educators. Teaching computer literacy involves more than just knowing how to use computers and software; it involves a wider range of digital skills and competencies. These skills include supporting students' digital citizenship and online safety as well as employing digital tools for course planning and delivery. Technology-savvy teachers are more likely to engage their students in the digital era and adjust to an ever-changing classroom environment (Sadik, et al., 2023). Since technology permeates every part of our lives, computer literacy among educators is crucial since it helps them manage their classrooms more effectively and efficiently. Additionally, to produce more captivating content, modify training to meet the needs of each student, and more effectively track their progress. Furthermore, it promotes professional growth by providing access to fresh resources and pedagogical ideas. It may also present chances for advancements in curriculum development or instructional technologies (Agustini, et al., 2020). However, the advent of new technologies presents challenges for educators on two fronts: first, they must enhance their digital competencies; and second, they must create lesson plans that give every student the tools they need to thrive in the digital age. Teachers must, for instance, support digital literacy abilities in addition to traditional literacy skills. The digital competence of teaching professionals is a major premise that comprises digital skills, attitudes, and knowledge (Meng, et al., 2023). It is a critical notion that teaching professionals seem to face challenges, e.g., they possess weaker problem-solving skills for technology-rich environments (TRE) than adults working in other sectors. Given the rapid advancements in technology and the expanding scope of the workplace, it is undeniable that education and learning have been especially influential in shifting

public opinion. These days, incorporating technology into education opens up new possibilities. Computers indeed have some features that, in the right hands, can help students learn. Furthermore, it was mentioned that the advantages of technology for education have been demonstrated to be crucial for creative teaching and learning methods. Many teachers find it difficult to keep up with the rapid advancements in technology for education and to fully utilize computers, other digital devices, and the internet when teaching languages according to Sulasmi (2022). In educational settings, internet instruction and remote learning are becoming more popular. Since the majority of instruction will take place online, educators must consider how they may employ digital tools to help students develop a variety of reading skills. There has long been a problem with teachers not being computer literate, and some Western nations have attempted to find solutions. Over the past four years, the Manitoba Department of Education and the province's universities have worked together to improve our teachers' computer literacy (Makhmudov and others, 2020). More than 70% of instructors at the Schools of Rajouri (J&K) in India were found to value digital literacy highly and to be aware of its advantages for the classroom; however, due to a lack of competency, these teachers are unable to use ICT to teach their students (Rasyid and Nuriyah, 2023). Additionally, research revealed that less than 10% of teachers have ICT training. Teachers lack the abilities necessary to integrate ICT into the teaching process and are not proficient in using it in the classroom. The majority of educators cannot utilize even basic ICT tools and applications. The findings unequivocally show that professional development in ICT is necessary for effective ICT integration in educational settings. Furthermore, teachers were found to be only minimally literate in terms of operational abilities, information navigation, creative usage, mobile and computer navigation, and digital awareness in a study done by Statti and Torres (2020) in the chosen schools in Dasmarinas, Cavite. The findings demonstrated that teachers, except for video conferencing and collaboration platforms, were only somewhat engaged with the use of cutting-edge digital classroom tools. However, teachers have a very good level of digital literacy on Digital Literacy and Competence of Filipino Teachers which means that teachers can use information and communication technologies

critically and safely for work, both in social and private classes, which is a sign of a digitally literate person. They placed the teachers in the highest category of digital competency based on the encouraging results that were presented. The responsibilities, methods of instruction, and professional growth of educators are all greatly impacted by the use of technology in the classroom (Setiansah, et al., 2022). Technology regularly changes teachers' responsibilities from being primary information sources to being facilitators and advisers. More responsibility is placed on teachers to foster a positive learning environment, help pupils use online resources, and promote critical thinking and problem-solving skills. Technology fosters cooperation and the sharing of creative teaching ideas and techniques by connecting educators with experts, peers, and schools throughout the globe. Therefore, teachers need to be computer savvy to incorporate technology into their lessons efficiently. This includes knowing how to use digital tools, evaluate information found online, and deal with challenges related to digital citizenship and online safety. Teachers are greatly impacted by the use of technology in the classroom although it offers opportunities for more tailored and efficient instruction, it also necessitates that instructors adjust, keep learning, and deal with a range of challenges, including those related to professional growth, digital literacy, and equitable access to technology (Ovez and Demir, 2023). Not only is computer literacy a desired skill for educators, but it is also an essential prerequisite in the classroom of the twenty-first century (List, et al., 2020). It strengthens their capacity to properly instruct kids, fosters creativity, and gets them ready for a digital future. In the end, it helps teachers and students alike by enabling them to be more engaged, productive, and efficient in their work. For teachers to impart these skills to future generations, it is crucial to evaluate their level of computer literacy and identify any pertinent abilities they still need to be proficient in their profession (Suwarto, et al., 2022).

II. METHODOLOGY

A descriptive approach was employed in this study to assess public school teachers' computer literacy. The study was carried out in the chosen schools supervised by the Pangasinan II Division and Urdaneta City

Schools Division Office. Three (3) sets of responders were present. This study focused on the computer literacy of teachers for the SY 2023–2024 and included three sets of respondents: elementary teachers from Calanutan Elementary School, junior high school teachers from Palina East NHS, and senior high school teachers from Urdaneta City NHS. The questionnaire checklist was utilized to collect the data required for the study, and the population of the study consists of 50 Public School Teachers from specific schools in the Division of Urdaneta City and Pangasinan II. The developed instrument was divided into two sections: Part 1 comprised the respondent's basic information, while Part 2 assessed the respondents' computer literacy. The surveys were sent by the researchers using a variety of social media channels. There was enough time for respondents to finish the checklist. Comparably, the researchers assured the participants that all data would be used exclusively for this study. Ensuring the data is as genuine, dependable, and objective as possible is the goal of this process. The right statistical tools were employed in this investigation to determine the dependability of the findings. An average weighted mean was utilized to ascertain the teachers' degree of computer literacy.

III. RESULTS AND DISCUSSION

Table I. Level of Computer Literacy of Teachers in the Area of General Computer Operations

Word processing, spreadsheets, presentations, and general computer operations are among the competency levels that were examined in this domain. According to the table below, the respondents' average weighted mean in the category of general computer operations was 3.54, indicating good performance.

Indicators	Mean	Descriptive Equivalent
Identify the different parts of a computer system (e.g. hard drive, RAM, etc.)	3.3200	Above Average
Identify the different parts associated with input, process, output	3.3200	Above Average
Know how to manage my desktop files	3.5600	Excellent
Install an application	3.5000	Above Average
Uninstall an application	3.7600	Excellent
Use the printer	3.5200	Excellent
Use the scanner	3.7000	Excellent
Cancel a file for printing	3.4800	Above Average
Know how to do a maintenance check on printer	3.6600	Excellent
Know when to use Save and Save As	3.6400	Excellent
Proficient in using email	3.2400	Above Average
Scan computer for viruses.	3.8000	Excellent
Average Mean	3.5417	Excellent

The data displayed indicate that, of all the indications, email proficiency has the lowest average mean (3.24), while virus scanning of a computer has the greatest weighted mean (3.800).

Table 2: Level of Computer Literacy of Teachers in the Area of Spreadsheet

Indicators	Mean	Descriptive Equivalent
Insert, Delete, Copy, Move, and Rename a worksheet	3.5000	Above Average
Sort and Filter data, Wrap text, Merge and split cells	3.5000	Above Average
Insert and manage tables	3.0200	Above Average

Create a link to a Web page, a picture, file, program using the Hyperlink function	2.9600	Above Average
Generate formulas using arithmetic and logical functions	3.0600	Above Average
Create and format different types of charts/graphs based on the existing data	3.4600	Above Average
Change the column width and row height	3.4000	Above Average
Adjust page scaling to fit worksheet contents on one page or on a specific number of pages	3.2600	Above Average
Add headers and footers	3.5000	Above Average
Preview and print a cell, a range of cells, or an entire worksheet	3.5400	Excellent
Average Mean	3.3200	Above Average

Table 2 demonstrates that the average mean of the respondents' literacy in the spreadsheet domain is 3.320, indicating above average proficiency. The responders are quite good at previewing and printing a single cell, a group of cells, or the complete worksheet, according to the table above. However, the utilization of the hyperlink function has the lowest mean (2.96), indicating that the respondents need to improve their proficiency in this area.

Table 3: Level of Computer Literacy of Teachers in the Area of Presentation

Indicators	Mean	Descriptive Equivalent
Create a new slide presentation and apply appropriate visuals and design considerations	3.3600	Above Average
Open multiple presentation	3.2400	Above Average
Rearrange slides using Slide Sorter View	3.4600	Above Average
Apply slide layouts and templates and add, delete, hide, and duplicate slides	3.4600	Above Average
Add and format text to the presentation	3.4400	Above Average
Insert shapes, pictures, cliparts, videos and audio to the presentation	3.3000	Above Average
Create and format chart/ graph based on the data given	3.2000	Above Average
Add hyperlink into the slide	3.3000	Above Average
Use rehearse timings, Start and end an slideshow	3.4800	Above Average
Average Mean	3.3600	Above Average

With an average mean of 3.360, the presentation area is considered above average. The findings demonstrate that every indication provided has achieved the above-average classification. The responders may need to improve their skills in this area as the creation and formatting of charts and graphs based on provided data has the lowest mean (3.200). Table 3 displays the respondents' literacy level about the research findings, which indicate that both word processing and general computer operations have the descriptive equivalent of excellent, with average means of 3.7240 and 3.5417, respectively. Additionally, with average means of 3.3200 and 3.3600, respectively, the domains of Spreadsheet and Presentation also have the descriptive equivalent of above average. As a result, the respondents' areas of greatest and lowest proficiency are word processing and spreadsheet, respectively.

Table 4: Difference in the Respondents' Computer Literacy if they are grouped according to their Highest Educational Attainment

Groups	Count	Sum	Average	Variance
College Grad	41	142.0400000	3.464390244	0.063910244
Masters	41	142.2857143	3.470383275	0.042765887
Doctorate	41	155.0000000	3.780487805	0.056859756

When teachers are categorized based on their greatest level of education, Table 4 illustrates the differences in their computer literacy. It reveals that teachers holding a PhD have the highest average mean (3.78), which is the descriptive equivalent of good. Teachers without a graduate degree, on the other hand, have the lowest average mean (3.46), which is above average in terms of descriptive analysis. According to the findings, teachers with doctorates typically possess a greater degree of computer literacy.

Table 5: Significant difference if the Teachers are grouped according to their educational attainment

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2.680285	2	1.340142	24.58437	1.13E-09	3.071779
Within Groups	6.541435	120	0.054512			
Total	9.22172	122				

If teachers are categorized based on their greatest degree of education, Table 5 illustrates the notable variation in their computer literacy. The P-Value was demonstrated to be less than 0.05, indicating that it is significant.

Interventions to improve the teachers' computer literacy

A Computer Literacy Workshop with advanced Microsoft Office training is suggested to further improve instructors' computer literacy in light of the research's findings. Given that the study's findings indicate that teachers' computer literacy is above average, it is suggested that the respondents receive more sophisticated and in-depth instruction to further increase their proficiency with computers.

CONCLUSIONS AND RECOMMENDATIONS

The findings and analysis led to the following deductions and suggestions. The researchers indicate that the teacher's computer literacy is above average, indicating that they possess more advanced skills than just basic computer usage. Additionally, teachers have outstanding computer literacy in the areas of word processing and general computer operations, indicating that they have the necessary skills to perform even more sophisticated work in these specific areas. The study's results and conclusions suggest that educational institutions hold computer literacy workshops with advanced training skills in the various key areas that address teachers' current computer literacy levels. This will help the teachers further develop their skills and adapt to the rapidly advancing technologies used in instruction. It is also advised that teachers actively participate in any computer literacy training sessions or lectures. Teachers need to be computer savvy and equipped to instruct pupils with better audio-visual presentations and reporting to adapt to the contemporary manner of teaching.

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