

Difficulties Encountered by Teachers in Utilizing Information and Communications Technology (ICT): Basis for an Action Plan

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Abstract

This study employed a descriptive research design to identify and analyze the actual experiences and difficulties primary teachers encounter when integrating Information and Communication Technology (ICT) in the classroom. Research was conducted quantitatively across all public elementary schools within a medium-sized division in Southern Negros. The investigation focused on key areas: office productivity tools, online platforms, and the adequacy of school facilities and equipment. Findings indicated that teachers faced significant challenges in these areas, highlighting a gap between the potential of ICT and its classroom implementation. To address these barriers, policymakers and trainers must understand the specific obstacles and costs involved. It is recommended that school administrators offer personalized professional development plans and mentorship opportunities with experienced educators. Furthermore, schools should prioritize ICT upgrades and support teachers in pursuing advanced degrees or certifications. Finally, teachers are encouraged to engage in action research to systematically solve challenges in technology utilization, ensuring an adequate flow of information among teachers, students, and administrators.

Keywords: Difficulties encountered, elementary school teachers, Information and Communications Technology (ICT), intervention plan

Bio-profiles

Ma. Lizette M. Guerra-Tamayor is a public-school teacher and researcher currently holding the position of Master Teacher I at San Antonio Elementary School in the Schools Division of Himamaylan City, where she has rendered seven (7) years of service. She completed her Bachelor of Elementary Education (BEEd) with a major in General Education at the West Visayas State University – Extension Campus of Himamaylan City (EHC) in 2014. She also earned her Master of Arts in Education, Majoring in Educational Administration and Supervision, at STI West Negros University in Bacolod City. Her research interests focus on teachers' utilization of Information and Communications Technology (ICT) in the teaching-learning process, instructional effectiveness, and professional development. Her master's thesis, entitled "Difficulties Encountered by Teachers in



Utilizing Information and Communications Technology (ICT): Basis for an Intervention Plan,” reflects her commitment to addressing teachers' challenges and to developing practical interventions to enhance ICT integration in education.

Dr. Bernie L. Libo-on is a career education leader with 37 years of professional experience in the Philippine public basic education system, serving under the Department of Education. He previously served as a school principal for seven years and as a public school district supervisor for twelve years, providing instructional leadership, policy implementation, and technical supervision across multiple public schools. His professional interests include educational management and supervision, leadership development, and innovation in education systems, with particular emphasis on improving organizational effectiveness and instructional quality. Drawing from extensive experience in school-based and division-level leadership, his work reflects long-term engagement in educational governance and capacity-building within large public education organizations. He currently holds a leadership role at the Schools Division level, where he contributes to system-wide planning, instructional improvement initiatives, and leadership support for school heads and supervisors.

Introduction

Rationale

Teachers lacked the necessary skills to use ICT effectively because the training they received was either inadequate or outdated. They also lacked confidence in working with technology and encountered technological issues such as poor internet connections and hardware unavailability. Besides, they had little time to learn new tools. These problems have prevented teachers from utilizing technology effectively in the classroom. To address these issues, it is essential to offer ongoing, expert-led training and support to teachers. Moreover, it is essential to ensure access to reliable technology and create a supportive environment that allows teachers to build confidence in using ICT to enhance learning and growth (Esfijani, 2020).

According to Paje et al. (2021), whereas the use of computer-based technology in the classroom is becoming more common in 21st-century education, not all teachers possess ICT literacy. Teachers were not experts in using a variety of computer programs, which affected how they created and organized multimedia, documents, and other computer-based learning resources. Teachers also find it challenging to troubleshoot software and computer issues. The availability of internet connections is a serious issue for schools. This is where the importance of teachers' competence in ICT comes in. Using ICT, teachers have free access to information through telecommunications technologies. Teachers can also reach learners through digital platforms (Dela Fuente & Biñas, 2020).

Teachers face significant difficulties in using ICT, stemming from a lack of training and support, poor infrastructure (including slow internet), outdated hardware, power issues, time constraints, resistance to change, challenges in aligning technology with pedagogy, and concerns about student safety and costs. However, many are motivated to integrate in order to receive



support. Overcoming these requires better training, resources, technical support, and integration strategies that respect teachers' existing beliefs and skills.

Teachers' degree of difficulties encountered in utilizing Information and Communications Technology must be addressed before the goal of fostering high-quality education can be realized. To have a meaningful impact on pupils, educators need to be trained to use digital media effectively to enhance current instructional materials. To provide training programs that will aid in raising the level of ICT proficiency among teachers.

Literature Review

The integration of Information and Communication Technology (ICT) in education is a multifaceted process characterized by the use of digital applications for diverse instructional purposes. Van Braak et al. (2020) define computer competence as the ability to use a variety of computer programs effectively for different tasks. While technology has revolutionized the modern classroom, educators face significant challenges in achieving technological proficiency. High-quality ICT integration involves the intersection of hardware, software, and the pedagogical skills necessary to manage classes and develop subjects effectively. Consequently, schools must establish clear baselines to align teacher abilities with the demands of a 21st-century digital ecosystem.

A primary determinant of successful ICT engagement is the teacher's level of confidence. Jones (2020) found that teachers' confidence in using technology is a strong predictor of their level of ICT involvement. Dawes (2020) further notes that instructors who lack confidence in their computer skills often avoid technology altogether to prevent potential lesson failures. This hesitation is frequently rooted in a lack of technical support, as Preston et al. (2020) explain that teachers fear breakdowns they cannot resolve during a live lesson. Furthermore, while many educators possess basic data management skills, they often require advanced training to interpret student achievement data or design data-driven assessments.

Beyond individual competence, external barriers significantly hinder the effective use of ICT in schools. Mumtaz (2020) argues that the level of access to ICT infrastructure and resources is a significant factor in determining teachers' use of technology. Plomp et al. (2021) emphasize that access to these resources in schools is a necessary condition for integrating ICT in education. Limited accessibility to up-to-date hardware, such as projectors and functional computers, remains a critical obstacle. Even when hardware is available, Simin et al. (2022) note that unreliable internet connectivity and power fluctuations can interrupt the flow of information, discouraging teachers from utilizing online resources. These infrastructure gaps are compounded by a lack of expert technical staff, meaning that technical issues cannot be resolved quickly.

In the Philippine context, the integration of technology has evolved from basic literacy in office productivity tools to more specialized applications. However, local studies reveal that many public-school teachers still possess only basic ICT knowledge and require continuous professional development to improve the quality of education. Caluza et al. (2021) found that teachers at San Jose Central Elementary School require more training to integrate ICT into teaching and related tasks effectively. Interestingly, Aslan & Zhu (2020) found that demographic profiles, such as educational attainment or gender, are not always significant predictors of the difficulties teachers



encounter. Instead, Oblinger and Oblinger (2020) suggest that the transition from traditional to virtual environments requires faculty to expand their understanding of the "Net Generation" and adopt new pedagogical approaches.

Ultimately, the synthesis of foreign and local literature highlights teachers' strong desire to use ICT despite existing barriers. Sharma (2020) noted that while teachers initially did an inadequate job of utilizing technology, they actively sought ways to use ICT to increase students' enthusiasm for studying. To bridge the gap between basic awareness and transformative use, Paje et al. (2021) point out that literacy remains unevenly distributed. Educators must engage in continuous training that moves beyond word processing toward cloud solutions, multimedia, and interactive platforms. By providing a supportive environment with robust infrastructure, as suggested by Jomezai et al. (2020), and specialized technical assistance, as noted by Plair (2020), educational institutions can empower teachers to enhance student engagement and achieve higher learning outcomes.

Theoretical Underpinnings

This research is fundamentally anchored in David Perkins' (2007) Theory of Learnable Intelligence, which posits that cognitive ability is not a fixed trait but a dynamic, three-dimensional construct comprising neural, experiential, and reflective components. While neural intelligence serves as the genetically determined and largely fixed foundation of the brain, the experiential and reflective dimensions are actively developed through education and interaction with the world.

Experiential intelligence refers to the knowledge accumulated through direct experience; thus, individuals in stimulating environments gain a distinct intellectual advantage. Complementing this is reflective intelligence, which involves the ability to analyze and understand one's own thinking processes. This framework suggests that intelligence can be enhanced through deliberate effort and instruction.

This theory is particularly suitable for the present study, as it provides a robust measure of outcomes, ranging from the initial transfer of knowledge to the ultimate impact on a learner's performance. By focusing on learner-based assessments, it aligns effectively with modern instructional competencies and training models.

Objectives

This study aimed to determine the degree of difficulties encountered by teachers in utilizing Information and Communications Technology (ICT) in one of the districts of a medium-sized school division in a first-class city in Central Philippines during the 2025-2026 school year. Specifically, it sought to answer the following questions: 1) level of difficulties encountered by teachers in utilizing Information and Communications Technology (ICT) in office productivity tools, online platform, and facilities and equipment; 2) level of difficulties encountered by teachers in utilizing Information and Communications Technology (ICT) when grouped according to age, civil status, highest educational attainment, and length of service; and 3) the significant difference in the level of difficulties encountered by teachers in utilizing Information and Communications Technology (ICT) when grouped and compared based on the aforementioned variables.



Methodology

This section presents the discussion of the research methodology and design, the study's subjects and respondents, and the research instruments. It further details the validity and reliability of the instruments, the data-gathering procedure, and the specific statistical tools and procedures used for data analysis.

Research Design

This study employed a descriptive research methodology to investigate the level of difficulty teachers encountered when using Information and Communications Technology (ICT) in one of the medium-sized divisions in Central Philippines during the 2025-2026 school year.

Descriptive research entails collecting data that characterizes events, which is then organized, tabulated, depicted, and described. It is also helpful in presenting information on which scientific judgment can be made, as it evaluates the current investigation (Santos, 2020).

Locale of the Study

This study was conducted across five elementary schools within a medium-sized district in Southern Negros, Philippines. As a third-class municipality covering 185.22 square kilometers, representing 2.37% of the total area of Negros Occidental, the locale comprises 16 elementary schools and one primary school across two districts. The teaching force comprises 41 male and 243 female educators.

The district serves as a domicile for achievers and an epitome of excellence within the division. Historically, its schools have consistently topped academic competitions in Science, Mathematics, and Language. Notably, in 2019, the district secured top honors at the Festival of Language and multiple awards at the Schools Press Conference, including Cartooning and Science Feature Writing. Furthermore, the district spearheaded the Department of Education's programs, with lead schools garnering 3-Star Awards for the Wash in School (WinS) Program and placing in Division-level Science Investigatory Projects.

By spearheading projects focused on quality education, the district serves the masses while fostering a generation of self-reliant and productive citizens. This environment of demonstrated excellence across various endeavors provides a robust setting for investigating the integration of educational and technological approaches.

Respondents of the Study

The respondents in this study are 57 public elementary school teachers from one district, selected based on specific criteria, namely, low ICT e-SAT scores (Rodriguez, 2024). Purposive sampling was employed to identify individuals who required urgent professional development, ensuring that all qualified individuals were included as respondents.

Data Gathering Instrument



The study employed a researcher-designed instrument to collect baseline data from teacher respondents. The instrument was structured into two distinct parts: Part 1 focuses on the respondents' profile, including age, civil status, highest educational attainment, and length of service. Part 2 serves as the questionnaire proper, consisting of 30 items designed to measure the level of difficulty teachers encounter in utilizing Information and Communications Technology (ICT). These items are equally distributed across three key domains: office productivity tools, online platforms, and facilities and equipment, with 10 items allocated to each area. To quantify the responses, participants were asked to rate each item using a five-point Likert scale: 5 (Always), 4 (Often), 3 (Sometimes), 2 (Rarely), and 1 (Almost Never).

Instrument Validity and Reliability

To ensure the instrument's appropriateness and correctness, it underwent rigorous face and content validation. Following the principles of Bueno and Matreano (2020), validity was established to ensure the tool measures its intended constructs. Three education experts, all holding Doctor of Philosophy degrees and serving as Principals or Education Program Supervisors, evaluated the researcher-made tool. Using Good and Scates' standardized form, the instrument achieved a validation score of 4.78, indicating an "excellent" level of validity.

Reliability was determined through a pilot test with 30 non-participant elementary teachers. Data were analyzed using Cronbach's Alpha, a metric for internal consistency. The computed alpha reached 0.943, exceeding the 0.70 threshold for high reliability. This "excellent" rating confirms that the instrument consistently measures the challenges teachers face in using ICT.

Data Gathering Procedure

Following the preliminary steps, the researcher secured formal permission from the Schools Division Superintendent. Once approved, the researcher coordinated with the School Principals to establish a data-gathering schedule. The research instruments were personally administered and retrieved by the researcher to guarantee a 100% retrieval rate. Finally, the gathered data were encoded, tabulated, and processed using the Statistical Package for the Social Sciences (SPSS). The results were then analyzed and interpreted to address the study's specific research problems.

Research Ethics Protocol

The protection of human subjects through the application of appropriate ethical principles is paramount to this study. Adhering to the principle of voluntary participation, the researcher ensured that no participants were coerced; instead, they were encouraged to participate through a transparent process. Informed consent was strictly obtained from all teachers and school heads, who were fully enlightened about the study's procedures, risks, and their right to withdraw at any time without penalty. Furthermore, several safeguards were implemented to minimize harm and protect the integrity of the process. Regarding confidentiality and anonymity, the researcher maintained a strict standard, removing personal identifiers from all datasets. Identifying information



was not made available to anyone outside the direct study, and results were presented only in summary form. This ensured that both individual respondents and their respective institutions remained entirely anonymous throughout the research.

Analytical and Statistical Schemes

Objective No. 1 employed descriptive statistics, frequency count, and percentage to determine the profile of the respondents in terms of age, civil status, highest educational attainment, and length of service. Objective No. 2 also employed descriptive statistics and means to evaluate the degree of difficulty teachers experience in using Information and Communications Technology (ICT) for office productivity tools, online platforms, and facilities and equipment. Objective No. 3 employed descriptive statistics and means to assess the degree of difficulty encountered by teachers in utilizing Information and Communications Technology (ICT) in terms of office productivity tools, online platforms, and facilities and equipment, when grouped by variables. Objective No. 4 used comparative statistics and the Mann-Whitney U test to determine significant difference in the degree of difficulty encountered by teachers when using Information and Communications Technology (ICT) in terms of office productivity tools, online platforms, and facilities and equipment, grouped and compared according to specific variables.

Results and Discussion

Profile of the Respondents According to Age, Civil Status, Highest Educational Attainment, and Length of Service

Table 1
Profile of Respondents

Variable	Category	Frequency	Percentage
Age	Younger (below 34 years old)	25	43.9
	Older (34 years old & above)	32	56.1
Civil Status	Single	25	43.9
	Married	32	56.1
Highest Educational Attainment	Lower (Bachelor's Degree)	16	28.1
	Higher (Master's & Doctorate Degrees)	41	71.9
	Shorter (less than 12 years)	25	43.9



Length of Service	Longer (12 years or more)	32	56.1
	Total	57	100.00

Table 1 presents the profile of teachers for the variables age, civil status, highest educational attainment, and length of service, using frequency and percentage.

In terms of age, 25 (43.9%) of the respondents were younger (below 34 years old), and 32 (56.1%) were older (34 years old and above). Regarding civil status, 25 respondents (43.9%) were single, and 19 (24.10%) were married. Regarding the highest educational attainment, 16 or 28.10% belonged to the lower category with a bachelor’s degree. Similarly, 41 or 71.90% belonged to the higher category, characterized by higher educational attainment. Results also show that, in terms of tenure, 25 respondents (43.90%) had shorter tenure (below 12 years), and 32 respondents (56.10%) had longer tenure (12 years or more). It is essential to determine the respondents' age, civil status, highest educational attainment, and length of service, as these factors can influence their responses to the survey. In this study, the majority of respondents were older, married, with longer service, and held a bachelor’s degree.

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Office Productivity Tools, Online Platform, and Facilities and Equipment

Table 2

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Office Productivity Tools

Area	Mean	Interpretation
A. Office Productivity Tools		
<i>As a teacher, I am not able to...</i>		
1. use Microsoft Word in making documents.	3.96	High
2. Create, edit, copy, and paste content from an existing document and save it as a new Word document.	4.10	High
3. share documents using Microsoft Word.	4.10	High
4. create my lesson plans using Word.	4.54	Very High
5. make posters and announcements in word	4.05	High
6. Use Microsoft Excel to make simple computations.	4.21	High
7. encode learners’ grades using the Excel application.	4.14	High
8. use Microsoft Excel for other data entry and encoding.	4.19	High



9. utilize Excel to create an academic timetable.	4.26	High
10. easily monitor deliverables and other tasks using Excel.	4.17	High
Mean	4.17	High

Table 2 presents the level of difficulties encountered by teachers in utilizing Information and Communication Technology (ICT), specifically in office productivity tools. The results indicate that respondents experience a high level of difficulty, as reflected in an overall mean score of 4.17. These findings suggest that while teachers have basic familiarity with administrative tasks in Microsoft Word, they struggle significantly with complex instructional applications. These internal struggles are exacerbated by external technical barriers such as unstable internet connections, insufficient devices, and a lack of training in advanced formatting. As noted by Van Braak et al. (2020), actual computer competence requires the ability to handle applications for various purposes. Furthermore, Plair (2020) and Lawless & Pellegrino (2021) emphasize that without expert-led professional training to bridge these technical gaps, teachers cannot fully transform student performance through technology.

Table 3

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in an Online Platform

Area	Mean	Interpretation
B. Online Platform		
<i>As a teacher, I am not able to...</i>		
1. navigate fully in e-LRMDS and other DepEd websites.	4.08	High
2. handle online classes using the prescribed platform.	4.29	High
3. facilitate class and other meetings.	4.46	High
4. conduct assessments and receive results.	4.45	High
5. create video clips online as a supplementary lesson.	4.59	Very High
6. navigate myself freely with all websites.	4.43	High
7. experience no significant technical issues with online platforms.	4.45	High
8. utilize online platforms for group discussions and activities.	4.47	High
9. provide activities to maintain online interaction.	4.03	High
10. experience fewer distractions among students.	4.14	High
Mean	4.34	High

Table 3 reveals a generally high level of difficulty among teachers in utilizing ICT on online platforms, with an overall mean of 4.34, indicating a significant lack of proficiency. These scores suggest that while teachers possess basic data handling skills, the use of advanced applications and instructional integration remains inconsistent. Overall, the data indicate widespread barriers to technological competence and infrastructure, severely compromising teachers' efforts to deliver effective online supplementary instruction and data-driven assessments. Van Braak et al. (2020) define computer competence as the proficiency to utilize diverse applications for various instructional goals. Consequently, research emphasizes that teachers must integrate technology



with new teaching practices, supported by expert guidance and professional training, to effectively enhance student performance.

Table 4

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Facilities and Equipment

Area	Mean	Interpretation
C. Facilities and Equipment		
<i>As a teacher, I am not able to...</i>		
1. have a computer laboratory.	3.94	High
2. have a fast and strong internet connection.	4.45	High
3. have a television in each classroom connected to the internet.	4.29	High
4. have sufficient laptops, tablets, and other mobile gadgets for teachers and students.	4.49	High
5. have a digital library as an academic resource	4.36	High
6. have a backup generator in cases of power failures.	4.38	High
7. have an up-to-date computer and software.	4.36	High
8. have properly used instructional tools and facilities.	4.43	High
9. have quality and adequate facilities that provide students with ease and comfort.	4.28	High
10. have regular conduct of inventory and monitoring of school facilities and equipment.	4.33	High
Mean	4.33	High

Table 4 reveals a generally high level of difficulty among teachers regarding ICT facilities and equipment, with an overall mean of 4.33. These results suggest that inadequate infrastructure, including malfunctioning devices and poor connectivity, hinders creative teaching and increases teachers' frustration. Ultimately, these structural barriers compromise teachers' efforts to integrate technology, forcing them to rely on traditional methods despite a latent willingness to innovate. Meyers (2022) highlights that the primary educational concern has shifted from digital access to digital illiteracy, while Jones (2020) and Dawes (2020) emphasize that a lack of teacher confidence is a critical barrier to the adoption of technology. Simultaneously, Mumtaz (2020) and Plomp et al. (2021) maintain that reliable access to ICT infrastructure and school resources remains a fundamental prerequisite for successful educational integration.

Table 5

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Office Productivity Tools according to Age

Categories	Younger		Older	
A. Office Productivity Tools	Mean	Interpretation	Mean	Interpretation



<i>As a teacher, I am not allowed to...</i>				
1. use Microsoft Word in making documents.	3.92	High	3.91	High
2. Create, edit, copy, and paste content from an existing document and save it as a new Word document.	4.16	High	4.06	High
3. share documents using Microsoft Word.	4.08	High	4.12	High
4. create my lesson plans using words.	4.6	Very High	4.5	Very High
5. make posters and announcements in Word.	4.12	High	4	High
6. Use Microsoft Excel to make simple computations.	4.08	High	4.31	High
7. encode learners' grades using the Excel application.	4.2	High	4.09	High
8. use Microsoft Excel for other data entry and encoding.	4.24	High	4.15	High
9. utilize Excel to create an academic timetable.	4.6	High	4	High
10. easily monitor deliverables and other tasks using Excel.	4.36	High	4.03	High
Mean	4.23	High	4.12	High

Table 5 presents the level of difficulties teachers encounter in using Information and Communication Technology (ICT) for office productivity tools, categorized by age. The findings reveal a generally high level of difficulty across both generations, with the younger group recording a mean of 4.23 and the older group, 4.12. Teachers are aware of productivity tools, but they lack the advanced technical skills necessary for professional academic work. Common frustrations include inconsistent styling, paragraph spacing, and complex table formatting for exams. To fully realize these competencies, Caluza et al. (2021) emphasize that enhanced professional development is essential for teachers to integrate ICT effectively into their instruction and elevate the overall quality of education.

Table 6

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Online Platforms according to Age

Categories	Younger		Older	
<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation



1. navigate fully in e-LRMDS and other DepEd websites.	4.12	High	4.06	High
2. handle online classes using the prescribed platform.	4.48	High	4.55	High
3. facilitate class and other meetings.	4.4	High	4.5	Very High
4. conduct assessments and receive results.	4.44	High	4.46	High
5. create video clips online as a supplementary lesson.	4.64	Very High	4.56	Very High
6. navigate myself freely with all websites.	4.52	Very High	4.37	High
7. experience no significant technical issues with online platforms.	4.46	Very High	4.37	High
8. utilize online platforms for group discussions and activities.	4.54	Very High	4.65	Very High
9. provide activities to maintain online interaction.	4.12	High	3.96	High
10. experience fewer distractions among students.	4.2	High	4.09	High
Mean	4.37	High	4.32	High

Table 6 presents the level of difficulties encountered by teachers in utilizing Information and Communication Technology (ICT) on an online platform, grouped by age. Both the younger group (mean 4.37) and the older group (mean 4.32) achieved scores indicating a high level of difficulty. The struggle with online integration is nearly universal across the teaching workforce, regardless of age, as teachers attempt to bridge the gap between traditional instruction and virtual learning. Liu et al. (2022) and Simin (2020) find that ICT integration enhances cognitive understanding and student engagement by improving peer-instructor connectivity. However, Abbasi et al. (2021) note that inadequate training and technical barriers significantly hinder teachers' ability to adapt curriculum and assessments to virtual environments.

Table 7

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Facilities and Equipment according to Age

Categories	Younger		Older	
C. Facilities and Equipment				
<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation
1. have a computer laboratory.	3.96	High	3.93	High
2. have a fast and strong internet connection.	4.36	High	4.53	Very High
3. have a television in each classroom connected to the internet.	4.16	High	4.40	High
4. have sufficient laptops, tablets, and other mobile gadgets for teachers and students.	4.52	Very High	4.46	High



5. have a digital library as an academic resource	4.4	High	4.34	High
6. have a backup generator in cases of power failures.	4.28	High	4.46	High
7. have an up-to-date computer and software.	4.48	High	4.28	High
8. have properly used instructional tools and facilities.	4.56	Very High	4.34	High
9. have quality and adequate facilities that provide students with ease and comfort.	4.44	High	4.15	High
10. have regular conduct of inventory and monitoring of school facilities and equipment.	4.32	High	4.34	High
Mean	4.34	High	4.32	High

Table 7 presents the level of difficulty encountered by teachers in utilizing ICT facilities and equipment, categorized by age. Both the younger group (4.34) and the older group (4.32) registered scores interpreted as a high level of difficulty. Systemic issues, including inadequate institutional support and poor connectivity, significantly hinder the integration of technology. Teachers struggle with virtual student engagement and motivation because of the lack of physical interaction. According to Abbasi et al. (2021), educators must achieve proficiency in technology to create and manage digital assessments effectively.

Table 8

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Office Productivity Tools according to Civil Status

Categories	Single		Married	
A. Office Productivity Tools				
<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation
1. use Microsoft Word in making documents.	4	High	3.93	High
2. Create, edit, copy, and paste content from an existing document and save it as a new Word document.	4	High	4.18	High
3. share documents using Microsoft Word.	3.92	High	4.25	High
4. create my lesson plans using Word.	4.72	Very High	4.40	High
5. make posters and announcements in Word.	4.04	High	4.06	High



6. use Microsoft Excel to make simple computations.	4.16	High	4.25	High
7. encode learners' grades using the Excel application.	4.28	High	4.03	High
8. use Microsoft Excel for other data entry and encoding.	4.28	High	4.12	High
9. utilize Excel to create an academic timetable.	4.48	High	4.09	High
10. easily monitor deliverables and other tasks using Excel.	4.16	High	4.18	High
Mean	4.20	High	4.15	High

Table 8 presents the level of difficulties encountered by teachers in utilizing ICT office productivity tools, categorized by civil status. The single group recorded an overall mean of 4.20, while the married group yielded a mean of 2.48, indicating a high level of difficulty for both groups. While teachers possess foundational digital literacy in drafting and editing, their limited proficiency with advanced productivity tools necessitates further skill development to effectively support 21st-century classroom competencies. McNulty (2023) notes that teachers must integrate ICT skills into instruction and professional development to optimize classroom management and lesson preparation. Reganon (2024) adds that schools should standardize evaluations of these competencies, spanning technical tasks such as document processing to the creation of a pedagogical digital environment.

Table 9

Categories	Single		Married	
B. Online Platform				
<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation
1. navigate fully in e-LRMDS and other DepEd websites.	4.12	High	4.06	High
2. handle online classes using the prescribed platform.	4.4	High	4.21	High
3. facilitate class and other meetings.	4.44	High	4.46	High
4. conduct assessments and receive results.	4.4	High	4.5	Very High
5. create video clips online as a supplementary lesson.	4.56	Very High	4.62	Very High
6. navigate myself freely with all websites.	4.36	High	4.5	Very High
7. experience no significant technical issues with online platforms.	4.32	High	4.56	Very High
8. utilize online platforms for group discussions and activities.	4.53	High	4.53	Very High



9. provide activities to maintain online interaction.	4.05	High	4	High
10. experience fewer distractions among students.	4.08	High	4.18	High
Mean	4.31	High	4.36	High

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Online platforms according to Civil Status

Table 9 presents the level of difficulties encountered by teachers in utilizing ICT on online platforms, categorized by civil status. The overall mean scores of 4.31 for single teachers and 4.36 for married teachers both indicate a high level of difficulty. Systemic barriers in technological proficiency hinder teachers' ability to foster 21st-century skills. Both groups require targeted professional development to move beyond basic knowledge and effectively empower the teaching and learning process. Caluza et al. (2021) and McNulty (2023) argue that educators must integrate ICT skills into instruction and professional development to revolutionize classroom quality. Consequently, Rodrigo (2020) maintains that schools should establish assessment baselines to align teacher abilities with the standards required for optimal technological proficiency.

Table 10

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Facilities and Equipment according to Civil Status

Categories	Single		Married	
C. Facilities and Equipment	Mean	Interpretation	Mean	Interpretation
<i>As a teacher, I am not allowed to...</i>				
1. have a computer laboratory.	3.92	High	3.96	High
2. have a fast and strong internet connection.	4.36	High	4.53	Very High
3. have a television in each classroom connected to the internet.	4.12	High	4.43	High
4. have sufficient laptops, tablets, and other mobile gadgets for teachers and students.	4.68	Very High	4.34	High
5. have a digital library as an academic resource	4.24	High	4.46	High
6. have a backup generator in cases of power failures.	4.2	High	4.43	High
7. have an up-to-date computer and software.	4.6	Very High	4.18	High
8. have properly used instructional tools and facilities.	4.4	High	4.46	High
9. have quality and adequate facilities that provide students with ease and comfort.	4.56	Very High	4.06	High



10. have regular conduct of inventory and monitoring of school facilities and equipment.	4.32	High	4.34	High
Mean	4.34	High	4.33	High

Table 10 presents the level of difficulties encountered by teachers in utilizing ICT facilities and equipment, categorized by civil status. The overall mean scores of 4.34 for single teachers and 4.33 for married teachers both indicate a high level of difficulty. Teachers face significant infrastructural barriers and a potential digital divide. Systemic lacks in equipment and connectivity continue to hinder the effective implementation of digital learning activities across the teaching staff. According to Jogejai et al. (2020), these applications are vital for keeping learners active in educational activities.

Table 11

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Office Productivity Tools according to Highest Educational Attainment

Categories	Lower		Higher	
<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation
1. use Microsoft Word in making documents.	3.87	High	4	High
2. Create, edit, copy, and paste content from an existing document and save it as a new Word document.	4.12	High	4.09	High
3. share documents using Microsoft Word.	4.12	High	4.09	High
4. create my lesson plans using Word.	4.56	Very High	4.53	Very High
5. make posters and announcements in Word.	3.93	High	4.09	High
6. Use Microsoft Excel to make simple computations.	4.18	High	4.21	High
7. encode learners' grades using the Excel application.	4.37	High	4.04	High
8. use Microsoft Excel for other data entry and encoding.	4.18	High	4.19	High
9. utilize Excel to create an academic timetable.	4.62	Very High	4.12	High
10. easily monitor deliverables and other tasks using Excel.	4.5	Very High	4.04	High
Mean	4.25	High	4.14	High

Table 11 presents the level of difficulty in utilizing ICT Office Productivity Tools, grouped by educational attainment. Both the lower group (4.25) and the higher group (4.14) recorded mean scores interpreted as indicating a high level of difficulty. While teachers possess foundational skills, they lack the advanced formatting proficiency required for professional instructional materials.



Abbasi et al. (2021) identified positive teacher attitudes toward technology and noted a significant link between usage and technological competence. Conversely, Cajilig (2021) found that educational attainment does not significantly correlate with a teacher's overall level of ICT difficulty.

Table 12

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Online Platforms according to the Highest Educational Attainment

Categories	Lower		Higher	
B. Online Platforms				
<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation
1. navigate fully in e-LRMDS and other DepEd websites.	4.12	High	4.07	High
2. handle online classes using the prescribed platform.	4.31	High	4.29	High
3. facilitate class and other meetings.	4.56	Very High	4.41	High
4. conduct assessments and receive results.	4.37	High	4.48	High
5. create video clips online as a supplementary lesson.	4.62	Very High	4.58	Very High
6. navigate myself freely with all websites.	4.62	Very High	4.66	High
7. experience no significant technical issues with online platforms.	4.5	Very High	4.43	High
8. utilize online platforms for group discussions and activities.	4.43	High	4.48	High
9. provide activities to maintain online interaction.	4	High	4.04	High
10. experience fewer distractions among students.	4.25	High	4.09	High
navigate fully in e-LRMDS and other DepEd websites.	4.12	High	4.07	High

Table 12 presents the level of difficulty in utilizing ICT on online platforms, categorized by educational attainment. The lower group (4.38) and upper group (4.32) both recorded scores interpreted as a high level of difficulty. Educational attainment does not statistically influence ICT proficiency; teachers struggle equally with technological integration. This underscores the need for universal, skill-based training rather than assuming higher degrees equate to better digital competence. Software selections were also generally limited to productivity tools. As such, ICTs were primarily used to teach computer literacy and programming (Rodrigo, 2020).



Table 13

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Facilities and Equipment according to Highest Educational Attainment

Categories	Lower		Higher	
C. Facilities and Equipment				
<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation
1. have a computer laboratory.	4.06	High	3.90	High
2. have a fast and strong internet connection.	4.51	High	4.51	Very High
3. have a television in each classroom connected to the internet.	4.12	High	4.36	High
4. have sufficient laptops, tablets, and other mobile gadgets for teachers and students.	4.5	Very High	4.52	Very High
5. have a digital library as an academic resource	4.43	High	4.34	High
6. have a backup generator in cases of power failures.	4.25	High	4.43	High
7. have an up-to-date computer and software.	4.43	High	4.34	High
8. have properly used instructional tools and facilities.	4.62	Very High	4.36	High
9. have quality and adequate facilities that provide students with ease and comfort.	4.37	High	4.24	High
10. have regular conduct of inventory and monitoring of school facilities and equipment.	4.31	High	4.34	High
Mean	4.34	High	4.33	High

Table 13 shows the level of difficulty encountered by teachers in utilizing ICT facilities and equipment, grouped by educational attainment. Both the lower and upper groups recorded mean scores of 4.34 and 4.33, respectively, interpreted as a high level of difficulty. The primary challenge lies in adapting to equipment shortages, rather than a lack of institutional guidance or the ability to interpret digital outcomes. To address unavoidable device shortages and the evolving demands of modern learners, Skiba and Barton (2020) emphasize that teachers must be trained to foster student collaboration and teamwork through the shared use of technology.

Table 14

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Office Productivity Tools according to Length of Service

Categories	Shorter	Longer
A. Office Productivity Tools		



<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation
1. use Microsoft Word in making documents.	3.92	High	4	High
2. Create, edit, copy, and paste content from an existing document and save it as a new Word document.	4.16	High	4.06	High
3. share documents using Microsoft Word.	4.08	High	4.12	High
4. create my lesson plans using Word.	4.6	Very High	4.5	Very High
5. make posters and announcements in Word.	4.12	High	4	High
6. use Microsoft Excel to make simple computations.	4.08	High	4.31	High
7. encode learners' grades using the Excel application.	4.2	High	4.09	High
8. use Microsoft Excel for other data entry and encoding.	4.24	High	4.15	High
9. utilize Excel to create an academic timetable.	4.6	Very High	4	High
10. easily monitor deliverables and other tasks using excel.	4.36	High	4.03	High
Mean	4.23	High	4.12	High

Table 14 shows the level of difficulty in utilizing ICT office productivity tools, categorized by length of service. Both the shorter-service group (4.25) and the longer-service group (4.12) yielded mean scores interpreted as indicating a high level of difficulty. The primary challenge lies in the integration of advanced organizational and pedagogical features rather than basic software usage. Simin et al. (2022) identified significant ICT productivity challenges regardless of teacher demographics, though proficiency levels remained largely consistent. Conversely, Liu et al. (2022) found that technology integration boosts cognitive understanding and achievement by connecting learners with peers and instructors through digital platforms.

Table 15

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Online Platforms according to Length of Service

Categories	Shorter		Longer	
<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation
A. Office Productivity Tools				
1. navigate fully in e-LRMDS and other DepEd websites.	4.02	High	4.06	High
2. handle online classes using the prescribed platform.	4.48	High	4.15	High
3. facilitate class and other meetings.	4.4	High	4.5	Very High



4. conduct assessments and receive results.	4.44	High	4.46	High
5. create video clips online as a supplementary lesson.	4.64	Very High	4.56	Very High
6. navigate myself freely with all websites.	4.52	Very High	4.37	High
7. experience no significant technical issues with online platforms.	4.56	Very High	4.37	High
8. utilize online platforms for group discussions and activities.	4.24	High	4.65	Very High
9. provide activities to maintain online interaction.	4.12	High	4.16	High
10. experience fewer distractions among students.	4.2	High	4.09	High
Mean	4.37	High	4.32	High

Table 15 presents the level of difficulty in utilizing ICT on online platforms, categorized by length of service. Both the shorter-service group (4.37) and the longer-service group (4.32) registered scores interpreted as a high level of difficulty. The primary barrier is the lack of advanced technical training for integrating creative instruction. This underscores the necessity for annual, hands-on professional development to support teachers in mastering online platforms beyond simple navigation. Aslan (2020) and Paje et al. (2021) highlight that schools must adopt technology to keep pace with change, specifically enhancing science education through collaboration, investigation, and student engagement.

Table 16

Categories	Shorter		Longer	
A. Office Productivity Tools				
<i>As a teacher, I am not allowed to...</i>	Mean	Interpretation	Mean	Interpretation
1. have a computer laboratory.	3.96	High	3.93	High
2. have a fast and strong internet connection.	4.36	High	4.53	Very High
3. have a television in each classroom connected to the internet.	4.16	High	4.40	High
4. have sufficient laptops, tablets, and other mobile gadgets for teachers and students.	4.52	Very High	4.55	Very High
5. have a digital library as an academic resource	4.4	High	4.34	High
6. have a backup generator in cases of power failures.	4.28	High	4.46	High



7. have an up-to-date computer and software.	4.48	High	4.28	High
8. have properly used instructional tools and facilities.	4.52	Very High	4.54	High
9. have quality and adequate facilities that provide students with ease and comfort.	4.44	High	4.15	High
10. have regular conduct of inventory and monitoring of school facilities and equipment.	4.32	High	4.34	High
Mean	4.34	High	4.32	High

Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Facilities and Equipment according to Length of Service

Table 16 shows the level of difficulty in utilizing ICT facilities and equipment, categorized by length of service. Both the shorter-service group (4.34) and the longer-service group (4.32) recorded mean scores interpreted as a high level of difficulty. The primary challenge lies in equipment shortages rather than individual experience, highlighting an urgent need for institutional investment to bridge the digital divide in 21st-century classrooms. Sharma (2019) and Paje et al. (2021) note that, despite enthusiasm for ICT, many teachers remain inadequately skilled in integrating classroom technology. Consequently, Oblinger and Oblinger (2020) urge faculty to deepen their understanding of modern learners and digital pedagogy to enhance the educational experience effectively.

Table 17

Difference in the Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Office Productivity Tools when grouped and compared according to the aforementioned Variables

Variable	Category	N	Mean Rank	Mann-Whitney U	p-value	Sig. level	Interpretation
Age	Younger	25	31.78	330.500	0.260		Not Significant
	Older	32	26.83				
Civil Status	Single	25	30.54	361.500	0.533		Not Significant
	Married	32	27.80				
Highest Educational Attainment	Lower	16	33.63	254.000	0.186	0.05	Not Significant
	Higher	41	27.20				
Length of Service	Shorter	25	31.78	330.500	0.260		Not Significant
	Longer	32	26.83				

Table 17 presents the analysis of significant differences in the level of difficulty encountered by teachers when utilizing ICT office productivity tools, grouped by demographic variables. The computed Mann-Whitney U test values for age (33.50), civil status (361.50), highest educational



attainment (254.00), and length of service (330.50) yielded p-values of 0.260, 0.533, 0.186, and 0.260, respectively. Since all p-values exceed the 0.05 level of significance, the results are interpreted as "not significant." Successful ICT integration requires teachers to perceive technology as user-friendly, valuable, and observable. Demetriadis et al. (2022) emphasize that while teachers are open to innovation, they require consistent support and extensive training to feel truly capable of integrating these tools into their teaching methodologies.

Table 18

Difference in the Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Online Platform when grouped and compared according to the aforementioned Variables

Variable	Category	N	Mean Rank	Mann-Whitney U	p-value	Sig. level	Interpretation
Age	Younger	25	30.36	366.000	0.581		Not Significant
	Older	32	27.94				
Civil Status	Single	25	26.82	345.500	0.377		Not Significant
	Married	32	30.70				
Highest Educational Attainment	Lower	16	31.25	292.000	0.519	0.05	Not Significant
	Higher	41	28.12				
Length of Service	Shorter	25	30.36	366.000	0.581		Not Significant
	Longer	32	27.94				

Table 18 presents the comparative analysis of the level of difficulty encountered by teachers in utilizing ICT on online platforms. When respondents were grouped and compared according to age, civil status, highest educational attainment, and length of service, the computed Mann-Whitney U test values were 366.00, 345.50, 292.00, and 366.00, respectively. The resulting p-values of 0.581, 0.377, 0.519, and 0.581 all exceed the 0.05 level of significance, leading to an interpretation of "not significant." Black (2020) and Kim and Moon (2020) state that web-based systems efficiently organize content and provide accessible online class management. Furthermore, Jones (2020) identifies teacher confidence as a primary determinant of ICT engagement, regardless of their demographic profile.

Table 19

Difference in the Level of Difficulties Encountered by Teachers in Utilizing Information and Communications Technology in Facilities and Equipment when grouped and compared according to the aforementioned Variables

Variable	Category	N	Mean Rank	Mann-Whitney U	p-value	Sig. level	Interpretation
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Age	Younger	25	29.72	382.000	0.770	Not Significant
	Older	32	28.44			
Civil Status	Single	25	29.16	396.000	0.948	Not Significant
	Married	32	28.88			
Highest Educational Attainment	Lower	16	28.91	326.500	0.978	Not Significant
	Higher	41	29.04			
Length of Service	Shorter	25	29.72	382.000	0.770	Not Significant
	Longer	32	28.44			

Table 18 shows the comparative analysis of the level of difficulty encountered by teachers in utilizing ICT facilities and equipment. When categorized by age, civil status, highest educational attainment, and length of service, the computed Mann-Whitney U test values were 382.00, 396.00, 326.50, and 382.00, respectively. The resulting p-values of 0.770, 0.948, 0.978, and 0.770 all exceed the 0.05 level of significance, interpreted as "not significant." Aslan & Zhu (2020) found that demographic profiles are not significant predictors of the difficulties teachers encounter when utilizing ICT facilities and equipment in education.

Conclusion

Teachers face a “high level” of difficulty in using ICT for office productivity and online platforms, primarily due to technical gaps and issues such as inconsistent internet connectivity. To address these challenges, educators must shift toward active engagement and wise technology use by participating in professional development that emphasizes student-centered support and interactive assessment methods, such as online polls and quizzes. To optimize learning, this study recommends transitioning from isolated home-based webinars to school-based group sessions. This collaborative setting ensures stable connectivity, facilitates immediate pedagogical discussions, and saves time. Furthermore, technical training should be decentralized, conducted quarterly in small Focus Group Discussion (FGD) sessions per grade level, with the Division’s IT experts to ensure maximum absorption with minimal class disruption. Ultimately, professional growth must be personalized, integrating mentorship, higher degree attainment, and action research to address challenges in technology integration. School heads play a critical role by moving beyond routine inspection to actively facilitating an environment where teachers can experiment with diverse ICT tools. By fostering a culture of self-reflection and resourcefulness, educational institutions can bridge the digital divide and create more engaging, inclusive learning experiences for all students.

Acknowledgment

Our deepest gratitude to the Almighty for the strength and wisdom to complete this research. Heartfelt thanks to the panel members for their expert guidance and invaluable mentorship. We are also grateful to our former colleagues, especially to our family, for their unwavering love, patience, and inspiration throughout this milestone.

Authorship Contribution Statement



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Guerra: Conceptualization, methodology, data collection, and formal analysis. **Libo-on:** Supervision, technical review, editorial validation, and project administration.

Conflict of Interest

The authors declare that they have no competing financial interests or personal relationships that could have influenced the work reported in this paper. This research was conducted with complete objectivity, and the authors affirm that no external organizations or individuals had any role in the study design, data analysis, or the decision to publish the results.

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Technology (ICT): Basis for an Action Plan**

DOI: <https://doi.org/10.56738/issn29603986.geo2026.7.140>

ISSN 2960-3986



GEO Academic Journal Vol. 7 No. 1 – 2026 series

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