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ASSESSING ICT COMPETENCE AND DIGITAL SKILL GAPS AMONG PUBLIC ELEMENTARY SCHOOL TEACHERS IN ILAGAN CITY, ISABELA

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Abstract

Information and Communication Technology (ICT) competence is essential in modern education; however, teachers may still experience difficulties in advanced digital applications. This study assessed the ICT competence of public elementary school teachers in terms of setup, maintenance, and troubleshooting; word processing; spreadsheet applications; telecommunications; video editing; and graphic design. It also examined differences in ICT competence when respondents were grouped according to age and gender. The findings revealed that teachers consistently demonstrated competence in setup, maintenance, word processing, spreadsheet applications, and telecommunications. However, limited competence was observed in video editing and graphic design, indicating gaps in multimedia production and visual content development. Significant differences across age groups were found in telecommunications, video editing, and graphic design, while no significant differences were observed in the other ICT domains. In terms of sex, significant differences were identified in setup, maintenance, troubleshooting, and telecommunications, with male teachers obtaining higher mean scores. No significant gender differences were found in word processing, spreadsheet applications, video editing, and graphic design. The findings underscore the need for targeted ICT professional development, particularly in multimedia production, graphic design, and advanced spreadsheet applications, to strengthen teachers' digital competencies and support technology-integrated instruction.

INTRODUCTION

The rapid advancement of Information and Communication Technology (ICT) has transformed educational institutions by reshaping how knowledge is created, accessed, and disseminated. Consequently, teachers are increasingly expected to develop the digital competencies necessary to integrate technology into instructional delivery, assessment, communication, and classroom management. Effective ICT integration, however, requires more than access to digital resources; it demands teachers' technical proficiency, confidence, and ability to apply technology to meaningful learning experiences. Shah (2022) emphasized that technology-supported instruction becomes more effective when teachers possess the

necessary skills and confidence. This highlights the importance of continuous professional development in strengthening classroom technology use.

Teachers' digital competence encompasses various abilities, including operating computer systems, using productivity applications, managing digital resources, communicating through online platforms, and developing technology-supported instructional materials. However, these competencies are not equally developed among educators. Ghavifekr et al. (2016) identified inadequate training, limited technical support, and insufficient infrastructure as persistent barriers to effective ICT integration. Similarly, Torrato et al. (2020) reported moderate proficiency in teachers' basic hardware and software competencies, while Abantas-Emji et al. (2025) identified areas for improvement in digital resource management and technology-supported instruction. These findings indicate the need to assess teachers' competencies across specific technological domains rather than treating digital proficiency as a single skill. In this regard, Tzafilkou et al. (2023) emphasized the importance of multidimensional assessment frameworks that consider teachers' instructional, professional, and technological competencies.

Beyond technical proficiency, teachers must also demonstrate the ability to translate technological knowledge into actual classroom practices. EskïCï and Çayak (2023) found a strong positive relationship between teachers' technological proficiency and their integration of technology into instruction. Similarly, Saloma and Lulab (2025) highlighted the relationship between teachers' knowledge of technology integration and its application in science instruction. These findings suggest that possessing technical skills is important, but the ability to select and utilize appropriate digital tools according to instructional objectives is equally essential. Moreover, Peng et al. (2024) established that teachers' attitudes, self-efficacy, and digital competence significantly contribute to ICT integration, indicating that successful technology adoption involves both technical and personal factors.

In the Philippines, the Department of Education (DepEd) continues to strengthen digital transformation through the Basic Education Development Plan (BEDP) 2030 and the Basic Education Digital Education Roadmap 2028. These initiatives emphasize improving digital infrastructure, expanding access to educational technologies, and enhancing teachers' digital competencies. Furthermore, DepEd Order No. 42, s. 2017, which institutionalized the Philippine Professional Standards for Teachers (PPST), recognizes the integration of ICT in teaching as an essential professional competency. These policy directions underscore the increasing importance of equipping teachers with the technological skills necessary to respond to the changing demands of basic education.

Nevertheless, the availability of technology and the implementation of ICT-related policies do not automatically guarantee teachers' technological readiness. Abbasi et al. (2025) observed that although ICT utilization can improve instructional effectiveness and lesson preparation, inadequate training, limited resources, and institutional barriers continue to constrain technology integration. Amemasor et al. (2025) further emphasized that effective professional development requires hands-on training, collaborative learning, continuous mentoring, and institutional support. These findings reinforce the importance of conducting competency assessments to identify specific areas requiring professional intervention.

In the City of Ilagan, Isabela, public elementary school teachers are increasingly expected to utilize ICT in instruction, assessment, administrative activities, and communication. However, differences may exist in their ability to operate and maintain computer systems, use office applications, perform telecommunications tasks, and develop digital materials through video editing and graphic design. Despite the growing attention given to digital competence in education, limited local evidence addresses teachers' proficiency across these specific technological areas. This gap highlights the need for a contextualized assessment that can guide professional development initiatives based on teachers' actual competencies and learning needs.

Hence, this study assesses the ICT skills of public elementary school teachers in the City of Ilagan, Isabela. Specifically, it examines their competencies across relevant technological domains to identify areas of proficiency and those requiring improvement. The findings will serve as the basis for developing an Enhanced ICT Professional Development Framework designed to strengthen teachers' digital competencies and support more effective technology integration in basic education.

METHODS

Research Design

The study employed a quantitative approach using a descriptive-comparative research design. The descriptive component characterized the respondents' demographic profiles and assessed their level of competence across various Information and Communication Technology (ICT) skill areas. Meanwhile, the comparative component determined whether significant differences existed in their ICT competence when grouped according to their demographic characteristics.

Respondents and Locale of the Study

The study involved 86 public elementary school teachers from selected schools in the City of Ilagan, Isabela. They were selected as the primary respondents because of their direct involvement in utilizing ICT for classroom instruction and various school-related responsibilities.

Research Instrument

The research instrument, adopted from Limpangog and Caliba (2024), consisted of two parts. Part I gathered demographic information, including age, sex, and years of teaching service. Part II assessed the respondents' ICT competence across seven skill areas: computer setup, maintenance and troubleshooting, word processing, spreadsheet applications, telecommunications, video editing, and graphic design.

Data Gathering Procedure and Analysis

The research process commenced with the acquisition of the necessary permits and authorizations. The researcher first secured an endorsement from the Graduate School, followed by approval from the Schools Division Superintendent of the City of Ilagan and the respective school heads. Upon obtaining the required clearances, the researcher personally administered and retrieved the questionnaires from the selected respondents. Before data

collection, the respondents were informed of the study's purpose, and their participation was secured through informed consent.

The collected data were systematically organized, analyzed, and interpreted using appropriate statistical techniques. Frequency and percentage distributions were employed to describe the respondents' demographic profiles, while the weighted mean was used to determine their level of ICT competence across the seven competency domains. Furthermore, an independent-samples t-test and one-way analysis of variance (ANOVA) were utilized to determine whether significant differences existed in the respondents' ICT competence when grouped according to their demographic characteristics. All hypotheses were tested at the 0.05 level of significance.

RESULTS AND DISCUSSION

Table 1 presents the demographic profile of the respondents in terms of age, sex, and years of service. In terms of age, the largest proportion of respondents falls within the 25–30 age group (30.2%), followed by those aged 41–45 (25.6%). Meanwhile, respondents aged 46–50 represent the smallest group (3.5%). This distribution indicates that the teaching workforce comprises both younger and more experienced educators, which reflects diversity in age and professional maturity.

Table 1: Profile of the Respondents

Profile	Frequency (n=86)	Percent
Age		
25-30	26	30.2
31-35	16	18.6
36-40	10	11.6
41-45	22	25.6
46-50	3	3.5
51 and above	8	9.3
Sex		
Male	10	11.6
Female	76	88.4

Regarding sex, female respondents constitute the majority (88.4%), while males account for only 11.6%. This reflects the predominantly female composition of the respondents, consistent with the substantial representation of women in the teaching workforce.

Table 2. Level of Competence in Information and Communication Technology (ICT) Skills of Teachers in terms of setup, maintenance, and troubleshooting

Items	Mean	Qualitative Description
1. I set up the computer system (i.e., System Unit, monitor; keyboard; mouse, UPS, AVR).	3.51	Always

2.	I connect and install peripheral devices (i.e., Printers, CD-ROM, external drives, router, printer)	3.57	Always
3.	I protect and scan flash drives.	3.67	Always
4.	I clean computer components and printers.	3.56	Always
5.	I ensure the security of data, including regular back-ups and virus checks are implemented in accordance with standard operating procedures.	3.57	Always
6.	I use self-help resources to diagnose and correct common hardware/software problems.	3.29	Always
7.	I install and upgrade an application.	3.35	Always
8.	I properly operate the environment for computers and peripherals.	3.31	Always
9.	I protect myself against computer viruses.	3.79	Always
10.	I reformat and reset (desktop computer and laptop).	3.06	Seldom
	Grand Mean	**3.47**	**Always**

Table 2 presents the level of ICT competence of teachers in terms of setup, maintenance, and troubleshooting. The highest-rated indicator was protecting computers against viruses, followed by protecting and scanning flash drives. Other indicators, including connecting and installing peripheral devices, securing data through backups and virus checks, cleaning computer components, and setting up computer systems, also received relatively high ratings. These findings suggest that teachers consistently perform routine technical tasks necessary to maintain functional and secure ICT equipment.

However, reformatting and resetting desktop computers and laptops obtained the lowest mean, indicating a possible limitation in performing more advanced system maintenance and troubleshooting tasks. This suggests that although teachers demonstrate competence in routine computer operations and security practices, they may require further training in resolving complex technical issues independently. Targeted capacity-building activities on system recovery, software installation, hardware and software diagnostics, and preventive maintenance may therefore strengthen their technical capabilities and minimize disruptions during technology-supported instruction.

Overall, the grand mean of 3.47, verbally interpreted as Always, indicates that teachers consistently demonstrate competencies in ICT setup, maintenance, and troubleshooting. These findings are supported by UNESCO (2021), which identifies computer maintenance, hardware and software troubleshooting, and repair as essential technical competencies for teachers. Similarly, UNESCO's (2018) ICT Competency Framework for Teachers emphasizes equipment maintenance, technical support, and security as important components of effective technology integration in educational settings.

Table 3. Level of Competence in Information and Communication Technology (ICT) Skills of Teachers in terms of Word Processing

	Items	Mean	Qualitative Description
1.	I enter, copy, and edit text.	3.91	Always
2.	I insert page breaks/section breaks (column, continuous, even, and odd page).	3.74	Always

3.	I change text format and style (change the actual size of the text and choose the type and special effects such as bold, italic, underlined subscript, and superscript).	3.83	Always
4.	I use page setup (amount of white space on the top, bottom, left, and right edges of the page)	3.71	Always
5.	I use insert and tab stop (align/justify to left, right, center, and decimal tab).	3.79	Always
6.	I check spelling, grammar, and word usage.	3.90	Always
7.	I create a footnote.	3.33	Always
8.	I insert a text box, shapes, symbols, equations, dates, time, and the page number.	3.67	Always
9.	I insert borders and shading into a document.	3.59	Always
10.	I format a picture into the document. (crop, wrap text, word art, picture styles, and color corrections).	3.78	Always
	Grand Mean	**3.72**	Always

Table 3 presents the level of ICT competence of teachers in terms of word processing. The findings indicate that teachers consistently perform various word-processing tasks, particularly those related to document preparation and editing. Entering, copying, and editing text obtained the highest mean, followed closely by checking spelling, grammar, and word usage. These results suggest that teachers are proficient in essential word-processing functions commonly used in preparing instructional and administrative documents.

However, certain advanced features received comparatively lower ratings. Creating footnotes obtained the lowest mean, while inserting borders and shading, adding text boxes, shapes, symbols, equations, dates, and page numbers also received relatively lower ratings. This suggests that teachers are more familiar with basic document editing than with specialized formatting functions. Strengthening their skills in these areas may help them produce more organized and professionally formatted instructional materials, reports, and other academic documents.

Overall, the grand mean of 3.72, verbally interpreted as Always, indicates that teachers consistently demonstrate competence in word processing. This finding highlights their capacity to utilize essential word-processing applications in performing routine instructional and administrative tasks.

Table 4: Level of Competence in Information and Communication Technology (ICT) Skills of Teachers in terms of Spreadsheet

	Items	Mean	Qualitative Description
1.	I am familiar with the concept of a spreadsheet and can distinguish between an electronic and a printed one.	3.51	Always
2.	I understand the possibilities of spreadsheet calculations.	3.41	Always
3.	I interpret the information from a spreadsheet and communicate the data in a graphical format.	3.31	Always
4.	I enter and sort data in an existing spreadsheet.	3.47	Always
5.	I create a spreadsheet with rows, columns, and headings.	3.53	Always
6.	I insert a formula in the insert function button.	3.33	Always
7.	I create a formula using functions (add, average, IF function, count, max, range).	3.21	Seldom

8.	I copy values using fill down and fill across	3.43	Always
9.	I change the appearance of a spreadsheet by inserting columns and rows.	3.41	Always
10.	I create a graph or chart from spreadsheet data.	3.37	Always
	Grand Mean	**3.40**	Always

Table 4 presents the level of ICT competence of teachers in terms of spreadsheet use. The findings indicate that teachers consistently perform basic spreadsheet-related tasks, particularly those involving data organization and management. Creating spreadsheets with rows, columns, and headings obtained the highest mean, followed by familiarity with the concept of spreadsheets and the ability to distinguish between electronic and printed spreadsheets. These results suggest that teachers are generally comfortable with the basic functions of spreadsheet applications.

However, comparatively lower competence was observed in more advanced spreadsheet operations. Creating formulas using functions such as addition, average, IF, count, and maximum received the lowest mean and was verbally interpreted as Seldom. Interpreting spreadsheet data, inserting formulas, and generating graphs or charts also received relatively lower ratings. These findings suggest that teachers may need further development in applying computational and data analysis features of spreadsheet applications. Strengthening these competencies could enable them to analyze learners' performance, monitor academic progress, identify achievement patterns, and make more informed instructional decisions. Thus, professional development activities may emphasize practical exercises involving formulas, built-in functions, data analysis, and graphical presentation of classroom data.

Overall, the grand mean of 3.40, verbally interpreted as Always, indicates that teachers consistently demonstrate competence in spreadsheet use. This finding is consistent with Medrano (2017), who reported that secondary school teachers in the Schools Division of San Fernando City demonstrated competence in creating workbooks, entering and saving data, editing existing files, and formatting spreadsheet cells, rows, and columns.

Table 5: Level of Competence in Information and Communication Technology (ICT) Skills of Teachers in terms of Telecommunications

	Items	Mean	Qualitative Description
1.	I connect to the Internet via an Internet Service Provider (ISP) with a user ID and password.	3.58	Always
2.	I compose a new email (address and subject; explanation of address domains) and I send an e mail (concepts of carbon copy(cc) and blind carbon copy (bcc).	3.13	Seldom
3.	I use google drive to back up and access all my files from any device.	3.52	Always
4.	I can share screens (MS teams, zoom, google meet, discord, slack, drovio, skype and facebook).	3.35	Always
5.	I am familiar with fourth-generation (4g) and fifth-generation (5g) mobile networks.	3.30	Always
6.	I find a search engine sites and perform a specific web search (list of search engines)	3.26	Always

7.	I know and use filters (software-driven, server-based, search engine inclusive)	3.22	Seldom
8.	I obtain/maintain an account or postpaid plan on the Internet service that provides Internet access (globe, smart, PLDT, DITO, converge, one sky).	3.30	Always
9.	I am aware of online conferences relevant to professional information.	3.48	Always
10.	I upload a pdf file and send it as electronic mail or as a link in gdrive.	3.56	Always
	Grand Mean	**3.37**	Always

Table 5 presents the level of ICT competence of teachers in terms of telecommunications. The findings indicate that teachers consistently perform activities involving internet connectivity, cloud storage, and online communication. Connecting to the internet through an Internet Service Provider obtained the highest mean, followed by uploading PDF files and sharing them through email or Google Drive links. These results suggest that teachers are familiar with essential telecommunications tools that facilitate access to online resources, file sharing, and professional communication.

However, certain telecommunications functions received comparatively lower ratings. Using filters obtained the lowest mean, followed by composing and sending emails using carbon copy (CC) and blind carbon copy (BCC) features. This suggests that teachers are more accustomed to basic internet access and file-sharing activities than to specialized communication and information-retrieval functions. Consequently, professional development activities may focus on effective email management, advanced search techniques, digital filters, and screen-sharing tools to strengthen teachers' capacity for online instruction and collaboration.

Overall, the grand mean of 3.37, verbally interpreted as Always, indicates that teachers consistently demonstrate competence in telecommunications. This finding is supported by Marcial et al. (2024), who examined Filipino teachers' online teaching competencies and reported that internet use and social media engagement were common among respondents, although variations in internet connectivity were observed.

Table 6: Level of Competence in Information and Communication Technology (ICT) Skills of Teachers in terms of Video Editing

	Items	Mean	Qualitative Description
1.	I can import footages.	3.03	Seldom
2.	I know how to unlink video track from audio track.	2.86	Seldom
3.	I use video recorder and copy the videos from a video recorder.	3.08	Seldom
4.	I can add text to video.	3.22	Seldom
5.	I use the right effects and transition.	3.15	Seldom
6.	I can use a green screen and properly edit the clips in video editing applications.	2.86	Seldom
7.	I know the recommended resolution and aspect ratio	2.92	Seldom

8.	I am familiar with video editing software (adobe premiere pro, adobe premiere rush, apple imovie, movavie, lightworks, filmora, pinnacle studio, animaker, corel video studio, sony vegas pro, cyberlink powerdirectos, blender).	2.94	Seldom
9.	I am familiar with fixing audio drift, multiple compressors, master bus effects and loudness normalization.	2.83	Seldom
10.	I can export project in (h.264, mpeg2, avi, mp3, mp4, quicktime)	2.91	Seldom
	Grand Mean	**2.98**	Seldom

Table 6 presents the level of ICT competence of teachers in terms of video editing. The findings indicate limited engagement in video-editing activities, as all indicators were verbally interpreted as Seldom. Adding text to videos obtained the highest mean, followed by using a video recorder and copying recorded videos. These results suggest that teachers have some familiarity with basic video-editing operations but may have limited experience in producing and enhancing digital video content.

The lowest-rated competencies involved fixing audio drift, using compressors, applying master bus effects, and normalizing audio loudness. Similarly, unlinking video and audio tracks and using green-screen technology received relatively low ratings. These findings indicate that teachers may have difficulty performing advanced editing and audio-enhancement tasks, which could limit their ability to produce polished and engaging instructional videos. Hence, professional development activities may begin with accessible video-editing applications and gradually introduce more advanced techniques through hands-on exercises relevant to classroom instruction.

Overall, the grand mean of 2.98, verbally interpreted as Seldom, indicates that teachers have limited competence in video editing, making it a priority area for ICT skills enhancement. This finding is consistent with Macapugas, Dagami, and Anadia-Macapugas (2024), who examined the video-editing and production skills of public high school science teachers and reported limited proficiency in several video-editing tasks, including adding effects, music, pictures, and subtitles.

Table 7: Level of Competence in Information and Communication Technology (ICT) Skills of Teachers in terms of Graphic Design

	Items	Mean	Qualitative Description
1.	I am aware of the graphics designing software (photoshop, illustrator, indesign, premiere pro, animate, adobe xd, coreldraw, pagemaker, gimp, adobe xd, coreldraw graphics suite, inkscape).	3.01	Seldom
2.	I am aware of the different graphic design styles.	3.05	Seldom
3.	I am familiar with the basic principles of design like CRAP (contrast, repetition, alignment, proximity).	2.95	Seldom
4.	I can apply bleed style in printing.	2.78	Seldom
5.	I can make 3d graphic art.	2.64	Seldom
6.	I create print-based products (e.g., brochures, posters, books, magazines, flyers, tarpaulin, yearbooks, school paper, certificates, calendar, stickers, tshirt design).	2.95	Seldom

7.	I am familiar with InDesign, Photoshop, Illustrator and Corel Draw.	2.83	Seldom
8.	I can use color schemes or print palettes and color combinations are experimented to compliment concept designs.	2.88	Seldom
9.	I am familiar with the parameters of the design brief.	2.72	Seldom
10.	I can provide appealing UX design.	2.59	Seldom
	Grand Mean	**2.84**	Seldom

Table 7 presents the level of ICT competence of teachers in terms of graphic design. The findings indicate that all indicators were verbally interpreted as Seldom, suggesting limited competence in this area. Awareness of different graphic design styles obtained the highest mean, followed by familiarity with graphic design software. These results suggest that although teachers have some conceptual knowledge of graphic design and its available tools, they may have limited opportunities to apply these skills in producing visual materials.

Among the indicators, providing an appealing user experience (UX) design received the lowest mean, followed by creating three-dimensional (3D) graphic art. This indicates that teachers may need further development in translating design concepts into effective visual outputs that address specific instructional and communication needs. Hence, practical training using accessible graphic design applications may focus on layout composition, color selection, typography, and the creation of educational posters, presentations, and other instructional materials.

Overall, the grand mean of 2.84, verbally interpreted as Seldom, indicates that teachers demonstrate limited competence in graphic design, making it an important area for ICT skills development.

Table 8: Test of Difference in the Level of Competence in ICT Skills of the Respondents when Grouped According to their Age

Competence in ICT Skills	Age	Group Means	F-value	p-value
Setup, Maintenance, And Troubleshooting	20-25	3.40	0.747	0.614
	26-30	3.55		
	31-35	3.58		
	36-40	3.34		
	41-45	3.46		
	46-50	3.23		
	51 and above	3.26		
Word Processing	20-25	3.30	1.986	0.078
	26-30	3.77		
	31-35	3.83		
	36-40	3.80		
	41-45	3.71		
	46-50	3.33		
	51 and above	3.51		

Spreadsheet Applications	20-25	3.60	1.647	0.145
	26-30	3.51		
	31-35	3.69		
	36-40	3.39		
	41-45	3.21		
	46-50	3.00		
	51 and above	3.09		
Telecommunications	20-25	2.90	6.012	<.001
	26-30	3.57		
	31-35[fg]	3.80		
	36-40	3.23		
	41-45	3.22		
	46-50[c]	2.43		
	51 and above[c]	2.85		
Video Editing	20-25	2.80	7.195	<.001
	26-30	3.37		
	31-35[fg]	3.52		
	36-40	3.00		
	41-45	2.61		
	46-50[c]	1.87		
	51 and above[c]	2.08		
Graphic Design	20-25	2.30	5.468	<.001
	26-30	3.13		
	31-35[fg]	3.43		
	36-40	2.71		
	41-45	2.62		
	46-50[c]	1.73		
	51 and above[c]	1.98		

Legend: a=20-25; b=26-30; c=31-35; d=36-40; e=41-45; f=46-50; g=51 and above
Letters in superscript indicate which groups have significant difference

Table 8 presents the test of difference in the respondents' ICT competence when grouped according to age group. The results revealed no statistically significant differences in setup, maintenance, and troubleshooting, word processing, and spreadsheet applications. Although mean scores varied across age categories, the differences were not statistically significant, indicating comparable levels of competence among teachers in these areas regardless of age.

In contrast, statistically significant differences were observed in telecommunications, video editing, and graphic design. For telecommunications, teachers aged 31–35 obtained the highest mean (3.80), while those aged 46 and beyond recorded the lowest. A similar pattern was observed in video editing, where the 31–35 age group obtained the highest mean (3.52), compared with 1.87 among teachers aged 46 and beyond. In graphic design, teachers aged 31–35 again registered the highest mean (3.43), while those aged 46 and beyond obtained the

lowest (1.73). These findings indicate that ICT competence in digital communication and multimedia and visual content production varies significantly across age groups.

Table 9: Test of Difference in the Level of Competence in ICT Skills of the Respondents when Grouped According to their Sex

Competence in ICT Skills	Sex	Group Means	t-value	p-value
Setup, Maintenance, And Troubleshooting	Male	3.75	2.022	.033
	Female	3.43		
Word Processing	Male	3.86	1.350	.260
	Female	3.71		
Spreadsheet Applications	Male	3.63	1.245	.663
	Female	3.37		
Telecommunications	Male	3.70	1.863	.033
	Female	3.33		
Video Editing	Male	3.44	1.842	.111
	Female	2.92		
Graphic Design	Male	3.01	.651	.208
	Female	2.82		

Table 9 presents the test of difference in the respondents' ICT competence when grouped according to gender. Male teachers obtained higher group means than female teachers across all six ICT skill areas. However, statistically significant gender differences were observed only in setup, maintenance, and troubleshooting and telecommunications. This suggests that gender-related variations in ICT competence may be more pronounced in technical tasks involving computer maintenance, troubleshooting, and digital communication.

In contrast, no statistically significant differences were found in word processing, spreadsheet applications, video editing, and graphic design. Although male teachers obtained higher mean scores in these areas, the observed differences were insufficient to establish a statistically significant distinction between male and female teachers.

These findings are consistent with Scherer and Siddiq (2015), who reported higher computer self-efficacy among male teachers in basic and advanced operational skills. However, their study found no significant gender difference in teachers' confidence in using computers for instructional purposes. This indicates that gender differences in ICT competence may vary depending on the specific skills being assessed.

CONCLUSION AND FUTURE WORKS

The findings revealed that teachers generally demonstrated consistent ICT competence in setup, maintenance, and troubleshooting, word processing, spreadsheet applications, and telecommunications. However, limited competence was observed in video editing and graphic design, identifying these areas as priorities for professional development. Significant differences in ICT competence were also found across age groups in telecommunications, video editing, and graphic design, while gender differences were evident in setup, maintenance, troubleshooting, and telecommunications. These findings highlight the need for

targeted, inclusive, and skills-based ICT training that considers teachers' varying levels of competence and specific development needs.

Future studies may examine the effectiveness of structured ICT capability-building programs in improving teachers' technical, multimedia, and digital content creation skills. Further research may also include other factors, such as ICT training experiences, access to digital resources, teaching experience, and technology self-efficacy, to provide a broader understanding of the factors influencing teachers' ICT competence.

CONFLICT OF INTEREST

The author declares no conflict of interest in the conduct and publication of this study. The research was conducted objectively, and no financial, personal, or professional relationships influenced the study's design, data analysis, interpretation, or reporting of findings.

DECLARATION OF AI USE

The author declares the use of ChatGPT and Grammarly solely for grammar checking and language improvement. These tools were not used to generate research data, conduct data analysis, or interpret the findings. The author takes full responsibility for the accuracy, integrity, and final content of the manuscript.

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