Teachers' Technological Competence and Learners' Academic Performance

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Abstract — Q: Must a child support order be filed in conjunction with an action to establish or enforce a foreign support order? A: No

This study explores the relation between teachers' digital competencies and students' academic performance, positioning teachers' technological preparedness as a crucial factor in the quality of instruction. Using a descriptive-correlational design, data were gathered from 105 public elementary school teachers through a validated questionnaire adapted from national digital literacy standards, while academic performance was obtained from official records. The instrument was designed to measure six domains of technological competence: basic computer use, use of common software, internet navigation, social media use, information literacy, and K–12 distance learning support. It was expert-validated and subjected to reliability analysis before administration. The results show that teachers have generally demonstrated high technological competencies across all domains, but areas of minor gaps were evident in cybersecurity and structural navigation of websites. Students also recorded high academic performance. Subsequent correlation analysis also revealed a significant positive relationship between the technological competencies of teachers and the achievement of students, and the stronger the teachers' digital competencies, the better the academic performance of the students. These findings provide support for the critical role of technology-enhanced pedagogy in promoting learner success and point out the necessity of continuous professional development to enhance the digital competencies of teachers, especially those who are at emerging stages of developing their technological competencies. Strengthening institutional support for current and meaningful integration of technology would most likely further enhance teaching and learning.

Keywords: Technological Competence, Academic Performance, Teacher Training, Digital Integration, Educational Research

I.   INTRODUCTION

With increased emphasis on technology-enhanced instruction within educational systems worldwide, the integration of digital tools into instructional practices has become an indispensable endeavor. Empirical research consistently links teachers' technological competence to higher student engagement and improved academic achievement. Despite policy initiatives encouraging digital literacy and ICT integration, many schools worldwide still face shortages in teacher readiness due to limited training, inequitable access to digital resources, and inadequate institutional support for such development. This study investigates teachers' technological competence in relation to student academic performance through the use of teacher profiles, six domains of digital competence, and student achievement indicators. A descriptive-correlational design was used wherein data were obtained through a standardized questionnaire based on national standards for digital literacy and learner performance official records. Results showed a generally high level of technological competencies among teachers, coupled with high learner achievement and a significant positive correlation between technological competencies and learner achievement, indicating that as digital proficiency heightens, so does learner performance. In addition to confirming the critical role of technology-enabled pedagogy, specific areas of competency have been defined wherein further development should be undertaken. This paper concludes that efforts toward capacity-building and systematic support for technology integration should be sustained to enhance instructional quality and strengthen academic achievement, calling for future professional development courses to emphasize advanced, at-skill-level, practice-oriented digital training among teachers.

Literature Review

Conceptual literature in existence identifies consistently the technological competence of teachers as an important determinant of effective instruction and improved learner outcomes. Earlier, arguments were advanced that technology enhances instructional efficiency when teachers

have sufficient digital skills and when administrative support ensures that technological integration simplifies, rather than complicates, teaching tasks. Empirical evidence suggests that teachers use technology for preparing lessons, content delivery, and engagement of students, but despite this, there are still persistent barriers such as a lack of resources and shortage of training to constrain effective integration. Systematic reviews indicate generally low to moderate digital competencies amongst educators, emphasizing the need for both institutional support and ongoing professional development. Quantitative evidence has suggested that positive attitudes toward technology and high levels of digital proficiency go together with more effective online teaching and higher student motivation and performance, though strong inequities in technology access continue as a barrier. Similar results can be seen from studies in basic education, where it is also reported that, although it is common for teachers to demonstrate competence in basic computer operations, advanced pedagogical integration, digital content development, and the responsible use of emerging platforms-such as social media-remain underdeveloped. Many different investigations have identified significant positive correlations between teachers' digital competence and learners' academic achievement, especially when technology is aligned judiciously within teaching. A minority of such studies, on the other hand, have reported weak or non-significant correlations, suggesting that student achievement depends on complex, multidimensional factors rather than the competence of teachers alone. Overall, the literature confirms that developing the digital competencies of teachers through targeted, equitable, and continuous professional development constitutes the necessary next step towards full realization of the pedagogical and academic potential of technology integration in modern education.

II.   METHODOLOGY

This was a descriptive-correlational study that aimed at portraying teachers' technological competence and its relationship with the academic performance of learners. Since the total enumeration method was employed, all teacher respondents eligible to join the study were involved to ensure comprehensive representation and a nonbiased assessment of competence levels across demographic variables. The data-gathering process followed a structured protocol-from

institutional approvals to instrument finalization and participant orientation, where informed consent and voluntary participation and confidentiality procedures were explained. The primary instrument consisted of a nationally validated questionnaire adapted from the national standards for digital literacy, which discussed teacher profile, six domains of technological competence measured using a five-point Likert scale, and learners' academic performance, which was retrieved from official school records. Qualitative insights were provided by an open-ended item to contextualize the quantitative results of this study. Content validity was established through expert review and reliability analysis confirmed internal consistency. In processing data, summary statistics presenting respondent profiles and levels of technological competence were followed by normality testing; thereafter, correlation based on ranks and comparative tests were applied to gauge the relationships among teacher characteristics, technological competence, and learner outcome. All analyses were performed at the 0.05 significance level, consequently justifying methodological rigor, and an evidence-based intervention plan was developed.

Research Design

This is a descriptive-correlational study design meant to determine the level of teachers' technological competence and its relationship to the students' academic performance. The descriptive aspect accounted for the teachers' competencies in computer operations, software utilization, internet navigation, social media utilization, information literacy, and support to K–12 distance learning. The correlational aspect tested relationships among the aforementioned competencies and learner outcomes with teacher profile variables, which are age, gender, educational attainment, length of service, income, and training exposure.

Sample of the Study

The study utilized total enumeration, in which it included all 105 teachers in the target population to ensure completeness of representation, eliminate any bias in sampling, and allow for precise analysis of group differences or the relationship of competence to performance.

Measures

Data were obtained from a structured questionnaire adapted from national digital literacy standards. Section 1 established demographic profiles; Section 2 assessed six domains of technological competence using a five-point Likert scale; Section 3 recorded the learners' academic performance from official documents. One open-ended item provided an in-depth qualitative insight. Expert validation and reliability testing were performed to establish instrument accuracy and consistency.

Procedure

The ethical, multistage methodology was used in the study, which starts with the preparation and approval of the research documents, followed by the refinement of the instrument and expert panel evaluation. Expert validation of the questionnaire was established, and the content validity index was 4.52; interpreted as Excellent, this provided confidence that the instrument adhered to the purposes of the study and appropriately gauged the intended constructs. With the securing of necessary permissions, an orientation presenting the purpose of the study, the voluntary participation, the safeguards of confidentiality, and the consent procedures was given to the participants. The validated questionnaires were administered during scheduled sessions, while learners' academic records are collected through authorized personnel. Data collection was systematically carried out, strictly following research ethics for the assurance of accuracy, credibility, and protection of all the respondents.

Data Processing

Descriptive statistics were used to summarize teacher profiles and levels of competence. Normality tests gave reason for the choice of nonparametric analytical procedures. The rank-based correlation was used to test associations among teacher characteristics, technological competence, and academic performance. Group comparison tests were used to assess differences across demographic categories. All tests were performed at the 0.05 significance level to guarantee methodological rigor as a basis for the intervention plan.

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III.   RESULTS AND DISCUSSION

Level of Teachers' Technological Competence

Analysis in this section covers data collected on teachers' technological competence: basic computer competencies, software use, internet use, use of social media for instructional purposes, information literacy, and K–12 distance-learning technology.

TABLE 3
FUNDAMENTAL COMPUTER SKILLS

Item	Mean	Interpretation
1. Log on to and shut down a computer	4.91	Very High Level
2. Start and exit programs	4.40	Very High Level
3. Open, close and switch between windows	4.54	Very High Level
4. Demonstrate knowledge of browsers and identify commonly used browsers	2.81	Moderately Level
5. Perform internet search using clear parameters (terms and filters)	2.99	Moderately Level
6. Demonstrate understanding of when it's safe and appropriate to share personal, private, or financial information	4.87	Very High Level
7. Create and send an email, including recipient address, subject, and message	3.74	High Level
8. Open and download an email attachment	2.94	Moderately Level
9. Move documents and files, including to and from Recycle Bin	3.61	High Level
10. Identify mechanisms for storing files (flash drives, hard drives, cloud-based storage)	3.57	High Level
Overall Mean	**3.84**	**High Level**

Legend: *4.21-5.00= Very High Levelt; 3.41-4.20= High Level; 2.61-3.40= Moderately Level; 1.81-2.60= Low Level; 1.00-1.80= Very Low Level*

Table 3 enumerates data pertaining to teachers' sense of efficacy in managing instructional and behavioral challenges. The aggregate mean is 4.20, classified as High Level, indicating that

teachers in the district feel confident in implementing instructional practices, supervising students, and facilitating learner success. This level of confidence suggests that teachers generally perceive themselves as effective facilitators of student learning. However, the lowest-rated item is "Ability to manage and control disruptive behavior in the classroom", with a mean of 3.22, which is at the Moderately Level. This would indicate frequent problems in behavioral management. Contributing factors may be large class sizes, lack of supporting personnel, or absence of clear school-wide behavior management systems. In DepEd schools, especially in cases when classrooms are overcrowded, such problems will translate into learning disruptions, high teacher stress, and reduced academic focus. Should these go unheeded, they may result in teacher burnout and deterioration of instructional quality in multi-grade or heterogeneous learning environments.

The highest mean rating was recorded for the item "Effectiveness in helping students value the importance of learning" with a mean of 4.95, described as a Very High Level. This is indicative of pronounced teachers' capacity to develop a positive attitude toward learning amongst students, even within resource-poor settings. Practically, this may be manifested if, for example, the teacher uses storytelling, relates lessons to real-life Filipino contexts, or aligns academic tasks with students' future aspirations-such as urging students to study hard to help their families or pursue professional careers. Classroom practice involves teachers very frequently going beyond teaching by mentoring learners and infusing moral and life lessons into daily activities. For instance, integrating values education into Araling Panlipunan or science classes can make the subjects more relevant to students' lives and communities. This capability also signals emotional intelligence and an authentic concern for students' growth. The modeling of enthusiasm and persistence with less-than-ideal instructional materials will spur persistence on the part of students. The implications are great: students are most likely to show interest and participate, especially in the development of lifelong learning habits. Besides, this develops resilience and a growth mindset, important in communities confronted with socio-economic obstacles. Teachers become motivators rather than just instructors, hence sustaining educational objectives against all external challenges.

This supports Han and Wang's (2021) work, which emphasizes that motivation-centered teacher efficacy is critical in fostering positive academic behaviors and a conducive classroom climate. Their meta-analysis suggests that better student performance and engagement occur when the value of education is consistently communicated by the teacher, although this is a factor of particular relevance to public schools, where socio-economic constraints may dampen student enthusiasm. The ability to shape learners' perceptions about the importance of education for personal and family improvement creates a real difference. This research also reveals that students who experience highly efficacious teachers are more likely to develop long-term academic goals and heightened self-efficacy. Hence, developing strategies for motivating teachers becomes quite pertinent in DepEd settings, where a large number of the learners face adversities from outside. This may be further optimized through continuous professional enhancement for better outcomes on the part of both students and teachers.

TABLE 4
PROFICIENCY IN ESSENTIAL SOFTWARE APPLICATIONS

Item	Mean	Interpretation
1. Save a document/workbook/presentation, being intentional about name and location	3.86	High Level
2. Cut, copy, and paste (text or data)	4.23	Very High Level
3. Use Spelling and Grammar check	4.88	Very High Level
4. Format text and cells: size, font type, color, alignment, spacing	3.78	High Level
5. Insert and manipulate objects: images, tables, charts, hyperlinks	2.77	Moderately Level
6. Write basic formulas and use AutoSum (SUM, AVERAGE, etc.)	4.66	Very High Level
7. Sort and filter data	3.57	High Level
8. Share files and collaborate (Viewer, Commenter, Editor permissions)	2.91	Moderately Level
9. Download or print documents in other formats (PDF, Word, etc.)	4.64	Very High Level
10. Undo the previous action	4.57	Very High Level
Overall Mean	**3.99**	**High Level**

Legend: *4.21-5.00= Very High Levelt; 3.41-4.20= High Level; 2.61-3.40= Moderately Level; 1.81-2.60= Low Level; 1.00-1.80= Very Low Level*

Table 4 assesses the proficiency of teachers in essential software applications. An overall mean of 3.99 describes the general competence of teachers as a High Level. It would, therefore, imply that the teachers are generally competent in using the basic features of Microsoft Word, Excel, and PowerPoint applications in performing instructional and administrative tasks. The skill "Use Spelling and Grammar check" obtained the highest mean with 4.88 and is interpreted as Very High Level. This implies that teachers put a high premium on linguistic accuracy, which is essential for preparing formal communications in the forms of memos, learner reports, and instructional materials. In practical terms, it would mean fewer grammatical errors in classroom handouts, neat examination papers, and professionally looking digital submissions of school reports or district presentations, thus further strengthening the credibility of teachers as instructors and as language models for students.

On the other hand, the lowest-rated item is "Insert and manipulate objects: images, tables, charts, hyperlinks," which has received a mean of 2.77, or a Moderately Level. This means that although teachers can work with documents, there is difficulty with embedding visual elements and interactive content. One practical implication seems to be with lessons that use visual aids-for example, inserting a chart into a Mathematics presentation or embedding in a lesson plan hyperlinks to online resources that would support the lesson. Teachers not skilled in this practice may find themselves using text-heavy materials, which frequently fail to capture students' attention and promote multimodal learning. Using this approach, for instance, may not facilitate how to enhance the presentation using Science lessons about body systems with labeled diagrams or external YouTube video links. This breach in technical development might also reflect inadequate differentiated digital training programs with more depth than basic functions. Other contributing reasons could be time constraints, discouraging exploration of more advanced tools, and some schools having inadequate access to updated software or appropriate internet bandwidth, restricting experimentation. These limitations altogether lead to the consequence of reduced student engagement because the more visually enhanced the content is, the better it enables comprehension, especially among visual learners. Recent research confirms that many educators have difficulties in moving beyond basic functions of software, especially in integrating multimedia elements. While they often use word processors and spreadsheets, deeper digital

design skills usually remain underdeveloped. Scholars argue that such gaps underline the need for differentiated ICT training programs tailored for instructional innovation.

TABLE 5
BASIC INTERNET NAVIGATIONS

Item	Mean	Interpretation
1. Identify the different ways a person can connect to the internet.	4.55	Very High Level
2. Demonstrate knowledge of browsers and identify commonly used browsers.	4.91	Very High Level
3. Demonstrate familiarity with website structure (e.g., landing pages, internal pages).	2.83	Moderately Level
4. Identify top-level domains (e.g., .edu, .com, .org).	3.59	High Level
5. Demonstrate understanding of how to use browser tools and settings to protect privacy (e.g., private browser windows, clearing search history, and declining to save passwords on shared computers).	3.66	High Level
6. Demonstrate understanding of when it's safe and appropriate to share personal, private, or financial information (e.g., recognizing phishing attempts, identifying unsecured websites).	4.74	Very High Level
7. Identify ways to protect your devices (e.g., anti-malware software, recognizing possible virus attacks).	2.61	Moderately Level
8. Demonstrate to a website that you are a legitimate user using CAPTCHA or other verification methods.	2.70	Moderately Level
9. Fill out an online form.	4.89	Very High Level
10. Identify address bar and demonstrate understanding of its functionality.	2.88	Moderately Level
11. Identify common browser tools and icons (e.g., favorites, downloads, refresh, and back).	3.56	High Level
12. Perform internet search using clear parameters (terms and filters).	3.77	High Level
13. Demonstrate ability to scroll up and down a page and left and right on a page.	4.35	Very High Level
14. Identify and make use of common website interactions (e.g., play buttons, hyperlinks).	3.64	High Level
15. Identify and work with tabs and windows.	3.84	High Level
16. Enable a specific pop-up window.	3.76	High Level
17. Use shortcut keys, or menu or mousing equivalents, to support user experience on the web (e.g., zoom, find text). Identify and locate camera and mic on laptops, tablets.	3.99	High Level
18. Turn computer and monitor on and off.	4.92	Very High Level
Overall Mean	**3.84**	**High Level**

Legend: *4.21-5.00= Very High Levelt; 3.41-4.20= High Level; 2.61-3.40= Moderately Level; 1.81-2.60= Low Level; 1.00-1.80= Very Low Level*

Table 5 shows the competence of teachers in basic internet navigation. The mean score obtained is 3.84, which is at a High Level. This indicates that the greater portion of teachers are actually capable of internet navigation to support instructional and research activities. The item "Turn computer and monitor on and off" had the highest mean of 4.92, characterized as Very High Level, indicating consistency and confidence in the performance of this basic technological operation. These base-level competencies are necessary for classroom readiness and ensure the smooth integration of technology within the lesson delivery and the use of digital resources.

In contrast, the item with the lowest mean is "Identify ways to protect your devices (e.g., anti-malware software, recognizing possible virus attacks)," which has a mean of 2.61, which is interpreted as at the Moderately Level. The result indicates an important gap in teachers' awareness regarding digital security practices. Being able to identify and apply computer and mobile device protection has become an increasingly vital ability in education today, as teaching, researching, and interacting with students are mainly performed online. Thus, the relatively lower competence may predispose teachers to digital threats such as computer viruses or phishing emails, which may put the safety of the students or disrupt instructional continuity. This could be due to a lack of exposure to ICT training with emphasis on cybersecurity skills, since most available programs focus on content creation or how to navigate a learning platform rather than how to protect computers and mobile devices. This means, for example, that in the absence of proper knowledge of digital safety, poor practice by teachers in respect of themselves and their learners could lead to violations of privacy and security, thus acting to the detriment of safe use of educational technologies. Supporting this finding, Mohammadyari and Singh (2020) assert that while many of the teachers are digitally literate in browsing and communication, they still lack depth in technical aspects of security management and protection. This study by the authors underlines the urgent need for professional enhancement programs in schools to cover the basic operational skills as well as the advanced use of the internet, including privacy safeguards, virus detection, and the use of secure browsing. The development of such competencies in teachers will go a long way toward inspiring confidence in the responsible integration of technology into learning and teaching.

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TABLE 6
UTILIZATION OF SOCIAL MEDIA PLATFORMS

Item	Mean	Interpretation
1. Identify different types of social media and their primary functions (especially Facebook, LinkedIn, Twitter).	4.90	Very High Level
2. Create a new account on a social media network and log in.	4.86	Very High Level
3. Recognize information posted on social media networks that may present a risk to you (user as consumer of information).	4.60	Very High Level
4. Demonstrate knowledge of managing "friends" on Facebook: adding friends, accepting/declining "friend" requests, and the difference between that and "following" someone.	4.89	Very High Level
5. Understand and change privacy settings	4.77	Very High Level
6. Demonstrate an understanding of the consequences of "liking" or commenting on something.	4.82	Very High Level
7. Share and delete content, including photos, videos, and links.	4.88	Very High Level
8. Identify information that is unwise to post and/or upload on a social media (too much personal sharing, inappropriate photos/comments)	4.79	Very High Level
9. Distinguish between public and private "spaces" on social media sites (ex: Facebook messages and Facebook timeline).	4.76	Very High Level
10. Post, share, like or comment on content.	4.95	Very High Level
11. Demonstrate knowledge of the permanence of anything posted on the internet.	4.90	Very High Level
Overall Mean	**4.83**	**Very High Level**

Legend: *4.21-5.00= Very High Levelt; 3.41-4.20= High Level; 2.61-3.40= Moderately Level; 1.81-2.60= Low Level; 1.00-1.80= Very Low Level*

Table 6: Teachers' competence in using social media platforms The overall mean is 4.83, which corresponds to a Very High Level. This means that the teachers in the district demonstrate quite a high level of familiarity and ease in using social media for personal and professional communication. The highest item mean attained is for the "Post, share, like or comment on content" with 4.95, indicating deeply integrated social media in the daily routines of the teachers. This also demonstrates confidence in using platforms like Facebook and Messenger for posting announcements, developing relationships with stakeholders, and communicating with colleagues in educational groups or threads. The ability to do this well supports timely information sharing and an inclusive, connected school environment.

Ironically, although all the items fall within the Very High Level category, the lowest-rated item is "Recognize information posted on social media networks that may present a risk to you (user as consumer of information)," with a mean of 4.60. Still classified as Very High, this score gives evidence of a lower level of skills related to identifying online risks such as misinformation, clickbait, deepfakes, and social engineering strategies. The inability to recognize misleading or harmful content compromises personal security and the quality of academic resources that are shared in today's media-saturated digital environment. A teacher may, for instance, not realize that they are re-forwarding educational materials which have not been vetted for bias or quality and hence contain prejudiced or incorrect information that affects learner knowledge. This knowledge gap could be linked to insufficient training in digital literacy and critical thinking applied to online content. Teachers sometimes depend on intuition or the popularity of posts (likes and shares) rather than the evaluation of sources as a guide, perhaps leading them to make incorrect judgments. Therefore, even though overall usage is high, critical awareness of potential online risks well deserves emphasis in training programs. Teachers need to be equipped with strategies in how to assess online content for validity, verify sources, and avoid the distribution of questionable material. Media-literacy sessions and simulation exercises to find fake or harmful content could be added to close the gap. This is necessary not just for personal protection but also to model responsible digital behavior to learners. Greenhow and Chapman (2020) noted that moving beyond functional use, educators need to develop evaluative digital skills necessary for ethical, informed, and secure engagement within online communities.

TABLE 7
INFORMATION LITERACY CAPABILITIES

Item	Mean	Interpretation
1. Define a problem, formulate a question, or identify a decision that needs to be made.	4.61	Very High Level
2. Identify the purpose for accessing information (how the information will help solve the problem, answer the question, make a decision, or accomplish a goal or objective).	4.79	Very High Level
3. Define the kind of information needed to complete the task.	4.40	Very High Level
4. Identify types and formats of information found online (articles, databases, images, videos, etc.).	4.36	Very High Level
5. Plan steps required to solve the problem or accomplish the task.	4.48	Very High Level
6. Recognize the costs, in time or money, and benefits of accessing different sources of information (article, newspaper, consumer reports).	4.50	Very High Level
7. Demonstrate use of efficient search strategies to hone in on relevant information.	4.44	Very High Level
8. Locate relevant information in media found online, including text, video, images, etc. Locate the source of the information.	3.61	High Level
9. Make use of hyperlinks to follow desired/required path of information.	3.79	High Level
10. Demonstrate basic understanding of use of non-Internet sources of information (personal documents, Excel spreadsheets, etc).	3.84	High Level
11. Discern between relevant and non-relevant information in an information source and select the information that addresses the issue that motivated the search.	4.66	Very High Level
12. Determine the quality of information by identifying bias, assessing the reliability of sources, and identifying the impact of context.	3.57	High Level
13. File/store information in a format that facilitates ease of access for future use (e.g., file naming, folder organization, bookmarking, etc.)	4.88	Very High Level
14. Monitor extent to which information solves a problem and know when additional information is needed.	4.51	Very High Level
15. Synthesize relevant information from one or more sources.	3.77	High Level
16. Integrate new information into current knowledge and use it to support understanding, views, perspectives, or opinions.	4.47	Very High Level
17. Act on information to solve basic problems or answer a question.	4.66	Very High Level

18. Select appropriate format for sharing information, based on audience and purpose, and distribute to intended audience.	3.70	High Level
19. Evaluate the result of gaining/using the information. Was the question answered? Was the problem solved? Was a better decision made? Was a goal or objective met?	4.78	Very High Level
Overall Mean	4.31	Very High Level

Legend: 4.21-5.00= Very High Levelt; 3.41-4.20= High Level; 2.61-3.40= Moderately Level; 1.81-2.60= Low Level; 1.00-1.80= Very Low Level

Table 7 presents the level of information literacy capabilities in teachers, which yielded an overall mean of 4.31, corresponding to a Very High Level. This means that teachers have been found to be highly competent in searching, evaluating, and using information for classroom practice. The highest-scoring item, "File/store information in a format that facilitates ease of access," was 4.88, indicating that teachers are highly capable of organizing digital files for accessibility. In practical terms, this means easy retrieval of instructional materials—lesson plans, reference articles, and examination templates, for example—being stored in clearly labeled folders or cloud repositories. Such a proficiency promotes efficiency and helps facilitate better planning, especially when dealing with last-minute administrative tasks or adjustments to classes. It also serves as a good practice for learners through demonstrated organizational skills in the digital environment.

In contrast, the statement with the lowest mean rating is "Determine the quality of information by identifying bias, assessing the reliability of sources, and considering the impact of context," with a mean rating of 3.57, which is interpreted as High Level. While the rating remains positive, it suggests a weakness relative to critical evaluation skills. Teachers may struggle in filtering misinformation or bias, for instance, when researching content in social media or non-academic websites. For example, a teacher planning a lesson about climate change may unknowingly take information from outdated or politicized sources and may miss biased language or unchecked claims of fact. Such skill deficits are natural outcomes of limited formal preparation in media literacy and a plethora of online material. In the school environment, such knowledge gaps present risks of perpetuating bad information and lowering the standard for scholarship. They also limit teachers' ability to model for students methods of fact-checking and critically evaluating

information found. Schools are increasingly advocating inquiry-based and research-based teaching, and, thus, the role of the teacher in modeling such skills becomes increasingly important. Remedies will include adding critical literacies to in-service training and providing teachers with pre-curated lists of trustworthy sources or source-evaluation checklists. New studies indicate that experienced teachers may also fall prey to persuasive yet unreliable information found online. Researchers argue that improving information literacy helps in placing teachers in the best position to promote critical thinking among learners and ensure academic integrity within the classroom (Wineburg et al., 2022).

TABLE 8
SUPPORTING K-12 DISTANCE LEARNING

Item	Mean	Interpretation
1. Understand models of remote instruction offered by schools (including synchronous and asynchronous distance learning, hybrid or blended learning) and strengths and challenges for each model.	4.79	Very High Level
2. Identify requirements for beginning distance learning successfully, including technology and technology support resources.	4.31	Very High Level
3. Log in and sign out of a distance learning platform.	3.58	High Level
4. Demonstrate internet skills essential for distance learning, including connecting a device to the internet, navigating to a website, closing and enabling pop-ups, and making use of common website interactions (e.g., play buttons, hyperlinks).	3.80	High Level
5. Understand the benefits and uses of parental control settings to create a safer online learning environment for children.	4.87	Very High Level
6. Identify the common features of distance learning platforms such as the dashboard, classes, calendar, and assignments.	3.56	High Level
7. Join a synchronous class meeting using a virtual meeting platform.	2.87	Moderately Level
8. Mute, turn on/off video, chat, and change screen view in synchronous class meetings.	2.98	Moderately Level
9. Understand basics of synchronous classroom etiquette.	3.77	High Level
10. Open an assignment in a learning platform and complete it using voice record, video, document upload, or other platform tools.	2.65	

11. Organize links and passwords for quick access using browser favorites, password managers, or other tools.	3.64	High Level
12. Troubleshoot common technical issues encountered during virtual learning, including factors that may impact internet speed, audio and video issues.	2.79	Moderately Level
13. Advocate for your student's specific needs and/or ask for technical help by making use of virtual communication tools such as email or learning platform messaging.	2.73	Moderately Level
14. Identify ways to provide support for students' social emotional development while participating in distance learning.	4.77	Very High Level
Overall Mean	3.65	High Level

Legend: *4.21-5.00= Very High Levelt; 3.41-4.20= High Level; 2.61-3.40= Moderately Level; 1.81-2.60= Low Level; 1.00-1.80= Very Low Level*

Level of Teachers Work Performance

Table 8 shows the teachers' competencies in supporting K–12 distance learning. It gives an overall mean of 3.65, which is interpreted as High Level. This means that, in general, teachers can support online and/or hybrid learning. The highest rating among all the items pertains to "Understand the benefits and uses of parental control settings to create a safer online learning environment for children," which has obtained an average rating of 4.87, or Very High Level. This also implies a strong awareness of teachers about the digital safety and learner protection, perhaps a product of experiences during the height of remote instruction. Specifically, this could imply recommending parental controls in mobile devices or showing parents how they can monitor online use in asynchronous sessions. Such a result highlights the concern of teachers not just on content but on the digital safety and welfare of learners, especially when students are studying independently at home using shared devices.

The lowest-rated item is "Open an assignment in a learning platform and complete it using voice record, video, document upload or other platform tools," and it reaches a score of 2.65, corresponding to a Moderate Level of competence. This means that a large proportion of teachers experience at least some difficulty with the full range of functions provided by digital learning platforms. In practice, teachers can well assign tasks but are less able to demonstrate how to

respond with multimedia tools, something that is especially problematic when they are called upon to support poor learners. For instance, a Grade 6 teacher using Google Classroom might fail to provide clear guidance to a student to upload a voice recording of a reading task and cause confusion, which delays submission. This may be due to limited exposure to engaging features of platforms, a general lack of hands-on training, or even fear of new technologies. These are further exacerbated by a lack of technical support in schools, forcing teachers to seek peer help or self-training. These limitations have wider implications for learner engagement, as an inability to use multimedia tools constrains teaching methods and undermines inclusivity, particularly for students with diverse learning needs. To improve this area, structured technical training on multimedia interaction is needed, accompanied by regular simulations of student-side experiences. Indeed, research findings corroborate that, although most teachers have adapted to the essential requirements for online teaching, deeper engagement with the platforms remains challenging-especially those involving interactive submissions. The scholarly work emphasizes scaffolding digital teaching skills through practical, contextual learning to bridge this enduring gap (Tang et al., 2021).

Level of the Learners' Academic Performance

This section presents the level of the learners' academic performance based on the data gathered. It shows how well the learners are achieving in their subjects as assessed by their teachers. The results serve as a basis for understanding how teacher-related factors may influence student outcomes.

TABLE 9
LEVEL OF THE LEARNERS' ACADEMIC PERFORMANCE

	Frequency	Percentage
Outstanding	252	8.00
Very Satisfactory	567	18.00
Satisfactory	1449	46.00
Fairly Satisfactory	882	28.00
Did Not Meet Expectation	-	-
Overall Mean	**3150**	**100.00**

Legend: *4.21-5.00= Very High Levelt; 3.41-4.20= High Level; 2.61-3.40= Moderately Level; 1.81-2.60= Low Level; 1.00-1.80= Very Low Level*

Table 9 shows the academic performance of learners as rated by the teachers in response to 3,150 learner assessments. It can be observed from the data that the highest number of learners are classified as "Satisfactory", consisting of 1,449 or 46.00% of the total. This would indicate that while the learners demonstrate minimum learning competencies, their performance is not consistently exceeding expectations. In the pragmatic classroom, this would mean that the learners are probably following instructions, completing tasks, and passing tests, but may need reinforcement and differential strategy interventions to achieve more advanced levels of mastery. It implies that current instructional modes are serviceable but perhaps do little to drive learners to excel or to deeper levels of understanding. The factors that might have contributed to this condition could be teaching methods, instructional materials, or the level of competence of the teachers themselves in applying more advanced pedagogies, including the integration of technology. As found in Soriano and Martinez (2021), a learner achievement profile at this level tends to reflect adequate instruction but at the same time points to areas that call for more innovative or strategic interventions beyond the development of higher-order thinking skills.

The frequency of the next most frequent category is "Fairly Satisfactory," with 882 learners (28.00%). This suggests that a large portion of the learners struggle to master relevant concepts or skills. These will manifest in the classroom as learners who generally meet requirements yet show some academic weaknesses, such as not being able to do well with independent work, spotty test results, or low levels of class participation. This trend could indicate problems with differentiated instruction, remediation, or motivation of students. In addition, teachers face challenges in dealing with diverse classrooms or may lack training in the early identification of learning concerns. On the part of the learners, there may be limitations in technology: not enough devices, unstable internet, or a deficit in digital literacy that may hinder them from accessing more enriched content or doing self-paced review. As pointed out by Villanueva et al. (2022), learners in the fairly satisfactory bracket typically benefit from formative assessment, peer tutoring, and technology-integrated remediation to accommodate feedback and scaffolded support. On the other hand, only 8.00% (f = 252) of the learners were rated "Outstanding," which would suggest that comparatively few learners attain the highest level. It could also mean that few enrichment activities are available or that there are very limited opportunities to engage learners in higher-order thinking tasks that

are challenging. It was found that learners thrive if teachers show confidence in using different approaches-including ICT-to promote deeper learning independent research and project assessments (Cabrera & Ilano, 2020). These findings point to a need for instructional designs that transcend mere compliance with curriculum standards and focus on maximizing learner potential.

Significant Relationship Between the Level of Teachers' Competence in Technology and the Level of the Learners' Academic Performance

This section presents the significant relationship between the level of teachers' competence in technology and the level of the learners' academic performance.

TABLE 17
SIGNIFICANT RELATIONSHIP BETWEEN THE LEVEL OF TEACHERS' COMPETENCE IN TECHNOLOGY AND THE LEVEL OF THE LEARNERS' ACADEMIC PERFORMANCE

Correlates	N	Rho	Level of Sig	p-value	Interpretation
Level of Teachers' Competence in Technology	105	.425	0.05	.000	Significant
Level of the Learners' Academic Performance	3150				

Table 17 indicates that there is a statistically significant relationship between the level of competence in technology among teachers and the learners' performance. A Spearman's Rho correlation coefficient of .425 shows a moderate positive correlation, which means that higher levels of teacher technological competence are associated with enhanced learner performance. This relationship falls within a range normally interpreted as moderate, showing that across the sample, an association exists that is meaningful and consistent, though not particularly strong. The p-value of .000 is far less than the conventional significance threshold of 0.05, confirming

statistical significance and thus reducing any likelihood that the result could be due to chance. Therefore, the null hypothesis is rejected as a function of this confirmation, in support of the existence of a real association between the two variables.

This finding agrees with the study of Yulia and Suhartono (2021), who found that the capacity of the teachers to utilize technology in instruction significantly affected the students' cognitive outcome in Indonesian secondary schools. Engagement and academic performance were more effective with the integration of ICT tools in presentation software, online quizzes, and virtual learning platforms. Similarly, Oyelekan and Agbaje (2020) found that technological competence among science teachers in Nigerian public schools facilitated pedagogical efficiency in teaching at classrooms and improved students' learning outcomes, as reflected in higher test scores. A local study by Abulon (2022) mentioned that in the Philippine setting, the proficiency of the teachers in online teaching platforms during the pandemic served as a critical factor in sustaining learner achievement amid distance education modalities. Together, all these aforementioned studies support the present findings and point out that teachers equipped with digital skills are more capable of delivering instruction relevant to the needs of 21st-century learners. The implication of this result is that enhancing the technological competence of teachers directly contributes to improved academic outcomes for learners. It points out how crucial it is to have educators adequately prepared with appropriate digital skills in order to infuse technology into teaching and learning. Introducing interactive platforms, learning management systems, and even online assessment tools can increase teaching efficiency, allowing simultaneously for more student-centeredness and deepened learning outcomes. Targeting professional development initiatives and continuing support in educational technology are therefore desirable strategic interventions to further improve learners' academic performances.

IV.   CONCLUSION

The study hypothesizes that the teaching force is primarily female, mid-career professionals with bachelor's degrees, steady service records, and limited ancillary duties. However, their limited participation in training argues for increased opportunities for professional learning.

Teachers are showing a high level of technological competence on basic computer operations and software use, internet use, social media integration, information literacy, and support for K–12 distance learning, suggesting that they have a high level of readiness for integrating digital tools into instructional practice. Learners were also showing high academic performance, which might have been the result of technology-enhanced pedagogy that promotes engagement, access, and timely feedback. In addition, it shows a strong positive statistical relationship between teachers' technological competence and learners' academic performance, proving that higher digital competence among teachers leads to better student achievement. All these are indications that initiatives aimed at improving the digital capacity of the teacher need to be sustained, and, from this perspective, any professional development programs undertaken in the future also need to target continuous, focused training in order to further enhance instructional quality in technology-rich learning environments.

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