

Difficulties of Teachers in the Conduct of Virtual Learning Activities

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Abstract:

Virtual learning offers flexibility and accessibility, crucial to address challenges like digital equity and maintain engagement through interactive strategies. A successful virtual learning experience involves adapting to the local context, leveraging technology effectively, and prioritizing student well-being and engagement. Teachers' high level of difficulties in conducting virtual learning activities in terms of technical infrastructure, digital literacy, student engagement, and learning assessment means that teachers need to focus on effective communication, active engagement with students, and utilizing technology wisely. This includes participating in professional development opportunities, collaborating with colleagues, and actively reflecting on their teaching practice. Provide professional development for educators to better understand and address diverse learning needs. Teachers must participate in professional development and attend workshops, webinars, and online courses to enhance their skills and knowledge in online teaching.

Keywords: Diverse Learning Needs, Local Context, Virtual Learning

Introduction:

According to the Center for Educational Research and Innovation (2018), assessments are vital to the education process of every learner. Assessments measure what students have learnt at the end of a unit, promote students, and ensure they have met required standards towards completion of a particular grade level. The Department of Education uses assessments to hold publicly funded schools accountable for providing quality education.

Virtual learning, also known as online or distance learning, involves teaching and learning through digital platforms and technologies, not in a physical classroom. It is about how people learn and gain skills outside a regular classroom. It includes lots of different things, like online tools and resources. This type of learning can happen in many ways and affects teachers and students. However, there can be challenges like talking to each other, keeping people interested, accessing computers and the internet, and just the overall feeling of learning online. It is imperative to figure out these problems and find ways to fix them so that virtual learning can work well.

Meanwhile, DepEd Order No. 012, series of 2020 entitled Adoption of the Basic Learning Continuity Plan, Enclosure No. 1 provides that virtual assessments should be holistic and authentic in capturing the attainment of the most essential learning competencies, use of a variety of strategies to administer virtual evaluations, ensure that assessments are integral to the learning development of the students, and more emphasis on formative assessments to promote growth and mastery.

In addition, the Huang (2020) report from UNESCO's International Institute for Educational Planning stated the usefulness of Virtual learning activities, and that it is vital to students' continuing education when situations are adverse for in-school learning. It said that digital formative assessment is now a practical, quick, and long-term option for more thorough data collection and student learning analytics, thanks to digital communication platforms, Learning Management System (LMS) technologies, and other specialized tools. By recording all learning outcomes and forms and using student data to identify and close learning gaps, digital formative assessment also offers chances to support lifelong learning and 21st-century skills.

Despite the normality of the situation, online classes are still inevitable when there are local or national disasters and calamities. For example, in the late months of 2023, many schools opted to shift to online classes due to the prevalence of a very high heat index. With prolonged online courses, providing an objective mode of verification for

students' learning would be difficult if virtual assessments are not properly administered. Hence, the motivation for conducting this study came from realizing that online or virtual assessments are often taken for granted and ridiculed. The study aimed to establish the continuing and new challenges in the conduct of said virtual learning activities to develop the so-called confirmation of learning.

Current State of Knowledge

Difficulties of Teachers in the Conduct of Virtual Learning Activities. There are so many factors that educators must consider when using computer-based technology in their classrooms. Identified some key factors contributing to teachers' use of computer-based technology. The ultimate goal is to investigate professional development in computer technology integration. Aslan (2021) stressed that enabling individuals to keep pace with this change has become the aim of education. Paje et al. (2021) stated that it is impossible to ignore the importance of new technology in schools, particularly for science, as its use is likely to contribute to science education and learning by advancing and enhancing the production of work, supporting the development of collaborative knowledge, supporting investigation and experimentation, offering students greater duty and control through individual investigation and experimentation, advancing inspiration and commitment, and helping students to consider forms more definitely.

ICT enables significant educational functions for educators and learners, so it has become the main ingredient where effective and efficient teaching and learning processes are guaranteed. ICT has the power to increase motivation and learner engagement and helps to develop lifelong learning skills. Teachers' proficiency in ICT integration plays an important role in the modern educational process. As teacher education institutions are under more and more pressure to use ICTs to provide teachers with the necessary knowledge and skills to prepare them for the 21st century, adequate teacher professionalization becomes a prerequisite to transforming education in such a way that teachers have the technological and pedagogical knowledge and skills to use ICTs to cater to teachers' individual preferences (Schols, 2017).

The emergence of ICT in education has been so rapid that there exists a serious information gap regarding the actual infusion of technology in education. One force generating attention to the use of ICT in education is the growing need for lifelong learning. The two main rationales behind the lifelong learning concept are the rapid increase in information and the need for more frequent career changes. ICT can help implement lifelong learning through on-demand and project-based learning activities. It can also facilitate it by making learning more feasible anytime and anywhere, not just in classrooms. It is becoming increasingly important in our daily lives and our educational system. Therefore, educational institutions have a growing demand to use ICT to teach the skills and knowledge students need for the 21st century (Buabeng-Andoh, C., 2016).

Studies reveal a few factors which influence teachers' decisions to use ICT in the classroom: access to resources, quality of software and hardware, ease of use, incentives to change, support and collegiality in their school, school and national policies, commitment to professional learning and background in formal computer training (Mumtaz, S., 2015). This article focuses on obstacles that educational practitioners perceive as significant impediments to realizing their school-based ICT objectives. Among the top 10 obstacles were material as well as non-material conditions. The major obstacles were a lack of computers and knowledge among teachers (Pelgrum, 2020).

ICT has the power to increase motivation and learner engagement and helps to develop lifelong learning skills. As a powerful educational tool, ICT can facilitate the transformation of school education. Nevertheless, to make this happen, it is vital to change the mindset and culture among teachers, administrators, parents, and students, as well as how the curriculum is designed and delivered, and how students are currently assessed. Thus, harnessing ICT continues to be an important challenge to educators. The Philippine Government has shown a serious commitment to ICT in education by announcing a series of initiatives to apply ICT in teaching and learning. These aligned with the Millennium Development Goals and the Education for All movement. They have provided a global policy environment for the directions and nature of interventions towards achieving improved access to and quality of basic education (Abeka, 2018).

Emerging technologies are changing every aspect of life: collecting information, reading and writing files, communicating, and analysing data. All these aspects influence education as well. Education is about reading, writing, calculating, collecting, and analysing data. Nevertheless, schools are stuck using 19th-century technologies and didactics. In other words, the use of new technologies and educational concepts is not sufficient at the core of the schools, and they are mainly used in special courses or programs. Although new technologies are not a panacea for educational ills, it seems clear that emerging technologies are essential to teaching in the 21st century. To use these technologies adequately, teachers need basic information and communication technologies (ICTs) skills and knowledge, and know how to use them to improve their students' learning (Hughes, 2020).

In the study of Paje et al 2021, emphasis was placed on the needs of educator training. Nowadays, educators are adapting new technologies, which have consequences on students' learning, budgetary costs, security, and plagiarism. In the study they found out: individual utility of computers outside of teaching exercises was the most significant indicator of educator in using technology in the classroom; teachers' utilization of computer advancements was generally for "instructional"; and looking forward for progress and observed esteem were the most significant

issues in recognizing levels of computer use among instructors;" (e.g., CD-ROM and World Wide Web) and "expressive" (e.g., Word processing) purposes. In this condition, getting the basic data completely and on schedule, utilizing the obtained data in expert and self-development, and being a skilled instructor are largely legitimately identified with the competency to utilize the computer-based technology successfully for these aims. Because of the importance of ICT in our society and for the future of education, educators must be competent in using ICT to improve the quality of teaching and learning. Teachers with basic ICT skills are not necessarily competent in ICT; therefore, teachers must know where and when to use technology for teaching and other related tasks by undergoing training that will help them further enhance their skills and knowledge in ICT (Caluza et al., 2020).

Theoretical Framework

The primary objective of this study is to comprehend the factors and causal relationships that influence the acceptability and behavioral intent of virtual learning activities. The following ideas served as the basis for the present research: The Technology Acceptance Model (TAM), instructional content expertise, and cultural aspects (Hofstede, 2003). It aims to provide helpful suggestions concerning how teachers could make the most of social media.

In the past, the Technology Acceptance Model (TAM), which explains how people accept information technology (IT), was constructed using the Theory of Reasoned Action (TRA). Technology for information and communication (ICT) has become an essential component of society. Hwa (2016) claims that particular nations have created the current ICT competency standards to effectively utilize human resources and enjoy the advantages of increased productivity, job creation, and economic growth. One effective strategy for facilitating a nation's integration into regional and global markets is the knowledge of information and communication requirements. The purpose of this framework is to specify the competency outputs and the auxiliary knowledge and abilities needed to use ICT in teaching-related employment vocations. It offers performance metrics for evaluating teachers' ICT proficiency and expertise in educational environments.

Additionally, various computer programs must be incorporated into lesson plans to engage and motivate students, eventually leading to their academic success. For students to keep up with the rapidly evolving technological landscape, teachers must be proficient in using computer-based technologies in scientific classes. Since many enjoy using computers and other computer-related devices, teachers can use this desire to improve student learning.

Objectives of the Study

This study aimed to determine the difficulties teachers encountered in virtual assessments in one of the districts of a big-sized division in Central Philippines for the School Year 2024-2025, as a basis for an action plan.

Methodology:

This section discusses the research design, respondents, data gathering instrument, validity and reliability of the research instrument, data gathering procedure, analytical schemes, and statistical tools.

Research Design

This study employed a descriptive research design, a scientific approach that entails observing and characterizing a subject's behavior without exerting any influence. Descriptive research is frequently employed as a prelude to quantitative research designs, and the overall summary provides some helpful guidance regarding which variables warrant quantitative testing (Shuttleworth, 2021). It aims to describe a population, situation, or phenomenon accurately and systematically. It is an appropriate choice when the research aims to identify characteristics, frequencies, trends, and categories (McCombes, 2020). Descriptive research design is valuable to this study as it provides facts and scientific judgment. Also, this design is appropriate for the study as it helps reveal patterns and connections that might otherwise go unnoticed, present situations, and determine the prevailing issues, making adequate and accurate interpretation of the data.

Respondents of the Study

The study's respondents are the 84 teachers sampled from a total population of 106 public elementary school teachers distributed in 14 schools in this district. Since the number of respondents is significant, stratified and random sampling techniques were used to find the sample size using the Cochran formula. To get the percentage, the respondents from each section were divided by the total number of respondents and multiplied by the sample size. The researchers randomly selected the respondents from each section using the lottery technique.

Table 1 shows the distribution of the respondents according to their grade level.

Table 1
Distribution of Respondents

District	Population (N)	Sample Size (n)	Percentage (%)
A	10	7	7.94
B	10	7	7.94
C	7	4	5.56
D	8	5	6.35
E	6	4	4.76
F	10	7	7.94
G	12	8	9.52
H	10	7	7.94
I	7	4	5.55
J	8	5	6.35
K	6	4	4.76
L	10	7	7.94
M	12	8	9.52
N	10	7	7.94
TOTAL	126	84	100.00

Data Gathering Instrument

The researcher used a self-made data-gathering instrument to gather the data needed for this study.

The researcher designed a survey questionnaire to help determine teachers' difficulties in conducting virtual learning activities. The questionnaire was in two parts: Part 1 gathered the respondents' profile information, including the respondents' age, sex, highest educational attainment, and length of service.

Part 2 assesses teachers' difficulties in virtual learning activities with a 32-item scale in technical infrastructure, digital literacy, student engagement, and learning assessment.

The respondents were given options to choose from their responses, which are as follows: 5 as always, 4 as often, 3 as sometimes, 2 as rarely, and 1 as almost never.

Validity

According to Bueno and Matreano (2020), validity refers to the appropriateness, meaningfulness, correctness, and usefulness of the research's inferences.

Taherdoost (2020) explains how well the collected data covers the actual area of investigation. Validity means "measure what is intended to be measured". The survey instrument was validated using Good and Scates' standardized form with a criteria rating of one as poor and five as excellent.

Since the instrument is researcher-made and subjected to face and content validation, three education experts were chosen to evaluate it for this study. The first validator is a graduate with a Doctor of Philosophy degree and currently serves as a principal in one of the public schools in the said SDO. The second validator is also a graduate of Doctor of Philosophy and currently serves as a school principal in the public schools in the same SDO. The last validator is also a full-fledged Doctor of Philosophy in Educational Management and is currently working as Education Program Supervisor in the same SDO. The instrument was evaluated using the criteria of Carter Good and Douglas Scates to ensure the instrument's validity, with 1 as poor and 5 as excellent. The interpretations are as follows: excellent (4.04 – 5.00); very good (3.28 – 4.03); good (2.52 – 3.27); poor (2.52 – 3.27); very poor (1.00 – 1.75). The result of the validation of the research instrument was 4.85, interpreted as "excellent", which showed that the validity of the research instrument was valid.

Reliability

The self-made questionnaire was subjected to a reliability test by conducting it on thirty (30) randomly selected elementary teachers from the neighboring SDO—the test result was analyzed using Cronbach's Alpha. A coefficient of correlation that is high or very high (0.70-1.00) means that the instrument is highly reliable. One metric for evaluating the internal consistency, or reliability, of a collection of scale or test items is Cronbach's alpha. Stated differently, the degree to which a measurement provides a consistent way to measure a notion is its dependability. One metric for assessing the degree of consistency is Cronbach's alpha (Goforth, 2018).

The calculation of Cronbach's alpha involves comparing the variance for all individual item scores to the correlation between the score for each scale item and the overall score for each observation, often individual test takers or survey respondents (Goforth, 2018). The computed alpha was 0.942, interpreted as "excellent". This implies that the research instrument was reliable for use in the study.

Data Gathering Procedure

After the validity and reliability test of the research instrument, the researcher prepared a letter addressed to the Schools Division Superintendent and the Public Schools District Supervisor of the said SDO. Once approved, another letter was sent to the school principals with a request to conduct the study.

Upon approval, the researcher administered the instrument to the respondents. The researcher administered and retrieved the research instrument to ensure 100% recovery. After the retrieval, the data were tabulated, analyzed, and interpreted according to the specific problems outlined in this study.

Research Ethics Protocols

In conducting this study, various ethical principles such as voluntary participation, informed consent, risk of harm, confidentiality, and anonymity shall be strictly followed to protect the identity of the respondents and the schools they represent, including their responses. Furthermore, the respondents can withdraw their participation in this research study. Anonymity would be assured in the study report.

Analytical Schemes

The researcher employed two analytical schemes based on the research objectives of this study, which are descriptive and comparative.

Objective No.1, which is to determine the profile of the respondents in terms of age, sex, highest educational attainment, and length of service, used the descriptive analytical scheme.

Objective No. 2 used the descriptive analytical scheme to determine the level of difficulties encountered by teachers in the administration of virtual assessments in technical infrastructure, digital literacy, student engagement, and learning assessment.

Objective No. 3 utilized the descriptive analytical scheme to determine teachers' difficulties administering virtual assessments when grouped according to the variables.

Objective No. 4 used the comparative analytical scheme to determine the significant difference in the level of difficulties teachers encounter in the administration of virtual assessments when grouped according to the variables.

Results and Discussion:

This section deals with the presentation, analysis, and interpretation of data gathered to carry out the objectives of this study. All these were made possible by following specific procedures to give the exact data and solution to each problem.

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

Table 2
Profile of Respondents

Variables	Categories	Frequency	Percentage
Age	Younger (below 34 years old)	40	47.60
	Older (34 years old and above)	44	52.40
	Total	84	100
Sex	Male	37	44.00
	Female	47	56.00
	Total	84	100
Highest Educational Attainment	Lower (Bachelor's Degree)	24	28.60
	Higher (Master's and Doctoral Degrees)	60	71.40
	Total	84	100
Length of Service	Shorter (below 12 years)	40	47.60

Longer (12 years and above)	44	52.40
Total	84	100

Table 2 shows the profile of the respondents in terms of age, where 40 or 47.60% were younger (below 34 years old), and equally, 44 or 52.40% were older (34 years old and above). Regarding sex, 37 or 44% were male and 47 or 56% were female. Regarding the highest educational attainment, 24 or 28.60% belonged to the lower respondents with a Bachelor's degree. Similarly, 60 or 71.40% belonged to the higher educational attainment respondents. Furthermore, according to length of service, 40 or 47.60% were categorized as shorter tenure respondents (below 12 years) and 44 or 52.40% as longer tenure respondents (12 years and above).

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities According to Technical Infrastructure, Digital Literacy, Student Engagement, and Assessment of Learning

Table 3

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities According to Technical Infrastructure

Items	Mean	Interpretation
<i>As a teacher, I have difficulties in ...</i>		
1. the availability of a good internet connection in school	3.95	High Level
2. the accessibility of the school's LMS.	4.21	High Level
3. providing learners with online resources such as e-library and the like.	4.07	High Level
4. online submission of grades, tracking of sent reports, and approval of requests.	4.37	High Level
5. accessing the common school e-folder for submitting grades and other deliverables.	4.21	High Level
6. organizing and managing computer files, folders, and directories.	3.92	High Level
7. sending and receiving emails with attachments, managing emails, and using LAN and web-based mail servers.	4.51	Very High Level
8. configuring and using web browsers and help applications.	3.79	High Level
Overall Mean	4.13	High Level

Table 3 shows the level of difficulties of teachers in the conduct of virtual learning activities according to the technical infrastructure. The overall mean score is 4.13, interpreted as "high level". Teachers face various difficulties in conducting virtual learning activities, which are significantly impacted by the level of technical infrastructure in their area. Challenges include inadequate internet connectivity, lack of devices, insufficient training, and insufficient digital teaching skills. These issues affect teachers' ability to deliver virtual lessons and students' access and participation.

Item 7 obtained the highest mean score of 4.51, which states "send and receive emails with attachments, manage emails and use LAN and Web-based mail servers," interpreted as "very high level". Teachers can encounter difficulties when sending and receiving emails with attachments, managing their inboxes, and utilizing LAN and web-based mail servers. These challenges often stem from technical limitations, organizational issues, or a lack of familiarity with the various email functionalities. Teachers also have difficulty sending and receiving emails with attachments, managing emails, and using LAN and Web-based mail servers, such as online submission of grades, tracking sent reports, and approving requests. Slow or unreliable internet access can hinder online lesson delivery, making it difficult for teachers to stream videos, use interactive tools, and maintain smooth communication with students. A lack of sufficient computers, tablets, or other devices for teachers and students can limit the scope of virtual learning activities.

ICT-integrated teaching and learning provided a flexible approach and better access to learning opportunities as a substitute for face-to-face instruction (Akram et al., 2021). However, teachers faced difficulties using ICT in their instructional practices due to inadequate technological competencies and technical infrastructure. Nevertheless, the transitory phase improved their digital skills. Furthermore, using ICTs in education to enhance instructional practices' effectiveness has been considered crucial for the last few decades worldwide (U.S. Department of Education, 2020). Several studies also highlighted the significance of ICT-integrated instructional approaches in meeting the educational needs of the learners by increasing their thoughtfulness and keeping students motivated, which is viewed as a significant predictor of students' educational growth (Xu et al., 2021).

Table 4

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities According to Digital Literacy

Items	Mean	Interpretation
<i>As a teacher, I have difficulties in ...</i>		
1. using the full features of the Microsoft Word application.	3.94	High Level
2. knowing how to apply the formulas in Microsoft Excel.	4.42	High Level
3. inserting video clips into my PowerPoint presentation.	3.93	High Level
4. exporting and importing documents and other files.	4.57	Very High Level
5. utilizing online professional help, such as useful templates for various office documents.	4.42	High Level
6. formatting text, controlling margins, layout, and tables	3.93	High Level
7. enhancing slide presentations by adding sound, customizing animation, and inserting images	4.57	Very High Level
8. printing and storing data tables using a spreadsheet application.	3.90	High Level
Overall Mean	4.21	High Level

Table 4 shows the level of difficulties of teachers in the conduct of virtual learning activities according to digital literacy. Educators should use digital devices and information ethically and efficiently to develop digitally literate people. The overall mean score is 4.21, interpreted as "high level" of difficulty. Items 4 and 7 obtained the highest mean score of 4.57, which states "exporting and importing of documents and other files" and "enhancing slide presentations by adding sound, customizing animation, and inserting images," interpreted as "very high level."

The respondents struggle with exporting, importing documents and other files, and enhancing slide presentations by adding sound, customizing animation, and inserting images. Digital literacy is understanding and using various digital technologies to find, evaluate, and communicate information effectively and responsibly. It encompasses cognitive and technical skills, enabling individuals to navigate digital environments, access information, and engage in online activities. Digital Literacy, according to Glister (2020), is the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers. However, according to Meyers (2022), concerns about the lack of digital access have given way to concerns about being digitally illiterate, i.e., lacking the skills, understanding, and practices required to navigate the ever-changing digital landscape successfully.

This may be a factor because these indicators had the lowest rating. Jones (2020) found that a very significant determinant of the teachers' level of engagement in ICT is their confidence in using the technology. Teachers with little or no confidence in using computers will try to avoid them altogether (Dawes, 2020). Another factor could be that teachers' ICT access level is significant in determining ICT use levels (Mumtaz, 2020). Access to ICT infrastructure and school resources is necessary for integrating ICT in education (Plomp et. al., 2021). Yildirim (2020) found in a study that access to technology resources is one of the effective ways to teach teachers' pedagogical use of ICT in teaching. Therefore, teachers should have access to computers, the internet, hardware, and software to increase their knowledge in ICT. Another factor could be the barriers to resources. Barriers are defined as any factor preventing or restricting teachers' use of technology in the classroom (Ertmer, 2020)

Teachers face various difficulties in conducting virtual learning activities, which are significantly impacted by the level of digital literacy. It is commonly accepted that teachers' ICT proficiency may empower them and their students, encourage change, and support the development of 21st-century skills. These micro-level assessments, which were conducted at the individual school level, should be maintained.

It was noted that teachers did an inadequate job utilizing computer-based technology in the classroom. Nevertheless, teachers looked for ways to use ICT to enhance instruction and significantly increase students' enthusiasm for studying. According to Paje et al. (2021), whereas computer-based technology in the classroom is becoming more common in 21st-century education, not all teachers possess ICT literacy.

Liu et al. (2022) also identified that technology-integrated learning increases students' cognitive understanding and learning achievements. In addition, ICT incorporated teaching-learning practices also enable learners to stay connected with their instructors and peers (via various social media platforms), help students resolve their academic challenges, and keep them participating actively in the learning activities (Liu Z. et al., 2021). Recognizing the importance of students' active involvement in learning activities, Liu et al. (2021) also suggested that teachers design collaborative activities via the computer-supported collaborative concept mapping (CSCCM) technique to develop a collaborative classroom environment, enhancing students' interest. In brief, ICT-integrated teaching-learning is the requirement of the time, which allows the learners to satisfy their learning needs and helps teachers align their teaching approaches.

Table 5

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities according to Student Engagement

Items	Mean	Interpretation
<i>As a teacher, I have difficulties in ...</i>		
1. ensuring full student focus during online classes.	4.77	Very High Level
2. keeping all students connected during the class due to intermittent connectivity.	3.87	High Level
3. keeping distractions away from learners while the class is going on.	3.99	High Level
4. ensuring learners understand what has been discussed in the class.	4.17	High Level
5. letting students join class discussions in online classes.	4.57	Very High Level
6. using a presentation package to add text and sequence a presentation.	4.32	High Level
7. making computations, using formulas, and creating graphs using spreadsheets.	3.85	High Level
8. printing presentation handouts and storing slide presentations	4.17	High Level
Overall Mean	4.21	High Level

Table 5 shows the level of difficulties of teachers in the conduct of virtual learning activities according to student engagement. The overall mean score is 4.21, interpreted as "high level". Item 1 obtained the highest mean score of 4.77, which states "ensuring full student focus during online classes" as "very high level". Teachers often find it challenging to maintain student focus during online classes due to various distractions, the passive nature of online learning, and the lack of direct supervision. Strategies to enhance focus include creating interactive lessons, utilizing technology to block distractions, and establishing a structured learning environment. Online learning environments can be filled with distractions like social media, online games, and family members. Teachers may struggle to know if students are paying attention when they are not physically present. Teachers face high-level difficulties engaging students during virtual learning activities, especially in cognitive, emotional, and behavioral engagement. Challenges include maintaining student attention, motivating participation, and assessing engagement accurately in a virtual environment. Factors like limited resources, inadequate training, and the need for reliable internet access also exacerbate these difficulties.

Teachers found it difficult to communicate with students while teaching remotely and constantly check in to see if they were learning, which affected their relationships with students. Impeded communication was identified as a challenge for teachers in managing students' learning, as students found it difficult to focus on the lesson and lost interest due to the lack of physical presence in the virtual classroom. This suggested that it was necessary to apply various tools or interactive teaching strategies to facilitate interaction with learners. Specifically, the teachers reported that they experienced communication difficulties with their students in discussion activities in the Zoom chat box, and they tried to compensate for these by changing the communication style, such as using a Google Classroom online discussion forum to create anchored comments.

The importance of ICT in education and the national educational policies have proved that the government has special concerns about integrating ICT into the teaching-learning practices to meet the global needs. Lack of ICT infrastructure (Akram et al., 2021a), electricity and internet (Akram et al., 2021b), technological knowledge and expertise (Asad et al., 2020), and lack of teacher training in educational institutions (Abbasi et al., 2021), that badly affects the successful usage of ICT in classrooms. Besides the above-mentioned technology-related factors, teachers' perceptions and beliefs play an essential role in effective technology integration. Their beliefs define their pedagogical decisions on integrating technology within their instructional practices that support the teaching and learning needs of the twenty-first century (Tondeur et al., 2017). Previous studies have also identified that teachers' instructional practices are greatly affected by their pedagogical beliefs (Taimalu & Luik, 2019). Teachers should encourage students to designate a specific study space and minimize distractions like social media and background noise. Employ website blockers and extensions to restrict access to distracting websites during study sessions. Incorporate Interactive Elements like polls, quizzes, and discussions to engage students actively in learning.

Table 6

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities according to Assessment of Learning

Items	Mean	Interpretation
<i>As a teacher, I have difficulties in ...</i>		
1. ensuring the competence of the results of online assessments.	4.75	Very High Level
2. providing formative assessments rather than summative.	4.02	High Level
3. knowing specific areas where learners are challenged because their online assessments are high.	3.96	High Level
4. providing assessment feedback online due to many alibis and circumstances.	4.29	High Level
5. letting all parents cooperate during the administration of online assessments.	4.77	Very High Level
6. stitching video footage and soundtracks and adding simple enhancements – transitions, titles, etc.	3.87	High Level
7. effectively using synchronous and asynchronous web-based communication tools like instant messengers, voice, and teleconferencing	3.99	High Level
8. properly acknowledging information sources – online and offline.	4.24	High Level
Overall Mean	4.24	High Level

Table 6 shows the level of difficulties of teachers in the conduct of virtual learning activities according to the learning assessment. The overall mean score is 4.24, interpreted as "high level". Items 5 and 1 obtained the highest mean score of 4.77 and 4.75, which states "letting all parents cooperate during the administration of online assessments" and "ensuring the competence of the results of online assessments," interpreted as "very high level". Teachers may face challenges encouraging parental cooperation during online assessments due to limited resources, language barriers, and varying levels of parental understanding. To address these challenges, teachers can employ strategies that foster open communication, provide clear instructions, and create opportunities for parents to participate actively in their child's education. Teachers may find it challenging to ensure consistent parental cooperation during online assessments due to factors like varied levels of parental involvement, differing technological access, and potential misunderstandings about the assessment process. Clear communication, proactive problem-solving, and building trust with parents are crucial to address these challenges and foster a supportive environment for online assessments.

Teachers face numerous challenges when assessing learning in virtual environments, including ensuring equitable access, addressing cheating and plagiarism, adapting traditional assessment methods, and managing online interaction and engagement complexities. Specifically, difficulties arise in implementing authentic assessments, using online tools effectively, and maintaining student motivation and parent participation. Difficult to ensure students are the ones completing assessments, especially in online exams, and to prevent plagiarism. Online learning can sometimes be isolating, decreasing student motivation and participation.

Furthermore, Aslam et al. (2021) revealed that virtual learning activities integration enhances the quality of the teaching learning process and found a significant correlation between teachers' technological pedagogical and content knowledge and their technological competencies. In addition, Abbasi et al. (2021) identified teachers' positive attitudes toward applying technology in their instructional practices and identified a significant association between technology use and their technological competencies. Teachers play an important role in cultivating successful students' online learning. ICT utilization in teaching-learning practices enables students to use technologies in education by accessing, selecting, establishing, and interpreting the information. Its effective integration helps meet the learners' educational needs by providing creative solutions to different learning inquiries (Rafi et al., 2022).

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities According to Technical Infrastructure, Digital Literacy, Student Engagement, and Assessment of Learning when grouped by Age, Sex, Highest Educational Attainment, and Length of Service

Table 7

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities According to Technical Infrastructure by Age

Items	Younger	Older
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<i>As a teacher, I have difficulties in ...</i>	Mean	Interpretation	Mean	Interpretation
1. the availability of a good internet connection in school	4.00	High Level	3.91	High Level
2. accessibility of the school's LMS.	4.20	High Level	4.23	High Level
3. providing learners with online resources such as e-Library and the like.	4.30	High Level	3.86	High Level
4. online submission of grades, tracking of sent reports, and approval of requests.	4.50	Very High Level	4.25	High Level
5. Access the common school e-folder for submitting grades and other deliverables.	4.20	High Level	4.23	High Level
6. organizing and managing computer files, folders, and directories.	3.98	High Level	3.86	High Level
7. sending and receiving emails with attachments, managing emails, and using LAN and web-based mail servers.	4.80	Very High Level	4.25	High Level
8. configuring and using web browsers and help applications.	3.90	High Level	3.68	High Level
Overall Mean	4.24	High Level	4.04	High Level

Table 7 shows the level of difficulties of teachers in the conduct of virtual learning activities according to technical infrastructure and age. The overall mean score is 4.24 for the younger group and 4.04 for the older group, interpreted as "high level". Items 4 and 7 obtained the highest mean, which states "online submission of grades, tracking of sent reports and approval of requests," and "send and receive emails with attachments, manage emails and use LAN and Web-based mail servers".

Several studies also showed a significant relationship between technology usage in educational practices and students' academic achievement (Asif et al., 2020; Abbasi et al., 2021). Furthermore, to enhance students' creative thinking and academic performance, Ali et al. (2022) advocated that cloud computing facilitates students' learning efficiently with better adaptability and cost-effectively.

Table 8

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities according to Digital Literacy by Age

Items	Younger		Older	
<i>As a teacher, I have difficulties in ...</i>	Mean	Interpretation	Mean	Interpretation
1. using the full features of the Microsoft Word application.	3.95	High Level	3.93	High Level
2. knowing how to apply the formulas in Microsoft Excel.	4.43	High Level	4.41	High Level
3. inserting video clips into my PowerPoint presentation.	4.00	High Level	3.86	High Level
4. exporting and importing documents and other files.	4.65	Very High Level	4.50	Very High Level
5. utilizing professional help online, such as useful templates for various office documents.	4.43	High Level	4.41	High Level
6. Formatting text, controlling margins, layout, and tables.	4.00	High Level	3.86	High Level
7. enhancing slide presentations by adding sound, customizing animation, and inserting images.	4.65	Very High Level	4.50	Very High Level
8. printing and storing data tables using a spreadsheet application.	4.03	High Level	3.80	High Level
Overall Mean	4.27	High Level	4.16	High Level

Table 8 shows the level of difficulties of teachers in the conduct of virtual learning activities according to digital literacy by age. The overall mean score is 4.27 for the younger group and 4.16 for the older group, interpreted as "high level". Items 4 and 7 obtained the highest mean: "enhance slide presentations by adding sound, customizing animation, and inserting images," and "exporting and importing documents and other files.". Teachers face varying

levels of difficulty in conducting virtual learning activities, influenced by their digital literacy skills and potentially by age. Some teachers may struggle with basic technology skills, while others are more adept at integrating technology into their teaching. There is also a possibility of a digital divide within the teaching staff, where younger teachers might be more comfortable with technology than their older counterparts.

Adopting ICT services helps educational institutions fulfill students' learning needs without having all the resources, such as multimedia equipment, software, and hardware. In addition, using ICT in classrooms motivates students and keeps them engaged in educational activities (Jogezai et al., 2020). Despite the demand for various educational innovations within the field of education based on remote and digital paradigms, prompted by the changes nowadays, it has not been easy for educators to keep up with the rapidly changing trends in the field of education. The expansion of distance learning has brought about many changes to the educational field. However, distance learning conducted in response to the emergency conditions of the pandemic brought numerous problems to light, such as a lack of infrastructure (Kruszewska et al., 2022) and difficulty in using digital devices (Jung et al., 2020).

Table 9

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities according to Student Engagement by Age

Items	Younger		Older	
	Mean	Interpretation	Mean	Interpretation
<i>As a teacher, I have difficulties in ...</i>				
1. ensuring full student focus during online classes.	4.68	Very High Level	4.86	Very High Level
2. keeping all students connected during the class due to intermittent connectivity.	3.85	High Level	3.89	High Level
3. keeping distractions away from learners while the class is going on.	3.95	High Level	4.02	High Level
4. ensuring learners understand what has been discussed in the class.	4.13	High Level	4.20	High Level
5. letting students join class discussions in online classes.	4.65	Very High Level	4.50	Very High Level
6. using a presentation package to add text and sequence a presentation.	4.23	High Level	4.41	High Level
7. making computations, using formulas, and creating graphs using spreadsheets.	3.83	High Level	3.86	High Level
8. printing presentation handouts and storing slide presentations.	4.15	High Level	4.18	High Level
Overall Mean	4.23	High Level	4.20	High Level

Table 9 shows the level of difficulties of teachers in the conduct of virtual learning activities according to student engagement by age. The overall mean score is 4.23 for the younger group and 4.20 for the older group, interpreted as "high level". Items 5 and 1 obtained the highest mean, "letting students join class discussions in online classes". The result indicated that the older teachers may face greater challenges adapting to new technologies than younger teachers, as shown by the mean, which showed slight differences. Lack of adequate training and support from schools and districts can hinder teachers' ability to integrate technology into their teaching.

Teachers may struggle with basic tasks like using online platforms, creating digital content, or troubleshooting technical issues. Teachers in virtual learning environments face challenges like maintaining student engagement, providing timely feedback, and addressing technical issues. Student engagement can vary significantly based on age, with younger students potentially needing more hands-on engagement and support from parents. Furthermore, geographical areas with limited internet access or technological infrastructure can exacerbate these challenges. Regarding the benefits of technology use at the secondary school level, Asif et al. (2020) signified that teachers' designed and prearranged resources (in the form of videos or texts) enable the learners to apprehend the lesson clearly before the teacher's demonstration.

Table 10

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities according to Assessment of Learning by Age

Items	Younger	Older
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<i>As a teacher, I have difficulties in ...</i>	Mean	Interpretation	Mean	Interpretation
1. ensuring the competence of the results of online assessments.	4.68	Very High Level	4.82	Very High Level
2. providing formative assessments rather than summative.	4.20	High Level	3.86	High Level
3. knowing specific areas where learners are challenged because their online assessments are high.	3.90	High Level	4.02	High Level
4. providing assessment feedback online due to many alibis and circumstances.	4.40	High Level	4.18	High Level
5. letting all parents cooperate during the administration of online assessments.	4.68	Very High Level	4.86	Very High Level
6. stitching video footage and soundtracks and adding simple enhancements – transitions, titles, etc.	3.85	High Level	3.89	High Level
7. effectively using synchronous and asynchronous web-based communication tools like instant messengers, voice, and teleconferencing.	3.95	High Level	4.02	High Level
8. properly acknowledge information sources – online and offline.	4.23	High Level	4.25	High Level
Overall Mean	4.24	High Level	4.24	High Level

Table 10 shows the level of difficulties of teachers in the conduct of virtual learning activities according to the assessment of learning by age. The overall mean score is 4.24 for the younger and older groups, interpreted as "high level". The result indicated that younger and older teachers may face greater challenges adapting to new technologies. Lack of adequate training and support from schools and districts can hinder teachers' ability to integrate technology into their teaching. Teachers face numerous difficulties conducting virtual learning activities, primarily related to internet connectivity, technological proficiency, and student engagement.

These difficulties vary depending on the area of assessment in technology integration, curriculum alignment, and the teacher's age, potentially reflecting differences in digital literacy and experience. Teachers may struggle to adapt curriculum materials and assessment methods to the online learning environment. Maintaining student attention and motivation in a virtual setting can be challenging due to the lack of face-to-face interaction and the potential for distractions. Teachers must be proficient in using technology to create and administer assessments (Abbasi et al., 2021).

Table 11

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities according to Technical Infrastructure by Sex

Items	Male		Female	
<i>As a teacher, I have difficulties in ...</i>	Mean	Interpretation	Mean	Interpretation
1. the availability of a good internet connection in school	4.05	High Level	3.87	High Level
2. accessibility of the school's LMS.	4.30	High Level	4.15	High Level
3. providing learners with online resources such as e-Library and the like.	4.03	High Level	4.11	High Level
4. online submission of grades, tracking of sent reports, and approval of requests.	4.43	High Level	4.32	High Level

5. accessing the common school e-folder for submitting grades and other deliverables.	4.30	High Level	4.15	High Level
6. organizing and managing computer files, folders, and directories	3.81	High Level	4.00	High Level
7. sending and receiving emails with attachments, managing emails, and using LAN and web-based mail servers.	4.59	Very High Level	4.45	High Level
8. configuring and using Web browsers and Help applications.	3.78	High Level	3.79	High Level
Overall Mean	4.16	High Level	4.11	High Level

Table 11 shows the level of difficulties of teachers in the conduct of virtual learning activities according to technical infrastructure by sex. The overall mean score is 4.16 for the male group and 4.11 for the female group, interpreted as "high level". Teachers face difficulties in virtual learning, with technical infrastructure, area, and sex impacting these challenges. Some challenges include inadequate internet access and devices, lack of training, and difficulties adapting traditional teaching methods to online formats.

Factors like parental support and the ability to assess students' progress online also contribute to these difficulties. Result suggests that there may be some differences in how teachers of different genders experience the challenges of virtual learning, indicating that males might be more satisfied with school and teacher support, potentially impacting their experience with virtual learning. In addition, teachers' attitudes are considered a crucial determinant that reflects their behaviors in applying technologies in their pedagogical practices by responding positively or negatively based on their experiences (Abbasi et al., 2021).

Table 12

Level of Difficulties of Teachers in the Conduct of Virtual Learning Activities according to Digital Literacy by Sex

Items	Male		Female	
	Mean	Interpretation	Mean	Interpretation
<i>As a teacher, I have difficulties in ...</i>				
1. using the full features of the Microsoft Word application.	3.97	High Level	3.91	High Level
2. knowing how to apply the formulas in Microsoft Excel.	4.38	High Level	4.45	High Level
3. inserting video clips into my PowerPoint presentation.	3.84	High Level	4.00	High Level
4. exporting and importing documents and other files.	4.51	Very High Level	4.62	Very High Level
5. utilizing professional help, such as useful templates for various office documents.	4.38	High Level	4.45	High Level
6. formatting text, controlling margins, layout, and tables.	3.84	High Level	4.00	High Level
7. enhancing slide presentations by adding sound, customizing animation, and inserting images.	4.51	Very High Level	4.62	Very High Level
8. printing and storing data tables using a spreadsheet application.	3.86	High Level	3.94	High Level
Overall Mean	4.17	High Level	4.25	High Level

Table 12 shows the level of difficulties of teachers in the conduct of virtual learning activities according to digital literacy by sex. The overall mean score is 4.17 for the male group and 4.25 for the female group, interpreted as "high level". Females may have slightly better digital literacy skills than males; the difference is often insignificant. However, a gender digital divide does exist, primarily due to disparities in access to technology and social factors. This can manifest as women having less access to devices, data, and networks, and facing social norms that limit their digital participation.

Conclusions:

The study found that most teacher-respondents were older females with longer teaching experience and higher educational attainment. They reported a high level of difficulty in conducting virtual learning activities, particularly in areas such as technical infrastructure, digital literacy, student engagement, and learning assessment, regardless of demographic differences. These challenges underscore the need for improved communication, student involvement, and effective use of technology in online teaching. In Bacolod, successful virtual learning requires adapting to local

conditions, addressing unequal access to technology, and promoting professional development through webinars, peer collaboration, and targeted training. To address these issues, the study recommends conducting regular, school-based technical training sessions—ideally in small groups—to enhance teachers' digital skills and support their efforts in delivering effective virtual instruction. Such initiatives should focus on practical tech skills, pedagogical strategies, and fostering ongoing reflection and collaboration among educators.

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