ISSN: 2945-4190

World Journal on Education and Humanities Research
Creative Commons Attribution 4.0 International
Vol. 3, Issue 2, pp. 78-98
Received, May 2023; Revised June 2023;
Accepted June 2023

Article

Digital Literacy of Teachers: Its Use in Distance Teaching Modality for Inclusive Education Instruction in The Midst of Covid-19 Pandemic

Severino Garcia Jr.
Cecilia Elena De Los Reyes
Joseph Pepito
Nina Rozanne De Los Reyes
Lilibeth Pinili

Corresponding Author: sgjr_06@yahoo.com

Abstract
Digital literacy among teachers has become a crucial aspect in the landscape of education, especially amid the ongoing COVID-19 pandemic. As physical classrooms were swiftly replaced with virtual ones, the role of digital tools and platforms has increased exponentially. This research was conducted to determine the extent of digital literacy of teachers and the extent of utilization of ICT in ICT-based activities in distance teaching modality for inclusive education instruction in the midst of COVID-19 pandemic. The Mixed-method was employed using the quantitative-qualitative technique and convenient random sampling in identifying the respondents. The samples consisted of 54 inclusive education teachers. The data gathering tools used were modified research survey questionnaire supplanted with the interview. The findings of the study revealed that in terms of digital literacy, the teacher-respondents were found to be "Slightly Ready" with an overall weighted mean of 2.218; in terms of extent on the utilization of ICT, respondents were found to have "Rarely Utilized" the ICT with an overall weighted mean of 2.197. It was found that there was no significant relationship between the profile of the respondents and the extent of digital literacy, and the extent of utilization of ICT in teaching inclusive classes with learners with disabilities. Furthermore, its findings revealed no significant difference in the extent of digital literacy and the extent of utilization of ICT when grouped according to learners with disability. Based on the interview, themes were formulated such as adaptability struggle, technical issues, computer literacy, time management, self-motivation, and support. Based on the findings, it is concluded that teachers need more training and seminar coupled with support from the administration and self-motivation to cope with the needs in this time of pandemic and this fast-changing technology. To address the issue, an action plan was formulated for implementation.

Keywords: Special Education, Inclusive Education, Covid-19 pandemic, Digital Literacy

Copyright: © 2023 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license(https://creativecommons.org/licenses/by/4.0/).

Introduction

The global disaster brought on by the Coronavirus (COVID-19) pandemic is unparalleled. Businesses, corporations, governments, and

private organizations everywhere have been hit hard by the outbreak (Nhamo et al., 2020). More than 190 countries took drastic measures to stop the spread of the virus and lessen its impact by closing their educational institutions and canceling all face-to-face activities (Waziri et al., 2020). According to UNESCO (2020) statistics, by the middle of May 2020, more than 1.2 billion students have abandoned traditional classroom instruction. Since many institutions have stopped holding regular courses or meetings in person and instead use alternative teaching methods, technological advancements have become increasingly important. All the pieces must fall into place for schools to keep teaching their kids. Some organizations began implementing the technology in advance of the pandemic, while others were put in challenging positions to deal with the issue (Kutnjak (2021).

This pandemic calls for digital literacy, which will aid the "new normal" in educational parlance. Sense-making, reasoning, problem-solving, and communication are all crucial educational skills that teachers and students should have regular access to (Jamal et al., 2021). Teachers that excel in working with kids who have special needs take full advantage of the ways in which technology may deepen their pupils' knowledge, pique their curiosity, and boost their abilities. Teachers' smart use of technology increases student access to SPED, which is especially important now (Khatoony & Nezhadmehr, 2020).

Various information and communication technology (ICT) curricula have been developed by provincial and territory governments in the United States to help students become digitally literate (DeCoito & Estaiteyeh, 2022). Both faculty and students receive instruction in the use of digital resources and children of school age were given opportunities unavailable in previous generations (Hargreaves & Fullan, 2020). The proper direction was provided so that the technology may be used to better society. Moreover, distance education has been widely implemented in many parts of the world, using a wide range of delivery methods (with and without technological aid) and the active participation of educators and their communities. Most nations have systems in place for maintaining access to education via distance learning (Williamson et al., 2020).

The Prince George's County Public School System serves a diverse student body that faces many challenges, including a recent outbreak of coronavirus illness (COVID-19) (Miller & Blumstein, 2020). Some kids have parents or older siblings who can help them out with homework and reading, while others have to fend for themselves and don't have that luxury. Since the district's schools will remain virtual until at least December, many students won't have access to valuable in-person training and tools that can help them build a solid educational foundation.

It's not Zoom that's keeping the district from achieving its goals, even if online classrooms introduce a number of challenges for both students and educators. In Prince George's County, there is a digital

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY). www.wjehr.com

divide between the residents who have regular access to computers and those who do not; this has prevented countless children from staying in school during the outbreak.

The Prince George's County Public School system is the largest in Maryland, with approximately 133,000 children enrolled this school year; 80,000 of these kids qualify for free or reduced-price meals. Only 60% of county students had daily internet access by June 2020, therefore approximately 40% of those who wanted to continue their education online had to discover ways to afford or borrow dependable technology.

When pupils in a county do not have access to technology for the whole six hours of the school day, no amount of teaching can make up for that. Online education has been found to be beneficial only when students have consistent access to computers, regardless of whether or not they have access to them temporarily. Providing resources to only some of the county's students leaves thousands of less fortunate kids in the dark and widens the gap between the county's rich and its underprivileged. Students with unique educational requirements (LSENs) are not immune to the current crisis. When planning classes for their students, special education teachers should keep the LSENs' unique learning styles, personality traits, and cognitive skills in mind. As a result, it is imperative that the field of Special Education prioritize the integration of suitable ICT, particularly assistive technology, into all-inclusive classroom settings.

Because of the current state of this epidemic, educators must be ready to adapt to the necessity of providing education through alternative delivery methods, such as the internet or videoconferencing. Therefore, classroom instructors who deal directly with students need to be up-to-date on technological developments and prepared for whatever lies ahead in the field. In light of the aforementioned, the purpose of this study was to investigate whether or not schools were equipped to accommodate students with disabilities in inclusive classroom settings by assessing teachers' digital literacy and their use of ICT in ICT-based activities. This study's conclusions were the foundation for further efforts.

Methodology

The mixed-method (Creswell & Plano Clark, 2011) was used to conduct this study, a technique that combines both qualitative and quantitative forms. This was used to accumulate complete and breadth understanding and corroboration of a particular phenomenon. Furthermore, the mixed-method design provides researchers across research disciplines with a rigorous approach to answering research questions. The Quantitative method gathered the data on the extent of digital literacy the teachers possessed and ICT utilization in the different ICT-based activities for teaching and learning. An adapted instrument was used, and the quantitative means of analyzing and

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

interpreting the data was employed. This statistical technique summarized the information numerically. Its computational method examined the respondents' technological confidence and training, pedagogical readiness, and technical readiness.

This research was conducted at Bowie High School and College Park Academy. Both schools are located in the district of Prince George's County Public School, Maryland, U.S.A. The research survey questionnaire, as a tool for gathering data, has been adapted and modified from the research studies of Doculan (2016) "E-Learning Readiness Assessment Tool for Philippine Higher Education Institutions," Waxman et al., (2013). "Principals' Perceptions of the Importance of Technology in Schools. Contemporary Educational Technology," Apagu & Wakili (2013) "Availability and Utilization of ICT Facilities for Teaching and Learning of Vocational and Technical Education in Yobe State Technical Colleges," Tyger (2011) "Teacher Candidates' Digital Literacy and Their Technology Integration Efficacy,".

For the qualitative aspect of the study, 20 participants were interviewed on the challenges they have encountered in using ICT in teaching an inclusive class to learners with disability. Among the 44 respondents from Bowie High School, 15 were taken as participants, and another five (5) out of the ten teachers from College Park academy. It is noteworthy that difficulty was encountered in the teachers' interview since they are geographically apart or far distances; hence focus group discussion was not possible due to pandemic protocols. However, few of the participants could have a Zoom interview together. The rest of the participants opted for an individual interview through video calls scheduled according to their most convenient time. As previously confirmed, interviews were recorded to get participants' responses correctly.

Results and Discussion

Profile of Teacher Respondents

Based on the data, the survey includes responses from 54 teachers, with 20 male (37.03%) and 34 female (62.97%) participants. In terms of age, the majority of teachers fall into the 51-55 (27.78%) and 56 years old and above (18.52%) categories. Regarding marital status, the largest group is married teachers (68.52%), followed by single (20.37%) and widowed (7.41%) teachers. In terms of ethnicity or race, the majority of teachers identify as Black/African (62.96%), followed by White (5.56%), Asian (16.67%), Hispanic (5.56%), and Two or More Races (9.26%).

When considering the highest educational attainment, the most common level is a baccalaureate degree (29.63%), followed by MA/MS degree (33.33%), and with MA/MS units (22.22%). In terms of field of specialization, English (20.37%) and mathematics (18.52%) are the most

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

common areas, followed by science (14.81%), special education (18.52%), and early childhood education (12.96%).

The teaching experience of the surveyed teachers varies, with the highest percentage falling into the 21-25 years category (33.33%), followed by more than 26 years (20.37%), 16-20 years (22.22%), 11-15 years (14.81%), and 6-10 years (9.26%). The grade levels most frequently taught by the surveyed teachers are Grade 12 (29.63%), Grade 11 (25.93%), Grade 10 (22.22%), and Grade 9 (22.22%).

Regarding the learners' disabilities in their classes, dysgraphia is the most common (50.00%), followed by dyscalculia (16.67%), dyspraxia (18.52%), and dyslexia (14.81%). The subjects taught by the surveyed teachers include mathematics (16.67%), science (16.67%), special education (22.22%), and early childhood education (7.41%), among others.

In terms of teaching hours per week, the majority of teachers spend more than 30 hours (64.81%) on teaching, followed by 26-30 hours (31.48%) and 21-25 hours (3.70%). Regarding seminars and training in digital literacy, the most attended programs include "Digital Literacy: A Comprehensive Guide to Modern Education Technology" (11.11%) and "Digital Literacy Training Program for LSEN Educators" (11.11%).

In summary, the surveyed teachers predominantly consist of female individuals with various levels of experience and educational backgrounds. They teach a range of subjects at different grade levels and encounter learners with various disabilities. The data also indicates that a significant portion of teachers dedicate a substantial number of hours to their teaching responsibilities, and there is considerable interest in attending seminars and training programs related to digital literacy.

Table 1. Extent of Teachers Technological Confidence and Training

Indicators	AWM	Verbal Description
Basic Computer Skills	2.221	Little Extent
Internet Skills	2.194	Little Extent
Software productivity Skills	2.193	Little Extent
Training	2.192	Little Extent
Overall Weighted Mean	2.2	Little Extent

Table 1 presents data on the extent of technological confidence and training among teachers. The findings suggest that there is a limited extent of basic computer skills, internet skills, software productivity skills, and training with respective Average Weighted Means (AWM) of 2.221, 2.194, 2.193, and 2.192. The overall weighted mean score of 2.2 also suggests limited technological confidence and training among teachers.

This reveals significant implications for the education sector. First, it suggests that many teachers may be struggling to integrate

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

technology effectively into their instructional practices, which could hamper student engagement and learning outcomes in the digital era. In a world where technology is rapidly evolving and increasingly shaping the way knowledge is acquired, teachers lacking in these skills could be a bottleneck to students' development and readiness for the modern world. This could also limit the teachers' ability to perform administrative tasks efficiently and engage in professional development opportunities online.

Secondly, this lack of technological competence among teachers could exacerbate educational inequalities, particularly in remote or blended learning environments necessitated by scenarios such as the COVID-19 pandemic. The students who could benefit the most from the equitable, inclusive potential of educational technologies may be left behind if their teachers lack the necessary skills. These findings highlight the urgent need for extensive professional development initiatives aimed at enhancing teachers' technological competence. This should not only be focused on basic skills but also on pedagogically sound uses of technology to support and enhance learning. Through such efforts, the education system can ensure it is better equipped to meet the demands of the 21st century and prepare students for a technology-driven future.

Table 2 Extent of Digital Literacy Possessed by Teachers

Indicators	AWM	Verbal Description
Technological confidence and training	2.2	Little Extent
Pedagogical readiness	2.192	Slightly Ready
Technical readiness.	2.154	Slightly Ready
Overall weighted Mean	2.182	Slightly Ready

Table 2 provides data on the extent of digital literacy among teachers, with the indicators of technological confidence and training, pedagogical readiness, and technical readiness being measured. The Average Weighted Means (AWM) for these indicators are 2.2, 2.192, and 2.154, respectively, corresponding to verbal descriptions of "little extent" and "slightly ready". This suggests that teachers, on average, only possess a modest level of digital literacy. The overall weighted mean of 2.182 also indicates that the teachers are merely "slightly ready" when it comes to digital literacy.

The implications of these findings are significant. Digital literacy is not simply about the ability to use technology; it also involves the capability to locate, evaluate, and use digital information effectively. The limited extent of technological confidence and training among teachers suggests that they may struggle to guide their students

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

in navigating the digital landscape, possibly leading to digital information illiteracy among students.

Furthermore, a lack of pedagogical and technical readiness signifies that teachers may find it challenging to integrate digital technologies into their teaching strategies and classroom activities effectively. They might also struggle with troubleshooting technical issues that arise during the use of such technologies. This can lead to disruptions in learning, decreased student engagement, and overall, less effective instruction. These findings emphasize the need for enhanced teacher training programs that not only focus on basic technological skills but also on pedagogical strategies for integrating digital tools into the classroom and improving teachers' abilities to navigate and use digital information. In doing so, we can ensure teachers are well-equipped to foster a digital literacy-rich environment that can enhance learning outcomes and better prepare students for the increasingly digital world.

Table 3. Extent in the Utilization of ICT in the Different ICT-Based

	Indicators	$\bar{x}$	s.d.	Verbal Description
1.	Browse/search the internet to collect information to prepare lessons	2.129	*1.927*	Rarely
2.	Browse/search the internet to collect resources to be used during lessons	2.166	*2.06*	Rarely
3.	Use applications to prepare presentations for lessons	2.185	*2.17*	Rarely
4.	Create your digital learning materials for students	2.148	*2.00*	Rarely
5.	Prepare exercises and tasks for students	2.222	*2.307*	Rarely
6.	Post homework for students on the school website	2.240	*2.30*	Rarely
7.	Use ICT to provide feedback and/or assess students' learning	2.203	*2.23*	Rarely
8.	Evaluate digital learning resources in the subject(s) you teach	2.222	*2.27*	Rarely
9.	Communicate online with parents	2.222	*2.27*	Rarely
10.	Download/upload/browse material from the school's website	2.203	*2.24*	Rarely
11.	Download/upload/browse material from a learning platform	2.222	*2.30*	Rarely
12.	Look for online professional development opportunities	2.203	*2.22*	Rarely
	Overall Weighted Mean and SD	2..197	*2.19*	Rarely

Table 3 offers an overview of the extent of utilization of ICT

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

(Information and Communication Technology) among teachers in different ICT-based tasks. For all twelve indicators, including browsing the internet for lesson preparation, using applications to create presentations, preparing digital learning materials, using ICT for feedback and assessment, and seeking online professional development opportunities, teachers reportedly engage in these activities rarely, based on the average scores ranging from 2.129 to 2.240 and a standard deviation ranging from 1.927 to 2.307. The overall weighted mean and standard deviation of 2.197 and 2.19, respectively, also suggest that these activities occur rarely.

These results have notable implications. The infrequent use of ICT for diverse teaching tasks implies that teachers are not taking full advantage of the vast resources and capabilities that technology can offer. This can limit the variety and depth of educational experiences for students, possibly affecting their engagement, learning outcomes, and preparedness for a digitally-driven world. The rare occurrence of using ICT for communication with parents and professional development opportunities also suggests that teachers may not be leveraging technology to enhance their interactions and growth in their profession. This could have a negative impact on home-school communication and teachers' continuous learning and adaptability to evolving educational practices.

Finally, the rarity of teachers evaluating digital learning resources indicates a missed opportunity for optimizing the quality and relevance of digital resources used in teaching. Without this critical evaluation, there is a risk of using resources that are outdated, inaccurate, or not pedagogically sound. These findings point towards an urgent need for comprehensive professional development programs that not only equip teachers with technical ICT skills but also provide them with strategies for integrating ICT effectively in their teaching practice, communication, and professional growth. With such training, teachers could provide more enriching learning experiences for students, better engage with parents, and continuously improve in their profession.

Table 4 presents the results of a statistical analysis examining the relationship between various demographic factors of teachers and their extent of digital literacy in terms of technological confidence and training. Spearman's rho was used as a test statistic for this non-parametric analysis.

Among the demographic factors analyzed the age, gender, marital status, ethnicity or race, highest educational attainment, field of specialization, teaching experience, grade level teaching assignments, type of learner's disability in the class, subjects taught, teaching hours per week, and seminars or training in ICT only gender demonstrated a significant relationship with the extent of digital literacy. Specifically, the p-value of .052 for gender is less than the accepted significance level of 0.05, leading to the rejection of the null hypothesis.

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

Table 4. Significant Relationship between the Profile of Teachers and Extent of Digital Literacy in terms of Technological Confidence and Training

Demographic Profile	Test Statistic	Computed Value	df	p-value	Decision
Age	Spearman Rho	-.053	52	.702>0.05	Fail to reject the null
Gender	Spearman Rho	.266*	52	.052<0.05	Reject the null
Marital Status	Spearman Rho	-.049	52	.723>0.05	Fail to reject the null
Ethnicity Or Race;	Spearman Rho	-.145	52	.297>0.05	Fail to reject the null
Highest Educational Attainment	Spearman Rho	-.127	52	.359>0.05	Fail to reject the null
Field Of Specialization	Spearman Rho	-.026	52	.852>0.05	Fail to reject the null
Teaching Experience	Spearman Rho	.118	52	.394>0.05	Fail to reject the null
Grade Level Teaching Assignments	Spearman Rho	.009	52	.950>0.05	Fail to reject the null
Type Of Learner's Disability in The Class	Spearman Rho	.035	52	.801>0.05	Fail to reject the null
Subjects Taught;	Spearman Rho	-.140	52	.312>0.05	Fail to reject the null
Teaching Hours Per Week	Spearman Rho	.117	52	.401>0.05	Fail to reject the null
Seminars/ Training in ICT	Spearman Rho	.043	52	.756>0.05	Fail to reject the null

Moreover, all other demographic profiles yielded p-values greater than 0.05, leading to the failure to reject the null hypothesis. This means there's no statistically significant relationship between these factors and teachers' digital literacy in terms of technological confidence and training. The implication of this finding is crucial. It suggests that gender plays a role in the extent of teachers' digital literacy, meaning that gender-based disparities may exist in this domain. It's essential to investigate why such a disparity exists and

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY). www.wjehr.com

what factors might contribute to it. Measures should be taken to ensure that teachers of all genders have equal access to resources, opportunities, and support to enhance their digital literacy and technological confidence.

However, the lack of a significant relationship for the other demographic factors doesn't necessarily mean these factors are not important or do not have any impact on an individual level. These factors might still affect the digital literacy of teachers in practical, non-statistical ways. Furthermore, the lack of relationship might indicate that efforts to enhance digital literacy and technological confidence should not be targeted based on these demographic profiles but rather should be wide-ranging and inclusive, catering to teachers of all ages, ethnicities, educational backgrounds, specializations, and teaching contexts.

Table 5. Significance relationship on the Profile of Teachers and Pedagogical Readiness

Demographic Profile	Test Statistic	Computed Value	df	p-value	Decision
Age	Spearman Rho	-.066	52	.636>0.05	Fail to reject the null
Gender	Spearman Rho	-.092	52	.507>0.05	Fail to reject the null
Marital Status	Spearman Rho	.156	52	.261>0.05	Fail to reject the null
Ethnicity Or Race;	Spearman Rho	-.055	52	.691>0.05	Fail to reject the null
Highest Educational Attainment	Spearman Rho	-.066	52	.637>0.05	Fail to reject the null
Field Of Specialization	Spearman Rho	-.199	52	.149>0.05	Fail to reject the null
Teaching Experience	Spearman Rho	.006	52	.968>0.05	Fail to reject the null
Grade Level Teaching Assignments	Spearman Rho	.014	52	.922>0.05	Fail to reject the null
Type Of Learner's Disability In The Class	Spearman Rho	.112	52	.418>0.05	Fail to reject the null

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

Subjects Taught;	Spearman Rho	.065	52	.638>0.05	Fail to reject the null
Teaching Hours Per Week	Spearman Rho	-.153	52	.269>0.05	Fail to reject the null
Seminars/ Training in ICT	Spearman Rho	-.178	52	.197>0.05	Fail to reject the null

Table 5 represents the findings from a Spearman's Rho test, exploring the relationship between the profile of teachers and their pedagogical readiness. This readiness refers to their capacity to effectively integrate technology into their teaching strategies and classroom activities. The p-value for each characteristic is greater than 0.05, which leads us to fail to reject the null hypothesis for all these profiles. This means that there is no statistically significant relationship between these demographic characteristics of the teachers and their pedagogical readiness.

The implication of these findings is two-fold. First, these results suggest that interventions designed to improve teachers' pedagogical readiness should not be targeted based on these demographic factors. Instead, such interventions should be inclusive, addressing all teachers irrespective of their demographic profile. Secondly, it is essential not to interpret the absence of a statistical relationship as the absence of any relationship or influence at all. Even though these demographic factors do not statistically correlate with pedagogical readiness, they may still impact it in real-life, non-statistical ways. For instance, a teacher with more teaching experience or a higher level of education may still be more ready, pedagogically, to integrate technology into their teaching.

Therefore, even as broad-based interventions are implemented, individual teacher needs and circumstances should be taken into account. These might include, for example, providing extra support for teachers who are less confident with technology, regardless of their age, experience level, or other demographic factors.

Table 6 illustrates the results of a Spearman's Rho test investigating the significance of the relationship between the profile of teachers and their technical readiness. Technical readiness is their preparedness and ability to use and integrate technological tools and resources in their teaching practices. For almost all demographic profiles including age, gender, ethnicity or race, highest educational attainment, field of specialization, teaching experience, grade level teaching assignments,

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

type of learner's disability in the class, subjects taught, teaching hours per week, and seminars or training in ICT, the p-value is greater than 0.05. This means we fail to reject the null hypothesis for these factors, indicating no statistically significant relationship between these teacher characteristics and their technical readiness.

Table 6. Significance relationship between the Profile of Teachers and Technical Readiness

Demographic Profile	Test Statistic	Computed Value	df	p-value	Decision
Age	Spearman Rho	-.202	52	.143>0.05	Fail to reject the null
Gender	Spearman Rho	-.081	52	.561>0.05	Fail to reject the null
Marital Status	Spearman Rho	-.273*	52	.046<0.05	Reject the null
Ethnicity Or Race;	Spearman Rho	.003	52	.981>0.05	Fail to reject the null
Highest Educational Attainment	Spearman Rho	.020	52	.888>0.05	Fail to reject the null
Field Of Specialization	Spearman Rho	.107	52	.442>0.05	Fail to reject the null
Teaching Experience	Spearman Rho	.043	52	.759>0.05	Fail to reject the null
Grade Level Teaching Assignments	Spearman Rho	-.248	52	.071>0.05	Fail to reject the null
Type Of Learner's Disability In The Class	Spearman Rho	-.047	52	.736>0.05	Fail to reject the null
Subjects Taught;	Spearman Rho	-.023	52	.870>0.05	Fail to reject the null
Teaching Hours Per Week	Spearman Rho	.207	52	.132>0.05	Fail to reject the null
Seminars/ Training in ICT	Spearman Rho	-.246	52	.073>0.05	Fail to reject the null

However, an interesting finding emerges with respect to marital status, where the p-value is less than 0.05 (.046). Thus, we reject the null hypothesis for this factor, indicating a statistically significant

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

relationship between a teacher's marital status and their technical readiness. The implications are significant. The finding suggests that marital status influences the extent of a teacher's technical readiness, which could be due to a myriad of factors such as time allocation, responsibilities, or support structures that differ between marital statuses. However, more research would be necessary to understand the specific factors causing this relationship. Moreover, for the rest of the demographic factors, the lack of a statistically significant relationship suggests that efforts to enhance technical readiness should not discriminate based on these profiles. However, as always, lack of a statistical relationship does not necessarily mean these factors have no practical impact on an individual's technical readiness. Therefore, while designing broad-based interventions, individual needs, circumstances, and potential barriers to technical readiness should be taken into account, independent of these demographic factors.

Table 7. Significance relationship on the Profile of Teachers and Extent of Utilization of ICT

Demographic Profile	Test Statistic	Computed Value	df	p-value	Decision
Age	Spearman Rho	-.052	52	.708>0.05	Fail to reject the null
Gender	Spearman Rho	-.109	52	.435>0.05	Fail to reject the null
Marital Status	Spearman Rho	.156	52	.261>0.05	Fail to reject the null
Ethnicity Or Race;	Spearman Rho	-.032	52	.819>0.05	Fail to reject the null
Highest Educational Attainment	Spearman Rho	-.017	52	.904>0.05	Fail to reject the null
Field Of Specialization	Spearman Rho	-.125	52	.370>0.05	Fail to reject the null
Teaching Experience	Spearman Rho	-.110	52	.429>0.05	Fail to reject the null
Grade Level Teaching Assignments	Spearman Rho	.059	52	.670>0.05	Fail to reject the null
Type Of Learner's Disability in The Class	Spearman Rho	.065	52	.638>0.05	Fail to reject the null

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

Subjects Taught;	Spearman Rho	-.016	52	.911>0.05	Fail to reject the null
Teaching Hours Per Week	Spearman Rho	-.043	52	.758>0.05	Fail to reject the null
Seminars/ Training in ICT	Spearman Rho	-.197	52	.153>0.05	Fail to reject the null

Table 7 illustrates the results of a Spearman's Rho correlation test examining the significance of the relationship between various demographic profiles of teachers and their extent of utilization of Information and Communication Technology (ICT). In all these cases, the p-value exceeds the threshold of 0.05, which leads to the decision to fail to reject the null hypothesis. This suggests that there is no statistically significant correlation between these demographic characteristics and the extent of ICT utilization among teachers.

The implication of these findings is crucial for designing ICT-related professional development programs and policies. It indicates that these demographic factors may not be significant determinants of ICT utilization among teachers. Consequently, efforts to improve ICT utilization should not be exclusively targeted based on these demographic factors. However, this does not suggest that individual experiences and circumstances are irrelevant. Hence, while designing interventions, an individual teacher's specific needs, potential barriers, and professional context should also be considered, alongside the pursuit of other factors that might influence ICT use significantly, which are not covered in this analysis. Moreover, the fact that 'seminars/training in ICT' does not show a significant correlation may imply that the current format or content of these trainings might not be effective or relevant enough to enhance the practical application of ICT among teachers. Therefore, it might be beneficial to re-evaluate and update the ICT training programs to make them more beneficial for the teachers.

Table 8 showcases the results from a series of ANOVA tests, which sought to determine the significance of differences in the extent of digital literacy skills when grouped according to the presence of a learner's disability. The digital literacy skills tested included technological confidence and training, basic computer skills, internet skills, productivity software skills, training, pedagogical readiness, and technical readiness. The p-values for all these skills were greater than the 0.05 threshold, leading to the decision to fail to reject the null hypothesis in each case. This suggests that there is no statistically significant difference in the extent of these digital literacy skills among

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY). www.wjehr.com

teachers when grouped based on whether or not their students have a disability.

Table 8. Significance difference on the Extent of digital literacy when grouped according to Learner's Disability

Digital Literacy Skills	Test Statistic	Computed Value	df	p-value	Decision
Technological Confidence and Training	ANOVA	.394	46	.901>0.05	Fail to reject the null
Basic Computer Skills	ANOVA	.507	46	.825>0.05	Fail to reject the null
Internet Skills	ANOVA	.717	46	.658>0.05	Fail to reject the null
Productivity Software Skills	ANOVA	1.24	46	.297>0.05	Fail to reject the null
Training	ANOVA	1.13	46	.359>0.05	Fail to reject the null
Pedagogical Readiness	ANOVA	1.23	46	.305>0.05	Fail to reject the null
Technical Readiness	ANOVA	1.80	46	.111>0.05	Fail to reject the null

The implication of these findings is that the presence of a learner's disability does not significantly influence a teacher's digital literacy skills. This can be interpreted to mean that the demands of teaching students with disabilities do not necessarily drive teachers to enhance their digital literacy skills significantly different from their peers teaching non-disabled students.

While this could be seen as a positive finding in terms of equitable ICT skill distribution among teachers, it may also imply that teachers may not be adequately adapting their digital literacy skills to cater to students with disabilities, which often require specialized digital tools and strategies for effective learning. Therefore, there might be a need for targeted professional development programs to help teachers better utilize ICT in special education contexts. These programs could focus on how to use ICT tools effectively to meet the specific needs of students with disabilities and incorporate accessibility features and strategies into digital learning environments.

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY). www.wjehr.com

Table 9. Significance Difference in the Extent of Utilization of ICT when grouped according to learners' disabilities

	Test Statistic	Computed Value	df	p-value	Decision
Utilization of ICT	ANOVA	.689	46	.681>0.05	Fail to reject the null

Table 9 displays the result of an ANOVA test evaluating the extent of utilization of Information and Communication Technology (ICT) among teachers, grouped according to whether their students have disabilities. The p-value for the test is greater than the established 0.05 threshold, leading us to fail to reject the null hypothesis. This suggests that there is no statistically significant difference in the extent of ICT utilization among teachers, whether their students have disabilities or not.

The implications of this finding are twofold. On one hand, it is a positive outcome, as it suggests that teachers of students with disabilities are using ICT to a similar extent as those teaching non-disabled students, indicating an equitable distribution of ICT utilization across teaching environments.

On the other hand, it could suggest that ICT utilization is not being adjusted or amplified to cater to the special needs of students with disabilities. Students with disabilities often require specialized teaching strategies, including the usage of certain ICT tools, to enhance their learning experience and improve accessibility. The absence of a significant difference in ICT usage might mean that these specialized tools and strategies are not being employed as extensively as they could be. This finding underscores the potential need for further training and support for teachers working with students with disabilities, particularly in maximizing the benefits of ICT to cater to these students' specific needs. Specialized training could focus on making digital learning more accessible and effective for students with disabilities, utilizing assistive technologies, and adapting digital content for diverse learners.

Challenges Met by The Teacher-Participants in The Use of ICT In ICT-Based Activities in Teaching Inclusive Class to Learners With Disability During The Covid-19 Pandemic

Theme 1 – Adaptability struggle

Teacher 1 confessed, "I don't think technology fits my belief about learning. I have taught for several years, but technology has no place in my classroom."

Teacher 4 added, "I don't know how to use technology, and it is difficult for me to shift my instruction immediately with this ICT." He

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY).

continued, "I have started using this before, but I found it time-consuming to learn the process."

Teacher 10 contributed, "Same with the other teachers, I felt struggling in using technology with my personal use, how much more for my online teaching?"

Theme 2 - Technical Issues

Teacher 2 started giving her answer by saying, "I have used some equipment like a computer, laptop, and cellphone. I observed several applications confuse me. I only used simple applications for my consumption. Technically, I am not prepared."

Teacher 6, a younger one, has his idea "Honestly, I don't know how to use technology, but given enough time and sufficient training, probably I will learn the complexity of this."

Teacher 12 shared her though and asked how to integrate technology into my class. I can't imagine how to manage my class with disabilities using technology."

Teacher 14 added, "How much more for me? I am contented and satisfied with my methods and techniques in the class without technology…it's a great problem for me since I am not ready to face technology challenges."

Theme 3 – Computer Literacy

Teacher 9, without hesitation, said, "There is not enough training for teachers about the use of ICT in teaching. It was not given much importance as a requirement in teaching before. Computer Literacy has been important this time and is now a part of the teachers' curriculum."

Teacher 20 added, "I did not consider this computer literacy a problem in my teaching career. There are prepared videos in the market, but I don't want to use them. "

Teacher 7 thought, "I understand how important t is to be computer literate. I have experienced this in my work. This makes our work easy, but the problem is how to troubleshoot when we encounter problems with the computer…. like when it hangs up. I need to call somebody to help me to continue my work."

Teacher 19, honestly, added, "My greatest problem is I do not know how to evaluate or assess my students online. I need enough time to train. I have to start anew with new things."

Theme 4 – Time Management

Teacher 8 stated, "Lack of time during the class period is my concern. It is necessary that we need to prepare everything beforehand. Preparing all these things to consume my time."

Teacher 15 had more to say, "We have to spend much time in ICT utilization, especially if we are not computer literate. We also need time to study how to use the ICT-based activities to deliver the lesson

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY). www.wjehr.com

effectively. I must request my husband's help to prepare all these things; otherwise, the time allocated for one subject is insufficient.

Theme 5 – Self-motivation

Teacher 11 was vigilant in saying, "Society views about ICT discouraged me from using ICT….so I have no interest at the start."

Teacher 17, with some reservation, said, "I just don't have the support from the concerned individuals."

Teacher 13 replied, "I don't believe technology integration is useful; that is why I don't have the charism to use them." …. she continued by saying, "Even the terms in technology are not familiar to me."

Theme 6 – Support

Teacher 3 said, "Support is needed in terms of funding from the administration. Online learning means we stay at home. What support can we have to sustain technology needs at home?"

Teacher 16 added, "We lack professional development on technology…we badly need this. And who will help us?"

Teacher 5 continued, "Not only that, but there are also no incentives in using technology, and others have difficulty accessing technology. Who will help the teachers with this? Whose concern is this?

Conclusion

This extensive data presents a clear picture of teachers' struggles with technology utilization, digital literacy, and the extent of training they receive. According to the results, teachers show a little extent of technological confidence and training, with an overall weighted mean of 2.2. Similarly, they possess only a slight readiness in terms of pedagogical and technical skills, with overall weighted means of 2.192 and 2.154, respectively. The use of ICT in various areas, such as preparing lessons, assessing students' learning, or communicating online with parents, is done rarely, as indicated by the overall weighted mean of 2.197. The data also suggests that there is no significant relationship between the teachers' demographic profile and their extent of digital literacy or their ICT utilization, except for gender in terms of technological confidence and training, and marital status in terms of technical readiness. In these two cases, the null hypothesis is rejected due to a p-value less than 0.05. Teachers also did not differ in their extent of digital literacy or ICT utilization when grouped according to the learners' disability, as indicated by the high p-values (greater than 0.05) in the ANOVA tests.

The qualitative data adds more depth to these findings by highlighting the specific challenges teachers face, which include adaptability struggle, technical issues, computer literacy, time management, and self-motivation. These findings highlight the pressing need for

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY). www.wjehr.com

enhanced training and support systems for teachers to boost their confidence, readiness, and utilization of technology, especially in inclusive classes during the ongoing pandemic. With increased technological proficiency, teachers can better serve their students, particularly those with disabilities, by leveraging ICT for efficient, effective, and inclusive teaching practices.

References

DeCoito, I., & Estaiteyeh, M. (2022). Online teaching during the COVID-19 pandemic: exploring science/STEM teachers' curriculum and assessment practices in Canada. *Disciplinary and Interdisciplinary Science Education Research*, *4*(1), 8.

Gonzalez, C. J., Aristega Almeida, B., Corpuz, G. S., Mora, H. A., Aladesuru, O., Shapiro, M. F., & Sterling, M. R. (2021). Challenges with social distancing during the COVID-19 pandemic among Hispanics in New York City: A qualitative study. *BMC Public Health*, *21*(1), 1-8.

Jamal, T., Kircher, J., & Donaldson, J. P. (2021). Re-visiting design thinking for learning and practice: Critical pedagogy, conative empathy. *Sustainability*, *13*(2), 964.

Gilchrist, M. E. (2022). *An Analysis of the Perceptions of Academic Rigor by Prince George's County Secondary Mathematics Teachers and Secondary Administrators During the Covid-19 Crisis* (Doctoral dissertation, City University of Seattle).

Hargreaves, A., & Fullan, M. (2020). Professional capital after the pandemic: Revisiting and revising classic understandings of teachers' work. *Journal of Professional Capital and Community*, *5*(3/4), 327-336.

Khatoony, S., & Nezhadmehr, M. (2020). EFL teachers' challenges in integration of technology for online classrooms during Coronavirus (COVID-19) pandemic in Iran. *AJELP: Asian Journal of English Language and Pedagogy*, *8*(2), 89-104.

Kutnjak, A. (2021). Covid-19 accelerates digital transformation in industries: Challenges, issues, barriers and problems in transformation. *IEEE access*, *9*, 79373-79388.

Miller, J. M., & Blumstein, A. (2020). Crime, justice & the COVID-19 pandemic: Toward a national research agenda. *American journal of criminal justice*, *45*, 515-524.

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY). www.wjehr.com

Nhamo, G., Dube, K., Chikodzi, D., Nhamo, G., Dube, K., & Chikodzi, D. (2020). COVID-19 and the stock market: Impacts on tourism-related companies. *Counting the cost of COVID-19 on the global tourism industry*, 297-318.

UNESCO. Adverse Consequences of School Closures. 2020. Available online: https://en.unesco.org/covid19 (accessed on 30 May 2020).

Waziri, S. L. L., Adamu, A., Ibrahim, H., & Ibrahim, B. (2020). Educational Challenges: Covid-19 as a Contemporary Challenge in Education.

Williamson, B., Eynon, R., & Potter, J. (2020). Pandemic politics, pedagogies and practices: digital technologies and distance education during the coronavirus emergency. *Learning, media and technology*, *45*(2), 107-114.

 Copyright (c) 2023. Author (s). This is an open term of Creative Commons Attribution License (CC BY). www.wjehr.com