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Digital Literacy Competencies: A Study of Distance Learners of Higher Education Regulatory Authority Khyber Pakhtunkhwa

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Abstract

With the use of technology, students can store, share, and record what they learned in a given session or day of remote learning. This study aimed to assess distance learners' abilities in digital literacy by examining their attitudes, concepts, and methods. The quantitative descriptive survey research method was used. For this purpose, 95 distance learners were selected from the different private colleges in district Swabi that were affiliated with Higher Education Regulatory Authority Khyber Pakhtunkhwa and were offering distance-learning programs (i.e., B.Ed. 1.5 and 2.5 programs). Likert scale was used through online Google survey forms. The study found that some of the digital competencies of distance learners were below average, as they had no awareness regarding the effect of extensive technology use. They did not know multimedia product designing as well as could not upload self-created content to any website for sharing. While some aspects of digital competencies showed better results as majority of the distance learners had an awareness of social networking and online collaboration tools. As a prerequisite for any distance course, an ICT-based course may be made available to all distance learners as well as tutorials may be made available for fresh distance learners.

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Introductıon

Several studies from around the world have emphasized the value of information and communication technology in the teaching and learning process. For pupils to understand digital tools and technology to compete with others, instructors must be digitally literate and willing to accept this as a requirement for 21st-century education. This is a critical problem for prospective teachers. ICT has become a significant part of our lives over the past few decades, having an impact on both our society and each of our individual lives. ICT is primarily used in the educational sector today. ICT is frequently used by staff, academics, students, and anybody involved in education. Teachers use ICT to significantly improve educational activities for pupils. Every society today expects education with technology, and teachers must be familiar with digital literacy. No professor or teacher at any institution in the twenty-first century, whether they are in an urban or rural setting, can effectively handle tasks without the aid of contemporary technologies. Due to the critical requirement for technology, numerous educational institutions are offering intangible cutting-edge resources that help instructors and students at every stage of academic endeavors (Kailani, Susilana &Rusman. (2021).

Technology has advanced quickly, having an impact on both the needs of individuals and many facets of contemporary society. In this regard, the integration of technology has begun to rule several spheres, including communication, the workplace, and especially the educational setting. Even through the limitless possibilities offered by information and communication technologies, there are challenges and barriers to the rise of the digital world. The importance of digital literacy in today's world helps people be more perceptive when seeking out information and communicating with one another. Digital literacy is also crucial for fostering imaginative and creative thinking, which is necessary for conducting critical analysis and resolving issues relating to digital sensitivities. Additionally, because the online world of today is becoming more and more populated with fake news, hate speech, radicalism, and dishonest activities, kids with strong digital literacy will be capable of selecting and choosing from the material being circulated there. Students can therefore be in charge of deciding how to use technology to engage with their surroundings (Botturi, 2019).

Using the terms "digital literacy," "information literacy," and "media literacy," each one calls for the combination of several different forms of literacy, including "information technology literacy," "information literacy," "information literacy," "technology literacy," "media literacy," and "visual literacy," all of which require expanded roles and are becoming more and more important with the advent of the digital surroundings. In a nutshell, some experts describe the phrase "digital literacy" as the link between the abilities and knowledge required to utilize the internet and digital technologies proficiently. A teacher's IT proficiency is seen as having computer literacy in addition to aiding the educational process and meeting professional criteria. Computer literacy, according to Bhatt, Roock, and Adams (2015), is the ability to use software installed on a computer, including word processing programs, databases, spreadsheets, and applications, as well as peripherals like scanners or printers. The ability to effectively utilize and manage computers is the goal of computer skills (Sriyono & Marfui, 2019).

In the twenty-first century, everyone and anyone may access information and communicate instantly, conveniently, and rapidly (Rakhmawati, 2017). Learners in particular are required to learn a variety of 21st-century talents and put them to use to raise civilization standards. To succeed in the problems, issues, and jobs of the 21st century, everyone must possess 21st-century skills. (Redhana, 2019). One can develop 21st-century talents that combine knowledge, skills, and mindsets with technological proficiency by engaging in critical thinking and problem-solving, communication, creativity and invention, and teamwork. Students must use technology increasingly frequently because of distance learning. Students were consequently expected to be more adept at using technology. Students must therefore improve their digital literacy. In the twenty-first century, digital literacy was crucial to education since it involved using technology for a variety of goals to enhance learning rather than merely introducing it to the curriculum. For future instructors, using technology during instruction and implementing it in elementary school classrooms was crucial (Cam & Kiyici, 2017). Prospective teachers must take specialist training to advance their skills because they are lacking in using the application in a particular curriculum (Falloon, 2020). So, the purpose of this study was to examine skills, attitudes, concepts, and approaches regarding digital literacy competencies among distance learners in enrolled in the Private Sector Colleges of District Swabi affiliated with the Higher Education Authority Khyber Pakhtunkhwa.

Literature Review

Teachers must use digital literacy to help students get ready for the next stage of digital spaces in the educational context concerned about the impact of the fast-paced development of digital technology. The effectiveness of integrating digital literacy in the classroom is dependent on teachers' choices since they serve as facilitators and motivators in the teaching and learning process. Digital literacy is now being employed in a variety of areas as a result of the quick expansion of digitalization in industries like the economy, health, services, and education. With the rapid expansion of educational technologies, the digital revolution has become particularly pervasive in the field of education. Therefore, developing digital literacy should be a priority for teachers, administrators, and even students (Kim, Reza & Seidman, 2019).

The purpose of education is to help students develop their critical thinking skills, use ethical research practices, access a range of sources and information from other sources, be able to effectively communicate with others, demonstrate positive social behavior, and show off all of these abilities during interpersonal communication. (Onursoy, 2018; Ozerbaş & Kuralbayeva, 2018). The digital revolution in education is growing regularly in combination with the use of educational technologies at all educational levels. Therefore, for educators to teach students digital literacy, they must first develop it in themselves. As a result, teachers now must increase their digital literacy abilities whenever possible. It should be noted that teachers have a significant responsibility to teach kids digital literacy (Syah, 2019).

Both professionals and academics strongly support information literacy because it can serve a variety of functions, including promoting reading habits, supporting academic performance, problem-solving, decision-making, emancipation, citizenship, critical thinking, and lifelong learning. Information literacy has been linked to a variety of environments. Developments to promote information literacy are primarily carried out in libraries and educational settings, with librarians playing a key role in their advancement. Furthermore, given the functions it can perform, it has expanded outside these contexts to assist people in bettering how they carry out their particular endeavors or daily tasks by teaching them how to obtain and manage the finest information necessary for this purpose. Digital literacy, as per Faloon (2020), is a set of abilities to use the website to access, discover, organize, and modify electronic information as well as participate in online communication and other online information and communication networks. According to Bhatt, de Roock, and Adams (2015), digital literacy is the capability to properly use, assess, and implement technological devices, tools, and assistance in lifelong learning

processes to develop efficient communication-specific learning skills for representation, community engagements, problem-solving, and academic work or lectures (Kenton and Blummer, 2010). Additionally, digital literacy proficiency requires a 21st-century education, which emphasizes collaboration, reflective practice, participation, and communication in the process of learning, particularly when employing technology in the classroom. Although digital literacy is crucial, Mayes and Flower contend that it eventually brings and must be encouraged from a young age in the contexts of the family, school, and community. Additionally, it's said that digital literacy is one of the key strategies for helping pupils find reliable information that suits their needs. Socializing about how to obtain information and official websites, which can enhance the learning system in schools, is one technique to increase learner literacy (Susilawati et al., 2021).

Today's students have low-speed or high-speed Internet access at home or in Internet cafes. They need software abilities to find information sources, manage their relevance and validity, analyze them rapidly, and help solve problems related to their academic improvement program to fully utilize information technology. This competency, which refers to extensive information abilities, is thought to have a favorable relationship with academic achievement. Yuniawatika and Kurniawan's (2018) study demonstrates how various factors influence how students learn together with digital literacy components. Just as internet access (condition of access) and the aptitude and engagement of student responses to tutors in discussions are factors in why students cannot perform well (poor student academic achievement) in online tutorial classes, so are poor management and the quality of online tutorial class management. One's capacity to use technology is impacted by their level of digital literacy (Yuniawatika and Kurniawan, 2018).

Both students and instructors participated in the education and learning process, and each should work to foster a culture of digital literacy to increase student participation. But because they lacked experience, the students found it difficult to accept the use of technology in the classroom. There are numerous ways to overcome students' lack of competence in using technology as a digital source. The subconscious skills of pupils are often a higher obstacle to teaching technology, according to Sarikaya (2019). Second, a study by Kozan and Ozek (2019) showed that teachers chose to adopt a modern approach over technology due to pupils' inability to learn by using it. It demonstrates how the lack of desire among students affects how technology is used in EFL instruction. Students with a high

level of economic background promote the practicing of digital literacy, according to studies on digital learning (Susilawati, 2021).

Dimensions of Digital Literacy

Sahay (2004) describes the following four aspects of digital literacy:

1. **Learning about ICTs as an object**: Courses are available to help students learn about and hone their skills with various tools. The use of ICTs in school, future employment, and community interactions are thus prepared for by this.
2. **Aiding Tool:** ICT is utilized as an aid to learning, for instance, in the preparation of lectures or assignments, the gathering of information and documentation, communication, and research. ICTs are used without regard to the particular topic.
3. **Platform for Teaching and Learning**: ICT is referred to here as a teaching and learning tool, the platform by which the instructors can impart knowledge and students may pick it up. Practice and drill sessions, simulations, and educational networks are just a few examples of the many ways that technology-based instruction is delivered.
4. **ICTs for Management Education:** Transaction processing systems (TPS) and management information systems (MIS) are the most widespread and common ICT applications in higher education institutions' administrative and logistical operations.

Levels of Digital Literacy

As digital technology advances, digital literacy must also. Three levels can be used to categorize it. (1) Digital competence: digital know-how; (2) digital usage: applications of digital competence; and (3) digital transformation: the creation of new knowledge. To develop new knowledge, interact with others, create media representations, and take constructive social action, people must be aware of, have an attitude toward, and be able to utilize online tools and facilities adequately. This awareness, attitude, and ability are known as digital literacy (Martin & Grudziecki, 2006). Martin (2009) stated that this definition implied only level II or level III discussions of digital literacy; digital competence is a prerequisite and a step before digital literacy, but it is not referred to as digital literacy (Livingstone, 2012).

1. **Digital Competence:** Digital competence, which includes learning, concepts, dispositions, and abilities related to the digital, is the basis of the system. There will be a wide variety of topics and different skill levels included. People or groups will use their digital competence as needed for their current situation, and they

will come back to it as new issues arise (Meyers, Erickson, and Small, 2013).

2. **Digital Usage*:*** The core and most important level is the application of digital competence inside particular professional or domain settings, eventually leading to a repertoire of unique digital usages for a person, a group, or an institution that become ingrained in the community's identity. Individuals rely on pertinent digital competence and proficiency about the career, area, or further setting while creating digital utilizations. Every individual contributes his or her past and ongoing personal growth to this (Felini, 2014).
3. **Digital Transformation***:* The highest degree, known as digital transformation, is attained whenever the digital applications that have been created encourage considerable change in the professional or knowledge sector and promote creative thinking and innovation. This transformation may take place at the personal, group, or organizational levels (Bhatt, Roock, and Adams, 2015).

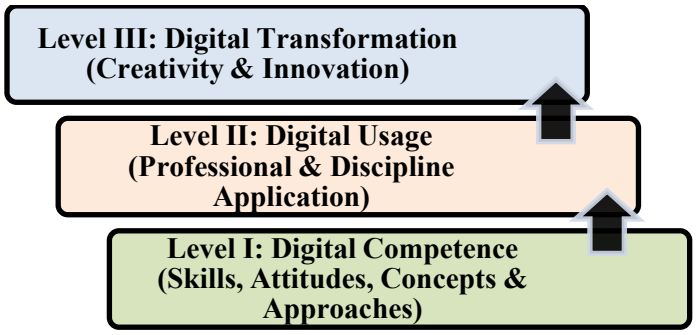

Figure 01. Theoretical Framework of Digital Literacy Skills (Martin & Grudzeicki, 2006)

Methodology

It was a quantitative study. This study employed a descriptive survey research design. Data were collected by the quantitative method by using a self-developed questionnaire.

Population and sample

The population of the study consisted of 95 students enrolled in distance programs of B.Ed 1.5 and B.Ed 2.5 of Private Sector colleges of District Swabi affiliated with the Higher Education Regulatory Authority Khyber Pakhtunkhwa.

Table 01
Sample of the Study

Institutes	No of Students
Frontier College of Education	8
Galaxy Institute of Advance Studies	13
Himalaya College of Science & Technology	11
Iqra College of Education	15
Meezan College of Education	20
Salatura Educational College	8
Swabi College of Physical Education	8
Swabi Institute of Management Sciences	12

Instrumentation

Close-end questionnaire by applying the Likert scale was prepared for data collection from the Distance learners included in the sample. The questionnaire consisted of 13 items based on the objective of the study covering the competency level of digital literacy

Results and Discussion

Digital literacy is a continually evolving process; when obtained, it does not guarantee constant familiarity with the digital environment; rather, it is a transient accomplishment that, provided the atmosphere does not change, will be favorable. Therefore, maintaining digital literacy requires ongoing effort; to develop the skills required to succeed in any situation, whether it be educational, professional, or recreational, the well of digital competence must be continuously tapped into since its components are always shifting as technology progresses. Many literacy experts have noted that, unlike more conventional approaches to literacy, even those from just a few decades ago, digital technologies give pupils a variety of ways to gain and share information. This is referred to as "collective goals and individual accountability" by Wiliam (2011). Beyond identifying individual and collective goals, members of the group must comprehend good teamwork, which is frequently taught and encouraged. According to Mohammadyari and Singh, (2015) using the Internet is similar to borrowing a book from the library, but it also presents opportunities that should be investigated. Virtual reality applications, video games, mobile devices, Internet technologies such as blogs, wikis, RSS, podcasting, etc. and are just a few of the many innovations that are common in daily life for communication and entertainment and are immensely useful in learning and evolving as such. The following table displays the findings about the competencies of digital literacy.

Table 2
Frequencies, Percentages, and Sum of the Items for Digital Competence

Items for Digital Competence	SA	A	N	DA	SD	Sum(n)
I can use any kind of IT security software for private data protection.	45 (47.3%)	24 (25.2%)	5 (5.2%)	10 (10.5%)	11 (11.5%)	
I can upload self-created content to any website to be shared.	3 (3.1%)	6 (6.3%)	3 (3.1%)	32 (33.6%)	51 (53.6%)	
I can modify the configuration parameters of the software application.	1 (1%)	5 (5.2%)	4 (4.2%)	23 (24.2%)	62 (65.2%)	
I am aware of social networking sites and online collaboration tools.	25 (26.3%)	68 (71.5%)	0 (0%)	2 (2.1%)	0 (0%)	
I can produce simple digital content (text, tables, images, audio files) in at least one format using digital tools.	52 (54.7%)	31 (32.6%)	6 (6.3%)	2 (2.1%)	4 (4.2%)	
I know how to design multimedia products to present information	1 (1%)	6 (6.3%)	5 (5.2%)	21 (22.1%)	62 (65.2%)	95 (100%)

with a digital tool.					
I make backup copies of my files and folders	39 (41%)	41 (43.1%)	12 (12.6%)	3 (3.1%)	0 (0%)
I am aware of methods used to protect personal data on the internet.	31 (32.6%)	55 (57.8%)	5 (5.2%)	1 (1%)	3 (3.1%)
I use social media as a usual medium to communicate with other people.	48 (50.5%)	33 (34.7%)	6 (6.3%)	2 (2.1%)	6 (6.3%)
I can modify and improve the content in an existing body of knowledge to create new content.	59 (62.1%)	21 (22.1%)	6 (6.3%)	4 (4.2%)	5 (5.2%)
I can create information products to go with the audience, the context, and the medium.	6 (6.3%)	8 (8.4%)	0 (0%)	48 (50.5%)	33 (34.7%)
I can create video media to use in PowerPoint.	68 (71.5%)	19 (20%)	3 (3.1%)	4 (4.2%)	1 (1%)
I can create new content with tools on the internet.	31 (32.6%)	45 (47.3%)	6 (6.3%)	9 (9.4%)	4 (4.2%)

The above table gives that distance learners today typically possess solid familiarity with using digital technologies in daily activities (e.g. finding information online, watching videos, listening to music, using social media, etc.). One of the studies by Danhua and Zhonggen (2022) concluded that Students' digital literacy may influence their self-control, technological stress, and learning participation. Students' excellent grasp of digital literacy may improve their independence and involvement in studying while reducing their technological stress in class in the present study majority of the distance learners (97.8%) have digital concepts and skills having an awareness of social networking and online collaboration tools, 87.3% can produce simple digital content, 84.1% can make backup copies of files and folders.

Many of the distance learners (72.5%) have attitudes and can use IT security software for private data protection, 85.3%, and 84.2% can modify and improve the content in an existing body of knowledge to create new content. In addition, enhanced digital literacy can significantly increase students' interest in the class. A potential explanation is that students with a high degree of digital literacy do not have to worry about technology issues and can focus entirely on the class (Wei and Chou, 2020). Although online learning is becoming popular due to its accessibility and flexibility, Phillips, Turnbull, and He (2015) contend that success requires a high level of preparation for self-directed learning, but on the other hand, this study showed that maximum distance learners (90.4%) have no approaches and awareness regarding the effect of extensive technology use, 89.4% are not able to configure the parameters of software application, 85.2% could not create information products to go with the audience, 87.3% have no knowledge about multimedia products designing as well as 87.2% cannot upload self-created contents to any website for sharing. This study found that distance learners need digital abilities to navigate online learning settings and engage with digital materials. It may underline the need for learners to acquire and develop digital skills to flourish in a digitally-driven educational context.

Conclusion

Based on the findings of the study it was concluded that some of the distance learners' digital competencies are a little bit weak as they have no awareness regarding the effect of extensive technology use. They are not able to configure the parameters of the software application. They do not know multimedia product designing as well as cannot upload self-created content to any website for sharing. While some aspects of digital competencies showed better results as maximum distance learners have an awareness of social networking and online collaboration tools. They can

produce simple digital content and make backup copies of files and folders. They also used IT security software for private data protection. As a prerequisite for any distance course, an ICT-based course may be made available to all distance learners. It will raise distance learners' academic self-efficacy. Tutorials may be made available for fresh distance learners before joining any course. It may be recommended for the incorporation of digital literacy instruction into curriculum design, the provision of suitable resources and support for learners, and the creation of a digital learning environment that fosters the development of digital literacy competencies.

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