Exploring Digital Competence of Pakistani ELT Teachers during Pandemic

Mamona Yasmin Khan, Shazia Riaz Cheema*
Associate Professor, Department of English, The Women University, LMQ Road, Katchery Choke, Multan, Pakistan.
Scholar M.Phil, Department of English, The Women University, LMQ Road, Katchery Choke, Multan, Pakistan.
*Corresponding Author Email ID: shazianazar78@gmail.com

ABSTRACT

COVID-19 was a tumultuous and unpredictable event that forcibly relocated all educators from the conventional face-to-face phenomenon to a virtual setting. This mode of teaching necessitates a level of digital competence that goes beyond online-based knowledge and encompasses media literacy, information seeking, and critical thinking skills. It also deals with the capacity to communicate with others via digital tools and applications around the globe. The study is aimed at exploring the effect of online teaching on ELT teachers’ digital competence in the COVID-19 perspective using (DigCompEdu 2017). Following pragmatism, the researcher used a mixed-method approach to collect data via questionnaires and semi-structured interviews as data collection tools. ELT: Teachers at the elementary and secondary levels in Multan's FGEIS(C/G) schools were selected through purposive sampling. For statistical analysis, cross-tabulation, chi-square tests, frequency tables, and bar charts were used, whereas IPA (stands for?) for qualitative analysis. The study revealed that during the online mode of education, teachers’ digital competence increased remarkably. It is suggested that all stakeholders should make substantial efforts to organize regular training and workshops, particularly to enhance ELT teachers’ digital competence to meet the challenges of any emergency in the future. Digital competence research should be developed, encouraged, and backed by the government because it will help spread digital skills and improve how technology is used in the classroom.

Keywords: COVID-19; Digital competence; DigCompEdu(2017); ELT teachers; Online mode.

INTRODUCTION

Global quarantines and social segregation have been implemented since March 2020 because of the unexpected disruption of COVID-19. The epidemic has surely become every nation’s Achilles heel, leading the entire world to halt. (Sher Ryn & SC, 2020). This unpredictability paused millions of kids’ education and changed instructional procedures. In Pakistan, schools have been closed since March 2020 in the backdrop of the pandemic’s impulsiveness and social isolation. This scenario forced all teachers, especially ELT, to leave the realm of long practice and enter the world of online, remote, and communally disconnected instruction (Dhawan, 2020).

BACKGROUND OF THE STUDY

Digital literacy is a set of skills that enable people to thrive in a digitized world and be more interested in digital technology (Romero-Tena et al., 2021). In today’s modern environment, digital literacy is a requirement for success in many areas of life. (Khan and Tufail, 2020) Because of the pervasiveness of computers and the internet, all individuals must learn digital competence for self-improvement, profession, and for active participation.

The ability to use a wide range of digital tools and programs to communicate with others is must in order to be digitally competent. (Ferrari et al., 2014). Digital competence, it is claimed that digital competence is not only limited to knowledge, but rather complements traditional forms of common literacies.

In 2018, the Pakistani government revised its “Digital Pakistan Policy” to promote the use of ICT in public schools and connected them to the internet, affecting the existing educational ecosystem (Digital Pakistan Policy, n.d.). The COVID-19 halted everything with prevention...
measures and social alienation. During the ongoing lockdown in Pakistan, many schoolteachers, particularly English language teachers, lacked the practice and technical skills to teach online.

STATEMENT OF THE PROBLEM
The unexpected epidemic of COVID-19 has impacted enterprises, health, and social situations, but education has been hit the hardest. No doubt, the COVID-19 had seized the regular classrooms and timetables from all instructors, even English language teachers, exchanging them with ambiguity (Bataineh et al., 2021). These were difficult times for school ELT teachers, but they worked hard to overcome them. Even when the pandemic is over, we will have gained new experience and understanding about using and incorporating technology in English language teaching practices. It was a chance to improve education and the professional development of English teachers to support and cope with this revolutionary process. While the use of communication technology and gadgets in teaching and learning has become a key emphasis of educational programs in industrialized countries, it is largely overlooked in third-world countries like Pakistan, notably at the school level. The COVID-19 scenario proved to be a fantastic chance for all levels of education to utilize technology.

It is hypothesized that the online mode of education provided English language teachers an opportunity to enhance their digital competence, lacking previously.

OBJECTIVE
As the current research has been dedicated to exploring ELT teachers’ digital competence during online teaching, the foremost objective of the research was:
➢ To explore the effect of online teaching on the digital competence of ELT Teachers in the FGEIS Multan Region.

RESEARCH QUESTION
To test the hypothesis and attain the intended objective, the following research question has been formulated.
➢ Whether online teaching served as a stimulus to develop and improve the digital competence of selected teachers or not?

SIGNIFICANCE OF STUDY
English language teachers in Pakistan’s public schools have never had much expertise with or practice with online teaching. They have never considered using technology or adopting digitalized instructional methods in their professional settings. The rapid spread of the Corona Virus has turned out to be a "blessing in disguise," as it has provided an opportunity to increase technological abilities and digital competence essential for online English language teaching and learning. This challenging scenario has offered English teachers a fantastic opportunity to improve their digital skills and select the finest accessible tools for delivering instruction in this period of uncertainty and unpredictability. The good impact of COVID-19 on education has been highlighted in this study since it encouraged teachers to discard their traditional teaching methods and adopt new learning strategies that incorporate technology. Even after the pandemic is gone, it will provide teachers with knowledge and inspiration to implement mixed teaching techniques. It will also bring education authorities’ and all stakeholders’ attention to the development of curriculum and guidelines for digital English language education in schools to meet the challenges of the twenty-first century. Therefore, this study is important for determining and evaluating the digital competence of English language teachers in schools, and it will be useful in the future in developing training programs to improve ELT instructors’ digital competence.

LITERATURE REVIEW
A literature review helps to comprehend the current research and debates on a subject or field of study and to communicate that information in writing. (Western Sydney University, 2017). The literature relevant to the topic of the research has been reviewed to get a deeper insight and presented below.

The study by Romero-Tena et al., (2021) highlighted the fact this digital change has paved the way toward digital training for teachers and students which is unquestionably required. (Romero-Tena et al., 2021). The study by Wong & Moorhouse,( 2021) about the secondary and primary school English language teachers’ digital competence showed how the DCE framework may be utilized to evaluate educators’ digital competence and make them capable of virtual teaching. (Wong & Moorhouse, 2021).

Khan, Raza & Sibtain (2021) conducted a study to examine the viewpoints of Pakistani teachers and students on motivational methods used in EFL sessions
The findings of the study revealed that researchers and language learners now have a fresh outlook on the COVID-19 pandemic as a blessing in disguise, functioning as a foundation stone for digital progress in the Pakistani E-Learning context in general and EFL context in particular.

Khan & Tufail (2020) investigated “the effectiveness of MALL during COVID-19 in the Pakistani environment based on the perspectives of EFL learners in higher education”. The study's findings revealed that the elements of perceived ease of use (PEOU) and perceived usefulness (PU) were found to be working, as seen by the learners’ opinions on cell phones.

Cabero-Almenara et al. (2021) researched and assessed the digital competence of instructors according to their allocated areas of knowledge, as well as overall. “The DigCompEdu Check-In instrument”, developed by “the European Commission’s Joint Research Centre”, was used in the study. According to the findings, teachers’ digital competence in the development and use of digital materials differs and depends on the field of knowledge to which they were assigned. (Cabero-Almenara et al., 2021).

Cervi and Tusa (2020) investigated the evolution of E-learning in universities and colleges in three countries: Spain, Italy, and Ecuador. The study found that teachers’ digital abilities and communication between institutions and students must be improved by embracing new teaching approaches.

Sher Ryn & SC (2020) highlighted in their research, the COVID-19 pandemic has expedited ICT integration, and today instructors and learners all over the world are compelled to work online, irrespective of whether they are equipped in terms of understanding, capabilities, or tools for the ‘technologization’ of learning and teaching. A study by Caena and Redecker in 2019 aimed to develop teachers’ digital ability at the micro, macro, and meso levels utilizing “the European Framework for Educators’ Digital Competence (DigCompEdu)”. Researchers claim this approach can help instructors both in their classrooms and in their professional growth. It can also help improve educational institutions’ governance and development by encouraging professional collaboration. (Caena and Redecker, 2019)

Training to improve the digital competence of teachers for quality education at the school level is very important. By realizing this fact Cantabrana et al. (2019) researched and highlighted the fact that the incorporation of ICT can make schools capable of improving their quality of education and planning professional development training programs to enhance the digital competence of teachers to meet the pivotal elements of transferring the use of ICT strategy to classroom activities.

Benali, Kaddouri & Azzimani (2018) investigated the digital competency of 160 Moroccan English instructors using the Educators Digital Competency Framework (DigCompEdu). Instructors performed better in digital assessment approaches, self-regulated learning, and digital content delivery than officials, indicating a need for officials and teachers to focus on professional development. (Benali et al., 2018)

The research examined by the researcher provides a detailed overview of the issues faced by ELT teachers during online teaching during the COVID-19 pandemic and the critical nature and awareness of the digital competencies expected from instructors in this period of the digital revolution in the national and international level.

In the COVID-19 situation, it is critical to determine whether Pakistani ELT teachers have the necessary digital competence to integrate technology into their online language instruction programs and whether online teaching helped them to improve their digital competence or not. The reviewed literature provided a deep insight regarding online teaching in COVID-19 and its challenges and opportunities at the national and international levels. The area of digital competence has also been explored a great deal at the international level by (Wong & Moorhouse, 2021), (Cervi and Tusa, 2020), (Caena and Redecker, 2019), (Cantabrana et al., 2019), (Redecker and Punie, 2017), etc. but at the national level so far the researchers talked about the psychological impact of online teaching during a pandemic, MALL learning in COVID-19, semiotic analysis and motivational strategies in the backdrop of COVID-19 but to my knowledge, no study regarding the digital competence of ELT school teachers from a Pakistani background has been conducted yet using this Framework (DigCompEdu, 2017). Therefore, it can serve as the vacuum that the researcher identified through the reviewed literature.
THEORETICAL FRAMEWORK
To comprehend the development of digital competence for teachers, the DigCompEdu (2017) framework had been employed in the research. In terms of knowledge, abilities, and attitudes, the framework describes all of the competencies required to be proficient in digital contexts.

DigCompEdu (2017)
The researcher used “The European Framework for the Digital Competence of Educators (DigCompEdu 2017)” to assess teachers' digital skills and the use of digital technology in education. The DigCompEdu framework focuses on key dimensions of prospective teachers' digital competence. The framework is based on research undertaken by “the European Commission’s Joint Research Centre (JRC) for the Directorate-General for Education, Youth, Sport, and Culture (DG EAC)”. This framework is designed for instructors serving at low level to higher level of education. The framework doesn’t stress technical skills. Lessons learned from this project are not just about digital technologies. The DigCompEdu structure has six fundamental categories, with 22 competencies.

Figure 1. DigCompEdu Conceptual Framework.
Source: (Redecker and Punie, 2017)

Analytical Framework
Three of the six core areas of DigCompEdu (2017) had been used as an analytical framework in this study to examine the development of efficient, accessible, and creative teaching and learning practices, whether or not, aided by technology. These competencies describe how to use digital tools efficiently and creatively while planning, implementing, and analyzing teaching and learning.

Figure 2. Analytical Framework.
Source: (Redecker and Punie, 2017)
Professional Engagement
Participation of instructors in professional activities is the focus of DigCompEdu(2017). Educators’ digital competence is evidenced by their capacity to use digital technologies to improve teaching, as well as their professional contacts with learners, parents, colleagues, and other stakeholders. This is the DigCompEdu section’s focus. (Redecker and Punie, 2017).

Digital Resources
DigCompEdu’s (2017) framework also includes access to digital resources, since educators now have an abundance of digital (educational) resources to choose from. The ability to structure plenty of materials, build links, alter, and develop digital tools to assist instruction is one of the important talents each educator must master. They must also know how to appropriately utilize and handle digital content. They must protect sensitive material and data such as digital examinations and student grades when utilizing, editing, and sharing resources. (Redecker and Punie, 2017).

Teaching and Learning
Digital technology may boost and improve the quality of education in many ways. This digital competency involves organizing the use of digital technology in diverse phases and situations throughout the education process. This competency covers designing, planning, and applying digital technologies in different phases of learning. (Redecker and Punie, 2017)

METHODOLOGY
The researcher used data triangulation for in-depth analysis and to overcome the weaknesses of the questionnaire and employed mixed-method research and obtained data through questionnaires and semi-structured interviews as used by Khan, (2020). The study was conducted at the 13 schools of FGEIS(C/G), Multan region. The selected sample were elementary and secondary-level ELT teachers. They were selected using purposive sampling. Cross-tabulation, chi-square tests, frequency tables, and bar charts have been used for statistical analysis along with IPA for qualitative analysis.

DATA ANALYSIS
In this study, the data has been analyzed using a mixed-method approach. The Questionnaire used for the study is adapted from Benali, Kaddouri, and Azzimani, (2018) containing eight closed-ended questions using the Likert scale. Some questions regarding demographic information have been added.

Data Analysis of Questionnaire
The questionnaire was distributed to 222 ELT teachers online through google forms and by sending links personally to the selected sample through WhatsApp. The response rate was 100%. The collected data were processed, coded, and transferred to a spreadsheet of Microsoft Excel.
To address the research objective which is to explore the effect of online teaching on ELT teachers’ digital competence and to get the answer to the research question that online teaching worked as a stimulus to improve digital competence, a frequency table has been used.

Frequency Table
Frequencies procedure in SPSS is typically used with categorical variables, it also includes special settings for continuous numeric variables. This process can calculate percentiles that are not included in the Descriptive, Compare Means, or Explore procedures. (Yeager, n.d.)
The data obtained through google forms have been processed and decoded into SA, A, DA, and SDA according to the intensity of the responses. The statistical analysis of the quantitative data through frequency tables is given below.
Table 1. Cumulative frequency table

| S. No. | Statements                                                                 | SA  | A  | DA | SDA |
|-------|-----------------------------------------------------------------------------|-----|----|----|-----|
| 1     | “I already had sufficient digital competence (use of technology, selecting  | 18  | 152| 35 | 17  |
|       | the digital resources, and integration into teaching) at the beginning of  |     |    |    |     |
|       | online classes during the pandemic.”                                         |     |    |    |     |
| 2     | “After taking online classes, what best describes your level of technical    | 37  | 136| 36 | 13  |
|       | expertise in the classroom?”                                                 |     |    |    |     |
| 3     | “After online classes, how would you define your degree of digital skills at  | 59  | 118| 31 | 14  |
|       | home?”                                                                       |     |    |    |     |
| 4     | “I use digital technologies to work together with colleagues inside and      | 69  | 115| 25 | 13  |
|       | outside my school after online classes.”                                      |     |    |    |     |
| 5     | “I try to improve my use of digital technologies in teaching and learning    | 80  | 131| 6  | 5   |
|       | after taking online classes”                                                 |     |    |    |     |
| 6     | “I participate in online training opportunities e.g. online courses, MOOCs,  | 43  | 100| 56 | 23  |
|       | webinars, virtual conferences, etc.”                                          |     |    |    |     |
| 7     | “I use the internet to find and select digital resources to find suitable    | 66  | 130| 20 | 6   |
|       | worksheets, presentations, videos, pictures, games, quizzes, and apps.”      |     |    |    |     |
| 8     | “Digital resources are very helpful in designing, planning, and implementing  | 69  | 140| 6  | 6   |
|       | different teaching-learning activities.”                                      |     |    |    |     |

Source is missing

It is obvious in the table (Table.1), that the highest ratio was of the respondents (N=152) who agreed with the statement about enough digital competence at the beginning of online classes (S. No. 1). The second highest frequency (N=35) is of disagreeing respondents. This fact is notable that the frequency of agreeing with respondents is far higher than the disagreeing ones. The frequency of respondents who strongly agree with the statements and who strongly disagree with the statement is almost similar. This statistical analysis proves that many teachers possess enough primary digital competence categorized into the use of technology, selection of the digital resources, and their use in teaching activities at the beginning of the online mode of education.

Online teaching became obligatory with the sudden disruption of COVID-19 and the closure of schools. As discussed earlier, the teachers possess primary digital competence but they were lacking the technical expertise that is enhanced by online teaching. The statement (S.No.2, Table: 1), adapted from Benali, Kaddouri, and Azzimani, (2018) analyzes the first core area of DigCompEdu (2017) and suggests that “Educators’ digital competence” is demonstrated by their ability to use digital gadgets. The frequency table (Table:1) proves that the online mode helped ELT teachers to improve their digital competence and their level of technical expertise in the classroom has increased. This fact is supported by the highest frequency of the respondents (N=136) who are comfortable with using the technology in their classroom and the second-highest frequency is of respondents (N=37) who are very comfortable. The respondents who disagreed with the statement attained the frequency (N=36) whereas those who strongly disagree have the least frequency (N=13).

As discussed earlier (Table:1) “Educators’ digital competence” is demonstrated by their capability to make use of digital technologies not only for pedagogic improvement but also in their professional communications with students, parents, coworkers, and other concerned parties. During online mode, teachers require digital skills to carry on a smooth teaching-learning process with the collaboration of all stakeholders. The novice experience of online mode provided teachers a chance to enhance their digital skills even at home. The statistical analysis of the relevant statement (S.No.3, Table:1) strengthens the fact because the highest frequency (N=118) is of the ‘who are very comfortable using the technology at home is the second highest (N=59). The respondents who are fairly uncomfortable attain the frequency (N=31) and the least number (N=14) is attained by the very uncomfortable.
for training are less in number and the majority can not avail of those. The statistical analysis (S.No.6, Table:1) reveals that respondents who have received any training (not about the use of digital technology) once or twice in their career have the highest frequency (N=100). The second highest frequency (N=56) who have not received any training but they are interested. The frequency of respondents who frequently attend all kinds of online training is (N=43). The least frequency (N=23) is of the respondents who are against the training. Though the teachers faced many difficulties and challenges in adopting this mode of education without any training eventually they learned so many new skills. This is the positive impact of this novel situation as the digital skills of teachers have been improved.

Before COVID-19, most teachers had traditional face-to-face teaching and there was no integration of technology in their education system. The online mode of education made the teachers capable of integrating technology into their teaching practices and they have learned the use of the internet to find and select suitable content about their topic. The results shown in the frequency table (S.No.7, Table:1) prove that the teachers who do not use the internet at all are the least in number (N=6) out of the total respondents (N=222). This is a very encouraging result and demonstrates the fact that the majority of teachers have digital competence according to the second core area of DigCompEdu (2017). The highest frequency (N=130) is attained by the respondents who use the internet and the second-highest frequency (N=66) is by the respondents who frequently use the internet. The frequency of responses who only search the internet but do not use is 20.

The usage of digital resources by the ELT teachers can be very supportive in the design, planning, and implement teaching and learning activities according to the second core area of DigCompEdu (2017). The statistical analysis (S.No.8, Table: 1) reflects this fact by showing the highest frequency (N=140&N=69) of agreed and strongly agreed with responses respectively while disagreeing and strongly disagree responses are least and similar in frequency (N= 6).

Data Analysis of the Interviews
An interview, as a general qualitative research technique, comprises of inquiring open-ended questions to converse with respondents and accumulate quick data about a question. The researcher conducted semi-
structured interviews of five teachers from the selected sample to obtain information in the desired detail by meeting and personally connecting with them. Semi-structured interviews provide flexibility to the researcher to get the required information from the respondents by preserving a basic interview structure (Likert, 2012). Keeping the structure in mind the researcher interviewed as a guided conversation between researchers and interviewees with a considerable elasticity. The researcher asked the questions and recorded the answers of the respondents. The data was transcribed and translated for analysis and interpretation. As the study deals with the digital competence of ELT teachers in a certain phenomenon of COVID-19 and online teaching, therefore, an interpretative phenomenological approach (IPA) has been used by the researcher which allows the researcher to explore the phenomenon from an individual’s personal experiences (Alase, 2017). The researcher categorized the answers of the respondents into three main points with the help of the analytical framework described earlier.

**Professional engagement**

Online teaching was a wonderful experience according to the majority of the respondents and it stimulated their professional engagement through the use of technology. It helped to improve their communication with colleagues, students, and other stakeholders. Before the COVID-19 pandemic, in our education system, we were following a traditional face-to-face method and we had not had any online communication with students before the online teaching experience. In response to the question about communication, R-2 said,

“No at all, I had no online communication with the students. It was absolutely a new experience for me and the students as well. Certainly! Online communication is the outcome of online teaching and as a team works our communication got better.”

Online teaching also instilled a new spirit of teamwork by engaging them with one another. Their professional development got a boost during online teaching when they learned the use of technology and collaborated without any proper training. About professional development, R-2 said, “Definitely! Online teaching helped a lot in our professional development and there is no denial at all.”

Teachers’ digital competence is evident in their ability to use the technology without any training to improve their teaching and professional communication with all concerned parties. Most of the respondents were of the view that online teaching was a source of professional development in the form of information sharing and learning a lot of new things through the use of digital technology. To describe the impact of online teaching on the professional development of teachers, R-5 said,

“Online teaching had a significant impact on professional development as we were not using and giving importance to digital technology.”

**Digital Resources**

The opinions of the respondents concerning the ease and difficulty in using the digital resources show their digital competence. Most of them have acknowledged that Digital resources are the part and parcel of online teaching as it involves the use of digital technology. However, at the beginning of online teaching, teachers faced a lot of problems to use digital resources which mainly involve a lack of devices and access to the Internet on the part of the students. Online teaching was a new experience for the majority of the respondents. R-5 remarked about the use of digital resources, “I faced difficulty about creating and using digital resources initially but gradually it became easy.” She further proclaimed that overall, it was a very good experience. Teachers created zoom meetings but initially, the response by students was very poor but gradually things got better. The analysis of the respondents' views makes it clear that teachers have not used digital resources previously even though they successfully searched, selected, and shared the materials by using digital resources. They made videos and voice notes to share the knowledge with the students.

**Teaching and learning**

Most of the respondents remarked that during online teaching digital technology wonderfully worked in the teaching and learning process. It has improved the teaching methods and ways of communication. The hesitation to use different apps and Technology in the teaching process has ended after the online teaching and teachers eventually learned to integrate technology into their professional activities but all the respondents complained about the lack of training. R-5 acknowledged and further stated, “I have learned the use of many apps,
my typing speed has been increased and the use of technology in written and spoken forms of language has made things easier than before.” The teachers did not receive any training before and after online teaching about the use and integration of technology. R-5 holds the same point of view about training as other respondents as she said, “Trainings are needed because still, we feel some problems relating to the use of Technology because it is ever-growing and unlimited knowledge so continuous training to upgrade and improve the use of technology is essential.” The findings suggested that they have learned a lot about the use of Technology after online teaching but still, they are facing problems, so pieces of training are needed to improve and upgrade digital knowledge.

CONCLUSION
The detailed discussion of the results and findings of the questionnaire and the interviews in the light of the analytical framework and hypothesis determines that teachers’ digital competence increased remarkably during online teaching. The results of the statistical analysis provide evidence that online teaching has a positive effect on ELT teachers as they have started using technology in their classrooms and resultantly their digital competence has also increased. The results of questionnaires and interviews made it evident that they already possessed the required digital competence, but it is also an unquestionable fact that online teaching has improved their digital competence in a great deal. Online teaching was a wonderful experience according to the majority of the respondents and it stimulated their professional engagement through the use of Technology. It helped to improve their communication with colleagues, students, and other stakeholders. The results made it clear that teachers have not used digital resources previously even though they successfully searched, selected, and shared the materials by using digital resources. The hesitation to use different applications and technologies in the teaching process has ended after the online teaching and teachers eventually learned to integrate technology into their professional activities but all the respondents complained about the lack of training. The data analyzed through the frequency table indicates a relationship between improvement in digital competence and use of digital technology as online teaching during the COVID-19 has helped the ELT teachers to use the digital technology in their professional life. The use of technology is certainly an innovative way of teaching and learning in every field of education. (Khan and Tufail, 2020).

FUTURE IMPLICATIONS
More comprehensive studies in the domain of digital competence in general, and at the school level, should be encouraged. The researcher’s research has been limited to evaluating ELT instructors’ digital competence in terms of the first three main categories of DigCompEdu (2017). The remaining fundamental categories of DigCompEdu(2017), which include assessment, educating and empowering students, and assisting learners in developing digital competence, can be used by future researchers to investigate the digital competence of teachers.

REFERENCES
Alase, A. (2017). The Interpretative Phenomenological Analysis (IPA): A Guide to a Good Qualitative Research Approach. International Journal of Education and Literacy Studies, 5(2), 9. https://doi.org/10.7575/iaic.jels.v.5n.2p.9
Benali, M., Kaddouri, M., & Azzimani, T. (2018). Digital competence of Moroccan teachers of English. International Journal of Education and Development Using Information and Communication Technology, 14(2), 99–120.
Bataineh, K. B., Atoum, M. S., Alsmadi, L. A., & Shikhali, M. (2021). A silver lining of coronavirus: Jordanian universities turn to distance education. International Journal of Information and Communication Technology Education (IJICTE), 17(2), 138-148.
Caber-Almenara, J., Guillén-Gámez, F. D., Ruiz-Palmero, J., & Palacios-Rodríguez, A. (2021). Classification models in the digital competence of higher education teachers based on the DigCompEdu framework: Logistic regression and segment tree. Journal of E-Learning and Knowledge Society, 17(1). 49–61. https://doi.org/10.20368/1971-8829/1135472
Cantabrama, J. L. L., Rodríguez, M. U., & Cervera, M. G. (2019). Assessing teacher digital competence: The construction of an instrument for measuring the knowledge of pre-service teachers. Journal of New Approaches in Educational Research, 8(1), 73–78. https://doi.org/10.7821/naer.2019.1.370
Caena, F., & Redecker, C. (2019). Aligning teacher competence frameworks to 21st century challenges: The case for the European Digital Competence Framework for Educators (Digcompedu). *European Journal of Education, 54*(3), 356-369.

Cervi, L., & Tusa, F. (2020). *Digital Literacy and Higher Education during November.* https://doi.org/10.3390/publications8040048

Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of educational technology systems, 49*(1), 5-22.

Khan, M. Y., Raza, S. A., & Sibtain, M. (2021). Online learning and motivational strategies in the backdrop of COVID-19: An EFL perspective on teachers and students’ perceptions at tertiary level in Pakistan. *sjesr, 4*(1), 135-147.

Likert, R. (2012). The sample interview survey: A fundamental research tool of the social sciences. In *Current trends in psychology.* (pp. 196–225). University of Pittsburgh Press. https://doi.org/10.1037/13989-008

Romero-Tena, R., Llorente-Cejudo, C., Puig-Gutiérrez, M., & Barragán-Sánchez, R. (2021). The pandemic and changes in the self-perception of teacher digital competencies of infant grade students: A cross-sectional study. *International Journal of Environmental Research and Public Health, 18*(9). https://doi.org/10.3390/ijerph18094756

Redecker, C., & Punie, Y. (2017). *European Framework for the Digital Competence of Educators: DigCompEdu. Luxembourg: Publications Office of the European Union.*

Sher Ryn, A., & SC, S. (2020). Teachers’ Practices and Perceptions of the Use of ICT in ELT Classrooms in the Pre-COVID 19 Pandemic Era and Suggestions for the “New Normal.” *LSP International Journal, 7*(1), 99–119. https://doi.org/10.11113/lspi.v7n1.100

Western Sydney University. (2017). Literature Review Purpose. *Western Sydney University Library, July, 1–2.* https://www.westernsydney.edu.au/__data/assets/pdf_file/0006/1254786/Literature_review_purpose.pdf

Wong, K. M., & Moorhouse, B. L. (2021). Digital competence and online language teaching: Hong Kong language teaching practices in primary and secondary classrooms. *System, 103,* 102653. https://doi.org/10.1016/J.SYSTEM.2021.102653

Yasmin Khan, M., & Tufail, H. (2020). An Investigation into the Effectiveness of MALL during COVID-19 at the Higher Education in Pakistani EFL Classrooms. *Global Language Review, VI*(I), 175–185. https://doi.org/10.31703/glr.2020(v-i).19

Yeager, K. (n.d.). *LibGuides: SPSS Tutorials: Descriptive Stats for One Numeric Variable (Frequencies).* Retrieved January 22, 2022, from https://libguides.library.kent.edu/SPSS/FrequenciesContinuous

**Publisher’s note:** EScience Press remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.