Teaching Concerns in Higher Education: Impact of COVID-19 in Pedagogy

Sohaib Alam

Department of English, College of Sciences and Humanities in Al Kharj
Prince Sattam bin Abdulaziz University
Abdullah Bin Amer Street, 16278, Kingdom of Saudi Arabia
E-mail address: s.alam@psau.edu.sa
ORCID: https://orcid.org/0000-0002-9972-9357

Ansa Hameed

Department of English, College of Sciences and Humanities in Al-Kharj
Prince Sattam bin Abdulaziz University
Abdullah Bin Amer Street, 16278, Kingdom of Saudi Arabia
E-mail address: a.zahoor@psau.eu.sa
ORCID: https://orcid.org/0000-0003-3477-156X

Abstract

Thesis. The present study aims to explore the impact of COVID-19 on higher education and identify the different problems faced by pedagogues around the globe. It compares the outcomes and comments from both established and developing countries to understand the change in pedagogical procedures.

Concept. The desire for social isolation that was unheard of until the 20th and 21st centuries became a catchall word during the pandemic. For educational institutions, the governments' emergency measures to switch from traditional classroom settings to virtual alternatives generated important opportunities and problematic obstacles.

Results and conclusion. The study was conducted thorough research of COVID-19's broad effects on pedagogical practices in higher education, from the viewpoints of both instructors and learners. An analysis of diverse secondary materials was carried out and conclusions were derived accordingly. The findings show that the pandemic caused distinct problems for different populations depending on selected criteria that were explored and emphasised in the proposed study.

Originality. The study has thoroughly analysed the ideas, challenges, of online educational pedagogy to identify the effectiveness and challenges. The main research contribution is the finding that asserts the promise of technology and the challenges that students encounter when learning through digital processes.

Keywords: pandemic, traditional-modern education, online learning, pedagogical challenges, digital pedagogy

Introduction

The pursuit of liberation views information as rational, all encompassing, moving steadily, and predictable into a value cluster. Amazing responses to scientific, social, and economic challenges were produced because they were quantitative and coherent. The ideas of thinking, learning, and practising are more nuanced, non-linear, and blended now. To maintain the best-informed worldwide instructors and learners during this crisis, the research will analyse the new curriculum and technology tactics. The world changed in the late 1990s when handwritten notes, wired phones, and television were the most common and reliable methods. The new standard for pedagogy is to use multiple strategies in blended form. On March 12, 2020, COVID -19 caused a global pandemic, influencing, and altering several facets of social, economic, political, and environmental life (Zha, 2021). The urgent global concern that emerged was a communication gap between the teachers and the learners because of lockdowns and closure of educational institutions. The COVID -related health emergency increased student access to technology-based learning in almost every three-tiered educational system. In addition to the challenges of a student's physical isolation from a teacher, the pandemic has taught us about the mental distance between peer groups and from a structured, academic learning environment. The directives issued by government organisations to stop face-to--face instruction in schools and universities resulted a negative notion on the growth of human intellect throughout history. E-learning is the name given to the formal educational system that uses electronic resources. While instruction can take place in or outside of classrooms, the key element of e-learning is blending the technology with the use of computer and the internet. We are aware of the detrimental effects of educational institutions acting in a non-supervisory capacity during summer breaks, in the event of natural disasters, or for any other reason, such as individual absence. ICT--assisted digitalisation of education has improved academic performance for pupils but also increased learning disparities. Although studies from throughout the globe reveal that restrictions and institution closures did stop the expansion of the coronavirus, the detrimental effects of delay and unequal information dissemination have increased the disparity between the rich and underprivileged population by up to 30% (Smith, 2021). There are many resources available to alter remote learning or virtual education, but the approach or strategy must rely on appropriate utilisation e-learning and thorough student guidance.

Literature Review

Chrysi Rapanta et al. (2021) illustrates how the COVID-19 outbreak allows us to rethink assumptions about education in general and higher education. Given the broad crisis the epidemic generated, teachers in all grade levels

and circumstances felt the need to reassess their duties, the strategies for aiding students with their learning objectives, and the notion of students as independent social agents and self-organising beginners. The paper reveals how some professional guidance for campus-based university instructors on adjusting to online instruction. How may this deep sense in reducing the disparity between digital and in-person teaching in the years to come now that university-college professors have witnessed the unexpected and compelled type of distance training and instruction (OLT)? was the issue raised in this follow-up research. The four experts, who are also the co-authors of this research, agreed that pedagogisation rather than digitalization of higher education should be prioritised, and that the core of post-pandemic practises should be strategic decision-making.

Henny Yulia (2020) describes how the COVID -19 virus affects all facets of life, including educational foundation, one of the most crucial components of civilization. It explains the prerequisites for educators to modify their pedagogical approaches whether they want to or not. The study examined how the coronavirus pandemic affected education and covered the many forms of online learning that teachers used in the post-pandemic era throughout the world.

Basem Okleh Salameh Al-Hawamdeh and Sohaib Alam (2022) is an important article which discusses the efficacy of the pedagogy during COVID-19. It also discusses the perspective of the learners towards designing and delivering effective pedagogical measures. The article emphasizes on the problems and issues faced by learner's during pandemic in pedagogy.

Micheal Murphy (2020) in an effort to flatten the infection curve and heed the advice of public health specialists, he explains how the COVID-19 epidemic quickly forced the suspension of campuses and colleges throughout the globe. The paper argues that these rules not only represented COVID-19 as a generic threat but also face-to-face learning as a menace. The report bases its arguments on a review of 25 emergency declarations made at American institutions for e-learning as well as the Copenhagen school securitization theory. A study of securitization theory provides the conceptual underpinning for the analysis, paying special attention to the advocacy challenge and the relationship between de-securitization and emancipation.

Alam et al. (2022) article findings also discuss the problems that emerges during the pandemic because sudden change in the pedagogy. The reasons are:

> The first requirement for the blended learning approach is the specialised infrastructure for high-speed internet connection which should be accessible by all students and instructors. Thus, it should be the duty of the policy makers to set up an effective infrastructure, such as language laboratories, modern software, lab technicians, tutorial programmes, and so forth. Moreover, teaching assistant initiatives will prepare educators to take use of the potential of integrating. The training courses should concentrate on the subject material and pedagogical strategies that teachers should employ in the curriculum while utilising a flipped classroom paradigm. (p. 236)

However, article by Aleksander Kobylarek et al. (2021) pointed emphasised the crucial component of online instruction, saying:

> Additionally, as can be seen from the research survey responses, there are several issues that need to be considered when moving to online instruction and at-home learning, in addition to the basic issues related to the availability of the required technologies and students' and teachers' basic digital skills. There have to be taken into consideration (also) increased pressures on teachers, pupils/students and their parents, especially those with limited digital skills, education, and resources for continued education, as to parents also increased demands to perform supervision tasks of ensuring that their children learn from home, increased probability of dropouts due to loss of interest in education and lack of resources to continue, and last but not least also a possibility of a negative impact on the occurrence of socio-pathological phenomena (p. 14)

Roy Chanet al. (2021) article features extensive research and input from several scholars, instructors, and learners. The collection, despite its geographical limitations, explores the online tutoring model and demonstrates the faculty's determination and the persistence of higher education. The global viewpoint allows for deeper exploration of current transformation narratives as well as analysis of knowledge development and continuity in European and Commonwealth countries. In reaction to COVID-19, institution members now desire to categorise, oversee, and coordinate the educational process.

Shuang Genget al. (2019) emphasises the value of blended learning (BL), which combines in-person and online training. With several technologically advanced communication networks, this deepens a conversation on the newly developed idea of affluent educational systems.

Charles Kivunja (2013) felt the need to clarify to pre-service teachers that the students in their classrooms will be Digital Natives, equipped with skills for digital fluency rather than the traditional chalk, and board, paper, pencil, and pen mode. This will help prepare them for their professional practise in the information age. Since most of our current pre-service teachers are from a pre-digital generation and lack the digital fluency necessary for the 21st century, it is imperative for the higher education practitioners, adequately prepare themselves for the new classrooms they will be working in. This will help to avoid situations where teachers and students are mismatched and appear to be trying to teach illiterate children while being illiterate themselves.

Pedro Isaias et al. (2020), book provides a novel perspective on how student experiences are affected by distance learning from higher education. To gauge how many kids had access to the internet; the whole online survey was built on justifications and analyses. Furthermore, Alexander V. Sirotkin et al. (2023) article also discusses the impact of COVID -19 on the universities pedagogy. It specifically explores the understandings from the Slovakia and Georgia. Similar study from Patrik Maturkanič, *Čergeťová,*

Králik et al. (2022), Lucia Petrikovičová, et al. (2022), Maturkanič, *Čergeťová, Konečná* et al. (2022) work describes quality life in Czechia, comparison of big and small city with regard to the quality life as well as the importance of social life is being discussed in the article. These studies are important for the present study as they are directly or indirectly related to the problems and concerns regarding higher education during COVID-19.

A quick overview of higher education learning systems in developing nations is offered with an emphasis on India, one of the biggest democracies in the world, using a sufficient sample size. The paper makes extensive use of government records to explain how the secondary data should have been organised throughout the investigation. With a variety of formats and their components, as well as via great online courses that embrace the pre- and post-pandemic attitude, Open Distance Learning (ODL) has decentralised expertise "for all of us." It must deliver quality assurance prime importance.

Objective of the Study

The objective of the present study is to find out the obstacles that prevented the integration of digital pedagogy practises during the COVID-19 epidemic. The research will document the changes brought about by the epidemic and look at how learning and teaching are done in academic settings:

- The goal of the research is to discuss such changes in education, incorporating traces from every facet of pedagogy;
- To what extent have instructors and students' levels of stress, confidence, and learning changed for the better or worse?
- To what extentcountries are now able to increase the remote learning quality using the available antiquated systems?
- How, therefore, has the epidemic transformed the same old practise into a novel, makeshift techno-learning mechanism?
- The results of the study confirm the need for an hour to confront the pedagogical challenges posed on by digitalization;
- The focus is also on resurrecting sophisticated learning tools and challenges that both teachers and students face.

Research Question

The following research questions will be addressed throughout the present study.

- How has the transition from traditional to online learning in terms of the core learning principles fared throughout the most recent economic downturn?
- How has the use of web programmes like Cisco, WebEx, Blackboard and other popular ones which are a crucial component of e-learning improved interpersonal online presence learning environment?

- How can the digital learning mechanism produce higher learning quality and more in-depth interaction?
- How do digital core competencies or web - based learning correlate to the growth and fall of human knowledge creation, maintenance, and future growth?

Methodology

The study was conducted after a thorough analysis of the literature on the effects of conventional and online (digitalised) learning using available data to gain a qualitative understanding. The methodology uses analysis techniques, enables the study to separate the section into extensions and limitations faced by instructors and students, and incorporates outcomes from all educational levels through contemporary, high-calibre scientific articles and publications.

Change in Pedagogy

The discussions argued the effects of a pandemic on many facets of the global system, including socioeconomics, agriculture, industry, and energy. It has a significant impact on millions of students, causing pre-schools to close and university conferences and seminars to be cancelled. Due to the coronavirus pandemic, teachers were compelled to train children digitally to prevent the virus from spreading further. The introduction of an online evaluation style may encourage students to employ machine-based tools and other alternative sources of persuasion. It has a significant impact on millions of students, causing pre-schools to close and university conferences and seminars to be cancelled (Özüdoğru, 2021). Teachers were required to instruct students digitally due to the coronavirus pandemic to stop the disease from spreading. The use of computer-based tools and other possible sources of influence may be encouraged in pupils by the adoption of an online assessment style (Ali, 2021). Many online technologies, such as Google Classroom, WeChat, Messenger, Telegram, and other cyber tools, are being investigated and assessed for their potential to improve educational opportunities in the wake of the recent turmoil. Online marketplaces may be looked at further to provide students with more information and employment prospects, if physical training continues. Users frequently utilise CISCO WebEx and Zoom for online meetings and even PhD submissions and final viva-voce, especially in developing countries (Fernando Ferri, et al., 2020). Using these web applications enhances social presence in the online learning environment, which is crucial for e-learning because research has shown that greater social engagement leads to deeper interactions (Mirzajani et al., 2016). Students will be more likely to believe that e-learning is more advantageous if they see an improvement in their performance. Universities have employed a range of techniques

to lessen the influence of student plagiarism on exams. As a result, educators and researchers find it difficult to employ digital evaluations, which make them less inclined to recommend and incorporate them into their curriculum (Spector et al., 2016).

Learning about the Digital Pedagogy

Youth nowadays are receiving an education in a world where digital technology influence daily lives. Among other things, digital technology has opened new possibilities for easier information sharing and seeking (Adam, 2017). To satisfy the changing learning requirements of pupils in the 21st century, international education systems are adapting to the social trends that digital technologies are ushering about (Bozkurt & Sharma, 2021). Because to the widespread COVID-19 epidemic, schools had to establish virtual teaching, which required them to change their pedagogical practises. Remote instruction should offer students learning opportunities that are comparable to those offered by in-person learning. Municipalities and university based consider these trends when designing and planning in-service teacher training. Due to the development of new learning requirements for pupils and new digital technologies, teachers nowadays must continually re-evaluate their teaching methods (Schwartzman, 2020).

A recent development in the field of education is digital pedagogy. Its roots may be seen in online courses for distant learning, when lecturers would transmit course content using cutting-edge digital technical advancements. It may be summed up simply as the incorporation and implementation of cutting-edge technical tools and approaches into the teaching and learning process (Väätäjä & Ruokamo, 2021). However, digital pedagogy is not just about using technology tools in the classroom; rather, it is about treating all digital tools and scientific advancements in the classroom from a critical pedagogical standpoint. Therefore, understanding when, how, and where to employ digital technologies in instructional aspects is equally important. From this angle, it might be seen as a smart integration of technology tools into the classroom (Williamson et al., 2020). A more thorough description of digital pedagogy was provided by Kivunja (2013,), who described it as "the ability to integrate digital tools into instruction in a way that improves learning, teaching, evaluation, and curriculum"(p. 139). As a result, the use of digital technology for pedagogy can also be referred to as digital pedagogy. In this work, a model of digital pedagogy is presented with the goal of elucidating the instructional use of digital technology. Three elements make Shujie Liu up this concept of digital pedagogy: pedagogical orientation, pedagogical practices, and digital pedagogical competences. It defines "pedagogical orientation" as a teacher's ideas on how students should be taught and advised, as well as what the ideal learning process should include. Liu & Lingqi Meng (2009) asserts that the objectives

of the curriculum, the teacher's function in connection to teaching practices, and the responsibilities of the students regarding learning practices all influence pedagogical orientation.

Digital pedagogy encompasses a wide range of topics, including the use of technology to make subject matter more engaging, blogging assignments, utilising social media platforms to improve contact with students, Massive Online Open course (MOOC) courses, and more. Therefore, integrating electronic technology tools into the teaching process is essential for improving the vividness, clarity, and flexibility of students' learning experiences (Nerantzi, 2020). Although virtual learning environments, MOOCs, and similar initiatives are attracting a lot of interest, it is less certain if these initiatives are prompting enough pedagogical and philosophical thought. This is partially due to the generally held belief that technologies are tools, essentially unaffected by the goals for which they are created or the contexts in which they are used. It is considered that tools do not automatically indicate a specific set of commitments, values, or ways of being (Onah et al., 2014).

From Coercion to Motivation: Advantages of Digitalising Education

The study's conclusions are mentioned below. According to the analysis, online teaching and learning gives both teachers and students some degree of flexibility (Howard & Howard, 2012) to develop their unique abilities and talents:

- With growing technology mechanisms for educational growth, both students and teachers were given the opportunity to explore their own skill, potential, and a range of academic possibilities (Pityana, 2009);
- To keep instructors and students engaged outside of the confines of a traditional university classroom, lecturers and university administration investigated the prospect of establishing blended learning (Alam & Usama, 2023);
- Students perform preparatory research and/or complete actions before online sessions in flipped classroom activities. This technique has been used to increase students' commitment to learning. The ability to talk privately in the chat boxes has improved privacy options, decreased hesitancy, and helped students and instructors develop more intimate relationships (Pokhrel & Chhetri, 2021).

Unsurprisingly, educational institutions in wealthy nations have extensive libraries, reference books, and other facilities. Teachers and learners in these institutions are also motivated to study, and countless hours are spent developing language and courses. Around the world, 900 million students and 85 million teachers have experienced both educational progress and disaster in the last two years of the pandemic. It will always be impolite (Yatesn et al., 2021).

The Value of Online Education in a Time of Crisis

Of course, the worldwide pandemic represented a significant public health emergency as well as a political, economic, and social disaster. In the coming years, research in a wide range of fields will look at the social, political, economic, and medical aspects that shape our current situation (Rippé et al., 2021). Further research in this study will be produced in the context of changes; as to how society, science, and technology are related (Oyedotun, 2020).

Education frequently adopts the current cultural context as the basis for its idea of technological change. As a result, stories on the transformative impact of technology in education are shared throughout schools. The expectation that, for instance, the widespread accessibility of digital educational resources will revolutionise teaching and learning (Lewin & Lundie, 2016). Anthony Bates (2015) explains that in the era of digital learning, both the instructor and the student are learners. He defends the availability of material on language variations between methods using electronic learning and the internet. Teachers' use of instructional methodologies to convey knowledge to pupils will determine whether traditional learning environments like classrooms or schools are successfully transformed into "Smart Classrooms" or "Digital Education."

Challenges for Teachers: Resistance in Adopting the Technological Dimensions from the Instructors' side

University workload and stress levels have grown because of the pressing desire to "get online." Numerous academics and researchers are voicing their worries as the use of virtual pedagogy has increased post pandemic. Studies show that internal characteristics or factors in schools and HEIs resist technological developments that conflict with present norms. In a purely historical sense, professors at these universities have acted above the law on several occasions. One of the main characteristics of bureaucracy is the development of a hierarchical way with professionals at the top and students at the bottom, in which teachers are in charge of setting field of studies, coursework, project evaluation, and program-related outcome (Milton & Vozzo, 2013).

Awareness among the Teachers in Advanced Nations

There is always a greater chance of a centralized approach of operations at colleges and universities in industrial countries and a decreased chance of decentralisation. Up until now, educators all over the world had difficulty juggling their roles as educators and members of an institution. But all pro-

fessors, regardless of their age group, were expected to be technologically savvy; they were ready to give lectures and enrol in online classes from the comfort of their own homes. In fact, there have been calls for pedagogical content knowledge (PCK), or advanced technical assistance (Chan et al., 2021).

Lack of Suitable Administrative Assistance

Teachers from all kinds of educational institutions, schools, colleges, universities lack suitable technical support, such as how to deal with online technical mechanism, revisions, acceptable presenting abilities, and understanding of how to build and prepare material using computer programmes, among other things. Authorities have given permission to colleges and institutions in poor nations that have little or no experience with online instruction. Lack of technicians, monitoring teams or other assistance from the back end revealed that it accelerated the difficulties in creating web-based programmes as well as their pedagogical limits (Espino-Díaz et al., 2020).

Development of Competency and Skills required for transformation

In their research Fernando Ferri et al. (2020) has mentioned Burns who has identified three barriers to online teacher education: a lack of technological assistance for instructors and students, a slow internet connection, and a shortage of trainers. Educators to see if it is comparable to the validity and reliability of physical, in-person evaluations put the validity and reliability of digital formative evaluation to the test. While teaching, using digital technology demands several abilities or competences from the instructor's side. This section explains how these virtual pedagogical competences are portrayed in the papers under examination. Because it includes people's resilience and tenacity in tackling difficult conditions and issues, Linda Mannila et al. (2018) found that a key element in the use of technology in education is the teachers' self-efficacy. Poor self-efficacy suggests a higher chance of failing to finish the assigned activities. The chance of failure is decreased by a high level of self-efficacy, which demonstrates the capacity and disposition to work harder on the tasks at hand. Thus, self-efficacy should be considered while enhancing instructors' technical expertise and knowledge. While 57% of full-time lecturers disagree, according to a 2016 survey, 18% of participants believe that online learning is just as efficient as studying in-person. Educators and optimists have put forward an array of propositions for these concepts, including sentimentalising the classroom instruction, questioning the validity and effectiveness of employed advanced technology, observing an inadequate repayment on past works, and rueing the intrusion of instructional authority attempts and dreading the encroachment of curriculum design authority (King & Russell, 2015).

Lack of Funds

The successful adoption and integration of ICTs in education depends in large part on the availability of funding. It is understood that nations with additional capital resource bases have a better opportunity than those with limited capital bases to profit from ICTs. Higher education institutions can:

- adopt open source and software for teaching process;
- persistently request more financial support from their government entities;
- expand sources of revenue to have a vast capital base to address the issue of limited funds and sustain donor-funded projects (Wen & Kim Hua, 2020).

The study done by Alam (2022), Alam and Al-Hawamdeh (2022), Alam et al. (2020) discusses the use of different activities and use of ICT in the actual classroom pedagogy. It also pointed out that these strategies and techniques can be used with minimum funds and infrastructure. Moreover, Oksana Hrydzhuk et al. (2021) says "modern technology can be an effective tool for student learning, provided that he is familiar with it and ready to use it in learning" (p. 208).

Conclusion

This article offers a glimpse into the difficulties experienced by decision--makers, academic institutions, programme designers, and students while addressing concerns of educational opportunity in developing nations. The attempt to define the phrase "digital pedagogy" proved to be the most difficult part of this study. Also, according to Kobylarek (2017), "digitalisation presents new interpretations about the potential, processing, and use of cultural information" (p. 7). Since the term "digital pedagogy" was rarely defined, the searches pulled up hundreds of works that covered the concept. Many academics appear to assume that the reader is already acquainted with the concept. However, the term "digital pedagogy" was used in several works in a variety of ways. Through all these epidemic periods, educational institutions in developing countries have a fantastic opportunity to improve their teaching and learning techniques. Most institutions in poor nations already have access to the fundamental ICT infrastructure that serves as the foundation for e-learning, including local area networks (LAN), multimedia, smart televisions, CDs, and DVDs. When incorporating ICTs in instructional and learning activities, pedagogical, technical, and economic considerations for each individual technology should be considered.

Acknowledgment

References

[1] Adam, A. (2017). A framework for seeking the connections between technology, pedagogy, and culture: A study in the Maldives. *Journal of Open, Flexible and Distance Learning*, 21(1), 35–51.

[2] Alam, S. (2022). Imagine, Integrate, and Incorporate: English Language and its Pedagogical Implications in EFL Classrooms. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, *14*(2), 1-17. https://doi.org/10.21659/rupkatha.v14n2.10

[3] Alam, S., & Al-Hawamdeh, B. O. S. (2022). Dynamics of integration of process drama in EFL classrooms: A holistic approach of activity based pedagogy. *e-mentor*, *4*(96), 70–81. https://doi.org/10.15219/em96.1580

[4] Alam, S., & Usama, M. (2023). Does E-Feedback Impact Minimizing ESL Writing Errors? An Experimental Study. *International Journal of Emerging Technologies in Learning (iJET), 18*(04), 156–169. https://doi.org/10.3991/ijet.v18i04.36349

[5] Alam, S., Faraj Albozeidi, H., Al-Hawamdeh, B. O. S., & Ahmad, F. (2022). Practice and Principle of Blended Learning in ESL/EFL Pedagogy: Strategies, Techniques and Challenges. *International Journal of Emerging Technologies in Learning (iJET)*, *17*(11), 225–241. https://doi.org/10.3991/ijet.v17i11.29901

[6] Alam, S., Karim, M. R., & Ahmad, F. (2020). Process Drama as a Method of Pedagogy in ESL Classrooms: Articulating the Inarticulate. *Journal of Education Culture and Society*, *11*(1), 255–272. https://doi.org/10.15503/jecs2020.1.255.272

[7] Al-Hawamdeh, B. O., & Alam, S. (2022). Praxis and effectiveness of pedagogy during pandemic: an investigation of learners' perspective. *Education Research International*, *2022*, 1-9. https://doi.org/10.1155/2022/3671478

[8] Ali, L. (2021). The shift to online education paradigm due to COVID-19: A study of student's behavior in UAE universities environment. *International Journal of Information and Education Technology*, *11*(3), 131-136. https://doi.org/10.18178/ijiet.2021.11.3.1501

[9] Bates, A. W. (2015). Teaching in a digital age: Guidelines for designing teaching and learning. British Columbia, SFU Document Solutions.

[10] Bozkurt, A., & Sharma, R. C. (2021). On the verge of a new renaissance: Care and empathy oriented, human-centered pandemic pedagogy. *Asian Journal of Distance Education*, *16*(1), 1-8.

[11] Chan, R. Y., Bista, K., & Allen, R. M. (Eds.). (2021). *Online teaching and learning in higher education during COVID-19: International perspectives and experiences*. Routledge.

[12] Espino-Díaz, L., Fernandez-Caminero, G., Hernandez-Lloret, C. M., Gonzalez-Gonzalez, H., & Alvarez-Castillo, J. L. (2020). Analyzing the impact of COVID-19 on education professionals. Toward a paradigm shift: ICT and neuroeducation as a binomial of action. *Sustainability*, *12*(14), 5646. https://doi.org/10.3390/su12145646

[13] Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online learning and emergency remote teaching: Opportunities and challenges in emergency situations. *Societies*, *10*(4), 2-18. https://doi.org/10.3390/soc10040086

[14] Howard, P., & Howard, J. (2012). Pandemic and pedagogy: Elementary school teachers' experience of H1N1 Influenza in the classroom. *Phenomenology & Practice*, *6*(1), 18-35.

[15] Hrydzhuk, O., Struhanets, L., & Struhanets, Y. (2021). Information technologies in language education during the COVID-19 pandemic. *XLinguae*, *14*(1), 197-211.

[16] King, E., & Boyatt, R. (2015). Exploring factors that influence adoption of e-learning within higher education. *British Journal of Educational Technology*, *46*(6), 1272-1280.

[17] Kivunja, C. (2013). Embedding digital pedagogy in pre-service higher education to better prepare teachers for the digital generation. *International Journal of Higher Education*, *2*(4), 131-142.

[18] Kobylarek, A. (2017). *The Polish Humboldtian university in the face of paradigmatic change*. Cambridge Scholars Publishing.

[19] Kobylarek, A., Alaverdov, E., & Jakubowska, L. (2021). The significance of a pandemic in teaching foreign languages, with special regard to the teaching of seniors. *XLinguae*, *14*(1), 73-80.

[20] Lewin, D., & Lundie, D. (2016). Philosophies of digital pedagogy. *Studies in Philosophy and Education*, *35*(3), 235-240.

[21] Liu, S., & Meng, L. (2009). Perceptions of teachers, students and parents of the characteristics of good teachers: A cross-cultural comparison of China and the United States. *Educational Assessment, Evaluation and Accountability*, *21*(4), 313-328.

[22] Mannila, L., Norden, L. A., & Pears, A. (2018, August 8-10). *Digital competence, teacher self-efficacy and training needs*. In Proceedings of the 2018 ACM International Computing Education Research Conference. Association for Computing Machinery, Chicago, USA 78–85. https://doi.org/10.1145/3230977.3230993

[23] Maturkanič, P., Čergeťová, I., Konečná, I., Thurzo, V., Akimjak, A., Hlad, Ľ., ... & Petrikovičová, L. (2022). Well-Being in the Context of COVID-19 and Quality of Life in Czechia. *International Journal of Environmental Research and Public Health*, *19*(12), 7164. http://dx.doi.org/10.3390/ijerph19127164

[24] Maturkanič, P., Čergeťová, I., Králik, R., Hlad, Ľ., Roubalová, M., Martin, J. G., ... & Petrikovičová, L. (2022). The Phenomenon of social and pastoral service in Eastern Slovakia and Northwestern Czech Republic during the COVID-19 pandemic: Comparison of two selected units of former Czechoslovakia in the context of the perspective of positive solutions. *International Journal of Environmental Research and Public Health*, *19*(4), 2480. http://dx.doi.org/10.3390/ijerph19042480

[25] Milton, M., & Vozzo, L. (2013). Digital literacy and digital pedagogies for teaching literacy: Pre-service teachers' experience on teaching rounds. *Journal of Literacy and Technology*, *14*(1), 72-97.

[26] Mirzajani, H., Mahmud, R., Ayub, A. F. M., & Wong, S. L. (2016). Teachers' acceptance of ICT and its integration in the classroom. *Quality Assurance in Education*, *24*(1), 26-40.

[27] Murphy, M. (2020). COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemporary Security Policy*, *41*(3), 492-505.

[28] Nerantzi, C. (2020). The use of peer instruction and flipped learning to support flexible blended learning during and after the COVID-19 Pandemic. *International Journal of Management and Applied Research*, *7*(2), 184-195.

[29] Onah, D. F., Sinclair, J., King, R., & Foss, J. (2014, November 17-19). *Massive open online courses: learner participation*. In Proceeding of the 7th international conference of education, research, and innovation, Seville, Spain (pp. 2348-2356).

[30] Oyedotun, T. D. (2020). Sudden change of pedagogy in education driven by COVID-19: Perspectives and evaluation from a developing country. *Research in Globalization*, *2*, 100029. https://doi.org/10.1016/j.resglo.2020.100029

[31] Özüdoğru, G. (2021). Problems faced in distance education during COVID-19 Pandemic. *Participatory Educational Research*, *8*(4), 321-333. http://dx.doi.org/10.17275/per.21.92.8.4

[32] Petrikovičová, L., Kurilenko, V., Akimjak, A., Akimjaková, B., Majda, P., Ďatelinka, A., Biryukova, Y., et al. (2022). Is the size of the city important for the quality of urban life? comparison of a small and a large city. *Sustainability*, *14*(23), 15589. MDPI AG. http://dx.doi.org/10.3390/su142315589

[33] Pityana, N. B. (2009, June 7-10). *Open distance learning in the developing world: Trends, progress, challenge* [Conference presentation]. 23rd ICDE World Conference on Open Learning and Distance Education, Maastricht, the Netherlands.

[34] Pokhrel, S., & Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. *Higher Education for the Future*, *8*(1), 133-141. https://doi.org/10.1177/2347631120983481

[35] Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2021). Balancing Technology, Pedagogy and the New Normal: Post-pandemic Challenges for Higher Education. *Postdigit Sci Educ, 3*(1), 715–742 https://doi.org/10.1007/s42438-021-00249-1

[36] Rippé, C. B., Weisfeld-Spolter, S., Yurova, Y., & Kemp, A. (2021). Pandemic pedagogy for the new normal: Fostering perceived control during COVID-19. *Journal of Marketing Education*, *43*(2), 260-276.

[37] Schwartzman, R. (2020). Performing pandemic pedagogy. *Communication Education*, *69*(4), 502-517.

[38] Sirotkin, A. V., Pavlíková M., Hlad Ľ., Králik R., Zarnadze I., Zarnadze S., Petrikovičová L. Impact of COVID-19 on university activities: comparison of experiences from Slovakia and Georgia. *Sustainability*, *15*(3), 1897. https://doi.org/10.3390/su15031897

[39] Smith, R. A. (2021). Pandemic and post-pandemic digital pedagogy in hospitality education for generations Z, alpha, and beyond. *Journal of Hospitality & Tourism Research*, *45*(5), 915-919.

[40] Spector, J. M., Ifenthaler, D., Sampson, D. G., & Isaias, P. (2016). *Competencies in teaching, learning and educational leadership in the digital age. Papers from CELDA 2014*. Springer International Publishing.

[41] Väätäjä, J. O., & Ruokamo, H. (2021). Conceptualizing dimensions and a model for digital pedagogy. *Journal of Pacific Rim Psychology*, *15*(1), 1834490921995395.

[42] Wen, K. Y. K., & Kim Hua, T. (2020). ESL Teachers' Intention in Adopting Online Educational Technologies during COVID-19 Pandemic. *Journal of Education and E-learning Research*, *7*(4), 387-394.

[43] 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.

[44] Yates, A., Starkey, L., Egerton, B., & Flueggen, F. (2021). High school students' experience of online learning during COVID-19: The influence of technology and pedagogy. *Technology, Pedagogy and Education*, *30*(1), 59-73.

[45] Yulia, H. (2020). Online learning to prevent the spread of pandemic corona virus in Indonesia. *ETERNAL (English Teaching Journal)*, *11*(1). https://doi.org/10.26877/eternal.v11i1.6068

[46] Zha, S. (2021). Pandemic pedagogy in online hands-on learning for IT/IS courses. *Communications of the Association for Information Systems*, *48*(1), 13-23.