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ABSTRACT

A confluence of unexpected circumstances has emerged in the relationship between teachers and distant learning regarding COVID-19, hinting at an invention of external trial and error that is happening within the common of school. The professional opinion of educators in terms of their gifts and protections closer to virtual advances are subject to the key advancements examined in this study. A survey on distance learning that was restricted to 160 educators and 363 students was conducted to investigate this issue. Problem and unshakable fine investigations, as well as connection and relapse tests, were carried out from a strategic standpoint. The analysis of the results revealed that the ballot prioritizes three major factors—two excellent and one negative that connect teachers' judgments to the protection from remote thinking. This indicates that the ballot values educators' competitiveness to separate learning to be alert. I give up; the topic of time acknowledgement in educational activity continues to be a general one of the ways for skilled perception and discernment. The second issue focuses on the link between computerized innovation and consumers, which should no longer only focus on the liaison with learners but also the perspectives of other preparatory entertainers, including teachers.

Keywords: Digital Resistance, ICT, Digital learning, Instructor perception, e-learning

Introduction

The COVID-19 pandemic has had an impact on numerous nations. More than 64.4% of students worldwide were impacted by the 134 national closures brought on by the pandemic (UNESCO, 2020). Pakistan also released a warning as a result of which all schools and educational institutions were forced to close. The educational infrastructure shut down the students being confined to their homes, so it became essential for schools to investigate alternative teaching-learning strategies, such as online learning. However, this abrupt change from traditional classroom-based learning to online learning gave neither teachers nor students much time to get ready.

The advanced conversation, reinvigorated by the Coronavirus epidemic, has moved on to virtual innovation and awareness. New media promote understanding when they support active investment, connection to the real world, cooperation, and regular and recursive feedback (Limone, 2021; Shahzadi and Alam, 2021; Meng and Dan-dan, 2022). As scholastic apps adapt to the researchers, provide non-foretell remarks, and, through gamification factors, blast inspiration in school settings, the media can play a significant role in the safeguarding of reading. Therefore, if used effectively, computerized media can enhance informational satisfaction as a dominant device. The goal, renown, and outstanding talent of the virtual instructor are discussed in this consideration. In the cutting-edge environment, the difficulty of this judgement paints and assumes magnificent connotations. The expertise machine has long been secure in its capacity to develop extraordinary skills, giving it a reputation as a five-star brand in terms of ways of development. Seidel and Strummer's (2014) analysis of the model's high level reveals that the master vision is only a fleeting subtlety for the skilled teacher. According to this model, the master creative and visionary is organized in terms of seeing and thinking. In cycle 3, the contextualized notion of dominating (seeing) is prepared with the following key components:

To move understudy, objective guidance is implied as a time of explanation for training and focusing on goals. The instructor's manual is regarded as an invaluable resource for educators, and it is via it that shallowness and spontaneous inspiration are dealt with, and practical information-gathering strategies are devised. Finally, a supportive learning environment is a requirement for successful instruction in a classroom.

The second estimate presents the idea of reflection (questioning), which is divided into three trends crucial for the teaching profession: knowledge of a method for portraying (portrayal), knowledge of a method for making sense (rationalization), and knowledge of a method for assuming (expectation). Each of the three sports combines to create a genuinely effective academic mediation inside the study environment. Since it still requires depth, the acquisition of the hold close progressive and apt is strongly advocated within teacher education research.

Table 1 presents a comparison of the research that has been conducted on the most significant challenges associated with the utilization and implementation of e-learning systems. These studies employed empirical research to focus on the problems that exist in developing nations and are preventing users from adopting certain technologies. According to surveys, a significant portion of the inability of universities to implement e-learning can be attributed to technological issues. These technological issues include a deficiency in technological infrastructure, an absence of security, and privacy worries. While it's possible that students'

lack of comprehension is to blame for the low uptake of e-learning, it's unlikely. One of the most significant reasons for the failure of the adoption of e-learning is that institutions were not well equipped for it. Empirical research is essential to identify the main challenges that affect the usage of e-learning systems during the COVID-19 epidemic, which will help decision-makers in universities address the issue of low e-learning (Al-Khasawneh and Obeidallah 2019; Almaiah and Al Mulhem 2019). Several difficulties discourage students from using new technology in Jordan and other developing countries, which adds to the problem of low adoption and utilization.

Table 1. Hindrances in acceptance of digital learning

Sr. No.	Hindrance	Explanation	Reference
1.	Technology Adoption	Students having trouble accessing the e-learning system due to technical issues	Al-Araibi et al. (2019)
2.	Inadequate Facilities	Insufficient technical personnel and support for infrastructure to carry out various operations	Eltahir (2019)
3.	Lacking Awareness	Students' ignorance of online resources and resistance to taking ownership of their education	Ali et al. (2018)
4.	Institutions' Preparedness	Students' e-learning competence evolves over time.	Stoffregen et al. (2016)
5.	Course Contents	<ul style="list-style-type: none"> a. Less interactive and lower quality course contents b. Inability to modify or adapt the course material to meet the needs of the pupils c. A course's reliability, appropriateness, and compatibility with learners' objectives are all inadequate 	Almaiah and Alyoussef (2019) Ozudogru and Hismanoglu (2016)
6.	Faculty Members Issues	<ul style="list-style-type: none"> a. Preservice teachers' poor IT capabilities b. Educators' aversion to using technology 	Vershitskaya et al. (2020) Uppal (2017)

		c. Educators delivering an e-learning event without a firm grasp of the subject material d. Instructor e-learning lacks effort and support	
7.	Insufficient confidentiality	The confidentiality of learner and educator personal information is jeopardized by the exposure of e-learning platforms	Almaiah and Alyoussef (2019)
8.	Technological Infrastructure deficit	Alludes towards the university's resources, equipment, technology, and network capabilities.	Almaiah and Almulhem (2018)

The present decline in professional vision has highlighted the trends of the two elements of seeing and thinking, and as a result, it has created significant instructional trends involving planning, adhering to, and continual trial and error. Region The main resistance from educators, according to Area-Moreira et al. (2020) and Tolwinska (2021), is related to the lack of mechanical property, ease of access, and rendition of the faculty to settings where sight and sound predominate. You should be aware that the protections depicted have probably been spurred by the personal developments of educators and their ideas. This influences educators' opinions of their viability and the real usage of ICT in educational activities. Discernment also plays a role in the construction of the protections portrayed. The rise of virtual (and non-computerized) abilities is offered to the resident by the three primary components of the European Dig-Comp tool. These components are the intellectual field, the complexity of the assignment, and the independence. For the improvement of virtual competencies, such as data training, report and cooperation, automated content fabric generation, and protection, the shape in the primer version (Carretero et al., 2017) supported the advancement of 4 distinct programming districts. This tool has evolved into the Dig-Comp-Edu version for instructors, which now includes the development of meta-talents (such as contemplating to discover proficiently or learning information on how to act with the media) which may serve as the deciding factors in the competition with students (Vasiljanovna, 2021). The speculative version shows a higher level of curiosity, reflection, and involvement in virtual and educational desires (Caena and Vuorikari, 2019). Situation pulls close willpower, digital assets, education, and assessment, helping inexperienced people, and functioning with beginners' advanced potential are the six areas on which it focuses (Khair et al., 2022). The key tool for fostering and solidifying academics' automatic competence is self-evaluation (Bouffard and Narciss, 2011). Schools attempt to integrate ICT into teaching methods that may be becoming more and more muddled to increase the pedantic methods adopted (Ihmeideh and Al-Maadadi, 2018; Agyei, 2021). Once more, instructional improvement makes the teacher the key figure responsible for supervising and the subsequent understudy to determine how you achieve instructional success (Gaskins et al., 2015; Magen-Nagar et al., 2019)). A key detail is at the very least expected by

the appearance of digital learning circumstances, which can be hybridized to high school exercise that typically alters this ongoing framework, in addition to the instrumental simple worth of innovation.

Materials and Methods

The massive and almost unique use of computerized tutoring beginning in 2020 in schools throughout the country has sparked doctors' and educators' idly ignited interest in learning about difficulties related to remote learning. The significant effects have generally been observed at all levels of required tutoring, school preparation, entry-level employment, replicas, and professional preparation with ordered trials that vary according to the justification of the instructive mediation. The purpose of this research is to investigate how preservice teachers who have experimented with various e-learning channels and the use of various jobs and techniques feel about them. They have taken on the dual role of instructors in required schools and college students enrolled in specialist courses for guidance, testing out more well-known distant learning techniques (online directions, reenactments, association fine art, temporary jobs, etc.). To determine the perspectives of educators in a financial concerns college who had already participated in web-based effective instructional sessions, a former pilot view in the Italian context (Walstad et al., 2017; Giusi, 2021) adjusted a second brief quarantine. During distance tutoring, the new device, which had an extreme degree of unchanging quality, studied clients' opinions. In addition to segment questions about orientation, school recognition, extensive training, experience, works of art situation, etc., the most recent version of the survey included 18 Likert-type questions about on-fix distributions and related explanations, with which the person or woman could also need to express different levels of understanding or conflict (Ossiannilsson, 2021).

The study is being conducted in Pakistan, where the basic teacher training curriculum is barely available online. As a result, all regions of Pakistan were represented by the researchers, with the central part accounting for 53% of their total participation. The universities have been delivering all the tutoring of scarcely online instructors and are pioneers in remote learning. For the benefit of the faculty at the university (n = 258), the surveys were sent to the educators and students of the schooling course.

Table 2. Distribution of respondents

Respondents	Digital Learning		Basic Learning	
	Number	%	Number	%
Educators	69	26.74	91	34.33
Students	189	73.26	174	65.67
Total	258	100.00	265	100.00

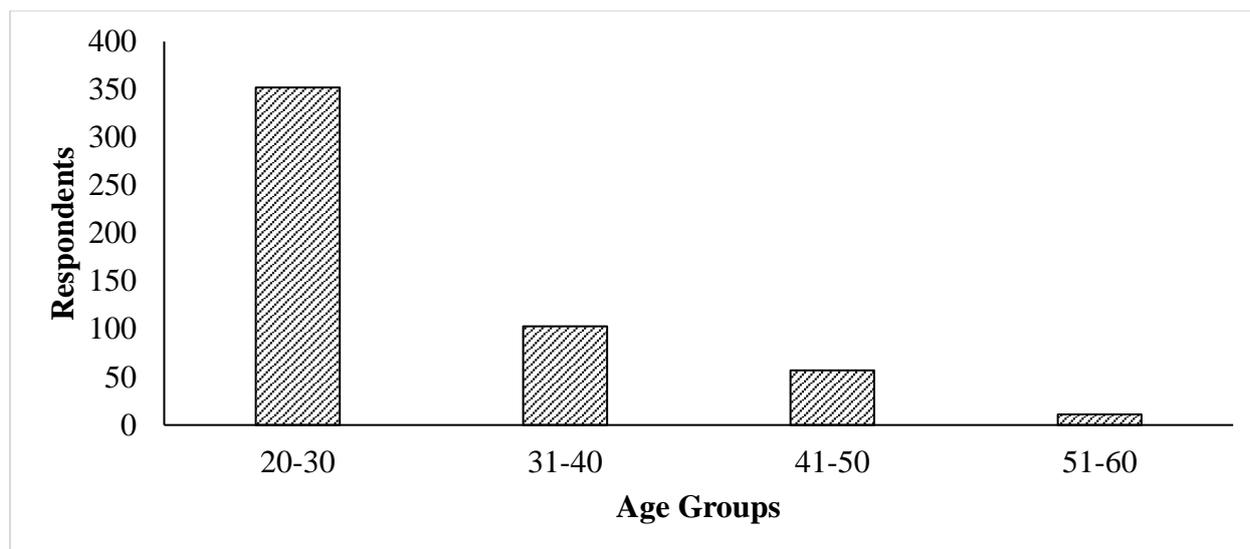


Figure 1. Age groups of the respondents



Figure 2. The sex groups of the respondents

We decided to conduct the survey online because doing so enables us to contact the greatest possible number of participants in the shortest amount of time. Because the objective of this research was to gather current information on a pandemic that is still in the process of unfolding, we felt that conducting the survey online would be the most efficient way to do so. Because this was an exploratory and descriptive study, we were unable to employ the approaches that had been tried, tested, and accepted in the past. We collected replies from all members of the institution, including educators and students, who were affiliated with a variety of departments and faculties, using an online questionnaire, which was a general inquiry developed through Google Forms. Within the first group (Remote learning), there were around 500 questionnaires distributed, and a total of 258 individuals, including students and professors, returned them. Concerning the second group (Basic Learning), more than 300 questionnaires were handed out, and a combined total of 265 were filled out and turned in by instructors and students. The instructors and students have been sent the questionnaires via the online survey

method of email in most cases; however, some of the questionnaires have been physically given to them. The disparity in response rates between students and faculty members was caused by a deficiency in the usage of the measurement instrument by the faculty members as well as a deficiency in the faculty members' access to the internet from their places of employment. The students' response rates were significantly higher than those of the faculty members. The participants of the study were of different age groups and their number is presented in figure 1. The gender-based participation of the respondents is presented in figure 2.

The data were divided using segment profiles, elaboration of the responses, and tutoring level as a reference. In December 2020, during the Coronavirus U.S. Of crisis, measurements were provided by a Google structure. It was possible to immediately view a rundown and gradually acquire effects by using the web form. The outbreak of the Coronavirus pandemic has disrupted distance-dissecting techniques not only in formal environments like resources and institutions but also in informal preparation groups (Ossiannilsson, 2021). Pedantic frameworks, devices, and procedures have changed how educators specialize, as well as how effectively schools are taught and how temporary job sports are conducted (that have continually been areas of acquiring information with the guide of approach to doing). In this exceptional circumstance, the universities had experimented with various things using a web company venture commercial endeavour canvas model that conveys computerized acquiring information on conditions, reproduction primarily dependent on getting to know, and gamification. Strong results in expressions of learning about, making connections with, and feeling have come from the use of reproduction in realizing partnerships.

According to a segment assessment that focuses on sexual orientation differences, adult men account for most of the respondents for preparations one and four during the later stages of schooling.

Four percent of the students (crossing this absolute last choice with business, will be all educators of various stages at the subsequent one title, and, thus, male college undergrads do now not have artistic creations with the confirmation associated with youth because of the essential mission want). In lower and higher optional college grades, the percentage exceeds 33%. Additionally, the typical tutoring years were 25.3 for university. When asked if they had ever participated in or demonstrated an online course, 26.74% of teachers responded in the affirmative, and 34.33% of instructors in the essential workforce did the same. However, when it came to focusing and unnecessary college, the percentage of confirmed arrangements fluctuated. Although web-based tutoring became the legal tutoring channel, the other respondents were not involved in online distribution.

Results and Discussion

The IBM SPSS model 25 real programming software was used to process all data (Armonk, NY, USA). Facts had been examined for univariate and multivariate exceptions before the number one assessment. All experiments that included any activities with a normalized z-score on a component from the +/- 3 collection have been removed. Fourteen univariate anomalies were identified and excluded from additional analyses as a standard. The similarity is increasingly used to identify multivariate exceptions. Twelve multivariate anomalies in all had been ruled out of further investigations.

Factor and Reliability Analyses

Exploratory detail analysis and internal consistency dependability assessment were documented to examine the psychometric patterns of the Discernments inside the approach of Online Courses Poll (POQ). The internal consistency analysis confirmed that there is no longer a strong revised object-far-reaching association between devices (Aygei, 2021). They were removed from the size and corresponding examinations when their thing normal relationship was found to be less than 0.30. In addition, article collection nine was dropped because it had little to do with any of the sections that had been divided in the exploratory viewpoint analysis. Eleven items made up the final survey model. For the final model of the size, Chronbach's alpha coefficient was modified to 0.71. Thus, we can state that the POQ scale had the appropriate dependability. Direct noblemen became the strategy for a turn, and the main element technique started to be used for troubleshooting. A method for reducing the dimensionality of such datasets is principal component analysis (PCA), which improves interpretability at the expense of time-limiting measurement error. The KMO (Kaiser-Meyer-Olkin) check's surrender result came to nothing. Seventy-one is average, however, it suggests that the seventy-one percent difference between POQ objects be transformed into a standard change. As a result, the data had been appropriate for evaluating the issue. Bartlett's exploratory sphericity changed into an even greater monster when multiplied by two. A score of 98.2, $p \geq 0.001$. The final viewpoint configuration made sense with a 43.4 percent variation (Table 3).

Table 3. Total variation

Featur es	Primary values			Sum of Squares		
		Variance	Cumulative		Variance	Cumulative
1	3	27.5	27.5	1.8	16.5	16.5
2	1.7	15.6	43	2.1	19.1	35.6
3	1.4	12.9	55.9	0.9	7.8	43.4
4	0.9	8.3	64.2			
5	0.8	7.1	71.2			
6	0.7	6.6	77.8			
7	0.7	6	83.8			
8	0.6	5.8	89.6			
9	0.5	4.8	94.4			
10	0.4	3.8	98.2			
11	0.2	1.8	100			

The second diploma attitude or super difficulty is a result of the inventive perspective exam. Because the statute mandated the introduction of chemicals, a significant amount of

hassle can be sidestepped by employing comparable organizational strategies and methodological approaches. The easiest differentiation is between the input variables. Thus, in the head element exam, the ballot elements are the entry elements, and the key supplementary materials are the result factors (the very last outcomes). Modern aspect evaluation uses input factors that are basic and spectacular results. Progressive issue research is a great technique for determining whether the sample is homogeneous and whether significant provided materials combine with at least one or more notable higher degree-brought materials. Accordingly, we will say that the POQ survey estimates one collection, which can be interpreted or described as instructors' discernments in the context of online training. The various tiered issue exam confirmed that each of the three crucial introduced components joined into one fantastic part. Since the optional components matched the positive attitude, the primary factor was adversely associated. We may also add that the POQ scale estimates poor judgments in the direction of online instances considering the relationships between various devices and additional materials, some of the introduced chemicals, and the significant issue. Consequently, a high ranking on this poll suggests making even more poor decisions. This study finds a solution to the issue of educators' automatic abilities and safety when using digital improvements in the classroom. Focuses on educators' professional growth connect conviction to time acknowledgement. A powerful device has specifically been put to the test to demonstrate screen educators' protection from the use of remote domineering, exceptionally in directives, and competent attention. Future testing tendencies might also want to consider how this competitiveness affects students' self-assurance and concepts as well as teachers' impressive abilities. Estimates suggest that the considerable or insufficient insights that the examination has regarding automated time may be to blame for the unusually extended durations used in the coaching and information-gathering process. The "limited" recognition brought on by the pandemic also affects insights.

Rapport and Relapse Examinations

A two or three-direct relapse evaluation is processed to determine whether phase factors are looking ahead to decisions regarding online training. The unprejudiced (indicator) variables have included grade, age, school breaks, and sexual activity. The organized variable was converted into the POQ scale's total score. It is now almost always preferable that grades and POQ be related ($r = 0.06$, $p = 0.03$). The association devolved into something bad, indicating that professors in higher grades will typically have a more outstandingly terrible impact on online examples. However, it is important to note that this correlation is incredibly weak in this case and that the two factors only differ by a negligible 0.6%. Furthermore, due to a large number of people present in the instance and the fact that this dating was chosen, it is almost certain that the relationship is false and infinitely uncommon. Age no longer had a measurably large impact on online example judgments ($r = 0.06$, $p > 0.05$) due to the decreasing goliath nature of the relationship between age and POQ. Online command evaluations were unaffected by the shifting long stretches of comprehension because there is no longer a significant link between POQ and long stretches of comprehension ($r = 0.05$, $p > 0.05$). At long last, the association between sex and POQ was not as strong as anticipated ($r = 21.23$, $p > 0.05$); as a result, sex had an impact on decisions regarding online examples.

The suspicions for this quantifiable strategy were examined prior to the relapse exam being recorded. The results confirmed that each of the hypotheses was true (commonly

conveyed mathematical modern factors, no anomalies, homogeneity of exchange, homoscedasticity). The relapse experiments provided support for the conclusion that the model is no longer truly significant, as indicated by the statistic $F = 1.06$, which was greater than 0.05. Because of this, we can also conclude that criteria such as grade, age, interaction, and sustained involvement are not important predictors of the impact that more locally-based teachers have on online learning. The data gathered by using the segment level confirm the need for preparation in media instruction despite the highly qualified representatives who investigated these works. Simple issues came up during the ballot gathering process, including protection from time recognition in school, particularly in a lower team of workers grades (where the obstruction manifests itself in more fundamental structures), and recognition of a large and diverse population of students in today's universities. A convoluted process of redefinition underlies the progression from safety-related innovations inside the instructional problem to professionalizing use by using instructors. No teaching discovery may generate beautiful or undesirable effects on its own; instead, it depends on the use that is made of it. Therefore, the presence of either negative results (addictions, health, sedentarism, seclusion, etc.) or positive results (liveliness, social components, studying, capacities, etc.) in the investigations ought to be thoroughly examined within the context of a larger, more comprehensive discussion on scholarly works and additional materials. Therefore, the goal of educational exercise study, unusually in predetermination studies styles, must remember not just the outcomes on the brand-new long term but also the complete educational and further educational population (teachers, teachers, and so forth.). Modern distance analysis's assurance of physical, intellectual, and close-quarters situations of prosperity/infection for all the training entertainers is one of its most immediately noticeable results. They are currently shaping a properly grounded grasp worldview that is more geared toward professional functionality and prosperity because of the clinical conversation (Myers et al., 2021).

Research by Potter and McDougall (2017) has shown how media tutoring in many worldwide contexts has positioned regions in what is referred to as "0.33 regions," that is, areas of extra academic and socio-social movement, as being better than adequate. The safety of the market and the traditionalism of the educational system are what led to the cutting out of this area of the digital media pastime. The introduction of the Coronavirus outbreak has made this problem worse by simultaneously integrating digital media into faculty teaching and positioning it as the best method for universities to stay current during the pandemic. In any event, the conversation on disseminating anti-coronavirus measures is focusing more on a revisitation of nature-based didactics. It was crucial to incorporate the project offered by using the interviewees in this study that of making half of and 1/2 of digital obtaining information on conditions inside universities that keep in mind the continuation of this non-stop alternate approach, to ensure that the facts and the pains completed had been as of not in that frame of mind.

Conclusions

In the wake of the excellent course of e-learning that specializes in trial and error that has occurred at various points within the region since the pandemic big bang, the scientific community is currently brooding over the future of distance progressing within the dissemination of Coronavirus innovation. The socio-well-being crisis has had a significant impact on education on two levels: (1) the recovery period of above-the-pinnacle excellent

thinking for using automatic innovation as the notable direction for imparting education in all levels of schooling, and (2) a nostalgic segment where the necessity of revisiting presence and styles of socialization of information is emphasized. A reflected image on large and grasp utilization of computerized innovation in teaching will become an important second in the instruction of educators. The expert vision variation recommends within the seeing section the course in the route of the targets, which requires legitimization of the coaching obtaining information on desires. As a clear method of instruction during the pandemic, distant learning has constrained educators to develop their expertise and rely on their athletic endeavours in this field. The capacity, the instruction, and the use of those practices commit to the maintenance of closed eyesight and the growth of reflexivity at the component of the audio gadget.

References

- Agyei, D. D. (2021). Integrating ICT into schools in Sub-Saharan Africa: from teachers' capacity building to classroom implementation. *Education and Information Technologies*, 26(1), 125-144.
- Al-araibi, A. A. M., Mahrin, M. N. R. B., & Yusoff, R. C. M. (2019). Technological aspect factors of E-learning readiness in higher education institutions: Delphi technique. *Education and Information Technologies*, 24(1), 567-590.
- Ali, S., Uppal, M. A., & Gulliver, S. R. (2018). A conceptual framework highlighting e-learning implementation barriers. *Information Technology & People*.
- Al-Khasawneh, A. M., & Obeidallah, R. (2019). E-learning in the Hashemite University: Success factors for implementation in Jordan. In *Advanced Online Education and Training Technologies* (pp. 135-145). IGI Global.
- Almaiah, M. A., & Al Mulhem, A. (2019). Analysis of the essential factors affecting of intention to use of mobile learning applications: A comparison between universities adopters and non-adopters. *Education and Information Technologies*, 24(2), 1433-1468.
- Almaiah, M. A., & Alyoussef, I. Y. (2019). Analysis of the effect of course design, course content support, course assessment and instructor characteristics on the actual use of E-learning system. *Ieee Access*, 7, 171907-171922.
- Area-Moreira, M., Bonilla, P. J. S., & Mesa, A. L. S. (2020). La transformación digital de los centros escolares. Obstáculos y resistencias. *Digital education review*, (37), 15-31.
- Bouffard, T., & Narciss, S. (2011). Benefits and risks of positive biases in self-evaluation of academic competence: Introduction. *International journal of educational research*, 4(50), 205-208.
- 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.
- Carretero, S., Vuorikari, R., & Punie, Y. (2017). The digital competence framework for citizens. *Publications Office of the European Union*.
- Eltahir, M. E. (2019). E-learning in developing countries: Is it a panacea? A case study of Sudan. *IEEE Access*, 7, 97784-97792.
- Gaskins, W. B., Johnson, J., Maltbie, C., & Kukreti, A. R. (2015). Changing the Learning Environment in the College of Engineering and Applied Science Using Challenge Based Learning. *International Journal of Engineering Pedagogy*, 5(1).
- Giusi, A. T. (2021). Perceptions and effects of distance learning detected during an online course on ICT for aspiring nursery and primary school support teachers. In *Proceedings teleXbe 2021 Technology Enhanced Learning Environments for Blended Education-The Italian e-Learning Conference 2021* (pp. 1-9). ceur.
- Ihmeideh, F., & Al-Maadadi, F. (2018). Towards improving kindergarten teachers' practices regarding the integration of ICT into early years settings. *The Asia-Pacific Education Researcher*, 27(1), 65-78.

- Khair, N., Al-Twal, A., Mahadin, B., & Nabil, B. (2022). Willpower: auto-ethnographic insights into the challenges that women encounter in academia. *British Journal of Middle Eastern Studies*, 49(4), 526-536.
- Limone, P. (2021). Towards a hybrid ecosystem of blended learning within university contexts. In *teleXbe*.
- Magen-Nagar, N., Shachar, H., & Argaman, O. (2019). Changing the learning environment: teachers and students' collaboration in creating digital games. *Journal of Information Technology Education. Innovations in Practice*, 18, 61.
- Meng, W., & Dan-dan, L. (2022). An effective blended online Political teaching and learning strategy during the COVID-19 pandemic. *Journal of Commercial Biotechnology*, 27(2).
- Myers, N. D., Prilleltensky, I., McMahon, A., Lee, S., Dietz, S., Prilleltensky, O., ... & Brincks, A. M. (2021). Effectiveness of the fun for wellness online behavioral intervention to promote subjective well-being in adults with obesity: A randomized controlled trial. *Journal of Happiness Studies*, 22(4), 1905-1923.
- Ossiannilsson, E. (2021). Some challenges for universities, in a post crisis, as Covid-19. In *Radical Solutions for Education in a Crisis Context* (pp. 99-112). Springer, Singapore.
- Ozudogru, F., & Hismanoglu, M. (2016). Views of freshmen students on foreign language courses delivered via e-learning. *Turkish Online Journal of Distance Education*, 17(1), 31-47.
- Potter, J., & McDougall, J. (2017). *Digital media, culture and education: Theorising third space literacies* (pp. 1-205). London: Palgrave Macmillan.
- Shahzadi, A., & Alam, Q. N. (2021). E-learning implementation challenges and impact on education system of Pakistan. *PSYCHOLOGY AND EDUCATION*, 58(5), 4016-4020.
- Seidel, T., & Stürmer, K. (2014). Modeling and measuring the structure of professional vision in preservice teachers. *American educational research journal*, 51(4), 739-771.
- Stoffregen, J. D., Pawlowski, J. M., Ras, E., Tobias, E., Šćepanović, S., Fitzpatrick, D., ... & Moebs, S. (2016). Barriers to open e-learning in public administrations: A comparative case study of the European countries Luxembourg, Germany, Montenegro and Ireland. *Technological Forecasting and Social Change*, 111, 198-208.
- Tołwińska, B. (2021). The role of principals in learning schools to support teachers' use of digital technologies. *Technology, Knowledge and Learning*, 26(4), 917-930.
- Totaro, M. W., Tanner, J. R., Noser, T., Fitzgerald, J. F., & Birch, R. (2005). Faculty perceptions of distance education courses: A survey. *Journal of College Teaching & Learning (TLC)*, 2(7).
- Uppal, M. A. (2017). Addressing student perception of E-learning challenges in Higher Education holistic quality approach (Doctoral dissertation, University of Reading).
- Vasiljanovna, E. G. (2021). Digital competence of the future teacher: Component composition. *ACADEMICIA: An International Multidisciplinary Research Journal*, 11(6), 330-337.

- Vershitskaya, E. R., Mikhaylova, A. V., Gilmanshina, S. I., Dorozhkin, E. M., & Epaneshnikov, V. V. (2020). Present-day management of universities in Russia: Prospects and challenges of e-learning. *Education and Information Technologies*, 25(1), 611-621.
- Walstad, W., Urban, C., J. Asarta, C., Breitbach, E., Bosshardt, W., Heath, J., ... & Xiao, J. J. (2017). Perspectives on evaluation in financial education: Landscape, issues, and studies. *The Journal of Economic Education*, 48(2), 93-112.