

**RESEARCH PAPER****Exploring and Overcoming Challenges Faced by Research Scholars in Faisalabad Amidst the COVID-19 Pandemic****¹Dr. Shafqat Rasool*, ²Dr. Sobia Rashid and ³Saba Latif**

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***Corresponding Author:** dr.shafqat.rasool@gcuf.edu.pk**ABSTRACT**

This study employs a qualitative approach to get insights into the experiences of research students during the COVID-19 pandemic and their perspectives on government higher education institutions. A total of 50 students from three universities were interviewed utilising the inductive thematic method. The students engaged in a discourse regarding the dissemination of misinformation on social media, hazardous behaviour, and the need of taking preventive measures during the crisis. They were cognizant of the hazards associated with the nursing profession as well as the inconveniences of using public transport and residing in student accommodation. The students praised the assistance provided by teachers and the efforts of the institutes. However, many expressed challenges in concentrating and acquiring knowledge in virtual courses. Students commonly encounter challenges such as limited internet access, elevated stress levels, heightened anxiety, financial constraints, joblessness, and the apprehension of losing their loved ones. The implementation of lockdown restrictions had a detrimental impact on the submission of theses, hence impeding students' capacity to conduct research.

KEYWORDS: Challenges, COVID-19, Higher Education, Pakistan, Research Students**Introduction**

Over the past few centuries, pandemics such as the bubonic plague, Spanish flu, Ebola, SARS, and influenza A have posed significant challenges to humanity, impacting various aspects like education, migration, travel, economy, urbanisation, trade, life, and technology. The COVID-19 pandemic had profound and far-reaching consequences on all aspects of global life. It is often regarded as the most significant socio-economic disruption since World War II. COVID-19 has significantly affected educational institutions, instructors, and students, particularly those involved in research. The coronavirus pandemic is not the initial occurrence to impact the school system. The SARS CoV outbreak significantly affected educational activities, including research, in numerous countries worldwide. Similarly, the Influenza outbreak in 2009 had a significant influence on ongoing education activities in many countries (Tate et al., 2009).

The coronavirus outbreak has compelled educational specialists to explore alternative options to traditional face-to-face learning in order to sustain educational activities. Subsequently, they began to contemplate implementing remote learning for the length of the epidemic, allowing students to remain safe from the disease within the confines of their houses. Global educational institutions, such as schools, colleges, and universities, were universally shut down, necessitating students to engage in remote learning via online platforms (Kiraz, 2014).

All educational institutions in Pakistan were closed on March 13, 2020. The Higher Education Commission, under the direction of the federal government of Pakistan, instructed these institutions to develop plans for distance learning, reschedule exams, and provide online assistance to students for the duration of the coronavirus crisis (Rizun & Strzelecki, 2020).

The COVID-19 epidemic has presented numerous issues as a result of the digital change in the school system. Various studies have suggested that a significant number of university students have experienced delays in their graduation as a result of the COVID-19 pandemic. Some students have chosen not to attend their classes, while others have switched their majors. Additionally, many students have reported a decrease in the amount of time they dedicate to studying. A significant proportion of students were unable to secure admission to institutions in 2020 as a result of the COVID-19 pandemic, resulting in a loss of their academic year (Kogan et al., 2020).

Literature Review

In December 2019, there was a significant surge in pneumonia cases within the seafood market located in Wuhan, China, namely in the Hubei province. The national health commission dispatched health experts to Wuhan to conduct a disease investigation. The laboratory of virology conducted an investigation on the new coronavirus on January 7, 2020. On 23 January, 2020, all means of transport to Wuhan city in China were shut down as a measure to contain the spread of disease. However, the disease continued to spread beyond Wuhan, leading to a rapid increase in cases of the novel coronavirus disease throughout China (Wang et al., 2020). The global impact of COVID-19 became evident when it spread to countries including Thailand, Japan, and Korea, where the first case was confirmed in January 2020. Subsequently, it proceeded towards the United States of America, Singapore, and Vietnam. In late January, the spread of the virus began in Nepal, Australia, and several European countries such as France, Germany, Finland, and Italy. Subsequently, it reached Malaysia, Canada, Southeast Asia, Russia, and Africa. The World Health Organisation has designated the novel coronavirus disease as a PHEIC, which stands for a public health emergency of international concern. The World Health Organisation recognised the new coronavirus as a pandemic on March 11, 2020. The new coronavirus was identified in over 217 countries in July 2020 (Ali et al., 2021).

As of February 11, 2020, there were 44,672 confirmed instances of novel coronavirus in China. Out of these cases, 8,225 were classified as more severe, and there were 395 deaths attributed to the coronavirus in China. The prevalence of coronavirus cases was predominantly observed among adults. The total number of confirmed COVID-19 cases worldwide reached around 17.2 million, with a death toll of 668,073 by the end of July 2020. The Federal Health Ministry in Pakistan officially confirmed the first two cases of COVID-19 in Karachi and Islamabad in February 2020. The number of verified COVID-19 cases in Pakistan on June 19, 2020 was 165,062, with a mortality toll of 3229 (Beland et al., 2020).

Working students were significantly affected by the COVID-19 pandemic, seeing a reduction in their earnings. A significant number of students experienced the unfortunate loss of their internships and positions, resulting in a drop in their prospects of receiving job offers. During the outbreak, students have been experiencing significant financial strain due to the economic issues faced by their families (Rose, 2020). Online learning relies entirely on the internet and technological equipment. Students experiencing inadequate internet connectivity were unable to gain access to the online system. The children and teachers faced a significant difficulty due to their complete reliance on technical devices and the internet. Several students and instructors encountered difficulties in meeting the numerous technical prerequisites of the online

learning system. According to Alkhasawneh (2010), certain pupils and instructors were utilising obsolete technological gadgets.

Under the traditional in-person learning model, students depend on university facilities to support their studies and research. However, the closure of universities has posed challenges for some students in accessing and utilising these resources. The students from disadvantaged socioeconomic backgrounds encountered challenges in their research endeavours. According to Rahmatunisa (2014), an increase in poverty levels in a country leads to a decrease in access to the internet and technological resources.

Online learning is generally beneficial in social science and humanities, but it is not as effective for students studying sports sciences, engineering, and medical science. This is because these fields require practical labour as part of their instructional activities (Siddiquah & Salim, 2017). There are certain areas where online learning cannot be properly and efficiently implemented, and this lack of compatibility still has to be addressed. In accordance with the guidelines provided by the Association of American Medical Colleges, medical students were instructed to refrain from engaging in direct interactions with patients throughout the month of March. The students were instructed to return to the hospital wards to resume direct patient engagement once the suspension caused by the Covid-19 pandemic is lifted (Galloway & Jenkins, 2009).

The concept of online education technology is an essential element of education in the 21st century. The integration of technology in education has transformed the role of teachers from being mere conveyors of knowledge in the traditional approach to adopting a more adaptable approach where they serve as facilitators, mentors, and motivators, encouraging student engagement and learning. Technology enables various forms of remote learning, distance learning, virtual learning, blended learning, mobile learning, distributed learning, machine learning, ubiquitous learning, deep learning, as well as cooperative and collaborative learning. The majority of education is shifting towards digital platforms, and all those involved in education, including students, are faced with the task of adapting to online learning. Utilising suitable educational technologies enhances the accessibility of learning resources, such as Massive Open Online Courses (MOOCs), and offers various learning methodologies to cater to the needs of a wide range of learners. Online education refers to the broad idea of using digital tools and platforms to facilitate teaching and learning over the internet. The efficacy of online education hinges upon various aspects, such as reliable internet connectivity, robust learning software, proficient digital literacy, and adequate availability and accessibility of technology. Online education platforms are essential resources that facilitate inclusive education and online learning. Online education originated from distance education and the development of digital technologies that enable the effective and dependable transmission of lectures, virtual classroom sessions, and other instructional materials and activities (Rose, 2020).

In the digital age, technology, namely information systems in the form of e-learning, has transformed the education industry. Due to the imminent transition from the conventional teaching and training model, educational institutions are faced with several challenges and difficulties. One of the notable features is the proliferation of information and communication technology (ICT), which has had a significant impact on the education sector and various other businesses. Several undergraduate and graduate programmes have begun to examine the numerous benefits that e-informational competency offers to students. Every instructional method should prioritise the importance of student satisfaction. Student satisfaction refers to the evaluation of whether the information and knowledge provided meet the students' expectations (Rose, 2020).

To mitigate the transmission of Covid-19, state and local authorities implemented various restrictions on human mobility and interpersonal interactions. Consequently, the youth population, comprising both school and university students, became unable to engage in targeted physical activities such as physical education. Universities across multiple countries are employing online education as a means to adhere to social distance requirements within the COVID-19 pandemic. Researchers conducted a study during the COVID-19 outbreak to examine the disparities in academic motivation between university students who attended regular in-classroom courses and those who took online distance courses (Mast et al., 2010). Conventional students who attend classes in person exhibit a lesser inherent motivation towards education compared to those who take courses online. Children who display predominantly internal (or independent) behaviour demonstrate higher levels of interest, confidence, perseverance, and performance compared to pupils who primarily exhibit externally regulated behaviour. The COVID-19 pandemic has necessitated a shift in the conventional higher education model, compelling educators and students to embrace alternative learning approaches that minimise in-person interactions and encourage virtualization (Mast et al., 2010).

Research in the realm of clinical psychology has demonstrated that individuals exhibit inclinations to modify their behaviour in order to avoid contamination. During the Covid-19 pandemic, there have been noticeable shifts in behaviour across different countries in terms of their level of optimism regarding economic recovery. Women have reported a rise in instances of domestic and physical violence during the lockdown period. This negative change in behaviour can be attributed to the stress caused by the lockdown measures and the economic downturn. The impact of Covid-19 on individual behaviour is contingent upon age, culture, gender, socio-economic background, and personality. The implementation of lockdown measures and the practice of social disengagement can exacerbate preexisting psychiatric conditions, resulting in heightened levels of anxiety, substance misuse, and instances of domestic violence. India has witnessed a surge in psychological issues and is experiencing a shift towards mental emergencies as a result of elevated unemployment rates and social isolation (Mast et al., 2010).

Students, as a significant part of society, are experiencing the most impact from this crisis in terms of academic setbacks, dread, and future-related worry. The global community is deeply concerned about the psychological well-being of students, as they play a pivotal role in shaping the future of a nation through their contributions to its progress. Additionally, the uncertainty surrounding examination dates has further exacerbated their distress. The abrupt transition from traditional classroom teaching to online instruction has imposed a hardship in terms of personal adaptation and financial implications. Additionally, a significant number of students have been compelled to return to their homes and experience social isolation in their domestic environment (Mast et al., 2010).

To address the closure of educational institutions due to COVID-19, UNESCO has recommended the provision of online instructional resources to these institutions. Consequently, the higher education commission in Pakistan promptly urged universities to create an advanced e-learning administration system following their closure. In contrast, the educational system in Pakistan has increasingly relied on conventional approaches to instruction and preparation. The Department of Higher Education in Pakistan is responsible for accrediting Pakistani universities and their associated programmes. The advent of online learning, a specific application of information technology, has revolutionised the education industry in the digital era. Institutions of higher education encounter challenges and opportunities due to the impending shift away from the traditional model of instruction and skill development (Bilcke et al., 2008).

Material and Methods

The study employed a qualitative research methodology and utilised semi-structured interviews as the primary instrument.

Target Population

The population from which a sample is selected for research purposes is referred to as the target population (Fornel, 2011). The population refers to the specific place in which the research is being carried out, as stated by Sanson (2017). The individuals being studied in this particular case are M.Phil students from Government College University Faisalabad. Two respondents were chosen from two distinct departments, one from the scientific department and the other from the arts department. Research participants were selected from two departments at National Textile University. Out of the 7 faculties at the University of Agriculture Faisalabad, the faculty of social sciences was readily chosen. The University of Agriculture Faisalabad comprises 7 distinct faculties, including the Faculty of Social Sciences, which caters to students pursuing MPhil studies. The research population consisted of individuals from Phil Education. All students are registered in the M.Phil. programme. The Institute of Agricultural Extension, Education and Rural Development regarded education as a focal point of their research endeavours. Additionally, participants were chosen from the faculty of Sciences.

The total population consisted of 60 students who were picked from three universities. A total of 20 students were chosen from each university. Among these students, 10 were picked from the arts department (5 male and 5 female) and 10 were selected from the science department (5 male and 5 female) (Kalateh Sadati et al., 2021).

Sample

The selection of students was done via purposive sampling. The study had a sample size of 60 students, with 20 students selected from each of the three universities. Among the 60 students, half of them, or 30 students, were males, while the other half, also 30 students, were females.

Instrument

For this study assessing the feasibility of implementing e-learning strategies during the COVID-19 pandemic in higher education in Pakistan, a semi-structured interview approach is employed as the research instrument. The semi-structured interviews consisted of a predetermined set of key questions addressing topics such as the challenges faced by students and teachers during the transition to e-learning, the availability and utilization of technological resources, the impact of integrating e-learning with traditional teaching methods, and the overall effectiveness of the approach in facilitating remote learning. This structured framework provides consistency across interviews, ensuring that core aspects of the research are explored with each participant. Simultaneously, the semi-structured format allows for flexibility, enabling the researcher to delve deeper into specific areas of interest based on participants' responses, thus capturing a comprehensive and nuanced understanding of the experiences and perspectives related to e-learning in the Pakistani higher education context during the pandemic.

Data Collection

The data collecting method, including the establishment of the interview schedule, was designed to ensure accurate and dependable responses while also prioritising the convenience of the participants. The data collection instrument

comprises the research questions designed with the study objectives in consideration. The responders' focus and concentration are contingent upon the manner and sequence in which the questions are posed. The quality of data and information obtained is contingent upon this factor (Pokryszko-Dragan et al., 2021).

To enhance comprehension of the Covid-19 situation and bolster the theoretical and methodological aspects of the study, we extensively analysed and collected secondary material from many sources like books, scholarly articles, company reports, and web resources. The main data is collected by qualitative interviews and open-ended inquiries with students (Klimova et al., 2021). The data was individually obtained from the research participants. The researcher personally gathered the appropriate data by directly interacting with the research subjects.

Reliability and validity

To enhance the dependability and minimise the authors' subjective analysis of the data, all interviews conducted for this study were recorded. Following the completion of the interviews, they were transcribed (Silva et al., 2021).

Data Analysis

Data analysis is the process of inspecting, cleaning, transforming, and modelling data in order to discover useful information, draw conclusions, and support decision-making.

Subsequently, the researchers employed deductive and inductive thematic analysis to transcribe the data and ascertain specific important themes (Rasmitadila et al., 2020). In this study, we followed Braun and Clark's strategy by manually implementing the six stages mentioned below:

- Acquainting oneself with the knowledge. In this stage, the researchers made an attempt to gain a comprehensive understanding of the full dataset by thoroughly studying and listening to the interviews numerous times (Peñarrubia-Lozano et al., 2021b).
- In the second stage, we assigned initial codes to the data in order to describe its content.
- Following a thorough examination of the codes, an analysis was conducted to identify patterns or themes.
- We analysed the themes based on the standards and assertions in the fourth phase.
- Ultimately, once we established and designated themes, the outcomes materialised as the encounters of research students and the challenges they encountered within the COVID-19 pandemic (Puljak et al., 2020).

Results and Discussion

Following themes were identified after coding. Codes having alternative meanings were categorised into themes based on their variations and links in the generated codes. The coding methodology and technique underwent a thorough examination. Themes were produced after autonomously finding patterns from the data. The ultimate concepts, as depicted in this piece, were subsequently assessed for their accuracy. No software was employed; all analyses were conducted manually.

Theme 1: Encountering psychosomatic symptoms

Theme 2: Economic Difficulties

Theme 3: Obstacles

Theme 4: Challenges with Technical Issues

Theme 5: Challenges in conducting research and writing a thesis

The study's findings indicate that most respondents expressed their opinions on the advantages and disadvantages of online foreign language instruction and learning during the COVID-19 pandemic, as well as its influence on students' motivation to learn. While the students found certain aspects of the educational environment satisfactory, such as the convenience of studying from home and avoiding daily commutes to school, they also encountered negative aspects, such as spending most of their time learning in front of a computer, which adversely impacted their motivation to learn. This finding aligns with other empirical inquiries that arrived to the identical outcome. In addition, they often encountered technical challenges such as a sluggish Internet connection, delayed communication, or subpar audio transmission quality.

However, the seminar recordings were highly appreciated by the students as they allowed them to review the material, resulting in improved learning outcomes and academic success. Consequently, this positively influenced their motivation to study a foreign language. They were able to discern the perceived worth of this online learning platform. An evident aspect was the absence of interpersonal contact through direct physical interaction. Within the study, students acknowledge that self-directed learning is demoralising and challenging. Hence, the conclusions indicate that students in the post-COVID age have a preference for conventional approaches to teaching and learning. Over 50% of their participants declined online learning.

Moreover, there was a deficiency in collaboration between the teacher and the students, as well as among the students themselves. Similar results were found. In addition, although the online environment was affordable, as is common in other research projects, there was a lack of collaboration among students to share and enhance their knowledge and expertise in the online format. Students will benefit from this characteristic, as it promotes personal development and collaboration in future careers through engagement in practical tasks that need teamwork with peers.

In summary, the results of this qualitative study indicate that students who expressed doubt regarding the value of online classes are less content with them compared to students who recognised some level of effectiveness in these courses, despite the challenging circumstances in which their language education was being conducted. The study aimed to minimise any potential influence on the opinions of the focus group participants and to prevent any bias that could easily arise. Consequently, a broader approach was employed, and the overall generated responses were considered with utmost seriousness.

Moreover, the study generated highly precise assessments of the participants, which were also evaluated in the study. This establishes a clear balance that is crucial from a methodological perspective. The absence of proposals from the participants can be construed as a neutral position, indicating neither excessive satisfaction nor dissatisfaction. Given the nature of the focus group, the researchers intentionally avoided influencing the participants' responses. Consequently, the questions posed were deliberately open-ended, allowing ample time for the participants to contemplate and discuss their answers. These replies may indicate a spectrum of subjective well-being rather than a singular measure.

Moreover, the occurrence of such delightful experiences empowered pupils to exhibit favourable behaviour, attain accomplishments, and augment the significance of the subject matter they had learned. Such a gratifying emotional encounter may perhaps enhance students' sense of autonomy. Furthermore, research has identified a correlation

between self-efficacy and experiencing positive emotions during participation in online educational tasks.

The primary advantages, as stated by all participants, encompass rapid information retrieval and the instantaneous nature facilitated by the multitude of technological and digital tools employed. Another crucial aspect was the capacity to provide students a much more motivating and customised learning encounter. Essentially, our intention was to highlight that the pupils' unease stemmed from the lockdown itself, rather than the way it was implemented. The sole utilisation of this instructional approach was also found to have drawbacks. The scope and quality of learning during the lockdown were initially called into question. This problem could potentially be attributed to a deficiency in e-learning adaption training. Additionally, there was the tangible digital gap, distinguished by significant inequalities in the availability of resources and internet connectivity.

Families lacking the financial resources to use technology tools and students residing in distant places seemed to be at a disadvantage due to widespread connectivity issues. A significant negative of this condition is the absence of social connection between students and teachers, as well as among students themselves, which may lead to psychological consequences. This poses a challenge in managing inquiries and providing individualised attention to each individual. Given the increased level of involvement necessary in their educational journey, all participants held the belief that children with special education needs may be disproportionately impacted by this phenomenon.

Our study elucidated the challenges encountered by university students among the COVID-19 pandemic, as indicated by community people. The initial challenges faced by participants are primarily associated with financial deficits resulting from the epidemic, including issues with rent and tuition payments, loss of income, and business operation difficulties. The primary health concerns revolved around familial anxieties, insufficient access to testing and treatment details, and apprehension around the possibility of catching an illness. The exacerbation of fear and anxiety was attributed to complications about visas, travel restrictions, and probable legal ramifications.

Due to the disruptions caused by the outbreak, certain students may be unable to complete the research tasks they had initially intended for their final thesis. It was imperative to gather the perspectives of students on potential measures to support learners who may be facing this particular problem. A vast majority of students advocated for the extension of deadlines. For example, students are often obligated to complete and deliver their thesis within the academic year in which they are enrolled in their last year of study. Alternatively, they are required to register for an additional academic year and remunerate the corresponding tuition fees. As a result of student criticism, participating colleges are now granting extensions to the deadlines. This will enable students who faced challenges in completing their studies during the pandemic to have a longer timeframe to do so.

The majority of university students pursuing health sciences expressed satisfaction with their personal and institutional adjustment to the new paradigm in higher education amidst the COVID-19 pandemic in early 2020. Examining students' attitudes towards e-learning and soliciting feedback on development strategies should help schools improve the distinctive e-learning experience for students today.

The alterations made to the teaching and learning process have significantly affected the efficacy of teachers and the overall quality of education, specifically in Pakistan. The participants in this study, who were educators, expressed the need for a modification in the instructional approach. They believed that it is crucial for all stakeholders, such as governments, schools, social organisations, school committees, and

parents, to collaborate in order to determine and establish online learning objectives that align with a national curriculum based on humanitarian principles. When discussing the teaching of design, they emphasised the need of technical readiness, which encompasses the capability of technology. This readiness is crucial for the continued development of online learning, whether it is conducted through various online platforms such as TV, radio, and online applications, or through offline methods such as printed teaching materials, modules, and textbooks.

Discussion

The findings of this research indicate that the COVID-19 epidemic in universities was not consistently associated with online teaching and learning. Furthermore, the survey revealed that nearly all of the participants believed that their education had been disrupted for an extended period of time as a result of the COVID-19 pandemic, leading to detrimental effects on their academic progress. Furthermore, the data analysis findings indicated that there was minimal statistical disparity in the responses of the students based on their gender. However, it was shown that the responses from students differed greatly based on their age and grade level. The study's results also uncovered a correlation between teaching and learning, as well as the impact of the COVID-19 epidemic on students' education in higher academic settings.

As a result of the disruptions created by the outbreak, certain students may encounter difficulties in fulfilling their intended study topics for their final thesis. It was crucial to listen to the opinions of students regarding the necessary actions to support pupils who may be facing this potential issue. The majority of students proposed the extension of the deadlines. For example, students are typically obligated to finalise and submit their thesis in their last year of study, within the same academic year. Alternatively, they are required to enroll and make payment for an additional academic year. As a reaction to student complaints, universities that are involved are now extending the deadlines. This will allow students who faced difficulties in completing their homework during the pandemic to have a longer timeframe to do so.

Educators are required to furnish precise predictions regarding the amount of work and the pattern in which it will be distributed. Teachers must undergo training in order to prepare young students effectively. Within a digital educational setting, pupils are required to comprehend and acknowledge their obligations. Identify the various individuals or entities involved, modify their preferences, and obtain the required training and preparedness. Additionally, they should also take into account the velocity of asynchronous tasks, establishing connections in online environments, effective time management, potential group responsibilities, collaboration, and the importance of team cohesion.

The students greatly valued the seminar recordings and the chance to revisit the lectures, which surely enhanced their academic performance and success rates, thus boosting their motivation to acquire a foreign language. They were able to discern the perceived value of this online learning platform. One of the most prominent characteristics was the lack of in-person encounters and physical contact. For example, in the study, students recognise that studying in alone can be demotivating and difficult.

This study examines the benefits and drawbacks of online foreign language instruction and study in the context of the COVID-19 epidemic, as well as their impact on students' motivation to learn. The students encountered both favourable and unfavourable elements of the educational setting, such as spending the majority of their time learning in front of a computer, which had an adverse effect on their motivation to learn. The students expressed contentment with certain facets of the educational setting,

such as the ability to engage in studies from the comfort of their own residences and circumvent the need for daily travel to the school.

Conclusion

Global collaboration and coordination are necessary to effectively tackle the pressing matter of COVID-19 and mitigate its repercussions. Globally, the viral pandemic has drastically transformed people's lifestyles. The World Health Organisation (W.H.O.) declared a global pandemic of a virus in March 2020, which posed a threat to education. Subsequently, education and learning have experienced numerous changes and alterations in the period of the Coronavirus. The recent modifications have presented challenges for higher education students in their pursuit of academic studies. The dearth of resources and the volatility of teaching and learning activities in Pakistan had a more adverse impact on students' learning than in any other country worldwide.

The primary challenges encountered in teaching and learning amidst the COVID-19 pandemic encompassed students facing unreliable internet connectivity, inadequate technological infrastructure, limited resources, costly internet access, insufficient awareness, linguistic proficiency limitations, unreliable power supply, and difficulties in preparing for online instruction. The challenges mentioned had a significant impact on teaching and learning in higher education, affecting students, teachers, educational institutions, and other stakeholders. Due to its weaker infrastructure and lack of organised protocols for online education, Pakistan saw significant adverse effects on teaching and learning during the COVID-19 pandemic, in comparison to other nations.

This study aimed to assess the feasibility of implementing this strategy in a lockdown situation resembling the one caused by COVID-19. It could provide advanced information on the applicability of e-learning for institutions that provide pre-university education to the scientific and educational communities. This qualitative study utilised open-ended questionnaires and semi-structured interviews with students as part of its research design.

The thematic analysis was conducted to examine the relationship between the availability and utilisation of technological resources in classrooms, the integration of e-learning methodology in traditional teaching, and the impact of this approach on remote learning. The data clearly indicate the necessity of modifying and refining the implementation of this methodology, while also considering its distinct attributes.

Integrating e-learning with traditional teaching methods can facilitate the incorporation of information and communication technology (ICT) into classrooms. In conclusion, it may be contended that integrating such an approach into educational environments is advantageous, provided that individuals receive specialised instruction to effectively harness the capabilities of both online and traditional instruction.

Recommendations

- The government and educational institutions should invest in improving technological infrastructure, including internet connectivity, to ensure reliable access for students and teachers.
- Considering the challenges of costly internet access, authorities should explore options for subsidizing internet costs for students, especially during periods of remote learning.
- Launch awareness programs to educate students, teachers, and parents about the benefits of online learning, available resources, and strategies for effective participation in e-learning.

- Provide language proficiency support for students who face linguistic limitations, ensuring that language barriers do not hinder their learning experience.
- Given the unreliable power supply, institutions should consider alternative power solutions such as solar energy to ensure continuous access to online learning resources.
- Develop and implement emergency preparedness plans for educational institutions to swiftly transition between in-person and online learning in response to unforeseen circumstances like pandemics.
- Establish comprehensive training programs for teachers to enhance their proficiency in delivering online education, incorporating the use of technology, and addressing diverse learning needs.
- Collaborate with international organizations and other countries that have successfully implemented e-learning during the pandemic to share best practices, resources, and strategies for overcoming challenges.
- Invest in the development of e-learning platforms tailored to the specific needs and challenges of Pakistani students, ensuring accessibility and user-friendliness.
- Continuously evaluate the effectiveness of the e-learning strategy and adapt it based on feedback from students, teachers, and stakeholders. This iterative process will help refine the implementation over time.
- Encourage research and development in the field of educational technology to explore innovative solutions that address the unique challenges posed by the Pakistani context.
- Foster community engagement by involving parents, local leaders, and community members in supporting students' learning during times of crisis.

References

- Bhandari, D., Kotera, Y., Ozaki, A., Abeysinghe, S., Kosaka, M., & Tanimoto, T. (2021). COVID-19: challenges faced by Nepalese migrants living in Japan. *BMC Public Health*, *21*(1), 1–14. <https://doi.org/10.1186/s12889-021-10796-8>
- Grimsholm, E., & Poblete, L. (2010). Internal and External factors hampering SME growth : a qualitative case study of SMEs in Thailand (Dissertation). Retrieved from <https://urn.kb.se/resolve?urn=urn:nbn:se:hgo:diva-529>
- Hayat, A. A., Keshavarzi, M. H., Zare, S., Bazrafcan, L., Rezaee, R., Faghihi, S. A., Amini, M., & Kojuri, J. (2021). Challenges and opportunities from the COVID-19 pandemic in medical education: a qualitative study. *BMC Medical Education*, *21*(1), 1–13. <https://doi.org/10.1186/s12909-021-02682-z>
- Hunter, A., Devane, D., Houghton, C., Grealish, A., Tully, A., & Smith, V. (2017). Woman-centred care during pregnancy and birth in Ireland: Thematic analysis of women’s and clinicians’ experiences. *BMC Pregnancy and Childbirth*, *17*(1), 1–11. <https://doi.org/10.1186/s12884-017-1521-3>
- Kalateh Sadati, A., Zarei, L., Shahabi, S., Heydari, S. T., Taheri, V., Jiriaei, R., Ebrahimzade, N., & Lankarani, K. B. (2021). Nursing experiences of COVID-19 outbreak in Iran: A qualitative study. *Nursing Open*, *8*(1), 72–79. <https://doi.org/10.1002/nop2.604>
- Klimova, B., Pikhart, M., Cierniak-Emerych, A., & Dziuba, S. (2021). A qualitative analysis of students’ reflections on the current use of digital media in foreign language classes. *Sustainability (Switzerland)*, *13*(16), 1–11. <https://doi.org/10.3390/su13169082>
- Lovrić, R., Farčić, N., Mikšić, Š., & Včev, A. (2020). Studying during the COVID-19 pandemic: A qualitative inductive content analysis of nursing students’ perceptions and experiences. *Education Sciences*, *10*(7), 1–18. <https://doi.org/10.3390/EDUCSCI10070188>
- Noori, A. Q. (2021). The impact of COVID-19 pandemic on students’ learning in higher education in Afghanistan. *Heliyon*, *7*(10), e08113. <https://doi.org/10.1016/j.heliyon.2021.e08113>
- Peñarrubia-Lozano, C., Segura-Berges, M., Lizalde-Gil, M., & Bustamante, A. J. C. (2021a). A qualitative analysis of implementing e-learning during the covid-19 lockdown. *Sustainability (Switzerland)*, *13*(6) <https://doi.org/10.3390/su13063317>
- Peñarrubia-Lozano, C., Segura-Berges, M., Lizalde-Gil, M., & Bustamante, A. J. C. (2021b). A qualitative analysis of implementing e-learning during the covid-19 lockdown. *Sustainability (Switzerland)*, *13*(6), 1–28. <https://doi.org/10.3390/su13063317>
- Pokryszko-Dragan, A., Marschollek, K., Nowakowska-Kotas, M., & Aitken, G. (2021). What can we learn from the online learning experiences of medical students in Poland during the SARS-CoV-2 pandemic? *BMC Medical Education*, *21*(1), 1–12. <https://doi.org/10.1186/s12909-021-02884-5>
- Wang, C., Cheng, Z., Yue, X.-G., & McAleer, M. (2020). Risk Management of COVID-19 by Universities in China. *Journal of Risk and Financial Management*, *13*(2), 36. <https://doi.org/10.3390/jrfm13020036>