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A Socio-Legal Analysis of University Students' Perspectives on Challenges in Online Education and Protocols: Post-Covid Reflections

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Abstract

The COVID-19 pandemic had a profound impact on nearly all sectors, including global education systems, necessitating a rapid shift from traditional classroom teaching to online learning, despite many institutions lacking the necessary infrastructure for such a transition. The integration of interactive multimedia and flexible scheduling in e-learning has enhanced student engagement and accessibility significantly compared to traditional education methods. It is crucial to assess the post-COVID impacts on students' learning and performance following the abrupt shift from in-person to online education. The online questionnaire used here, created using Google Forms, targeted students across Pakistan, covering their opinions, challenges, and recommendations on traditional and online learning, particularly their post-COVID perspectives. Surveys were distributed to various universities, including institutions in Punjab, Sindh, Islamabad, Khyber Pakhtunkhwa, and Balochistan. A snowball sampling method was employed to gather responses, leveraging participants' networks to expand the sample size, and the collected data were analyzed using the Statistical Package for the Social Sciences for descriptive statistics. The demographic attributes of the involved 150 respondents showed that 59.3% had a rural background, 80% were aged 18–23, and 75% were male, with 51% living within 1–25 km from their universities. Results revealed that students showed a slight preference for online education, with a higher level of comfort expressed in using digital tools and better access to resources, though factors of engagement and peer interaction still need improvement. Universities ought to address matters involving data privacy, academic integrity, accessibility, intellectual property, and contractual duties to ensure legal obedience and equity in online education. Faculty, students, and governing bodies should work jointly to design efficient legal strategies.

Keywords:

Online Education Protocols;
Post-COVID;
Opinions;
Data Privacy and Cybersecurity;
Legal Challenges;
University Students.

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1- Introduction

Chinese authorities reported the first isolation of a new distinct virus, initially called the novel coronavirus (nCoV), in January 2020. It presented pneumonia-like symptoms in the affected patients [1]. On 12 January 2020, the World Health Organization (WHO) [2] named the virus severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease caused by the virus was named 'COVID-19' on 11 February 2020. As the virus spread rapidly in the following months, the WHO declared it a pandemic on 11 March 2020 (WHO, 2020) [3]. The virus spreads quickly through close contact, social gatherings, and assemblies, and subsequently, national and international safety measures were implemented to control its spread. To this end, many countries imposed complete lockdowns and travel bans, both nationally and internationally. Additional measures included physical distancing, using hand sanitizers, and wearing face masks [4, 5].

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The pandemic gradually disrupted all aspects of human activities, including health, economic status, finances, society, politics, the environment, education, and culture [6]. Education, from primary schools to universities and research institutes, was one of the sectors most significantly affected [7]. The education sector experienced unparalleled disruption, as the pandemic acted as a catalyst for the quick adoption of digital learning and affected more than 1.5 billion students worldwide due to school closures [8]. Under the direction of UNESCO and other educational regulatory bodies in many countries, numerous public and private universities fostered the implementation of digital education forms such as e-learning systems to teach their students and to overcome the hindrance in education [9-11]. However, this sudden transition from physical to online education was challenging, as many institutions were unprepared due to a lack of necessary infrastructure [1]. Two primary methods were used to promote online education. The first method was massive open online courses, which provided prerecorded classes to students via various platforms such as WhatsApp, Gmail, and YouTube. The second method involved conducting live online classes using various digital tools such as Zoom, Google Meet, and Skype [12].

1-1- Positive Aspects

One of the major positive outcomes that emerged from online education was the use and understanding of various illustrations, vivid photographs, and videos related to the course, which created a significant impact on student learning, which traditional education had not achieved. All these contexts are easy to record and can be accessed on demand, unlike in physical education. E-learning offers flexible scheduling for both teachers and students, allowing them to communicate at their convenience from their homes while adhering to the necessary standard operating procedure during crucial times [13]. The paradigm encompasses a diverse array of electronic delivery methods such as virtual classrooms, interactive television, web-based multimedia, and video conferencing [14]. It also helps to minimize fuel costs, which is particularly important for those living in rural areas [15]. E-learning supports faculty in conducting online quizzes, exams, and tests using digital tools, unlike traditional learning, which lacks the capability to monitor student performance [16].

1-2- Negative Aspects

Although e-learning offers several benefits, there were notable challenges present, including student–student and student–teacher interactions and distractions in the home environment [17]. A significant disparity appeared between rural and urban populations in access to various online digital tools, which created a divide. Rural students were relatively deprived of e-learning opportunities, leading to social and economic distress, which was not seen in physical education settings [12]. Another challenge for teachers was the lack of proper information on how to use the various platforms employed for online learning. The sudden closure of educational institutions and the lack of staff training led to numerous issues, such as restricted data transfer and a lack of clarity and preparation for using different e-learning platforms. The initial steps to start online education were managed poorly, causing anxiety and confusion among both teachers and students. In traditional in-person education, these issues were not prevalent [18]. Varghese (2020) [19] highlighted the side effects of prolonged use of mobile phones, computers, and laptops, such as eye strain and dryness, sleep cycle disturbances, and headaches caused by blue light exposure, affecting both teachers and students. In contrast, these mental health issues occurred rarely in traditional learning environments.

1-3- Contextual/theoretical Background

Previous studies have explored whether traditional offline learning or online e-learning is more effective for teaching [20-22]. These studies revealed that students' performance in hybrid or e-learning environments was better than in traditional physical learning. Digital learning, which involves the use of information and communication technology in education, has become a fundamental aspect of contemporary teaching and learning [23]. The swift progression of digital technologies in recent decades has significantly reshaped the way education is delivered and experienced. From the initial use of computers in classrooms to the widespread implementation of online learning platforms, digital education has developed into an essential element of modern educational systems. This shift goes beyond merely substituting for traditional methods; it aims to enrich the learning experience by increasing accessibility, interactivity, and personalization [23-25].

Henriksen et al. (2020) [26] discussed various challenges teachers face when transitioning from physical to online teaching modes. Traditional teaching methods have been effective in achieving educational goals [27-29]. The modern era, however, demands internet-based lecture delivery and web-based applications, which are considered contemporary forms of classes [30]. Rajabalee & Santally (2020) [31] noted the scarcity of literature on factors affecting student satisfaction and performance in online education during COVID-19. The learning environment is a crucial factor in students' learning behavior [29]. Gopal et al. (2021) [32] proposed four key factors to enhance student acceptance and learning efficiency in e-learning, namely, course design, quality assurance in teaching methodology, immediate response, and student expectations [33].

The digitalization of education enhances learning by facilitating easier access to and exchange of knowledge [34]. The course design is a systematic way of outlining the course content, organizing and optimizing the structural strategies of courses, and aligning goal instructions that are coherent in e-learning [35]. Well-planned course systems would enhance students' performance [36]; however, if the course is not well-planned, this will reduce the use of e-learning and other digital learning platforms, and both students and teachers will become less confident about online learning [37].

The second factor, instructor quality, plays an important role in meeting and understanding the needs of students in online education. It refers to the special abilities and characteristics closely associated with teaching that empower and inspire learners [38]. The Students Evaluation of Educational Quality, developed by Marsh (1987) [39], was adopted consensually, and it is one of the most effective tools for delineating instructor quality from students' feedback [40].

The third factor that influences student satisfaction is prompt feedback or immediate response [41]. It may be defined as 'the exchange of information with context to learning about what we know and what we don't' [42]. Hattie & Timperley (2007) [43] advocated feedback as the 'sequel of performance' because it comprises the data provided by faculty or teachers that give an account of the student's efficiency. It has been observed that prompt feedback acts as a bridge between teachers and pupils to improve learning consequences [42, 44].

The last factor that impacts students' performance is their expectations, which are considered the most important point, as highlighted by Appleton-Knapp & Krentler (2006) [45]. To achieve higher satisfaction and performance, students' expectations should be met [46]. Despite that, if students' expectations are discontented, it would lead to the inclination towards the course [47]. Those pupils who had expectations of good grades will get them compared to those who had lower grade expectations.

While digital learning holds greater promise for enhancing educational outcomes, a substantial gap persists between its theoretical advantages and the practical challenges encountered by students, educators, and institutions. Bridging this divide necessitates a comprehensive strategy involving inclusive policy formulation, investment in technological infrastructure, and ongoing professional development for teachers. As education continues to evolve in the digital age, all the stakeholders must work collaboratively to build a learning environment that is both inclusive and effective [48].

Figure 1 shows the flowchart of the research methodology through which the objectives of this study were achieved.

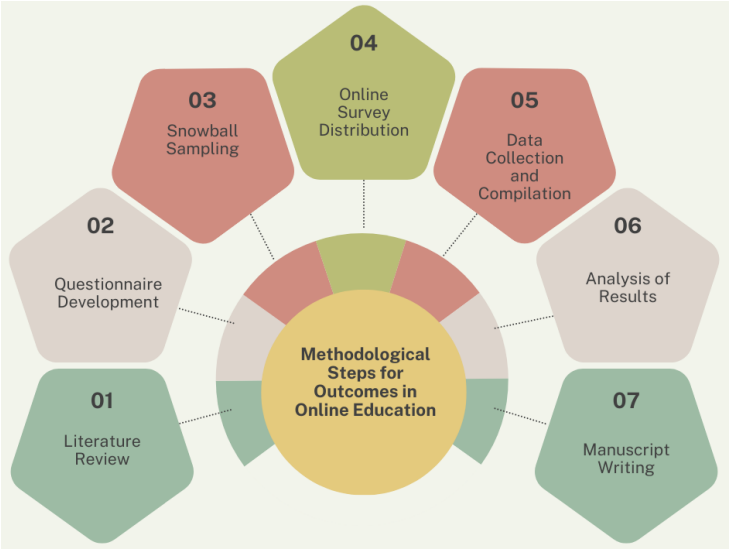

Figure 1. Flow chart describing the methodology opted for in this study

1-4- Objectives of This Study

There is a pressing need to study and evaluate the post-COVID impacts on students' learning capacity and their ability to perform work following the sudden transition from physical to online education. This study seeks to provide an in-depth investigation into undergraduate students' opinions during the COVID-19 lockdown, the benefits, emerging trends, prevailing challenges, innovative practices, and recommendations in digital learning. These perspectives will contribute to a valuable understanding of educational adaptations and achieve the goal of offering strategic recommendations with ongoing changes in the post-pandemic period to shape a more equitable and impactful educational future.

2- Methods

2-1- Sampling

A 30-item, well-structured online questionnaire was prepared using Google Forms titled 'A Socio-Legal Analysis of University Students' Perspectives on Challenges in Online Education and Protocols: Post-COVID Reflections,' which included three major preliminary sections directed towards the target population. The sections covered student opinions, the challenges, and the recommendations based on post-COVID perspectives regarding the traditional and online learning systems. The survey was distributed to all provinces and also to the Islamabad Capital Territory of Pakistan for sampling evaluation.

In Punjab, the country's largest province by population, we sampled all undergraduate and postgraduate programs of the following government universities: the University of Sargodha (SU); Punjab University, Lahore (PU); the University of Agriculture, Faisalabad; Ghazi University – Dera Ghazi Khan (GU – DGK); and Baha Uddin Zakariya University, Multan (BZU). In Sindh, we selected Sindh Agriculture University, Tandojam (SAU), and the University of Karachi, Karachi, for survey distribution. In Islamabad, our target was the National University of Modern Languages. From the province of Khyber Pakhtunkhwa, we selected the University of Agriculture, Peshawar. From Baluchistan province, we evaluated Lasbela University of Agriculture, Water & Marine Sciences. All the flowcharts in this study were created by an online digital platform called Canva, which provides a comprehensive suite of tools that allows users to create designs, presentations, flyers, logos, resumes, etc. [49].

The snowball sampling method was used in this study, purposefully chosen by the researchers or investigators to access participants within their contacts, who, in turn, help further by gathering information from their own networks [50]. The data collected were analyzed using the Statistical Package for the Social Sciences for descriptive statistics and interpretation for the manuscript.

2-2- Google Forms as a Research Tool

Google Forms was an appropriate instrument for conducting the distributed questionnaire for this survey, as it is easy to access and ready to use. The demographic attributes of the respondents included in this study were their name, educational program, department, semester, university, age, background (rural/urban), and distance from the city.

In Pakistan, with the arrival of the COVID-19 pandemic in March 2020, the Higher Education Commission (HEC) issued a notification of the closure of all educational institutions. Subsequently, many public sector universities initiated online education using different digital tools, including Zoom, Skype, Google Meet, and WebEx [51].

The period of online education lasted for approximately 1.5 years. In October 2021, the HEC issued a notice to students to resume physical classes in their respective institutions. During the pandemic crisis, the students' capacity to perform academic work changed completely due to the extended closure of their institutions. The multifaceted effects of the pandemic on academic performance, engagement, and the overall learning experience of students were highly remarkable. Some students favored online education, while others agreed to join physical lessons. The first part of the survey for this study consisted of students' opinions regarding what changes they noticed between online and traditional education after returning to their institutions after the pandemic (Figure 2). Using a Likert scale (i.e., 5 = Strongly agree, 4 = Agree, 3 = Undecided, 2 = Disagree, 1 = Strongly disagree), the responses from the first part were evaluated. The following aspects were used in the questionnaire.

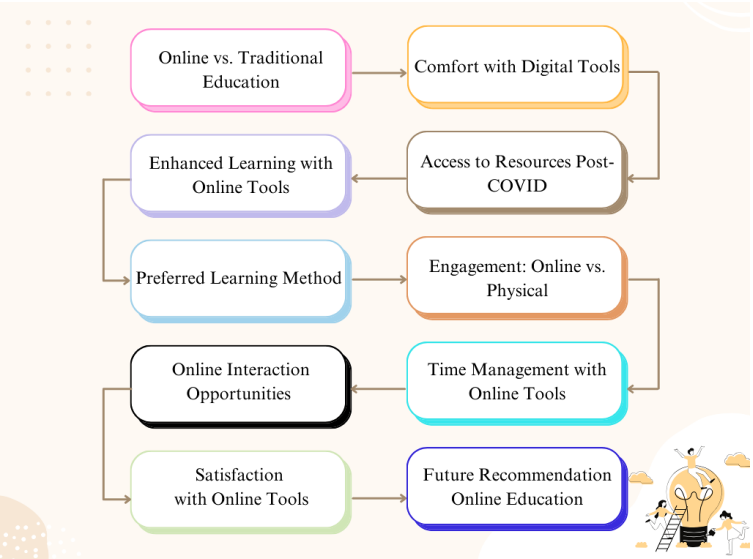

Figure 2. Opinions regarding online education

In the next section of the questionnaire, participants were asked to document the challenges they are facing now regarding physical/traditional education concerning the previous online education and the use of tools that are a compulsory part of our educational sector now (Figure 3).

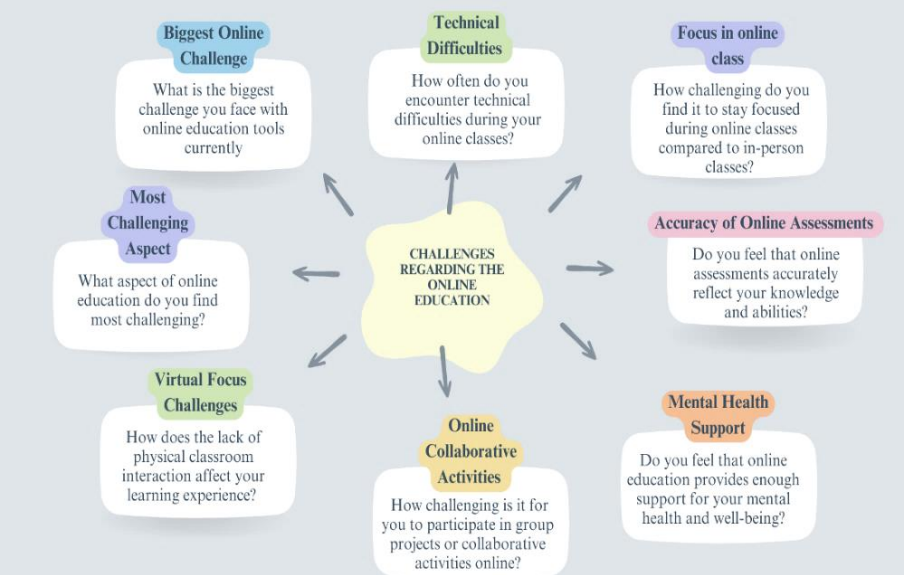

Figure 3. Challenges regarding online education

The last section of the questionnaire consisted of some important recommendations for the improvement of the user experience with online education and how different changes in the course structure, learning environment, access to some new digital tools, and improvement concerning their use could lead to improving such online platforms in ways that would be helpful for students (Figure 4).

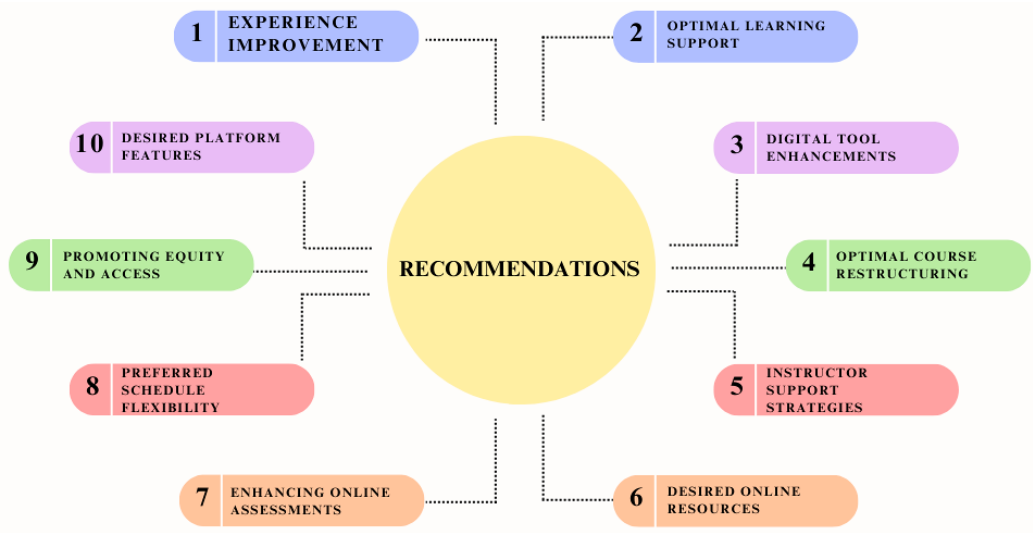

Figure 4. Recommendations regarding online education

2-3- Ethical Considerations

The survey was distributed in confidence and solely to the participants (students) of different universities. The participants gave their informed consent after being provided with information about the study, and those who were willing to take part in the survey gave their responses. All the respondents participated voluntarily in completing this form, and their responses did not affect their grades. All the necessary information, including their names and other sensitive information, was kept confidential.

3- Results

3-1- Demographic Attributes

Figure 5 shows the demographic attributes of the respondents, including their universities, gender, age, background, and the distance from their universities. Out of 150 respondents, 59.3% came from a rural background, while 40.7%

lived in urban areas. Similar results were found in the study of Abbas et al. (2024) [13]. Among the respondents, 80% were between 18 and 23 years old (Gopal et al., 2021 [32] and Mobisha et al. [53] 73.43%), 15% were 24–29 years old (Mobisha et al. 44%) [53], and 5% were up to 17 years old. In terms of gender, 75% of the respondents were male and 25% were female [32]. Regarding the distance from their universities, 51% lived within 1–25 km, 20% lived more than 100 km away, 11% were within 26–50 km, and another 11% were within 76–100 km. Only 7% of the respondents attended universities located 51–75 km away from their hometown.

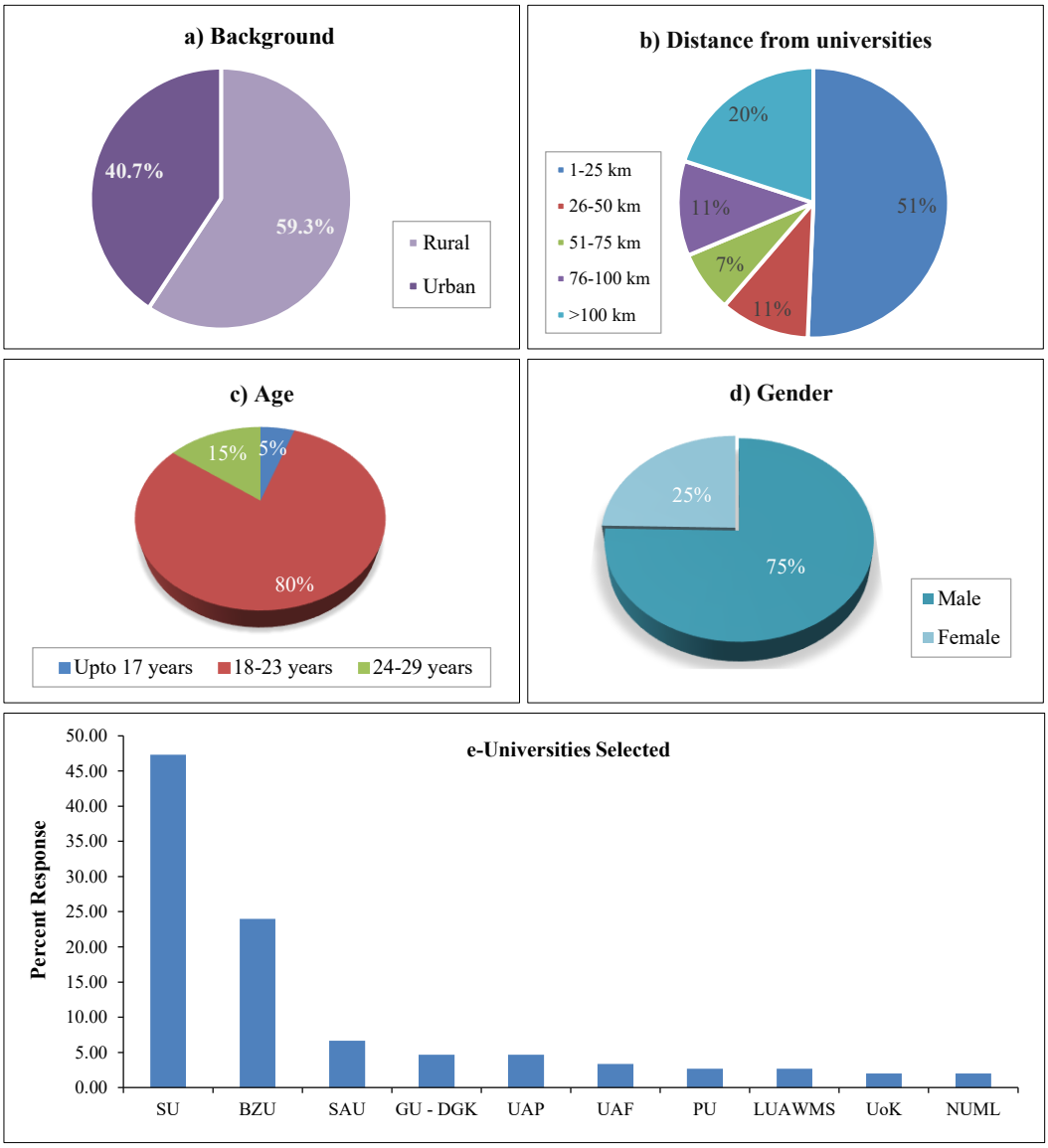

Figure 5. Demographic attributes of respondents

3-2-Students' Opinions Regarding Online Education

The data from the 150 respondents present a set of descriptive statistics for 30 survey questions regarding students' opinions, challenges, and recommendations about online education post-COVID-19. The statements regarding the students' opinions about online education included 'My ability to access educational resources changed with the increased use of online tools in post-COVID,' 'I feel comfortable using digital tools and platforms for online education,' 'Based on my learning experience, I prefer online education to in-person education,' and 'I believe that the use of online tools has enhanced my learning experience in post-COVID scenarios' and were ranked first, second, third, and fourth, with mean values of 3.76 (SD = 0.774), 3.64 (SD = 0.950), 3.53 (SD = 0.825), and 3.52 (SD = 1.021), respectively. All these results tend towards the 'agree' level as per the Likert scale, whereas the statements 'I am strongly satisfied with the online learning tools and platforms I am currently using,' 'My time management skills have been improved by the use of online education tools in post-COVID situations,' 'Online education is effective compared to traditional in-person education in the post-COVID era,' and 'Online education provides sufficient opportunities for interaction with my peers and instructors' tended more towards neutral with mean values of 3.49 (SD = 0.880), 3.33 (SD = 1.150), 3.04 (SD = 1.220), and 3.01 (SD = 1.039), respectively (Table 1).

Similar studies [53-55] concluded that the COVID-19 pandemic forced universities to transition to online education, prompting researchers to investigate students' perspectives on this shift. Studies across different countries found that while students acknowledged the necessity and usefulness of online learning during the pandemic, many still preferred traditional classroom settings. Students appreciated the flexibility of online classes and noted improvements in teachers' online teaching skills. However, different challenges were identified, including a lack of face-to-face interaction, technical issues, and impacts on health and society. The effectiveness of online education varied, with concerns raised about its suitability in underdeveloped countries.

Table 1. University students' opinions regarding online education (n = 150)

Statements	Mean	SD
Online education is effective compared to traditional in-person education in the post-COVID era	3.04	1.220
I feel comfortable using digital tools and platforms for online education	3.64	0.950
I believe that the use of online tools has enhanced my learning experience in post-COVID scenarios	3.52	1.021
My ability to access educational resources changed with the increased use of online tools post-COVID	3.76	0.774
Based on my learning experience, I prefer online education to in-person education	3.53	0.825
My engagement and participation in online classes are significant compared to in-person classes	2.93	1.091
Online education provides sufficient opportunities for interaction with my peers and instructors	3.01	1.039
My time management skills improved by the use of online education tools in post-COVID situations	3.33	1.150
I am strongly satisfied with the online learning tools and platforms I am currently using	3.49	0.880
Based on my current experience, I would recommend online education to other students	2.98	1.090

(1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree).

3-3- Challenges Faced in Online Education

The results regarding challenges faced by the university students indicated that 'lack of motivation, interaction with peers/instructors, and time management are challenges in online learning' was more inclined towards being more challenging with a mean score of 3.93 (SD = 1.221) and ranked as the first challenge based on mean values (Table 2). Whereas, the challenge 'quality education and academic integrity are a big concern in online learning' tended to be more challenging with a mean score of 3.71 (SD = 1.229) and was ranked as the second challenge based on mean values. Furthermore, 'staying focused during online classes is a big challenge' was ranked third with a mean score of 3.69 (SD = 0.956), and 'participation in group projects or collaborative activities is challenging' was ranked fourth with a mean value of 3.52 (SD = 1.015) by the university students, and this also tends more towards being more challenging. Similarly, 'effective communication and retaining information are challenging' was ranked fifth by the university students with a mean value of 3.45 (SD = 1.150).

According to various researchers, COVID-19 presented multifaceted challenges for both the students and faculty. Students were facing challenges around technological concerns, lack of computer skills and training, and lack of resources. Educators struggled with changing roles, transitioning from face-to-face to online teaching, time management, and adapting teaching styles. Moreover, creating content using multimedia skills and competence and choosing a suitable teaching strategy were challenges for teaching faculty. In addition, in developing countries, teachers lacked knowledge, experience, and skills for teaching online effectively. Furthermore, students' limited access to the internet and lack of learning devices also presented challenges as external factors [56-59].

Table 2. Challenges faced by university students regarding online learning (n = 150)

Statements	Mean	SD
Lack of motivation, peer/instructor interaction and time management	3.93	1.221
Technical issues (internet connectivity, software, etc.) during learning	2.92	1.013
Staying focused during online classes	3.69	0.956
Effective communication and retaining information	3.45	1.150
Reflecting knowledge and abilities during online learning	3.29	0.980
Online learning instead of physical interaction affects the learning experience	2.61	0.940
Participation in group projects or collaborative activities	3.52	1.015
Mental health and well-being	3.09	0.999
Quality education and academic integrity	3.71	1.229
Difficulty managing other responsibilities during online learning	2.41	0.964

(1 = No opinion, 2 = least challenging, 3 = Challenging, 4 = More challenging, 5 = Much more challenging).

3-4- Recommendations about Online Education

The responses related to recommendations about online education indicated that the statement 'improve online learning with recorded lectures, flexible deadlines, adjustable live session times, and self-paced modules' was ranked top with a mean value of 3.81 (SD = 1.358), and the statement 'support learners with subsidized laptops, digital tools, support for disabilities, and flexible financial aid' was ranked second with a mean value of 3.69 (SD = 1.291). Similarly, the statement 'Improve online learning through better connectivity, technical support, interactive content, and peer interaction' was ranked third with a mean value of 3.67 (SD = 1.344). The results of the top three statements tend more towards being more challenging. The statement 'Upgrade online learning with assignments, real-time classes, group projects, and supplemental materials' was ranked fourth with a mean value of 3.35 (SD = 1.356). Similarly, the statements 'improve online learning with user-friendly platforms, multimedia, interactivity, accessibility, and customization' and 'boost online education with low-stakes quizzes, open-book exams, practical assignments, personalized testing, and peer reviews' were all ranked fifth with mean values of 3.31 (SD = 1.221) and 3.31 (SD = 1.142). The statements ranked fourth and fifth tended more towards challenging. Meanwhile, the other statements 'Improve online learning with user-friendly platforms, multimedia, interactivity, accessibility and customisation', 'Enhance online learning with frequent instructor feedback, virtual study groups and digital tools training', 'Enhance online learning with virtual libraries, online tutoring, career counselling and skills workshops', 'Enhance online learning with gamification, interactive simulations, personalised paths and advanced communication tools', and 'Enhance online learning with one-to-one meetings, clear instructions, regular check-ins and real-life applications' tended more towards challenging with mean values of 3.21 (SD = 1.292), 3.20 (SD = 1.311), 3.07 (SD = 1.507) and 3.03 (SD = 1.266), respectively (Table 3).

Faculty perceptions of online teaching vary, necessitating support and training to improve experiences. Key recommendations include establishing a strong online presence, using video for communication, and developing backup plans to deal with technical issues. Enhancing online education requires transformations in course content, platforms, assessments, and teacher–student interactions by considering the methodological, psychological, and technical aspects. Quality assurance in online education is complex, with various models addressing certification, benchmarking, and accreditation. While no new quality schemes are needed, there is a significant need for knowledge sharing, capacity building, and stakeholder coordination. Recommendations include mainstreaming e-learning quality into traditional institutional quality assurance and establishing criteria for mobile learning systems [60, 61].

Table 3. Recommendations about online education as perceived by the students (n = 150)

Statements	Mean	SD
Improve online learning through better connectivity, technical support, interactive content, and peer interaction	3.67	1.344
Enhance online learning with frequent instructor feedback, virtual study groups, and digital tools training	3.21	1.292
Improve online learning with user-friendly platforms, multimedia, interactivity, accessibility, and customisation	3.31	1.221
Upgrade online learning with assignments, real-time classes, group projects and supplemental materials	3.35	1.356
Enhance online learning with one-to-one meetings, clear instructions, regular check-ins, and real-life applications	3.03	1.266
Enhance online learning with virtual libraries, online tutoring, career counselling, and skills workshops	3.20	1.311
Boost online education with low-stakes quizzes, open-book exams, practical assignments, personalized testing, and peer review	3.31	1.142
Improve online learning with recorded lectures, flexible deadlines, adjustable live session times, and self-paced modules	3.81	1.358
Support learners with subsidised laptops, digital tools, support for disabilities, and flexible financial aid	3.69	1.291
Enhance online learning with gamification, interactive simulations, personalized paths, and advanced communication tools	3.07	1.507

(1 = No opinion, 2 = Least challenging, 3 = Challenging, 4 = More challenging, 5 = Much more challenging).

3-5- Legal and Regulatory Challenges in Online Education after COVID-19

Legal issues and regulations have influenced the growth of online classes significantly, especially after the COVID-19 pandemic. Major concerns about the emerging online schooling system in the post-pandemic period range from data privacy protection, cybersecurity, the content's accessibility, ownership of intellectual property, and the nature of contract systems in response to complications of jurisdictional issues. Data privacy, alongside cybersecurity, is one of the most sensitive legal issues concerning online education. Higher educational institutions collect and retain substantial amounts of student data, which requires them to adhere to data protection regulations such as GDPR and FERPA. Students' confidential information is significantly at risk of a variety of cyber threats, such as identity theft and data breaches. Institutions must implement robust security measures, provide clear disclosure regarding data usage, and ensure transparency in obtaining informed consent to uphold students' digital identity rights.

In terms of online education, another persistent problem is academic fraud. The growing adoption of remote evaluation methods has led to a surge in cheating and plagiarism cases, undermining trust in institutional policies and the reliability of proctoring systems [62]. Despite existing institutional policies, students often express concern about

breaches of their privacy resulting from the use of surveillance tools. Striking a compromise between protecting the students' rights and protecting the institution's integrity remains a key regulatory issue [63]. Ensuring equity in access and opportunity is essential for the effective delivery of distance education. The Americans with Disabilities Act and other such legislation mandate educational institutions to provide access for disabled students [64]. Gradually, in the same vein, the socioeconomic disparities in digital access also restrict equal opportunities, especially for those students expressing issues and raising worries about the effectiveness of current policies aimed at supporting inclusive education and adequate technology [65].

The enforcement of intellectual property rights regarding online courses brings some legal challenges; ownership of recorded lectures, video course materials, and even student-generated content raises issues of copyright infringement and its associated provisions of fair use [66]. To avoid legal complications, universities and other educational institutions must communicate their positions on copyright and clarify whether students retain ownership of their academic work while at the university's online institution. Both staff and students need to be brought up to speed on copyright laws [67]. The relationship between students and the university regarding online education poses a serious concern. The shift to online learning has led to conflicts over charges, refunds, and the level of education being offered. Students may perceive a lack of support from universities when the experience of online learning does not meet the required standards of traditional education [68]. Institutions must ensure that their fee structures and the quality of services offered do not violate consumer laws, and when the student's expectations are not met, legal measures are in place to ensure they are treated fairly [69].

Jurisdictional and cross-border legal complications present additional hurdles for international students who wish to enroll in virtual programs. Different countries' recognition of degrees, accreditation, and legal compliance often leads to confusion and legal uncertainties [70]. Legally, there are no clear regulations outlining how international students' rights are protected, which makes it easier for students on global online learning platforms to get into disputes with no resolution in sight [71].

Policies and legal frameworks have to be amended to address the above challenges and enhance the effectiveness of online education. Every university and educational institution must manage the issues of digital security and accessibility while meeting compliance requirements to uphold academic integrity. For example, students should be educated on their legal rights and required to attend legal discussions as part of the curriculum. There is an institutional need for an automated, legally compliant system of online education together with a policy enforcement mechanism that is much tighter than at present [72]. Looking back, it seems reasonable to claim that the more relevant factors pertaining to the change to online teaching and learning are legal and regulatory issues (Figure 6).

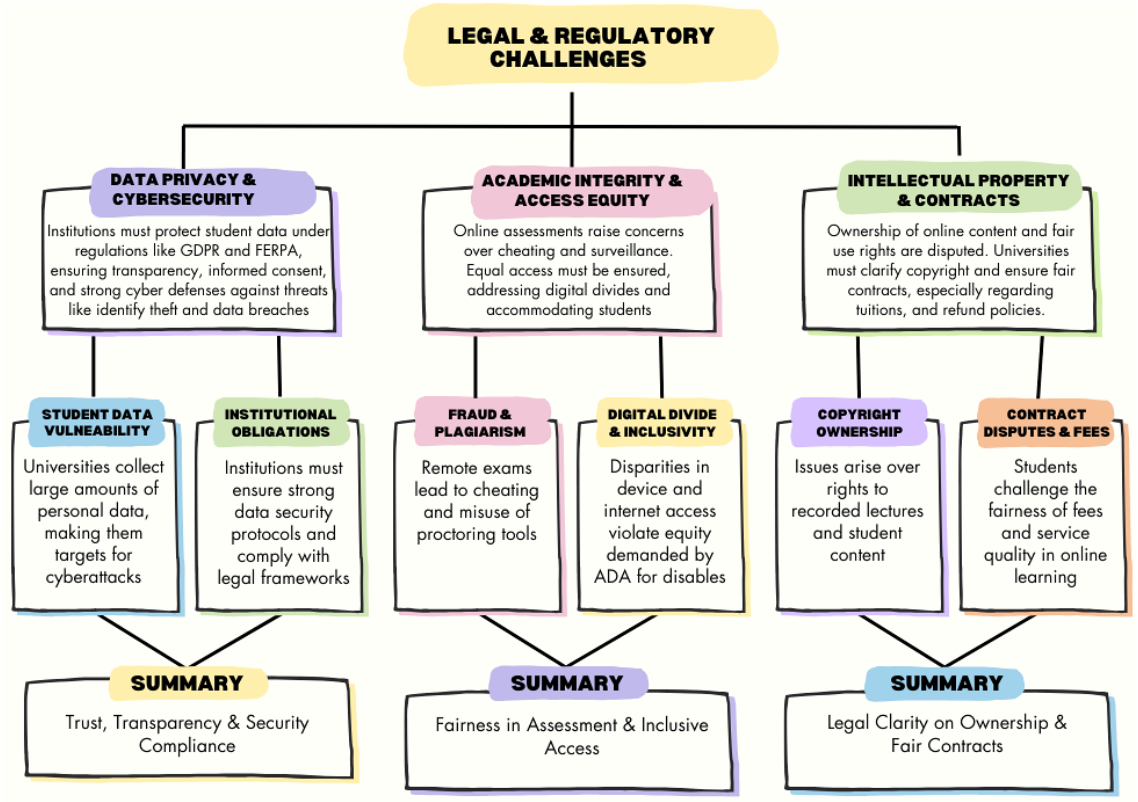

Figure 6. Legal and Regulatory Challenges Regarding Online Education

4- Conclusion

The conclusion of this study reveals that students have a moderately positive perception of online education, expressing significant satisfaction regarding access to educational resources and comfort with using digital tools. However, challenges such as the overall effectiveness of online tools, maintaining focus, and balancing responsibilities are notable concerns. To address these issues, it is essential to enhance flexibility in learning schedules, ensure equity and access for all students, and improve the overall online learning experience through better digital tools and course structure adjustments. Strengthening support for students, both academically and mentally, along with refining online assessments and providing comprehensive instructor support, are crucial steps to optimize the efficacy of online education. To ensure legal compliance and equity within the learning environment, issues such as data privacy, academic integrity, accessibility, intellectual property, conflict of contract obligations, and governing body issues should be considered. To enhance the quality of online education and accommodate more users, legal policies must be created by the universities, including the governing bodies, faculty members, and learners. In line with gradual changes in learning, these systems will need continuous assessment and modification to match the changing context of online education. Moreover, the study proposes the development of a stakeholders' advisory council and the establishment of a digital collaborative platform allowing concrete information and communication for decision-making for faculty, students, and policymakers. Additionally, academic consortiums of these educational entities and policy agencies could develop a framework for productive and collaborative decision-making to address educational and legal issues.

Based on the outcome of the current socio-legal analysis, it is recommended that universities take a more inclusive and resilient approach towards online education, both in terms of the legal implications and the socioeconomic challenges experienced by students. Institutions should focus on a clear construction of digital learning systems that comply with the law and are intellectually accessible to all students irrespective of their background. Furthermore, cooperative governance with students, faculty, and policymakers should be created to monitor the efficiency of online learning systems and prevent problems arising over time. More digital literacy programs and mental health support services should also be incorporated into the online learning framework to reduce problems related to isolation and technology. Policymakers need to consider reforms to ensure there is equitable access to digital resources and students' rights via a virtual forum. These steps would not only reinforce the legal bases of online education but also increase its inclusivity and effectiveness in the post-COVID period.

5- Declarations

5-1- Author Contributions

Conceptualisation, S.A.; methodology, S.A., M.Y.; software validation, S.A.; formal analysis, S.A., M.Y.; investigation, S.A.; resources, S.A.; writing—original draft preparation, S.A.; writing—review and editing, S.A.; visualisation, S.A.; supervision, S.A.; project administration, S.A.; funding acquisition, S.A. All authors have read and agreed to the published version of the manuscript.

5-2- Data Availability Statement

The data presented in this study are available in the article.

5-3- Funding

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5-4- Institutional Review Board Statement

The project and survey instrument (questionnaire) were ethically approved by the Research Ethics Committee, University of University of Southern Punjab, Multan, Pakistan.

5-5- Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

5-6- Conflicts of Interest

The authors declare that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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