



# Exploring Students' Perspectives on Barriers to Virtual Distance Education at Public Higher Education Institutions in Kuwait During the COVID-19 Pandemic: A Mixed Methods Study

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**Abstract:** The primary goal of this paper was to identify and elucidate the varied obstacles faced by students adapting to distance/remote education system (i.e., electronic, online, mobile, and virtual teaching and learning) during the COVID-19 pandemic. To achieve this, the study utilized a mixed methods approach, which combined both quantitative and qualitative research methodologies in a descriptive, analytical, and evaluative manner. Data was collected through an online questionnaire, informal semi-structured interviews, and team discussions held via focus groups. A carefully selected and stratified random sample of 5,000 students from two Kuwaiti public higher education institutions took part in this study electronically. They engaged in the research process through various information and communication technology (ICT) tools, including email, social networking/media apps, and video conferencing software platforms. This data was gathered during the fall, spring, and summer semesters of the 2021/2022 academic year. Analysis of the data revealed that students generally expressed a “high” level of satisfaction with the practice of distance teaching and learning. This positive response suggests a promising path forward for continued utilization and integration. Moreover, distance teaching and learning has proved to be an especially valuable tool in circumstances when traditional methods are unavailable or impractical, such as during natural disasters, political upheavals, or epidemics. However, for distance teaching and learning to be properly implemented, it is crucial for the administrators of Kuwait’s public higher education institutions to address the numerous barriers that students encountered during

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this unique and unconventional educational experience. This study enumerates several of these noteworthy challenges, some of which: technical and network-related issues; increased quantity and complexity of assignments; lack of empathy and consideration for students' technical difficulties, circumstances, and conditions; and failure to employ teaching and learning strategies that are well-suited for distance education. Administrators should actively seek and implement effective solutions to these issues if they desire to enhance the success and benefits of this educational approach.

**Keywords:** Coronavirus (COVID-19) pandemic, distance/remote education, electronic/online/mobile/virtual teaching and learning, barriers/challenges, students' perceptions, public post-secondary education, Kuwait University, Public Authority for Applied Education and Training, State of Kuwait.

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## Introduction

The novel coronavirus (COVID-19) pandemic has negatively impacted all aspects of life globally, and the education sector in particular has not been spared. Audrey Azoulay, Director-General of the United Nations Educational, Scientific and Cultural Organization (UNESCO), has gone on record describing this level of disruption as something that has “never [been] witnessed” before. As such, the education and training field had to rapidly adapt to unprecedented and everchanging precautionary and preventive measures. Schools, institutes, colleges, and universities in more than 177 countries were closed and/or disrupted, affecting approximately 1.3 billion learners; according to UNESCO, nearly 72% of all students enrolled in schools and institutes worldwide were impacted (Alghamdi, 2022; El-Dahshan, 2020; Kenawy, 2020; Rabehi, 2022).

To curtail the national spread of COVID-19, the esteemed Kuwaiti Cabinet and several health authorities declared a mandatory suspension of education and work for all faculty, academic support staff, administrative personnel, and students from March 2020 until August 2020. During this period, institutions began to realize that for them to re-open, they would need to find a way to adhere to the mandated physical and social distancing

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measures; and to do so, an alternative educational (i.e., teaching and learning) environment had to be created (Alghamdi, 2022; Rabehi, 2022; Safar, 2022, 2023). In this new environment, the application of information and communication technology (ICT) played a pivotal role. Major technological innovations in the field of ICT like remote audio and video communication networks, interactive video conference platforms, and multimedia across the World Wide Web could facilitate online teaching and learning systems. These tools and platforms could enable educational institutions to continue running their operations efficiently, all while maintaining a safe physical and social distance (Aljohani, 2020; Safar, 2022, 2023).

Considering the educational interests of academic institutions, public higher education institutions in Kuwait represented by Kuwait University (KU) and the Public Authority for Applied Education and Training (PAAET) decided to issue their own regulations regarding distance teaching and learning. KU issued its regulations titled “Regulations for distance learning when traditional face-to-face education is not feasible at Kuwait University” on July 27, 2020, by virtue of the university director’s decision number 721. These regulations were approved during the university council meetings numbered 2/2020 on July 15 and 22, 2020. Similarly, PAAET issued its regulations titled “Guidelines for distance learning using electronic learning platforms at the Authority during the COVID-19 pandemic” on August 6, 2020, by virtue of the General Director’s decision number 836/2020. These regulations were approved during the Authority’s Board of Directors meeting number 143 on July 19, 2020.

These regulations encompassed all the rules, standards, roles, responsibilities, procedures, and professional guidance that aligned with best global educational practices. They aimed to ensure the continuation of education in public higher education institutions, through distance teaching and learning since traditional face-to-face education would be unfeasible. It was emphasized that these regulations should be implemented flexibly to respond to any developments related to the handling of exceptional circumstances including current and future natural, health-related crises, and disasters.

Both the KU Council and the PAAET’s Board of Directors approved the implementation of the distance

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teaching and learning system for the second semester and summer semester of the academic year 2019/2020. Furthermore, they approved its application for the fall, spring, and summer semesters of the 2020/2021 academic year. Both councils stressed the importance of adhering to the guidelines provided by the Ministry of Health regarding preventive and precautionary measures to limit the spread of the COVID-19 virus, and the necessity for all work centers, specialized departments, colleges, institutes, and staff of KU and PAAET to follow these guidelines when implementing the regulations of the distance teaching and learning system.

### **Problem of the Study**

Public higher education institutions in Kuwait KU and PAAET implemented a novel distance teaching and learning system to continue education during the spring and summer semesters of the 2019/2020 academic year. This system was then later extended for the fall, spring, and summer semesters of the 2020/2021 academic year in response to prolonged COVID-19 restrictions. To evaluate the outcome of this educational experiment, gathering feedback and comments from all stakeholders, especially students, is essential. Since students are the primary beneficiaries and participants in education, their thoughts, attitudes, perspectives, and observations concerning distance teaching and learning are of paramount importance. Their experiences and opinions are crucial to best assess general satisfaction, identify emergent challenges, and determine the success or failure of this educational approach. By collecting this feedback, educational institutions can gain valuable insights into the effectiveness of the distance teaching and learning system and make necessary improvements to enhance the quality of distance education (i.e., electronic, online, mobile, and virtual teaching and learning) in the future.

### **Research Question**

This study aimed to address the following question: What were the challenges faced by students at Kuwaiti public colleges and institutes during the innovative implementation of distance education amid the COVID-19 pandemic?

### **Objective of the Study**

The purpose of this study is to identify and determine the obstacles, difficulties, and challenges that students

encountered with the use of distance teaching and learning systems in KU and PAAET during the COVID-19 pandemic.

### **Significance of the Study**

The significance of the current study can be summarized as follows:

1. From the feedback obtained, ICT leaders within these institutions will be able to make more informed decisions to improve the quality of distance teaching and learning.
2. Administrations of public higher education institutions in Kuwait can apply these findings towards the development of ICT academic educational services.
3. Officials of public higher education institutions in Kuwait can use these results to assess the efficiency, effectiveness, and quality of using distance teaching and learning systems as a modern and alternative educational model when traditional face-to-face education is impossible or impractical. Moreover, the challenges highlighted by students in this study should be addressed in the development, reimplementation, or future execution of similar educational systems.
4. The current study aligns with the international educational trends and issues in the field of ICT.
5. This study is considered a valuable resource for those leaders concerned with providing a highly efficient, effective, and quality distance teaching and learning system in the field of education.
6. This paper will enrich the local, regional, and global scientific educational field by opening avenues for deeper intellectual and scholarly exploration via new scientific research.

### **Limitations of the Study**

The limitations of this study can be categorized as follows:

1. Human limitations: These were represented by the perspective of students from public higher education institutions only.
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2. Spatial/geographical limitations: These were limited to colleges and institutes of public higher education in Kuwait, including KU and PAAET.
3. Temporal limitations: The study was conducted from the beginning of the fall semester until the end of the summer semester of the 2021/2022 academic year.
4. Scientific limitations: Represented by the limited academic literature available covering this vital topic within our geographical context.

## **Literature Review**

### **Definition of Electronic Teaching and Learning**

Safar (2020, 2022, 2023) defines electronic or online teaching and learning also known as digital or smart teaching and learning as the process through which various forms of knowledge (i.e., information, competencies, skills, attitudes, values, and scientific, practical, and social experiences) are transferred to the learner and acquired in a manner that allows opportunities for their management, active interaction, and engagement with all aspects. This includes content delivery, teaching methods, activities, experiences, assignments, projects, assessments, and resources, all in an electronic/digital format. This is achieved through various ICT tools, applications, platforms, and services based on computers and networks.

Due to its flexibility, diverse modalities, and mediums, it can take place in any educational environment, whether traditional (face-to-face), non-traditional (virtual or distance), or hybrid. Thus, it can serve any type of learner, covering any subject matter, in any place, at any time, using any device. With the significant advancements in ICT, especially those related to smart devices (e.g., smartphones, tablets, and wearable devices), a new educational concept known as “mobile teaching/learning” has become widespread.

### **Definition of Distance Teaching and Learning**

Safar (2020, 2022, 2023) defines distance teaching and learning as the process through which various forms of knowledge information, competencies, skills, attitudes, values, and scientific, practical, and social experiences

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are transferred to the learner and acquired in a non-traditional educational environment. In this environment, there exists a spatial and/or temporal barrier between the teacher and the learner. This transfer of knowledge can occur either synchronously (i.e., live broadcasting of lectures and interactive virtual classrooms) or asynchronously. It enables opportunities for managing, interacting, and actively engaging with all its aspects, including content delivery, teaching methods, activities, experiences, assignments, projects, assessment, and resources; all in an electronic/digital format, using various ICT tools, applications, platforms, services, and resources. Due to its flexibility and diverse modalities, it can take place anywhere, at any time, and serve any type of learner. This process is also referred to by other names, such as open or distributed teaching/learning.

### **The Essential Benefits of Distance Teaching and Learning**

Current global recommendations from many educational organizations and international educational bodies emphasize the necessity of employing and utilizing distance teaching and learning strategies in various educational institutions such as schools, institutes, and universities whether for human, geographic, social, cultural, humanitarian, psychological, economic, political, natural, or health justifications. This is due to the fact that it offers many advantages for the teaching and learning process, which can be summarized as follows (Alameri et al., 2020; Alshakrah, 2022; Alshammari et al., 2022; Arab Center for Educational Research for the Gulf States, 2020, pp. 41-42; Ben Ghaith & Yousef, 2023; Ginedi, 2023; Kenawy, 2020; Kim, 2020; Rabehi, 2022; Safar, 2022, 2023; Süğümlü, 2021, p. 174; Zohra, 2021):

1. It increases the opportunities to provide teaching and learning by maximizing the number of potential learners in the community.
  2. It saves time, effort, and costs for all parties involved in the teaching and learning process.
  3. It ensures that learners can continue their education without interruption or disruption to their teaching and learning journey due to natural, health, or political circumstances.
  4. It provides an opportunity to continue teaching and learning while on the move.
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5. It offers an organized educational environment aimed at providing rich teaching and learning opportunities.
  6. It is characterized by its flexibility in providing teaching and learning opportunities, allowing learners to acquire information, competencies, and skills at any time, place, and using whatever device available.
  7. It enhances learners' responsibility for their teaching and learning to a greater extent.
  8. It provides diverse patterns of teaching and learning strategies that cater to the different needs of learners.
  9. It facilitates real-time interaction and communication between teachers and learners, enabling the open exchange of information, ideas, questions, and recommendations related to essential teaching and learning units.
  10. It promotes collective, cooperative, and collaborative teaching and learning, allowing learners, regardless of their locations, to interact with their fellow students, thereby enhancing their sense of participation and competition.
  11. It enhances the concept of self/individual teaching and learning for learners.
  12. It assists in delivering scientific material (academic content) in a modern manner that aligns with the innovative ICTs in the current digital knowledge landscape.
  13. It provides increasing opportunities to update, develop, and repurpose educational technological resources and materials for teaching and learning (such as lessons, video recordings, audio libraries, and images), while also facilitating access to these resources from anywhere, at any time, and using any device.
  14. It considers individual learning differences by allowing each learner to refer to teaching and learning strategies that suit their needs.
  15. It enables teachers to reach a larger number of learners in distant and scattered locations, enriching teaching and learning experiences and making them more exciting for everyone involved.
  16. It motivates learners to continue their education and deepens their commitment to using ICT tools and
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resources for teaching and learning.

17. It encourages learners to continue their education and lifelong learning, promoting the pursuit of knowledge throughout their lives.
  18. It provides two models for teaching and learning, either the synchronous model (i.e., where communication and interaction among participants occur simultaneously through live streaming of lectures or via interactive virtual classrooms using video/web cameras) or the asynchronous model (i.e., where communication and interaction among participants do not happen simultaneously and can be done using methods like email and video recordings).
  19. It gives learners the opportunity to interact and respond individually to the teacher, enabling them to learn according to their own abilities and capabilities, taking control of the teaching and learning process, which may not be possible in traditional conventional classrooms.
  20. It can eliminate the need for repeated explanations, as the subject or lesson content is available on the educational institution's website or the teacher's personal website.
  21. It is based on the principle of multisensory teaching and learning, wherein all types of teaching and learning modes (i.e., textual, auditory, visual, and tactile) are offered to accommodate the individual needs of each learner.
  22. It reinforces learners' commitment to continue learning, both inside and outside the educational institution, due to the ease of access to educational resources, alleviating concerns about future interruptions or disruptions in education.
  23. It utilizes ICT tools and resources in a way that helps reduce the costs and expenses of teaching and learning.
  24. It provides distance teaching and learning experiences that parallel face-to-face educational experiences but employ different methods, techniques, and strategies for delivering academic content.
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25. It adds flexibility to the teaching and learning process, allowing learners to participate whenever they want by catering to their individual preferences.
26. It relieves teachers of administrative burdens (i.e., like receiving instructions, guidelines, newsletters, memoranda, reports, official records, assignments, projects, exams, and more, from students) since these tasks can now be sent and received through distance teaching and learning tools.
27. It assists teachers in increasing engagement and participation, especially for introverted learners who may feel shy about asking questions in traditional classroom settings. Through remote/distance teaching and learning systems, these learners can participate and interact with teachers and peers through various communication and interaction tools such as email, forums, discussion groups, and more.
28. It offers various technologies that can be easily accessed and used at any time, from anywhere, and with any device.
29. It allows learners to receive guidance according to their needs outside of official working hours.
30. It is cost-effective, as communication and interaction costs are free in some countries. Additionally, it does not require purchasing study materials and is easily stored and retrieved.
31. It achieves a noble purpose by providing teaching and learning opportunities to those who have been deprived, thus realizing the principle of education for all.
32. It ensures the health and safety of learners in natural, political, and health crises, as they are not directly exposed to the educational environment.
33. It helps educational institutions, and their administrations achieve the efficiency, effectiveness, and quality required of them in the early years of the third millennium.

However, implementing a distance teaching and learning system correctly is not a straightforward task. This is because it requires the full realization of educational and learning objectives, including the delivery of study materials, teaching, and learning activities, and measurement and assessment processes over the Internet. This,

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in turn, necessitates that the design of distance education be accompanied by careful and organized planning by educational policymakers. Additionally, its practice requires the training of teachers, learners, technical supervisors, administrators, and other educational institution staff to possess a core set of knowledge, skills, abilities, and competencies in the field of ICT (Alshammari et al., 2022; Alsharafat, 2022; Alshdifat, 2022; Ben Ghaith & Yousef, 2023; Churiyah et al., 2020, p. 493; Ginedi, 2023; Halitoglu, 2021; Kenawy, 2020; Safar, 2022, 2023; Shayeb et al., 2023).

### **Barriers to Distance Teaching and Learning**

After reviewing a significant amount of literature and academic research studies applied during the COVID-19 pandemic crisis, the researchers found that most of the results of these studies agreed on the trends of university students. They indicated a level of satisfaction ranging from “moderate to high” regarding their use of distance teaching and learning environments. This shows their appreciation and acceptance of it as a new educational system for electronic teaching and learning, an alternative to the traditional face-to-face education system. Moreover, it was empirically demonstrated during the COVID-19 pandemic crisis how important and beneficial it is for teaching and learning purposes. This is because it facilitated and streamlined the continuation and monitoring of the educational process at the university level from any geographical location, time, and device. This is something that is not attainable in the case of the traditional face-to-face education system. Studies also confirmed that most university students have the intention and determination to continue employing and using these software, platforms, or virtual educational systems as teaching and learning tools in the future, given their various educational benefits.

However, studies have also confirmed and agreed that there are numerous challenges and material, human, and moral barriers that university students, both male and female, faced during their participation in this experience. These obstacles hinder the optimal utilization and employment of the distance teaching and learning system in educational institutions. They limit the interaction, engagement, and usage of distance e-teaching/learning platforms/systems and have had a significant impact on determining students' level of satisfaction. These

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obstacles and challenges can generally be categorized into those related to infrastructure, ICT tools, the educational environment, management, teachers, learners, parents, technical support staff, academic support staff, professional development, curriculum content, and efficiency, effectiveness, and quality. Some of the most prominent of these obstacles and problems faced by learners (in addition to teachers, educational administrators, technical supervisors, and parents) during the COVID-19 pandemic and in the midst of the rapid transition to the distance teaching and learning system include (Abu Shukheidim et al., 2020; Abuzaid, 2021; Alameri et al., 2020; Al-Balas et al., 2020; Alghamdi, 2022; Almaiah et al., 2020; Al-Qudah, 2021; Alqurshi, 2020; Alshakrah, 2022; Alshammari et al., 2022; Alsharafat, 2022; Alshdifat, 2022; Azzahra, 2020; Baalache & Chikhi, 2023; Ben Ghaith & Yousef, 2023; Bojović et al., 2020; Bui et al., 2020; Daroedono et al., 2020; El Refae et al., 2021; Ginedi, 2023; Jasem, 2022; Kadhim, 2023; Khalil et al., 2020; Khan et al., 2021; Kim, 2020; Muthuprasad et al., 2021; Osmani, 2021; Ouyaba & Salah, 2020; Rabehi, 2022; Rahali et al., 2020; Safar, 2020, 2022, 2023; Shayeb et al., 2023; Shukri et al., 2020; Wang et al., 2020; Zohra, 2021):

1. The inefficiency, ineffectiveness, and low quality of ICT infrastructure. This has resulted in various technical problems related to the Internet, communication networks, software, and hardware.
  2. Insufficient or inadequate services and technical and academic support provided by higher education institutions to their members regarding the platforms used for distance teaching and learning.
  3. Difficulty in communication and interaction among teachers, students, educational administrators, technical supervisors, and parents.
  4. Support for intellectual/scientific theft, academic impersonation, and cheating on exams and assignments.
  5. Academic, psychological, social, health, and physical problems.
  6. Lack of trust and goodwill from some faculty members towards students, questioning their credibility, and having doubts about their involvement in cheating.
  7. Shortened timeframes and increased the difficulty of exams.
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8. A high number of challenging assignments or tasks assigned to students with tighter deadlines.
  9. The density of academic content (course materials or curriculum) compared to the short duration of the academic semester and the high number of courses or academic subjects a student is enrolled in.
  10. The lack of alignment in courses, materials, or study curricula with technological advancements in the field of ICT, requiring strategic, scientific, objective, thoughtful, and systematic development, and revision.
  11. The absence of ICT skills and competencies among faculty members, students, administrators, technical supervisors, and parents.
  12. Failure to employ modern and suitable teaching and learning methods for distance education, resulting in difficulty for students to focus, understand, and assimilate the academic content from online lessons and lectures (ultimately decreasing their academic achievements).
  13. Neglecting to appreciate and consider the fundamental goal of the teaching and learning process.
  14. Not giving attention, consideration, appreciation, and understanding to students' technical-related issues or their personal circumstances and problems.
  15. Lack of specialized human resources for the development of digital teaching, learning, and training content for courses or academic subjects.
  16. The digital/electronic content of academic and training courses is challenging to prepare, lacks competence, effectiveness, quality, and interactivity, contributing to distraction, boredom, and disinterest. Attention is focused on quantity of output, disregarding the quality of the educational content provided and its achievement of predefined educational objectives.
  17. The inappropriate use of objective testing methods as a tool for measuring and assessing students' academic achievement in courses, especially scientific and practical ones.
  18. Difficulty in using and handling the systems/platforms, including tasks such as designing and producing assignments, homework, tasks, and activities, as well as managing them (i.e., uploading,
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distributing/delivering, receiving, and grading).

19. Challenges in implementing electronic measurement and assessment tools, such as designing, producing, and administering electronic tests for courses or academic curricula, as well as managing and monitoring them remotely.
20. Emphasis on individuality is more apparent, with a diminished or reduced spirit of participation and collaboration.
21. The lack of educational guidance and instructional manuals on how to use, handle, and employ distance/electronic teaching and learning management systems in various educational environments.
22. Inability to effectively use distance/electronic teaching and learning management platforms to serve the educational process due to a lack of professional training on how to handle them correctly, diagnose issues that may arise, and improve their integration into the teaching and learning process.
23. The absence of a specialized center for distance education on campus, which would collaborate internally and externally to reduce and address virtual barriers that students and faculty members may encounter.
24. Bridging the digital divide.
25. Academic pressure.
26. Increasing educational costs.
27. Lack of electrical power or interruptions during classes/lectures and exams.

## **Methodology**

### **Research Design**

The study adopted a mixed methods research design, which combines both quantitative and qualitative research methodologies, utilizing a descriptive analytical and evaluative approach to investigate the main study objectives. This design is considered by experts to be one of the most suitable approaches for the nature of this

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type of research. It is more comprehensive than other methodologies, aiming to provide a deeper understanding of the study, clarify ambiguous points, harmonize, and integrate results, conclusions, and findings obtained from both quantitative and analysis. It focuses on describing real-world phenomena or social issues through a comprehensive survey of a specific population, and this method has gained traction among researchers in recent times (Creswell & Creswell, 2018; Johnson & Christensen, 2020; Patten & Newhart, 2018).

## **Instrument**

The study utilized the following data collection tools:

1. An electronic questionnaire, after ensuring its validity and reliability. The Cronbach's alpha reliability coefficient for the questionnaire was 0.900, which is very high and thus acceptable for the study's purposes, providing full confidence in the tool's use. It was distributed using various ICT means.
2. Informal semi-structured personal interviews that were conducted remotely.
3. Focus group discussions directed through visual communication and interaction platforms (remotely). These discussions aimed to pose both closed and open-ended questions to participants, revolving around the study's topics. Participants were encouraged to freely and openly converse about these topics, with the purpose of gathering both quantitative and qualitative data.

## **Sample and Data Collection**

The study's stratified sample consisted of 5,000 participants, including male and female students, enrolled in public colleges and institutes in the State of Kuwait (i.e., KU and PAAET) during the fall, spring, and summer semesters of the 2021/2022 academic year. Participants were randomly selected using simple random sampling, and the study's tools were delivered to them electronically across various technological communication platforms. The students were assured that their participation was voluntary, and all data or responses provided were considered confidential and would only be used for the purposes of scientific research and development.

## **Methods of Analysis**

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To aptly process and analyze the quantitative and qualitative data collected, the statistical approach utilized consisted of: (1) Exploratory descriptive analysis, including measures like Cronbach's alpha, frequencies, and percentages; and (2) Thematic analysis, which is one of the methods and techniques used to code and analyze qualitative data. In thematic analysis, the researcher organizes, arranges, and classifies the qualitative data into specific themes or topics.

## Results and Discussion

### First: Demographic profile of the respondents.

Table 1 outlines the demographic profile of the students.

**Table 1:** Participants' demographic information in frequencies and percentages.

Variable	Category	<i>N</i>	%
Gender	Male	2,414	48.3
	Female	2,586	51.7
Type of College	Arts, humanities, & social sciences (AHSS) colleges	2,548	51.0
	Scientific colleges	2,452	49.0
Type of Major	Arts, humanities, & social sciences (AHSS) disciplines	2,288	45.8
	Scientific disciplines	2,712	54.2
GPA	Poor (less than 1.67)	102	2.0
	Good (from 1.67 to less than 2.67)	848	17.0
	Very good (from 2.67 to less than 3.67)	2,616	52.3
	Excellent (from 3.67 to 4)	1,434	28.7
ICT Efficacy Level	Low (beginner)	727	14.5
	Moderate (intermediate)	3,128	62.6
	High (expert/advanced)	1,145	22.9
ICT Ownership	Desktop PC	804	16.1
	Laptop PC	3,382	67.6
	Tablet	2,035	40.7
	Smartphone	4,870	97.4



## Second: Interview results and discussion.

The study's research question focused on the challenges and obstacles that students in Kuwaiti public colleges and institutes faced while distance teaching and learning was being implemented during the COVID-19 pandemic. To answer this question, a thematic analysis approach was used to code, analyze, and interpret qualitative and quantitative data by categorizing the responses into specific themes. The findings revealed that students in public colleges and institutes in Kuwait encountered numerous challenges, difficulties, and problems during this experience, with the most prominent ones being as follows:

1. Technical issues related to the Internet, communication networks, software, and hardware that were beyond the control of both the teacher and student during lectures and/or exams ( $N = 3,072$ , % = 61.4); resulting in time wastage, confusion, stress, annoyance, lack of focus, and difficulties in perception, understanding, and comprehension; the most important of which includes:
    - Internet and communication network interruptions ( $N = 2,745$ , % = 54.9).
    - Slow Internet speed and communication networks ( $N = 2,711$ , % = 54.2).
    - Poor Internet quality and communication networks ( $N = 2,653$ , % = 53.1).
    - Internet, communication network, and system/platform congestion ( $N = 2,620$ , % = 52.4).
    - Lack of clarity or sudden audio and/or video disruptions ( $N = 2,579$ , % = 51.6).
    - Exclusion/removal from the system/platform ( $N = 1,592$ , % = 31.8).
    - Inability to access the system/platform ( $N = 1,499$ , % = 30.0).
    - Sudden system/platform suspension, with the appearance of a black screen for the user at times, due to overload ( $N = 1,565$ , % = 31.3).
    - Lack of synchronization between audio and video ( $n = 1,033$ , % = 20.7).
    - Disruption of displayed educational content ( $N = 1,370$ , % = 27.4).
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- Inability to share content ( $N = 768$ ,  $\% = 15.4$ ).
  - Failure to consistently track the lecture/exam, causing stress, anxiety, and feelings of wasted time and effort ( $N = 1,466$ ,  $\% = 29.3$ ).
  - Lack of familiarity by both the teacher and the student with how to use the system/platform ( $N = 1,217$ ,  $\% = 24.3$ ).
  - Counting the student as absent during lectures, resulting in grade deductions ( $N = 1,590$ ,  $\% = 31.8$ ).
  - Difficulty in dealing with specific distance teaching and learning management systems/platforms designated by public higher education administrations ( $N = 730$ ,  $\% = 14.6$ ).
  - Incompatibility of the systems/platforms used with other operating systems, such as Macintosh and Linux ( $N = 430$ ,  $\% = 8.6$ ).
  - Incompatibility of the systems/platforms used with assistive technology related to individuals with special needs, such as screen readers and others ( $N = 655$ ,  $\% = 13.1$ ).
  - Failure to receive an invitation for the student to join the lecture and/or exam ( $N = 1,620$ ,  $\% = 32.4$ ).
  - Hardware and software malfunction due to technical reasons ( $N = 950$ ,  $\% = 19.0$ ).
  - Problems related to opening the camera and/or microphone ( $N = 1,123$ ,  $\% = 22.5$ ).
  - Problems related to assignments or homework, leading to a decrease in final grades and low evaluations, such as:
    - Non-receipt of assignment or homework files despite sending and submitting them within the specified period ( $N = 936$ ,  $\% = 18.7$ ).
    - Failure to open assignment or homework files ( $N = 695$ ,  $\% = 13.9$ ).
    - Difficulty in sending and submitting assignment or homework files due to their large electronic size ( $N = 955$ ,  $\% = 19.1$ ).
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- Failure to provide students with postponed and/or alternative assignments or homework in case of technical issues ( $N = 1,313$ ,  $\% = 26.3$ ).
  - Technical glitches in sending and submitting assignment or homework files, leading to postponement, reassignment, or assigning a “zero” grade to the student ( $N = 858$ ,  $\% = 17.2$ ).
  - Problems related to electronic exams, resulting in lower grades and final evaluations, such as:
    - The use of automated proctoring software employing artificial intelligence technology to prevent cheating by students, causing difficulties in exam performance and rendering devices/equipment and systems/platforms inoperable, only functioning with Windows-based desktop or laptop computers ( $N = 973$ ,  $\% = 19.5$ ).
    - Improper configuration of exam management settings, leading to delayed access/delivery of exams to students ( $N = 929$ ,  $\% = 18.6$ ).
    - Incorrect programming of answers to exam questions ( $N = 1,215$ ,  $\% = 24.3$ ).
    - Non-display of some exam questions and/or answers during the exam ( $N = 1,472$ ,  $\% = 29.4$ ).
    - Alteration or erasure of selected answers after or while submitting the exam ( $N = 1,100$ ,  $\% = 22.0$ ).
    - Slow download or upload of the exam, causing delays in its arrival to the student ( $N = 1,515$ ,  $\% = 30.3$ ).
    - Sudden ejection/exiting during exam ( $N = 1,397$ ,  $\% = 27.9$ ).
    - Failure to access the exam ( $N = 986$ ,  $\% = 19.7$ ).
    - Automatic and unexpected submission of the exam without clicking the “Submit” button ( $N = 795$ ,  $\% = 15.9$ ).
    - Poor quality (lack of clarity) of images included in the exam ( $N = 847$ ,  $\% = 16.9$ ).
    - Lack of synchronization of time between the teacher’s, student’s, and server’s devices, resulting in
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delayed or non-receipt of the exam by the student in a timely manner; this may also lead to delayed submission/delivery of the exam or the exam's time running out without warning, forcing the student out ( $N = 1,078$ , % = 21.6).

- Variability in the software used for creating and managing electronic exams ( $N = 534$ , % = 10.7).
  - Failure to provide students with postponed and/or alternative exams in case of technical issues, counting them as absent and giving them a grade of “zero” ( $N = 1,693$ , % = 33.9).
  - Some students failing to submit or deliver the exam due to a technical glitch, or the exam not being received despite being sent and submitted in the system/platform, leading to a rescheduling or postponement of the exam for all students ( $N = 857$ , % = 17.1).
  - The use of programmed automated timing in exams, causing stress for many students during exam performance ( $N = 1,859$ , % = 37.2).
  - Difficulty in writing mathematical and scientific equations ( $N = 1,744$ , % = 34.9).
2. The short time allocated for students to complete exams, despite the large number and increased complexity of questions, leads to stress, anxiety, confusion, and scattered attention and focus. The limited time did not allow for thoughtful consideration, answering, and reviewing of questions and it did not consider individual differences ( $N = 1,778$ , % = 35.6).
  3. Lack of concern, consideration, appreciation, and understanding from some faculty members and academic support staff regarding students' technical issues, their circumstances, and conditions, and sometimes their treatment to students was characterized as being harsh and rude ( $N = 1,447$ , % = 28.9).
  4. The abundance (and exaggeration) of difficult assignments or homework tasks (such as projects, reports, research papers, presentations, and activities) assigned to students, with short deadlines, causing academic pressure, stress, and exhaustion ( $N = 1,411$ , % = 28.2).
  5. Increasing the difficulty of exams by including challenging questions under the pretext of preventing
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- cheating ( $N = 1,205$ ,  $\% = 24.1$ ).
6. Academic pressure ( $N = 1,199$ ,  $\% = 24.0$ ).
  7. Some faculty members and academic support staff do not use modern and diverse teaching and learning methods suitable for distance education due to their lack of genuine interest in distance education, resulting in unclear, lower quality, and ineffective teaching. The limited use of ICT tools also contributed to students' difficulty in grasping, understanding, and comprehending the academic content, especially in scientific and practical courses where the theoretical aspect dominates through educational videos ( $N = 1,175$ ,  $\% = 23.5$ ).
  8. Some faculty members and academic support staff did not have trust and good faith in their students, which resulted in many students being suspected of cheating ( $N = 974$ ,  $\% = 19.5$ ).
  9. Some faculty members and academic support staff mandating students to turn on their cameras and microphones during lectures or exams, sometimes even recording them, causing stress, embarrassment, and various other issues ( $N = 887$ ,  $\% = 17.7$ ).
  10. The frequency of tests, especially quizzes ( $N = 881$ ,  $\% = 17.6$ ).
  11. Psychological and physical health issues, such as difficulty concentrating, attention deficit and daydreaming, pressure, stress, insomnia, depression, boredom, fatigue, exhaustion, headache, back and leg pain, lethargy, laziness, sleep disturbances, among others, either due to prolonged screen time or unsuitable home environments for studying ( $N = 875$ ,  $\% = 17.5$ ).
  12. Some faculty members unfairly treat students because of the cheating behavior of some of them ( $N = 836$ ,  $\% = 16.7$ ).
  13. Some faculty members and academic support staff did not enable the lecture recording feature, preventing students from reviewing the material later for study purposes ( $N = 819$ ,  $\% = 16.4$ ).
  14. Difficulty in communication and interaction with some faculty members and academic support staff after
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- lectures to inquire about course-related matters, possibly due to the lack of designated office hours ( $N = 816$ , % = 16.3).
15. The density of academic content in academic courses compared to the short duration of the summer semester ( $N = 779$ , % = 15.6).
  16. Unsuitability of objective testing methods as a tool for measuring and evaluating students' academic achievement in courses, especially scientific and practical courses, where complete reliance on selecting the correct final answer is the norm, without considering partial credit for problem-solving steps ( $N = 771$ , % = 15.4).
  17. Some students lack appropriate study environments ( $N = 733$ , % = 14.7).
  18. A decline in students' cumulative GPA due to lower grades and, consequently, final grades ( $N = 685$ , % = 13.7).
  19. Some faculty members and academic support staff do not fairly distribute grades in the course in general and exams in particular ( $N = 658$ , % = 13.2).
  20. Short deadlines for submitting assignments or homework causing stress and anxiety among students ( $N = 650$ , % = 13.0).
  21. Some faculty members do not allow students to review their final assessments, grades for assignments, or exams and ignore their requests, sometimes even threatening them when they seek clarification or review ( $N = 615$ , % = 12.3).
  22. Some faculty members and academic support staff are not familiar with how to use ICT educational tools, applications, platforms, networks, services, and resources ( $N = 605$ , % = 12.1).
  23. Lack of precision in the language (spelling and grammar) of some faculty members and academic support staff in formulating and writing exam questions and answers, which lead to students' misunderstanding and subsequently selecting incorrect answers ( $N = 568$ , % = 11.4).
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24. Some faculty members do not allow students to review and modify exam questions and answers before submission due to disabling the option to navigate or go back to previous questions ( $N = 560$ , % = 11.2).
  25. Difficulty in participation, interaction, discussion, dialogue, and communication within virtual classrooms and beyond ( $N = 554$ , % = 11.1).
  26. Mismanagement by some faculty members and academic support staff during virtual semester classes, leading to chaos, noise, disturbance, confusion, and tension ( $N = 520$ , % = 10.4).
  27. Some students lack the financial means to purchase necessary equipment such as desktop computers, laptops, tablets, and smartphones ( $N = 483$ , % = 9.7).
  28. Public higher education institutions failing to manage the educational crisis during the COVID-19 pandemic due to a lack of a clear strategic plan for continuing the educational process in cases of emergencies resulting from natural and health-related crises such as disasters, pandemics, and others ( $N = 428$ , % = 8.6).
  29. Difficulty in contacting and communicating with technical support staff to resolve technical issues faced by students, sometimes being ignored ( $N = 410$ , % = 8.2).
  30. The failure of college and institute guidance and registration offices to effectively handle remote student affairs ( $N = 384$ , % = 7.7).
  31. Some faculty members not adhering to the scheduled lecture or final exam times ( $N = 380$ , % = 7.6).
  32. Some students are not familiar with how to use ICT educational tools, applications, platforms, networks, services, and resources ( $N = 358$ , % = 7.2).
  33. Incompatibility of measurement and assessment tools used by some faculty members and academic support staff in academic courses with the nature of distance education (electronic/online/mobile/virtual teaching and learning) evaluation ( $N = 355$ , % = 7.1).
  34. The student bookstore's failure to establish a specific and effective mechanism for providing students with
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required course textbooks, purchasing them, and delivering them on time ( $N = 336$ ,  $\% = 6.7$ ).

35. Some faculty members and academic support staff compelling students to attend lectures, take exams, or submit assignments or homework in person at the college or institute, putting their health at risk ( $N = 318$ ,  $\% = 6.4$ ).
36. Some students' inability to conduct virtual meetings due to restrictions imposed by public higher education institutions on using meeting features in their Microsoft Teams accounts, making it difficult to complete assignments or homework that require collaborative, cooperative, and participatory work ( $N = 289$ ,  $\% = 5.8$ ).

Table 2 presents the results of this statistical analysis in descending order.

**Table 2:** The results of the thematic analysis of the quantitative and qualitative data for the study's main domain - "Challenges", arranged in descending order.

No.	Problem/Difficulty	Theme/Category	$N$	$\%$
1	The technical problems related to the Internet, communication networks, software, and hardware.	Technical	3,072	61.4
2	The short period of time granted to students to take the exams, despite the large number of questions and their difficulty, to avoid cheating.	Academic Assessment	1,778	35.6
3	The lack of sympathy/concern, consideration, appreciation, and understanding for students' technical problems, their circumstances, and conditions, and holding them accountable for that by punishing/penalizing them, and sometimes treating them with abuse, cruelty, and rudeness.	Social - Moral	1,447	28.9
4	The large number and difficulty of assignments or duties/tasks (such as: projects, reports, research studies, presentations, activities, etc.) that the student is assigned to complete and deliver them in a short period.	Academic Assessment	1,411	28.2
5	Increasing the difficulty of the tests by placing awkward questions; On the pretext of avoiding cheating.	Academic Assessment	1,205	24.1
6	The study pressure.	Academic	1,199	24.0
7	The failure to use modern and diverse teaching and learning methods and strategies that are suitable for distance education (electronic, online, mobile, and virtual teaching and learning); Which caused difficulty in	Academic	1,175	23.5



	perceiving, understanding and assimilation among students.			
8	The lack of trust and good faith in the students which causes challenging their credibility and being suspicion that they are cheating a lot.	Moral	974	19.5
9	Requiring students to turn on the camera and microphone during the lecture, and/or while taking the test, and recording them sometimes.	Social - Moral	887	17.7
10	Too many tests, especially short ones (i.e., quizzes).	Academic Assessment -	881	17.6
11	Mental and physical health problems (such as: difficulty concentrating, distraction, pressure and tension, insomnia and depression, boredom, a sense of loneliness, fatigue, exhaustion and stress, dry eyes and headaches, pain in the back and legs, lethargy and laziness, sleep disturbances, and others) either because of sitting in front of the screen for long periods of time, or the home environment that is not suitable for studying.	Health	875	17.5
12	Injustice to students because some of them cheated.	Moral	836	16.7
13	Do not use the lecture recording feature.	Academic - Moral	819	16.4
14	Difficulty communicating with some faculty members and the academic support staff after completing the lecture to inquire about matters related to the courses.	Academic - Social	816	16.3
15	The intensity of the scientific content of the academic course compared to the short semester duration (i.e., extraordinary summer semester).	Academic Administrative -	779	15.6
16	Inappropriateness of the pattern of objective tests as a tool for measuring and assessing/evaluating the academic achievement of students in academic courses, especially scientific and practical courses.	Academic Assessment -	771	15.4
17	The lack of an appropriate study environment for some students.	Social - Economic - Personal	733	14.7
18	Decreasing the students' GPA because of the low scores/grades, which then affected their final grades.	Academic Assessment -	685	13.7
19	Unfairness in the method of distributing grades/scores in the course in general, and the tests in particular.	Academic Assessment -	658	13.2
20	The short period granted to students to hand in assignments.	Academic Assessment -	650	13.0
21	Not allowing students to review their final grades and scores/grades obtained in assignments and tests; and ignoring them and threatening them in the event of an	Academic Assessment - Moral -	615	12.3

	inquiry and review request.	Administrative		
22	Lack of knowledge of some faculty members and the academic support staff on how to use ICT tools.	Academic Personal	- 605	12. 1
23	Lack of accuracy in formulating and writing test questions and answers linguistically (i.e., spelling and grammar).	Academic Assessment	- 568	11. 4
24	Not allowing students to review the test questions and modify their answers before submitting the test; Due to the cancellation of the option to move/navigate between questions.	Academic Assessment	- 560	11. 2
25	Difficulty participating, interacting, discussing, dialoguing, and communicating inside and outside the virtual classrooms.	Academic - Social	554	11. 1
26	Mismanagement by some faculty members and academic support staff of the virtual classroom, whether during lectures and/or exams; Causing chaos, noise, inconvenience, confusion, and stress.	Academic Administrative Personal	- - 520	10. 4
27	Lack of financial capabilities to purchase devices/equipment.	Social - Economic - Personal	483	9.7
28	The failure of the administrations of public higher education institutions to manage the educational crisis.	Administrative	428	8.6
29	Difficulty communicating with technical support staff to solve technical problems.	Social Administrative Technical	- - 410	8.2
30	The failure of guidance, counselling, and registration offices to deal with students remotely.	Social Administrative Academic	- - 384	7.7
31	Non-adherence by some faculty members and academic support staff to the date of the lecture and/or the final exam (i.e., time and day).	Academic Administrative	- 380	7.6
32	Some students are not familiar with how to use ICT tools.	Academic Personal	- 358	7.2
33	The measurement and assessment/evaluation tools used in the courses are inappropriate with the nature of distance education (i.e., e-teaching/learning).	Academic Assessment	- 355	7.1
34	The failure of the Student Library Administration to provide the textbooks of the academic courses to students.	Academic Administrative	- 336	6.7
35	Requiring students to attend lectures, take exams, and/or hand in assignments at the college/institute.	Academic Assessment Administrative	- - 318	6.4
36	Students' inability to hold video conferencing meetings.	Administrative	- 289	5.8

Despite that, findings also showed that some of the participating students ( $N = 480$ ,  $\% = 9.6$ ) affirmed that they did not encounter any difficulties or problems; on the contrary, they found that distance teaching and learning was better, easier, and more time- and effort-efficient. For instance, some students found the reduction in commute times to be greatly beneficial as it provided them with more time to study and relax. Students also noted that distance education had contributed to increases in their concentration, enthusiasm, and overall academic achievement, while also improving their communication and interactions with peers. They also expressed a desire for the continuation of distance education.

These results somewhat align with the findings of other scientific research papers, such as the studies by: Ali and Abd Elhalim (2020), Rahali et al. (2020), Mohammed (2020), Wang et al. (2020), Daroedono et al. (2020), Alqurshi (2020), Alquraini and Alharthi (2020), Ouyaba and Salah (2020), Shukri et al. (2020), Al-Hajri (2020), Bui et al. (2020), Alenezi (2020), Khalil et al. (2020), Alenezi and Alsaeedi (2021), El Refae et al. (2021), Khan et al. (2021), Muthuprasad et al. (2021), Osmani (2021), Abuzaid (2021), Alghamdi (2022), Alshammari et al. (2022), Alshdifat (2022), Jasem (2022), Rabehe (2022), Safar (2022, 2023), Baalache and Chikhi (2023), and Ginedi (2023). All these studies emphasized that there are a set of difficulties and challenges hindering the proper implementation of distance education systems. These barriers include, but are not limited to:

1. Technical obstacles related to Internet connectivity, communication networks, and software or hardware problems during lectures and/or examinations that are beyond the control of teachers and students.
  2. Insufficient technical and academic services and support provided by higher education institutions regarding the platforms and software used for distance teaching and learning, whether synchronous or asynchronous.
  3. Difficulties in consistent communication and interactions between teachers and students, and among students as well.
  4. Unintentional facilitation of academic plagiarism, academic impersonation, and cheating in exams and
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assignments.

5. Increased educational and technological expenses.
6. Lack of consideration for psychological, social, and health-related issues.
7. Inefficiency, ineffectiveness, and quality problems with ICT infrastructure.
8. Challenges related to the application of alternative measurement and evaluation methods, especially when assessing infrastructure.
9. Lack of technological skills and competencies among faculty, students, administrators, and other educational workers which are necessary to successfully adapt in a rapidly evolving digital space.
10. Scarcity or absence of educational curricula in the form of digital/electronic educational content, and a database to store said materials and their derivatives.
11. Lack of familiarity among academic faculty regarding modern, technology-based teaching and learning methods.
12. Inadequacy of the home environment for distance education.

### **Conclusion and Recommendations**

This in-depth analysis reveals that students in Kuwaiti public colleges and institutes were en masse highly satisfied with the application of distance education during the pandemic. As such, this positive impression towards moving forward in its continued employment and utilization, adapting it as an effective and essential educational tool alongside the traditional mode of study, and/or when traditional study is not possible due to exceptional natural, political, health crises, or other disasters. However, it is imperative for the administrations of public higher education institutions to take care and address the difficulties and challenges that their students faced during this experience, as indicated by the current study's findings, and to strive to find appropriate and effective solutions. This is to ensure the success of this educational experiment and to reap the desired educational benefits from it. In the context of the study's findings, the study recommends the following:

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1. Overcoming the challenges addressed in this study in a systematic, integrated, and gradual manner neutrally, scientifically, and objectively so that the difficulties most affecting professional performance are dealt with first, then obstacles with a medium impact, followed by challenges with less impact.
  2. Ensuring that public higher education institutions secure and provide all necessary needs to implement distance education system properly.
  3. Regularly conducting investigation into the efficiency, effectiveness, and quality of distance education management platforms/systems used in public higher education institutions, as this is one of the most important factors affecting the user/customer satisfaction.
  4. Paying attention to the process of professional development and training for faculty members and the academic support staff in public higher education institutions in the ICT sector, by holding training courses and specialized workshops periodically in this field offered by training centers affiliated with these institutions and urging and encouraging them to enroll in them.
  5. Providing moral and material incentives such as certificates, appreciation awards, grants, and financial rewards to faculty members and the academic support staff in public higher education institutions in Kuwait to encourage them to utilize and integrate technology into their curriculums.
  6. Reducing the density of academic curricula/course content in public higher education institutions on the grounds of lack of time and large number of courses being studied; and keenness to prepare (i.e., design and produce) curricula with scientific content that is consistent and compatible with the nature and characteristics of distance education.
  7. Reforming the measurement and assessment policies and methods in accordance with the distance education system via the Internet.
  8. Developing the ICT infrastructure and superstructure in Kuwait to keep pace with the latest technological innovations.
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9. Urging the public higher education institutions leaderships to expand the establishment of educational digital resource centers in all colleges, institutes, administrations, and its various work centers, and to provide all its needs in terms of educational/technical cadres, hardware, software, teaching/learning electronic/digital materials, etc.
10. Encouraging the administrations of public higher education institutions to diversify the platforms/systems for managing distance education in their colleges and institutes. As well as placing a strong emphasis on continuously developing/updating them by utilizing the latest versions available in the global markets.
11. Urging the administrations of public higher education institutions to continue with the option of using distance education system in normal conditions by offering some academic courses during the academic year to be taught remotely/online and/or when the traditional pattern of study is not possible because of the exceptional natural, political, and health conditions resulting from crises, disasters, epidemics, and others.
12. Supporting the exchange of knowledge and experiences among countries by benefiting from the experiences of others whether at the local, Gulf, Arab, regional, or global levels in the field of deploying and utilizing e-teaching/learning technologies (platforms or systems) in distance education programs.
13. Urging the Kuwaiti government to establish an independent national educational body specialized in distance education, which encompasses electronic, online, mobile, and virtual education. This body's tasks include developing a clear philosophy, creating a well-structured national strategic action plan for implementation, and exploring methods to overcome obstacles and challenges hindering its effective use in educational institutions.
14. Encouraging proficient national human resources scholars, professors, researchers, and specialized personnel in the field of educational technology to actively engage in and contribute effectively to enriching scientific research within this essential field.

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