

## Reflections on higher education institutions responses intra-period COVID-19: A road towards a new normal in Arab universities

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### ABSTRACT

While the unprecedented COVID-19 pandemic continues to impact, the new normal era becomes the latest universal issue to be discussed. Hence, most Arab countries are still categorized as developing countries, this stipulates the need to provide deep discussion on the typology of the types of responses currently undertaken by their higher education institutions. This can assess their agility in preparing for the intra-pandemic period and the unprecedented future disruption. This paper aims to give reflections on the adopted practices in Arab higher education institutions in response to COVID-19 disruption. It also aims to utilize the success indicators and challenges encountering these universities in a way to propose recommendations to shape the new normal era forward. In this study, a desktop analysis, leveraging six Arab universities websites and governments' sources, was conducted wherein systematic literature, policy documents, as well as related procedures targeting COVID-19 and higher education were reviewed. The results indicate that, throughout the uncertainties of COVID-19, Arab higher education institutions continuously strive to deliver high quality of teaching and learning through employing consistent high-tech procedures entitling government legislations, education management, curriculum, scientific research and stakeholders' collaboration.

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## 1. INTRODUCTION

Since February 2020, the entire world has been disrupted with the invasion of a dangerous virus that claimed the lives of countless innocent people in various parts of the globe [1]. The education system is one of those sectors which is severely affected by the emergence of COVID-19 [2], [3]. As stated by UNESCO [4], approximately 264 million students are not in their schools hence this pandemic has made things further worse. The spread of the pandemic has continually converted and transformed the educational landscape. Hereupon, there has been an increasing shift towards online virtual teaching as a result of educational institutions' suspension for definite and indefinite periods of time as the only option left [5]. As COVID-19 pandemic is a fairly new research area, this paper makes an original contribution to the research base in terms of higher education institutions' (HEIs) responses intra and beyond COVID-19 era. It looks forward to intellectually enriching prospects for anticipating future academic decision-making through any adversity. It

further draws a holistic picture of ongoing macro and micro procedures in Arab universities during the outbreak period by establishing bridging connections between both the change management process and the Emergency Remote teaching process in the education system amid the COVID-19 outbreak. This desktop analysis initiates a conversation to explore Arab universities' responses to COVID-19 waves globally; anticipating their new normal agenda.

## 2. LITERATURE REVIEW

COVID-19 pandemic is upending the educational life from kindergarten to tertiary education [2], [6]–[8]. Enduring challenges affecting the educational institutions, the teaching-learning process is intensified day after day [1], [8], [9]. The gradual spread of the virus starting from China then South Korea, Iran, and Italy and then worldwide resulted in a shift in the higher education sector in the affected countries to focus on their own operations [2], [3], [6], [8]. Mainly, certain steps and planned procedures were adopted around the world preparing for what is to come. COVID-19 contributed to significant changes in the higher education sector that can be viewed as either opportunities or threats. With the global closure of HEI, many questions are being raised regarding the impact of this response on the learning opportunities for the students, academic staff and stakeholders. Considerably, COVID-19 has “redefined higher education delivery globally” [1]. HEIs have begun to change the way they operate in order to meet the students and education staff needs. Cancelling classes and closing the doors of universities' campuses were the first response steps to the pandemic [10].

According to Hodge [10], the foundation of the education ecosystem has been affected, wherein educational institutions worldwide are currently struggling to seek available options in dealing with the impact of the pandemic. Numbers of universities in different countries worldwide have shifted to emergency remote learning [10]–[12]. In addition, some universities have rescheduled the academic calendar by canceling spring breaks and advising international students to return back home to their countries [13]. Being aware of technology means, academic faculties everywhere rushed to convert their teaching methods virtually. While tertiary institutions worldwide compete to continue developing their action plans, responses to COVID-19 are carried out ensuring the universities efforts to update information regarding the pandemic and asserting that safety practices of educational operations are performed. They also include establishing multitasking procedures for infected students, promoting information sharing, planning for the continuity of learning and supporting vulnerable populations among others. Universities' responses further took the form of joining forces and authorities with local, regional and international organizations such as the World Health Organization (WHO), research institutes and national governments bodies among others towards the creation of appropriate responses that would enable them to contribute in preventing the spread of COVID-19 whilst ensuring the continuity of students' learning [13], [14].

HEIs work hard to develop new innovative pathways to meet their students' needs through the pandemic. Blankenberger and Williams [13] asserted that universities strive to develop, modify and create alternative paths for practical educational experiences, such as internships, clinical rotations for medical students, and student teaching experiences for teacher education students. Muftahu [1] argued that “COVID-19 pandemic has pushed universities in different nations beyond their limits toward developing appropriate and creative alternatives such as transitioning to remote learning, training of academic staff in the use of online instruction materials and tools and encouraging students to complete their education requirements through online learning in response to the COVID-19 pandemic.”

The proactive and highly techno-efficient step in the time of pandemic is the main response of education worldwide. Thus, most universities have now shifted to online or remote teaching and learning in order to limit the spread of the virus. Cacayan, Baua, and Alvarado [14] explained that academic institutions around the world use online campus mainly in three ways: i) To add new online courses quickly and easily and even whole subject areas to their catalogs to attract and serve more students; ii) To provide faculty with more digital tools to be integrated into their classes; and iii) To provide faculty, staff, and alumni with lifelong learning opportunities. “In the face of COVID-19, the shared vision of the education system realized that during the pandemic period, teachers and students are motivated to adapt online teaching-learning platforms in fulfilling the current educational needs” as illustrated by previous researchers [15].

The shift into distance teaching and the blended techniques integrate “laboratory assessments, online instruction, e-mail, class websites, computer laboratories, mapping and scaffolding tools, computer clusters, interactive presentations and e-mail, handwriting capture, evidence-based practice, electronic portfolios, learning management systems, and virtual apparatuses” [11]. Accordingly, when hard decisions need to be made, universities will need to have the courage to make the best of them to help students excel. They would also need to extend their accountability frameworks to integrate student learning evaluations irrespective of the modality of delivery. Government regulators and accrediting bodies would expect that organizations will

provide proof that results are equal. An urgent need for transparency and institutional responsibility in the post COVID-19 world is stipulated. Students facing the challenges of COVID-19, whether in conventional programs or online, will need greater academic and financial assistance. In a period of decreasing budgets, this will entail the commitment of HEIs resources.

In the context of Arab HEIs, since they are considered developing countries according to World Economic Situation and Prospects (WESP) [16], initiatives have been launched in a few Arab countries to deal with the impact of COVID-19. Some of these initiatives were subsequently announced, including the Open University in Tripoli in Libya, which has many branches in Libyan cities; the University of Continuing Training in Algeria; and the virtual university in Syria. In addition to Egypt's experience in using distance education to train teachers during service, there are preliminary projects for distance education in Yemen, Morocco, Lebanon, and other Arab countries [17]. According to Lassoued, Alhendawi, and Bashitialshaer [18], "most Arab universities have used the internet to provide lessons via various educational platforms (such as the Moodle platform adopted by most Algerian universities), or to use social networking sites (Facebook and YouTube) to explain the lessons after sending electronic publications through university websites." As the impact of COVID-19 continues, higher education officials and legislators collaborate addressing short term and long-term impacts of the pandemic [19], [20]. Nevertheless, COVID-19 pandemic has left higher education with immediate and long-term challenges particularly in the areas of management, funding, academic, technology and learning opportunities [2], [3], [21].

### 3. THE STUDY PURPOSES

Many pieces of research have been conducted targeting Emergency Remote learning and teaching during the pandemic in different educational settings. They focused majorly upon the impact of COVID-19 on the education process with all its actors. The purpose of this study is to give reflections on the Arab HEIs responses against the impact of the COVID-19 pandemic by identifying arising matters and challenges of sustaining the continuity of academic programs in these universities. This study reveals the various forms of adopted procedures during COVID-19. The world's nations have not worked together on how Emergency Remote education can be applied, resulting in possible local and international gaps in implementation [21]. Considered as developing countries, Arab universities in these countries strive to maintain the continuity of the educational process with low infrastructure and the absence of a crisis management planning agenda for pandemics. As a misconception, it is believed that, being as developing countries, Arab HEIs will achieve no progress in the field of online remote education for many years. However, with the emergence of the pandemic, Arab universities are "endeavoring to revive the distance education system to continue to provide educational activities for students" [18]. This research, therefore, centered on Arab countries' perception and their agenda for the new normal period. The study was conducted during the coronavirus epoch in the second half of 2020 and aimed to recognize the consequences of using distance education to resolve the contingency in Arab settings. This analysis is conducted for the purpose of answering the main research question: How are Arab HEIs responding to COVID-19? This paper continues to address the conversation of providing some preliminary types of current and forthcoming stages of Arab tertiary education responses.

### 4. RESEARCH METHOD

This paper is a systematic review that adopts a desktop analysis approach with careful consideration as for the quality of the information to be sourced. According to Kowalczyk and Truluck [22], a systematic review is "a high-level overview of primary research on a focused question; utilizing high quality research evidence through: identifying, selecting, synthesizing and appraisal." Given the general fluctuation of knowledge about COVID-19, relevant sources are used in order to establish an accurate and rigorous status report for the studied Arab HEIs. The procedures of the systematic review included the preparation of a finalized relevant reference list and resources (both computerized and printed). The full articles of potentially useful studies were obtained. The authors who performed the study selection were not to be blinded to the publishing journal, the authors, or the studied universities.

The first stage of screening search results involved assessing Arab universities' websites, documents, articles, titles and abstracts to determine whether each article was meeting predetermined criteria. Hereupon, If the title and abstract were not enough to make a decision, then the full text of the article was obtained to which the inclusion criteria were applied. Other criteria further focused on official articles from the universities main websites that were published in the period of conducting the research. Disagreement between authors was resolved through discussion, and if no agreement was reached, then an opinion was taken from university councilors detailing the number of excluded studies at each step. In order to make the process of performing the systematic review more replicable and transparent, sufficient details were documented in detail to make it easier to assess the thoroughness of the search. The search main results were

saved in a form of an excel file while the unfiltered search results were saved and retained for possible reanalysis. Selected studies were subjected to a more refined quality assessment by using general critical appraisal guides and design-based quality checklists. These detailed quality assessments were used for exploring heterogeneity and informing decisions regarding suitability of meta-analysis. In addition, they helped in assessing the strength of inferences and making recommendations for future research. Data synthesis consisted of tabulation of study characteristics for exploring different studies and combining their effects (meta-analysis).

In carrying out this study, the data analysis was conducted wherein systematic literature, policy documents, universities' websites as well as related models between COVID-19 and higher education were reviewed. All the analyzed universities in this study are distributed within the Arab countries. The Arab countries are among the countries with membership in the Arab League. To assure that the review process is obtained across the Arab countries, the researcher attempted to achieve a rough equality of countries across the Arabian Peninsula, Fertile Crescent, North Africa and Horn of Africa regions according to the WHO. The studied regions provide a slight skew because they are more affected by the COVID-19 spread. There are several countries that are deemed to have equivalent or similar strategies to the current sample. The focus was to explore most of the Arab countries from each region, with a stronger focus on countries that have differing responses and strategies to others. This study is delimited to six Arab universities. For transparency, 133 sources were used. The emphasis was on the use of direct universities websites and governments' sources with a percentage of (48.07%) supplemented by reports and news from different Arab HEIs' official websites, news articles, published researches, news outlets and other forms of communication.

## 5. RESULTS

### 5.1. How are Arab HEIs responding to COVID-19?

This section presents objective findings and reflections obtained after the desktop content analysis and the systematic review. These findings are presented and organized in an alphabetical order according to the studied regions. As a result of the desktop research, synthesis and meta-analysis across six selected Arab countries revealed distinct similarities and differences to the approach taken by their HEIs. This analysis illustrates certain procedures and implications across Arab countries concerning the present reality and challenges. Table 1 summarizes a description and a meta-analysis, including the economic condition of each country using the classification of WESP [16], COVID-19 status [23], updated data from UNESCO [4] pertaining to monitoring of school closures and converting to emergency remote learning.

Table 1. Synthesis and meta-analysis

Region	Country	The economic condition	COVID-19 status (Total cases/1M pop*)	Extension or semester breaks	Campus closure (Outset of the pandemic)	Converting to emergency remote learning
Arabian Peninsula	Bahrain	Developing economies (High-income)	53,033	No	All	All
	Kuwait	Developing economies (High-income)	34,794	No	All	All
	Yemen	Developing economies (Lower middle income)	69	Some	Some	Some
Fertile Crescent	Palestine	Developing economies (Low-income)	25,801	Yes	All	All
North Africa	Egypt	Developing economies (Lower middle income)	1,283	No	All	All
Horn of Africa	Somalia	Developing economies (Low-income)	291	Some	Some	Some

\*Number of cases per one million population [23]

### 5.2. Arabian Gulf

#### 5.2.1. Bahrain

Bahrain, as other countries worldwide, has been affected by the strike of the pandemic where the numbers of infected people reached 53,033 per million [23]. Consequently, this pushed the country to face the new situation at initial stages in February, 2020 by taking several precautionary measures to limit the spread of coronavirus, which included closing down schools, universities, and other private education institutions [12], [24], [25]. Alongside the procedures adopted in the Arabian Gulf countries and worldwide, what is happening in Bahrain is the development of an already existing system and the provision of its electronic infrastructure [12], [24], [25].

Most universities in the Arabian Gulf area including Bahrain responded to COVID-19 first cases by suspending education to stop the chain of the disease spread. Universities were closed under governments' orders for a period ranging from three to five months while their operations turned to be fully online. Shifting into digitalization was anticipated in most of the Bahraini universities with a clear announcement of their agendas presented on their main websites. For example, the University of Bahrain announced their digitalization plan based upon the electronic admission system they developed which is integrated with the e-government Portal and the Ministry of Education in Bahrain [26].

Regarding management, The University Correspondence Management System in Bahrain simulates the internal processes of the universities to track the workflows while preserving information on each transaction. In addition, a broadcasting announcement is included as an additional feature. The systems of the universities Councils offer the possibility to organize and search Council meetings and contents for discussion in electronic forms. This implies that stakeholders including upper management, deans, head of department, advisors, student, sponsor and administrators are given a lot of features based on their own positions and functions. One of the success indicators in the Bahraini universities is the high attendance rate for lectures that are implemented electronically. This is further represented by the success of the Higher Education Council in maintaining the continuation of education through e-learning in all Bahraini universities despite the great challenge created by the COVID-19 pandemic.

### 5.2.2. Kuwait

Kuwait was one of the first Arab countries that witnessed COVID-19 cases with 34,794 per one million [23]. Similar to Bahrain, Kuwait tried to facilitate the continuity of the education process through a series of procedures starting with employing modern technology in the educational and administrative fields. This is found with the use of information technology in e-learning applications where ignorance of how to deal with computers and the internet has become one of the illiteracy indicators. The integration of e-learning in Kuwaiti universities is based on the use of information technologies in e-learning applications and also represented by enhancing the educational process and creating educational networks to organize and manage HEIs tasks.

Kuwaiti universities, such as the university of Kuwait, have applied highly technical educational procedures implementing online learning. These procedures include connecting the management system and the students with electronic emails. Similar to Bahrain, cloud computing system (Office 365) is also used in the context of emergency remote learning. Self-service/human resource management system (KU/HRMS), blackboard and TRACK are all electronic systems that are employed for the benefit of all the education actors. Other helpful electronic systems were applied such as the admission electronic system which facilitates the registration procedures for students without a need for them to approach their universities. Despite all these efforts, the Kuwaiti Ministry of Education (MoE) missed over the past eighteen years to implement online learning, and by pausing all learning during this pandemic, these years resulted in the challenges the MoE is facing today [27]. The main reasons behind this failure are not related to financial resources, but attributable to the professional capacity of the MoE's leaders to handle the education sector during this crisis. This included hesitation about making decisions and the lack of readiness.

Furthermore, there is a problem that the Kuwaiti government does not recognize and certify the qualifications obtained by distance education or e-learning. Nevertheless, it did not hesitate to interact positively with the emerging needs of scholarship students who were imposed by circumstances, either to postpone their study or to deal with remote teaching needs. Al-Kandari *et al.* [28] denoted a variety of obstacles that may prevent the effective application of e-learning in Kuwaiti higher institutions.

### 5.2.3. Yemen

With unstable and civil-war conditions in Yemen, universities have major troubles along with the spread of COVID-19. As countries worldwide reacted in a different way based on their capabilities, some countries immediately shifted to online education and others faced obstacles. However, Yemen is under great pressure from different aspects. Universities in Yemen as a result, partially stopped their activities to preventively limit the spread of the novel COVID-19 among students. The first announced COVID-19 case in Yemen was in early April when the healthcare system buckled under the added burden [29], [30].

According to UNESCO [4], the virus is estimated to affect 267,498 tertiary learners in Yemen. As a response, the United Nations agencies and their global partners are searching for \$2.41 billion in the fight against the propagation of COVID-19 while still supporting thousands of people who were impacted by one of the worst humanitarian crises worldwide [29]–[31]. After five months of suspension as part of measures to confront the outbreak of the COVID-19, universities in August 2020, based on the government's call, continued to open their doors under preventive measures.

The universities witnessed collaboration and communication with the Ministry of Communications and Information Technology for the success of many of their programs, including the electronic networking

project and the electronic academic and administrative record. A comprehensive sterilization campaign for the halls and laboratories of the faculties was carried out by the primary health care sector in universities like Aden University and Yemen University of Science and Technology. Most colleges also implemented the process of sterilizing students' hands before entering the halls, laboratories and offices, while adhering to a physical distance of no less than 1-1.5 meters between the college's employees. In addition, according to the Yemeni HEIs new statements, there is a need to adjust and be committed to the idle students' distribution number in lectures to range from 30 to 36 students and from 10 to 15 male and female students in laboratories [30]. The examinations were conducted in colleges in four periods, starting from eight in the morning until four in the afternoon, so that students can take the exam while implementing the principle of social distancing and taking all necessary precautions to prevent themselves from the virus.

### **5.3. Fertile Crescent**

#### **5.3.1. Palestine**

As an occupied land that has undergone harsh economic and health conditions, the State of Palestine showed struggle to maintain education continuity through the pandemic. The gradually increasing numbers of the infected people have reached to its utmost with 25,801 per million [23] which is a dangerous indicator compared to other Arab countries. The continuous imposed siege upon the Gaza Strip since 2007 and the daily restrictions on the citizens movement in the West Bank before the virus outbreak have forced the Palestinians to find their own innovative ways to overcome difficulties hence, online education becomes a need not a choice. Previous researchers [8], [32]–[35] argued that the Palestinians were the first to establish a university for distance education in the Arab world, which is Al-Quds Open University. This university is acting upon the recommendations of a comprehensive evaluation funded by the World Bank and the European Union to integrate distance, open, and e-learning into its teaching and learning program moving from a correspondence model to a blended learning environment [33]–[35]. As a second response of the universities after the temporal suspension, a draft e-learning system was prepared and a Palestinian normative frame of reference emanating from the Arab and international frames, and a comprehensive procedural guide were formulated and put into actions.

The Palestinian academic institutions adhered to the ministry of education regulations shifting to fully online teaching mode using different technology platforms such as Najah National University and Islamic university of Gaza except for the vocational and practical majors as in community colleges such as the University College of Applied Sciences and Khadouri University hence they adopted a blended mode of teaching under strict precautions. According to Kayed [33], “large segment of Palestinian educators and students alike are still cautious in their approach to e-learning education. This is evidenced by their resistance to change and reluctance to attempt new teaching/learning methodologies that do not align with a traditional classroom setting.” Forming a partnership type of relationship between lecturers and their students wherein students take an active role in the learning process is not a common practice at Palestinian universities [33]. Nevertheless, with the intensified efforts paid from all the Palestinian educational actors, the online learning has achieved positive feedback.

The implementation of e-learning has succeeded in Palestine, however it faces great challenges, especially in the besieged Gaza, which suffers from power outages for large periods and without a specific time, as well as the low economic level of poor Palestinian families, which make e-learning a burden on the guardians' shoulders, where they are required to provide computers or mobile phones for the continuation of the educational process [34]. In addition, other obstacles are related to the weak Internet connection in universities, schools and homes, and the lack of computer laboratories. New enrolled university students showed weak computer and electronic skills as well as some university lecturers due to the lack or insufficient training on various appropriate electronic programs [35].

### **5.4. North Africa**

#### **5.4.1. Egypt**

Compared to other neighboring countries, Egypt showed less COVID-19 cases with 1,283 per million despite being a high-density populated area [23]. Once reported positive COVID-19 cases, Egypt has temporarily closed its educational institutions including schools and universities similar to its counterparts of Arab countries [19], [20], [36]. The Ministry of Higher Education and Egyptian universities believed in the importance of emergency remote learning as one of the solutions to face the education crisis at the present time. Considerably, it has sought to establish e-learning centers within each university.

Considered as one of the oldest universities in Egypt, Ain Shams University has continued to fulfill the university mission to meet the increasing demand of its students given the fact that Ain Shams University has been keeping pace with scientific development and has paid attention to the field of e-learning. The university aspires to the great importance of online technology in the coming years, as its e-learning center

facilitates the process of distance learning by converting into electronic courses that can be accessed anywhere and at any time, and thus overcoming restrictions related to place, time and cost. As hundreds of thousands of students were impacted by the closure of universities, most of the Egyptian universities took various measures during the time of the campuses' closure to carry out their teaching continuity process online.

For example, the British University in Cairo provided e-learning by using Moodle, Microsoft Class Notes, and Microsoft Teams software. There have also been some other steps taken by the American University in Cairo to move from face-to-face to online classes as Blackboard, Moodle, and Zoom are some of the applications used to offer online courses. Some colleges and universities such as Tanta University and others have allowed students to select a "pass/fail" choice rather than a standard letter or number for the grading system [37]. The integration of online learning by most state universities in Egypt, such as Cairo University and Alexandria University, may be subjected to some barriers. This is partly due to the large number of enrolled students; while other problems are related to the availability of the correct software and hardware, networks, online infrastructure and storage capacity [37]. Alongside other analyzed universities in this study, no specific effort was devoted to students of Special Educational Needs and/or Disabilities (SEND) on the main Egyptian university websites or the searched documents.

## 5.5. Horn of Africa

### 5.5.1. Somalia

The new COVID-19 has cast a shadow over various areas of life in Somalia from health to economy and education. Somalia recorded its first case of Coronavirus in mid-March, while the total number of cases has now reached 4,445 cases, of which 3,412 have recovered so far, 920 have suffered complications from the virus, and 113 people have died [23]. In Somalia, the education sector has suffered in light of the crisis. Thousands of Somali students were unable to join their academic seats to continue studying in their educational institutions. Instead, many of them were forced to stop education, due to the inability to bear the Internet expenses, or due to the suffering of a large number of students and their families from digital illiteracy. Numbers of educational institutions were also forced to lay off thousands of teachers due to their inability to pay their salaries due to the stifling economic crisis that accompanied the health crisis of COVID-19. As a result of COVID-19 crisis, strict restrictions are imposed by the government of Somalia. Nearly all higher learning institutions in Somalia have migrated to online with immediate effect.

Respectively, universities released press statements to inform students of the risks of COVID-19 and the adoption of emergency remote learning. For instance, universities such as Mogadishu, Jazeera, Hormuud, Banadir University and the SIMAD University resolved that in this shutdown, learning will continue through e-learning platforms like Google Meet, Google Classroom, and Jam board. Similarly, Somalia National University advised all its students and lecturers to use e-learning platforms to ensure education continuity where both actors deliver classes using Zoom video conferencing [38]. Following COVID-19 outbreak in Somalia, strict preventive measures were implemented by the Somalia government [39]. Somali universities adhered to the government recommendations via two consecutive online procedures. For instance, Mogadishu University utilized five preventive measures such as physical distancing, face mask use and hand hygiene alongside other preventive measures. However, what was noticeable is that there was no reference to COVID-19 procedures and protocols on most of the viewed and analyzed websites compared to other neighboring or Arab countries.

## 6. DISCUSSION

This discussion is applied with interpretation related to aspects pertaining to HEIs initial responses, high-tech procedures and shifting to Emergency Remote learning, government legislations and education management, scientific research, stakeholders' collaboration, financial disruption, and the new normal anticipated vision in these HEIs.

### 6.1. Arab HEIs response to COVID-19

As highlighted in Table 1, all Arab countries are considered as developing economies despite variations in terms of high-income, upper middle income, lower middle income and lower income. Nearly most of the studied Arab countries reported a high number of cases per one million population especially in Arabian Gulf countries such as Bahrain and Kuwait while Yemen and Somalia showed the lowest numbers where this can be a questionable matter related to the availability of information updates. Few universities in these countries have taken the approach of rescheduling their academic calendar by extending their semester or taking semester breaks such as some private universities in Palestine, Yemen, and Somalia while the majority have taken no approach towards academic rescheduling or extending.

All Arab universities closed their campuses' doors converting to a virtual online mood of instruction as first step measures taken to prevent the spread of the disease except in some universities in Somalia and Yemen. The closure in most of these countries was a part of a country-wide policy such as in Bahrain and Kuwait, nevertheless some countries depended only on temporal localized closures especially in the outset of the pandemic such as in Palestine and some private higher education in Egypt. Some private universities in Bahrain, Yemen and Somalia took the approach of changing dates of the semesters' break to be starting earlier. Countries with high-tech infrastructure implemented various online strategies to support their education process with their students including Bahrain and Kuwait for example while some other countries like Egypt, to some extent, appeared to be striving to conduct their best efforts but within limited progress compared to their Arabian gulf counterparts. This goes in line with various studies [33]–[35] where the focus was devoted to the technological infrastructure preparedness.

War-zone and conflict areas including Palestine, Yemen and Somalia showed major challenges regarding the adaptation of the online education mode. Hence, in case of Palestine, electricity is only available for eight hours a day with weak technology infrastructure with unavailable computers and laptops for the majority of students. In Yemen and Somalia, on the other hand, some universities were controlled by some conflict parties destroying some of the universities' campuses and laboratories. Such struggle in war zone areas is reflected in previous studies [40]–[43].

## **6.2. Arab HEIs and shifting to emergency remote learning**

Interestingly, it was noticed that in some Arab countries, HEIs have adopted the digital strategy for teaching and learning prior to COVID-19 cases. This was anticipated in high-income improved countries such as Bahrain and Kuwait in terms of activating platforms and integrating online procedures in most of the university's operations such as registration and admission including the graduation stage. This was further noticeable with the Palestinian experience in their open universities to help Palestinian students nationally and in diaspora through distant learning, despite being classified as a low-income country. Some private universities, at the beginning of the pandemic, decided to move online but higher education providers have been instructed not to provide online tuition to restrict mobility. This can be considered an opportunity for higher education providers in countries that have yet to experience a growth in cases to establish their online instruction strategy such as in Somalia and Yemen.

In their response, Arab HEIs emphasized a comprehensive and detailed approach which is represented by cooperation between the Ministry of Health, telecommunications companies, and with legislative authorities as in Bahrain and Kuwait. The response also stressed the heterogeneity within Arab nations along with other countries worldwide to incorporate digital strategies for their higher education organizations with all the possible available effort and resources to maintain the student's wellness and safety preventing the students' attendance to the academic organization. HEIs' began introducing amendments to fully or partially remote education qualifications' recognition for the benefit of students, as in Kuwait and Bahrain. Shifting from conventional or blended learning to a completely virtual and online delivery is not an easy mission for higher education. This assumption lines with different studies that find the Emergency remote learning challenging and requires lots of preparedness [5], [6], [15], [35]. Respectively, this is associated with many challenges and unanswered questions regarding the future stages. Throughout the analysis some of HEIs' anticipated challenges range from creating legislative ground for e-learning, clarity of the institutions' vision, providing adequate technology infrastructure concerning the availability of adequate internet bandwidth, student and academician's infrastructure concerning the students' interaction with the academic processes and academicians' mobility. Other challenges are attributed to the adopted governments' policies of incompetence and crisis management agendas in terms of critical circumstances [3], [9].

## **6.3. Arab HEIs legislations and education management**

In terms of Arab HEIs' management and educational planning, there is a need for raising the standards of the level of institutional accreditation requirements related to distance education standards and the ability of Arab HEIs to apply e-learning. This goes alongside other literatures [6], [9] where addressing management is considered a crucial response. Developing countries struggle facing major problems related to policy analysis and coping with sudden changes of online scenarios in the light of their academic incompetence, fragile technical infrastructure, and lack of resources. Considerably, Arab low and middle income countries, in this study presented by Yemen, Palestine and Somalia, will suffer the most setbacks because they were already running out of the needed finance [40], [43].

Compared to Arab countries, education in the Western world is much more flexible where students can easily postpone a semester or academic year or more without affecting their university careers. In addition, universities, especially local and governmental, offer reduced fees for all students who have completed high school in study places - unlike, for example, many countries that require students to obtain



clear marks in general secondary examinations. A key aspect of the new standard would be greater flexibility, including the use of artificial intelligence based for proctoring resources for online evaluation. Throughout the authorities' encouragement and motivation, it was found that Arab Universities have been managing their operation in the present context. This was shown in the adopted, gradual and comprehensive procedures in countries such as Bahrain, however, it was not highly noticeable in countries like Kuwait, Palestine and Egypt and Somalia. The limited mobility and timidly confined exchange programs of academic activities due to COVID-19 lockdown have deteriorated the privatization and globalization of education among countries.

#### 6.4. Arab HEIs and the new normal

The universities are now in the journey from continuity to reopen their campuses. The new normal globally and in Arab world would see a greater emphasis on increasing access to reliable, accessible education through the use of free services and technologies. For a long time to come, the new standard will be a mixed combination of online and face-to-face. Through their journey for continuing education to reopening, uncertainty will remain a fiscal aspect of life at Arab colleges and universities for months to come. Leadership will have to prepare for several future scenarios in order to survive in these turbulent times, to seek new solutions and to stay flexible in the face of rapid change [41].

COVID-19 disruption presents destructive but correct conditions to explore the image of what the entire academic world could look like including students and stakeholders. There has never been a time for a globally organized, inclusive and mutual response pertaining to the best practice regarding online instruction [44]. This indicates that in a time of global crisis, there is an opportunity to share resources and skills around the world to ensure that our students' education will continue. The new normal would need innovations and a more open mindset in order to adapt to changing circumstances. Students respectively will need to develop skills to learn online and become self-directed learners. Furthermore, they need to take part in collective learning events and remain associated with peer groups and teachers and develop critical skills. In addition, privacy concerns and the negative effects of misinformation should be taken into account.

The study is in line with previous study [42] that argues the necessity of developing various learning tools to support disaster mitigation education efforts at the university level. Besides, it asserts the need to carry out a more detailed measurement of innovation regarding the students' skills in disaster mitigation. Arab HEIs, in the new normal, need to achieve a dual management system for success through the pandemic two tracks; the first with direct and immediate dealing with the administration and the second with documenting the Arab HEIs' experience to benefit from it in developing similar strategic systems for virtual interaction. New Standards should be based on the speed of the universities' response under the availability of political and government support. The Arab universities new normal will require more exposure to distance learning, which has invoked strategies to overreach a range of learners, including the most distant and vulnerable. In the developing world, there is no major difference between distance and traditional instruction of teaching in terms of learning outcomes [45]. There is a persistent perception that distance education is not as effective as class-based education.

Based on the findings and discussion, considerable educational implications can be applied both in the short and long run taking different planned and organized steps. These steps involve the synergy between Arab HEIs, government bodies and stakeholders and the development of multimodal approaches for better learning outcomes as a better solution to deal with education complexity and disruption through the pandemic. These implications can be utilized in terms of e-legislations and government support asserting the educational management. Governments must ensure and facilitate the availability of effective communication resources and high-quality digital academic experience, and facilitate technology-enabled learning for learners to bridge the inequalities that have arisen in the education system pre and post COVID-19, which can be unavoidable for uninterrupted learning. By sharing COVID-19 insightful tools with students, staff, and faculty, higher education administrators need to maintain their stakeholder network. They need to work with local health authorities to determine what sort of information is best to be shared with the HEIs.

In order to initiate policy implementation with regard to the introduction of online education, it is proposed that Arab universities and HEIs consider inventing the reinforcement of internet capabilities and improving their technology infrastructure. With some worthy innovation, certain administrative normality can be maintained as far as possible in order to avoid the suspending acts for instance holding virtual graduation ceremonies. Universities should work to set their goals upon helping students and the academic staff in order to sustain the continuity of teaching with quality and equity and to be prepared adequately for campuses' full reopening in the new normal. Decisions can further entitle the presented curriculum in these universities to shift into focusing upon the students' skills, creativity and learning experience; encouraging them to think critically.

The rapid shift in online learning adaptation and incorporation has generated overwork and tension for the teaching faculty. Therefore, teachers need to re-imagine the preparation of curricula, the development of e-content, assessment, and reporting forms that could have been established without proper training and

planning. Alongside the necessary online educational resources and training programs, more technical preparedness is needed for both teachers and students in the Arab world although it is challenging to manage it on a long-term basis under the existing technology infrastructure. No negligence towards digital transformation can be afforded in the long run. Noticeably, everyone must learn to live and survive with the present crisis and take steps forward.

## 7. CONCLUSION

Throughout the uncertainties of COVID-19, Arab HEIs continuously strive to deliver high quality of teaching and learning through employing consistent high-tech procedures entitling government legislations, education management, curriculum, scientific research and stakeholders' collaboration. Arab universities and HEIs alongside their counterparts worldwide have no best practices to imitate and no established templates to follow in the period of crises. Responding to the students' needs and leveraging the latest technological tools, HEIs' responses in Arab countries have covered numerous areas from the pandemic's outset pertaining to the purely health front, suspension and closure procedures, rescheduling and calendar adjustment change, assuring the continuity of teaching and training activities through distance learning and supporting management and administrative legislations. Operating throughout different economic, social and political environments, COVID-19 may give the opportunity for Arab HEIs, with a stronger emphasis on public service and social responsibility, to change and develop. The challenges they encounter will need a reestablished plan in the coming months by taking difficult decisions tackling the post-pandemic era.

As the world will not be the same after this crisis, Arab HEIs' vision and mission will not be the same. New requirements will be given to HEIs in terms of their collaboration with communities, teaching, national and international strategies, mobility, and in terms of their values. As for recommendations, it is the time for Arab HEIs to gravely rethink, revamp and redesign their education system for the demanding needs of the unprecedented situation. Universities will need to involve and consult all their stakeholders in the complex balance of financial disruption and public health. Through their journey to reopening their campuses, HEIs should focus on innovation in the recovery period. The key is not to replicate the apparently vulnerable pre-COVID systems, but instead to rebuild improved systems that allow accelerated learning for all students, getting benefit from the digitized approaches. New standards lay out the longevity and adaptability criteria where prospective educators will highly value creativity, coordination and research and development efforts. HEIs must be prepared enough for the challenging post-pandemic path ahead, where their choices will shape and steer their students' future.

This study was limited to six Arab countries. The researcher's focus was to explore most of the Arab countries from each region, with a stronger focus on countries that have differing responses and strategies to others. The aim of this stratification was to support the digital pedagogy strategy. It also further attempted to balance between countries with high, low- and middle-income status to achieve equilibrium in terms of data and findings.

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