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Transition to distance learning during the COVID-19 pandemic: Efforts within the Higher Education sector in the United Arab Emirates

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Abstract

In the UAE, the Ministry of Education (MOE) ordered the closure of higher education institutions' facilities in March 2020 as a precautionary measure to contain COVID-19 and allowed online distance learning to take place. In this paper, a study on the readiness of higher education institutions in the UAE to transition to distance learning during the COVID-19 pandemic is conducted, and the preparedness of several institutions is discussed. In addition, this study highlights the foundations of the distance learning system adopted by higher education institutions along with the adopted educational platforms. MOE played a crucial role in this crisis by governing, monitoring and supporting the transition among universities to assure business continuity in higher education institutions. Moreover, higher education institutions encountered several challenges while implementing a distance learning system which is presented in this paper along with possible solutions and scenarios. Furthermore, multiple initiatives were launched by the UAE government to support distance learning that resulted in maintaining learning continuity among higher education students and faculty.

1. Introduction

At present, Information and Communication Technology (ICT) has an extreme effect on the way knowledge is accessed and delivered. The Internet has provided seamless and unbridled access to knowledge, removing barriers and constraints. Online learning is considered as one of the learning applications that is increasingly becoming widespread with the use of the Internet (Demir Kaymak & Horzum, 2013). Online learning is defined as the process of learning where knowledge and skills are acquired by synchronous and asynchronous learning applications. Currently, online learning is widely adopted in higher education (HE) institutions. Statistics revealed that in the higher education sector in the U.S., more than 30% of students are involved in online learning activities (Demir Kaymak & Horzum, 2013).

Incorporating online learning in the higher education sector has emerged in recent years, as in 2002, about 1.6 million students participated in online courses. In 2008, around 25% of higher education students were having a minimum of one online course (Perry & Pilati, 2011). Many researchers have studied the impact of online education and blended learning (BL) in higher education student performance (Vo et al., 2017; Topper & Lancaster, 2016).

The Coronavirus (COVID-19) outbreak has disrupted life globally in early 2020 when the World Health Organization (WHO) declared that COVID-19 is an infectious disease caused by a new Coronavirus (WHO, n.d.). Consequently, worldwide governments announced the closure of schools and universities as a safety measure to stop the spread of the virus (Butler-Henderson et al., 2020). Around 1.3 billion students from both sectors were affected by this closure as of mid-April as stated by UNESCO statistics (UNESCO, n.d.). In fact, this pandemic has severely affected the education sector. Much research has been devoted to investigate this impact on the higher education sector and to study the response of institutions worldwide (Crawford et al., 2020).

In March 2020, the UAE's Ministry of Education (MOE) imposed several awareness and precautionary safety procedures to contain the virus in alignment with the National Crisis and Emergency Management Authority (NCEMA). MOE announced the closure of higher education institutions and the resumption of remote learning. Therefore, spring break was moved two weeks earlier so institutions can prepare for the transition to distance learning. Institutes that were ready for direct implementation were allowed to continue with their academic calendar as planned. In addition, MOE collaborated with telecommunication companies in the UAE (Du and Etisalat) to support distance learning in higher education institutions by providing students with free network packages. MOE circulated guidelines issued by the relevant education institutions' authorities to deal with the developments of the novel Coronavirus. All employees of education institutions were instructed to avoid travelling, and in the cases where travelling was required, they had to undergo a medical examination and remain in quarantine for a period of 14 days upon return, and the institutions were obliged not to allow those coming from abroad to enter any of their facilities without these measures. Moreover, MOE has instructed higher education institutions to stop all local and international foreign university trips and events. Also, institutions were directed to reprogram their academic evaluation of lectures, assessment methods, and vacations for students or academic, and administrative members, in a manner that they could ensure the achievement of academic accreditation standards.

In this paper, the transition into a distance learning system in higher education institutions that is governed by Ministry of Education is illustrated. The paper describes the preparedness procedure taken by institutions to ensure the continuity of learning in the COVID-19 pandemic outbreak period. It highlights the readiness of higher education institutions for the transition into distance learning along with the adopted platforms. In addition, it illustrates how the assessment process is performed along with encountered challenges. It also elaborates the role of UAE government and MOE to maintain teaching continuity.

In summary, this paper contributes to the implementation of distance learning programs in higher education institutions to mitigate the effects suffered due to the pandemic. The paper includes the following:

- Description of preparedness plan adopted by higher education institutions;
- explanation on the readiness and transition into distance learning;
- illustration of challenges encountered along with possible solutions; and
- role of MOE and UAE government.

The rest of the paper is organised as follows. In section 2, an overview about the Ministry of Education in the UAE is presented while section 3 summarises the literature review of online learning. Section 4 demonstrates the readiness of higher education institutions for distance learning. Section 5 describes the transitioning procedures implemented by higher education institutions along with the adopted platforms. Section 6 elaborates the effort made by the UAE government to support distance learning in higher education institutions. Section 7 analyses the data, and section 8 highlights the challenges of the online learning system from the higher education sector perspective. Section 9, however, informs on our recommendations and future directions after taking into consideration the findings in this paper. Finally, section 10 concludes this study.

2. Overview about the Ministry of Education

The Ministry of Education (MOE) governs the entire education system in the UAE, encompassing both the private and public sector providing general education. Figure 1 shows the full taxonomy of the ministry structure in which it is clear that the Ministry is responsible for both general and higher education sectors (MOE, n.d.).

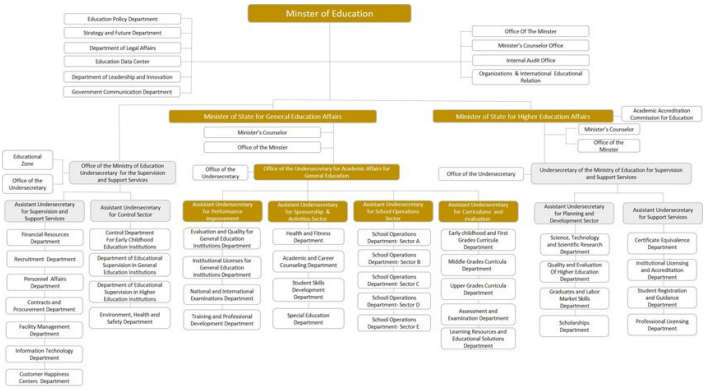

Figure 1: MOE Structure (MOE, n.d.)

In general education, public schools follow the UAE national curriculum, while private schools vary in their curriculum type (American, UK, etc.) to meet the nature of diversity in the country. MOE is the custodian for all policies and regulations that are related to education and inspection in the UAE as well as overseeing all public schools which are present in all Emirates. As for private schools, agencies such as Department of Education and Knowledge (ADEK) in Abu Dhabi and Knowledge and Human Development Authority (KHDA) in the Emirate of Dubai ensure that private schools implement and align their practices to UAE education policies and adhere to the standard quality, by conducting inspection as per the national framework that has been developed by MOE. These agencies work closely and collaboratively with MOE to support all private schools in their jurisdiction.

3. Literature review

Spanning over two centuries, distance learning has undergone many substantial changes in the way how this method of learning has been delivered. In literature, distance education environment has been referred to in many ways, e.g. including distance learning, e-learning, online learning (Çakıroğlu et al., 2019). Among others, distance education is the most common term used to refer to distance learning. It describes the process of providing geographically distant learners access to the learning process whereas e-learning is defined as a method of learning that incorporates technological tools such as Internet, videotape, satellite broadcast and TV. The use of e-learning system can allow students to have more flexible and easier learning experience as they can access the learning material inside and outside the classroom (Almaiah & Alyoussef, 2019). Online learning is described by many researchers as the access to learning experience through technological tools while some researchers defined it as a newer version of distance learning (Moore et al., 2011).

Another terminology used to describe distance education is online distance learning (ODL) which is widely used in academic institutions where most of the courses are delivered online and there is no need for physical meetings between instructors and students (Cheawjindakarn et al., 2013). In fact, researchers defined online courses as courses that are delivered with at least 80% of their course content through online learning with limited or zero face-to-face interaction. This can be done using video conferences, course management system (CMS) and other technological online tools (Cheawjindakarn et al., 2013).

Online teaching has more variety and options compared to the traditional teaching as it provides more features that cannot be possible with the traditional method (Perry & Pilati, 2011). With online learning, instructors are equipped with sophisticated tools that support them in evaluations and provide them with more creative options to deliver course content. Online learning can link instructors, students and resources one to another via communication media (Çakıroğlu et al., 2019). At present, there is much discussion on how to apply an effective online learning system, which almost requires a blend of both classic face-to-face learning and online learning. There are several factors that affect the efficiency of online learning such as community, having regular feedback, and providing clear expectations (Sadera et al., 2009; Perry & Pilati, 2011). These factors are essential to maintain student success and improve the efficiency of online learning. Therefore, creating a successful and productive online learning environment needs appropriate incorporation of both pedagogy and technology within the course delivery process (Perry & Pilati, 2011).

4. Readiness of higher education institutions for distance learning

This section illustrates the readiness of higher education institutions for learning by distance in regards to infrastructure and availability of resources and platforms.

4.1 Infrastructure

In the UAE, the majority of higher education institutions are pre-equipped with a learning management system to enhance the educational journey for students. These systems are supported by ICT available by service providers. To support the online learning system in this pandemic, Telecommunications Regulatory Authority (TRA) has launched several initiatives. TRA coordinated with telecommunication companies Etisalat and Du to provide free access to numerous online learning applications such as Microsoft Teams, Blackboard, and Skype for Business. They also extended the bandwidth for users to facilitate their Internet network usage.

4.2 Availability of resources and platforms in HE

There are several platforms used for distance learning in higher education institutions including Blackboard, Moodle, and Adobe Connect. These tools are used by students and faculty to support the distance learning process. For web meetings, institutions used tools such as BigBlueButtons and Microsoft Meetings to facilitate communication between students and instructors. More details about the e-learning platforms that are used in higher education institutions under COVID-19 pandemic are presented in sub-section 5.1.

5. Actions to transition into distance learning in the UAE

This section describes the preparedness plan created by higher education institutions to transition into distance learning during the COVID-19 pandemic.

5.1 Transition of institutions in higher education: a case study of best practices in five universities

The Ministry of Education has organised a virtual forum to discuss higher education institutions preparedness in response to COVID-19 with the presence of more than 100 leaders of higher education institutions in the country. This forum aimed to discuss the strategy adopted by institutions to face the challenges raised from the current health situation and to exchange best practices on how to overcome the obstacles of the Coronavirus challenge. Representatives of several institutions presented their experience and practice regarding the measures taken to ensure business continuity in their institutions considering the outbreak of the pandemic. They also highlighted the most prominent challenges faced by institutions along with possible solutions.

This section summarises the level of preparedness of higher education institutions in the UAE in response to COVID-19. In this section, we highlight the responses of five universities which are: United Arab Emirate University (UAEU), Higher Colleges of Technology (HCT), Zayed University (ZU), Khalifa University (KU) and American University of Sharjah (AUS).

5.1.1 United Arab Emirate University (UAEU)

The UAEU started to transition into online teaching on March 1st, as the university planned to conduct a pilot experience on March 4th and 5th for the whole university. Then on March 22nd, the university officially started online teaching and learning. Several technology platforms have been used by the UAEU in the online teaching process, including Blackboard Collaborate Ultra and MS Office 360 in which all classrooms are equipped with smartboards using MS Office 360. For faculty and students, Ellucian's Banner has been used to facilitate communication. Also, the UAEU has offered UAEUX on edX with MOOCs offered to the general public.

The university adopted four plans for online teaching as follows:

- Plan A: Using Blackboard Collaborate Ultra to conduct both synchronous and asynchronous sessions
- Plan B: Using Microsoft Teams instead of Blackboard Collaborate Ultra
- Plan C: Using Panopto
- Plan D: Using audio and/or video annotated PowerPoint presentations

Regarding research continuity, the university provided online research services to be available 100% to all researchers whereas it supported 20% of the operation of important laboratories to maintain ongoing research. In addition, to support the research community, the university established online grant management systems and online patent submission processes.

There are several challenges that UAEU encountered with online teaching. Firstly, there are many students who are suffering from no or poor Internet connections. This affects the quality of the delivered material to students where it becomes more challenging as some faculty members do not record their sessions. Secondly, many technical problems occurred due to the high traffic on cloud-based solutions. Also, many students and faculty members who did not attend the university online tutorials regularly contact the IT department for simple technical issues.

5.1.2 Higher Colleges of Technology (HCT)

From the start of the pandemic, HCT has prioritised the safety of students and staff and worked hard to turn challenges to opportunities. The institute responded to NCEMA and it conducted international benchmarking and best practices in order to prepare a pandemic preparedness plan to follow. To transition into online teaching, HCT used Blackboard (Campus-Elife) and HCT Smart Learning Platform, Uber-Like smart e-Learning, that allows students to access educational materials regardless of their location, to help them during the learning process.

HCT has prepared an Emergency Preparedness Plan as a measure during the COVID-19 pandemic. This starts by announcing cancellation of classes and campus closure. The plan also includes monitoring and assessing risk levels, anticipating actions in a critical situation with solutions to build a recovery plan. Regarding Environment, Health, and Safety (EHS), HCT also has a pandemic emergency management procedure, to coordinate with external authorities for emergency cases, and to monitor social distancing practices. Moreover, HCT made a great effort to overcome the challenges in the transition period. Many guidelines and materials were prepared to support students and faculty members in their online teaching process. Also, the institution supported the readiness of resources and technology for students and instructors.

5.1.3 Zayed University (ZU)

Zayed University has responded quickly to the transition into online teaching. Once it declared the closure of the campuses, immediate measures have been taken to smoothen the transitional period. The IT department provided full network support to all students and faculty members as well as guaranteed the availability of the needed hardware and software components. Also, the IT department operated a call center to solve problems. Several technology platforms have been used by Zayed University in the online teaching process, including Blackboard and Adobe Connect (AC). Regarding research continuity, faculty research was

facilitated using the library that can be accessed remotely by researchers. However, research using laboratories and studios has been put on hold as faculty members are working only from home. In order to protect experimental facilities, laboratory technicians are permitted to access the campus.

There are several challenges that come with the online teaching process. The most challenging one was the virtual practical sessions involved in many subjects such as Science and Art as it requires numerous practical activities during the class. Therefore, students were asked to work at home and share their work later using Adobe Connect (AC). Faculty also record themselves while they are performing practical skills and techniques and share it with their students through AC.

5.1.4 Khalifa University (KU)

Khalifa University responded to the pandemic immediately by forming a KU Pandemic Committee to develop a multimedia awareness campaign about the pandemic. The university made sure that all faculty members have laptops and interactive teaching pads to support the online learning process along with continuous and full support from the IT department. Training on distance learning tools and methodologies was done for all faculty members. Also, an FAQs platform was developed for the KU academic community to maintain business continuity in the university. Regarding distance learning, the university first piloted online learning and then gradually shifted towards implementing a working from home strategy. LMS platforms such as Moodle and Blackboard were provided to be used by students and faculty to support learning by distance. For meetings, several web meeting tools are used such as BigBlueButtons and Microsoft Meetings. To support the technology infrastructure in the university, the network bandwidth was increased. Regarding research activities, the university provided remote access to supercomputers and software to support researchers in maintaining their ongoing simulations along with full access to library resources. Moreover, the university considered web meeting platforms that can be securely accessed.

The university has investigated different scenarios for the admission of the next academic year as the Emirates Standardized Test (EmSAT) and entry exams are requirements for admission to the university. Since these exams may not happen, the university proposes three possible scenarios for the admission acceptance.

Scenario A:

Case of conducting EmSAT exams by end of June:

- The admission will be based on the EmSAT exam, while an interview will be done virtually.

Scenario B:

Case of no EmSAT exams in June:

- In July, the university will conduct admission exams in a multipurpose hall taking into consideration social distancing criteria.

Scenario C:

Case of neither EmSAT nor KU entrance exams are conducted:

- Grant university conditional admission for applicants based on high school scores.
- Students who hold conditional admission will be directed to study in Foundation year.

The university has built e-learning quality assurance standards to monitor new updates about distance learning. This includes updated e-learning policies and daily reports from students and faculty that include feedback about e-learning system and the used technology. Also, this includes having regular reports from the IT department regarding system efficiency and description of technical issues. In addition, it covers teaching methodologies by instructors to successfully achieve the outcomes of the courses. For Senior Design Project (SDP) where the hardware design needs hands-on work, the submission deadline may need to be shifted to the summer, as students will then have more time to work on it.

As part of the university's preparedness plan, a set of challenges was defined along with their corresponding action plans. For distance learning, several challenges were anticipated. Firstly, for the courses that need physical labs, a review of curriculum design was undertaken in which labs are replaced with virtual labs and simulations. Secondly, to support students with the distance learning system, instructions and guidelines were shared with them to explain how to use e-learning platforms along with 24/7 IT support services. To maintain distance education, the university has prepared a list of primary and secondary instructors for each course in case faculty members fall sick. In the research field, the main challenge was the suspension of research projects due to lab closures. To overcome this challenge, researchers were directed to re-plan their research to concentrate more on the simulation parts. For some researchers, they were given access to the labs while considering strict precautionary safety measures. Another challenge faced by researchers is the delay in purchasing research equipment due to the procurement suspension. As a response to this challenge, the university made sure to continue with the acquisition and installation of all needed equipment.

5.1.5 American University of Sharjah (AUS)

AUS started online learning on March 8, 2020, with faculty members devoting much time on online teaching to support students and help them. The timeline for many projects has been extended due to the closures of laboratories. The university focused on the quality assurance of distance learning as it was a quick transition to a different mode of course delivery. Therefore, the university worked on identifying the limitations taken from student and faculty feedback.

The university classified the challenges by two categories:

- Challenges for spring 2020:
  These challenges include the completion of undergraduate senior design projects and graduate students' theses, conducting laboratory courses and online examinations. To overcome these issues, the university directed to use simulations whenever possible and to provide an asynchronous experiment by providing students with data to be used. Also, the university decided to honour graduate students' contracts for the spring semester.

- Challenges beyond spring 2020:
  These include registration for the summer semester, as the university is planning to continue with course scheduling and registration. For the next fall semester, contingency planning will be prepared.

5.1.6 Policy of assessment in higher education

The Ministry of Education has issued a decree to regulate the continuity of teaching in higher education institutions until the end of the academic year 2019-2020 including the Summer semester. The decree includes instructions about distance learning system. The main points of the decree have been highlighted below:

- All institutions must adhere to the announced university calendar, especially with regard to the number of teaching weeks and exam dates.

- All institutions are obligated to maintain the approved study plan for each program and to offer all its corresponding courses.

- The institutions should impose appropriate procedures to monitor and ensure that students attend the distance learning process.

- Regarding assessments, the institutions should apply appropriate procedures while conducting exams remotely and use advanced tools to capture cheating behaviours.

- The institutions are instructed to keep the actual course grade whether it's a letter grade or a digital grade (depending on the institution's result system) and give students sufficient time in case they want to keep the actual result or have it converted to a Pass/Fail grade. In case students express their desire to have a Pass/Fail grade, the institutions should keep the actual grade in their database.

- The institutions should have a note on the student transcript, in which it identifies the semesters that have been run via distance learning along with the courses for which their grades have been converted to a Pass/Fail grade.

- The institutions shall exempt students from academic warnings, probation and academic dismissal during the distance learning period.

- The institutions must extend the withdrawal deadline and give students the option to withdraw from the course until the end of the last week of teaching and before the final exam of the course.

- The institutions should not deprive any student from entering the final exams during this period.

- The institutions should complete a discussion of graduate students' theses and graduation projects through distance learning methods and follow the simulation system for practical laboratory experiments.

6. Role of UAE Government in distance learning

After MOE announced the closure of the educational sector and the transition to distance learning, numerous initiatives were established by the UAE government to support the continuity of learning. From the beginning, the government coordinated with Telecommunications Regulatory Authority (TRA), Du, and Etisalat to offer free access to educational platforms and to offer free Internet packages for families with no Internet connection at home (UAE, 2020). In addition, laptops were distributed for students and faculty members who did not have one at home so they could resume distance learning and teaching in higher education institutions. Another initiative that has been established to support students is the Hematak initiative that includes remote interactive activities (FCSA, n.d.). Moreover, several initiatives have been launched by the government in coordination with the Emirates Red Crescent Authority, such as Ma'an and YallaGive, that aim to provide medication, food supplies, and educational support for families and students (The National, 2020). In fact, these initiatives along with the availability of the online platforms in the universities supported the students during the online learning period and did not result in an increase in the tuition fees.

7. Data and Analysis

From the moment that MOE announced the transition to distance learning, it kept monitoring and regulating online learning implementation in higher education institutions as it is considered the authority that governs the educational sector in the UAE. Therefore, multiple surveys were conducted by the MOE data centre to observe distance learning operations in higher education institutions. The surveys took place every week for a period of four weeks in order to capture learning by distance experience and take necessarily possible actions to enhance it based on the received feedback.

In the first week, a survey was conducted for higher education institutions. The total number of participants was 73, with 54 participants from the private sector and 19 from the public sector. The survey measured the level of readiness of

institutions for distance learning for the following aspects:

- Home readiness;
- infrastructure readiness;
- staff readiness; and
- challenges faced at the beginning of distance learning.

The home readiness factor reflects as to what extent students are ready to start distance learning. This includes questions regarding the availability of laptops, Internet access and access to systems and shared documents while questions that cover staff readiness are related to factors that reflect how much instructors are capable of delivering online teaching, which includes technical support, training programs and implementation of online classes. The infrastructure readiness factor reflects the availability of online platforms and resources in the institutions and the availability of a data centre. Finally, challenges highlight the challenges faced at the beginning of the distance learning period.

It can be observed from Figures 2 and 3 that higher education institutions' overall readiness for transition is considerably high. This is due to the fact that college students are independent and are familiar with online learning applications as they are used to deal with such applications to download course material, and submit assignments and projects. Similarly, this also applies to the faculty in the universities since they are used to deliver some of the course material online before the crisis. Thus, this significantly supported the transition to distance learning in the higher education sector.

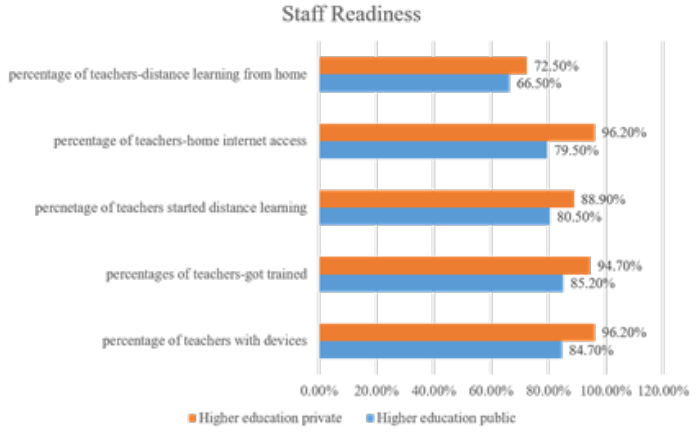

Figure 2: Staff Readiness

In the fourth week survey, the survey was conducted again to compare data with the first week analysis. The result of both surveys is summarised in Table 1.

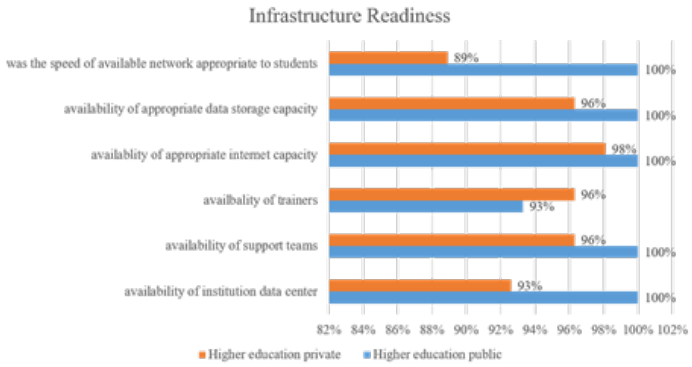

Figure 3: Infrastructure Readiness

It can be noted that more students accessed the available online platforms in the fourth week in comparison with the first week. The higher education statistics showed an improvement in infrastructure in the distance learning system. The reason behind this increase is that MOE supported students and instructors who needed laptops or Internet access. In addition, the higher education maintained its efficiency in having well-trained staff which increases the satisfaction of the online learning among instructors. The Table shows the improvement in the services that the MOE has provided to students and instructors.

Table 1: Surveys' data in the first and fourth week

Aspect	Higher education 1st week	Higher education 4th week
Online content not ready	10%	6%
Teachers do not accept distance learning technology	18%	4%
Quality of video and sound issue while using live streaming	29%	24%
Weakness of internet at teacher's home	33%	25%

Another aspect that was considered in the survey is the average studying hours for students per day. Figure 4 depicts the number of studying hours for higher education students per day. It can be noticed that 90% of students spend around nine hours in distance learning whereas a minority spend around three to four hours per day in online learning.

Figure 4: Number of Studying hours

8. Challenges of practical implementation: lessons learned

This section summarises the main challenges faced by higher education institutions during the transition to learning by distance. The greatest challenge was time limitations as the transition period was very short and institutions had to work intensively to provide sufficient support to students and faculty members. This challenge was mainly faced by the Information Technology (IT) department as they received a huge number of technical inquiries related to connections and clarity of online learning applications.

Another major challenge is examination methods in distance learning as institutions should maintain integrity and credibility when determining a method of assessments as exams will be conducted electronically with a highly secured proctoring system that can monitor the students' environment and detect any cheating behaviors. To assure the efficiency of such exams, universities should perform multiple simulation scenarios for conducting exams.

Moreover, managing laboratory courses in distance learning is highly challenging as many experiments require hardware implementations that need a physical presence of instructors and students to be properly performed. In order to solve this issue, laboratory experiments are currently conducted via the use of simulation tools and there is an investigation on whether or not simulations are enough to run laboratory experiments. Also, managing art classes across higher education is challenging and there should be proper planning to ensure proper delivery of the learning outcomes.

For the admission of the next academic year, a big challenge facing higher education institutions is regarding admission requirements and acceptance, with the current disruption of national and international exams such as EMSAT, IELTS and TOFEL tests. Thus, institutions should explore options and be prepared for next year admission.

Finally, conducting practicums and internships for juniors, seniors and graduate students is extremely challenging especially for students graduating from educational and medicine majors as they have to join practicums and internship programs to be able to get a job and to graduate from universities.

9. Recommendations and future research

The COVID-19 pandemic has significantly changed the higher education sector as it has allowed students and instructors to interact virtually. Although students and instructors were physically isolated, they devoted their time and effort to preserve business continuity of their organisations, both in teaching and research. This pandemic played a vital role in motivating researchers in higher education institutions to conduct extensive research in the areas of smart learning and artificial intelligence to support their and other institutions in this crisis. Therefore, the next step for all researchers, instructors and leaders in higher education is to work collaboratively to overcome the aforementioned challenges to assure fair and high standards of knowledge delivery along with high quality online learning. This will require great dedication and enthusiasm to solve these issues and maintain a continuity of learning. Thus, the future directions will be towards developing robust assessment models, laboratory courses, internship programmes and a creditable admission system where all possible scenarios are explored.

10. Conclusion

Online learning became of great interest in the educational sector due to the recent emergence of various learning applications. The COVID-19 outbreak forced higher education institutions in the UAE to close and shift towards distance learning as a precautionary measure to contain the virus.

This paper captures the experience of distance learning across higher education institutions across the UAE during the COVID-19 pandemic. This paper aims to discuss universities' transition to distance learning with the use of the available online educational platforms. This means that the existing online learning algorithms, platforms and resources in higher education institutions were developed in order to establish a distance learning system and to maintain learning continuity. Institutions created a preparedness plan to deal with the current situation and to avoid disruptions to teaching and research. This plan included possible challenges that may be encountered along with the possible solutions and possible future scenarios. Moreover, the UAE government along with the Ministry of Education (MOE) significantly supported the higher education sector to reduce the impact of challenging situations and improve the efficiency of distance learning. In addition, MOE has monitored, governed, observed and regulated the online learning implemented across higher education institutions in the UAE.

It is worth noting that this pandemic has paved the way for a new era of a learning system that will shape the future teaching methodologies where it will be based on smart and sophisticated systems. The role of online learning will shift from being an off-the-shelf emergency solution into an effective learning mechanism that will create new opportunities and supplement existing traditional learning methods. This will definitely require further research, investigations and development to cover all educational aspects and fulfil the requirements of effective learning and teaching.

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