

The Impacts of the Covid 19 on the Algerian Higher Education System: Distance Teaching and Learning: a Critical Analysis

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Abstract. The COVID-19 pandemic has caused the most serious disruption of education systems in the new millennium. Algeria is not of any exception since most of its institutions mainly in economy and education are still threatened causing the collapse of years of progress. However, the sanitary crisis has stimulated innovation within the education sector. Distance learning solutions have been developed as quick responses to the government in order to support the education follow up. The present paper provides a critical analysis of the online education in the Algerian universities during the pandemic crisis. An electronic interview designed to teachers and learners as a research design based on a mixed research methodology was implemented to set the future framework of a successful e-Learning in the Algerian Higher Education. The results show that Education Continuity through e-learning platforms remains a debatable concern especially during unexpected situations.

Keywords. Algerian Universities, Critical Analysis, COVID 19, on- line education

ملخص. تسبب جائحة COVID-19 في أخطر اضطراب في أنظمة التعليم في الألفية الجديدة. الجزائر ليست استثناء لأن معظم مؤسساتها في الاقتصاد والتعليم كانت ولا تزال مهددة مما تسبب في انهيار سنوات من التقدم. ومع ذلك ، فقد شجعت الأزمة الصحية على الابتكار في قطاع التعليم. تم تطوير حلول التعلم عن بعد كاستجابة سريعة للحكومة من أجل دعم متابعة التعليم. تقدم هذه الورقة تحليلاً نقدياً للتعليم عبر الإنترنت في الجامعات الجزائرية أثناء أزمة الوباء. يسلط الضوء على أوجه القصور في التعليم عبر الإنترنت من خلال منصات التعلم الإلكتروني. تم تنفيذ مقابلة إلكترونية مصممة للمعلمين والمتعلمين كتصميم بحث قائم على منهجية بحث مختلطة (نوعياً وكمياً)، لوضع الإطار المستقبلي لتعلم إلكتروني ناجح في التعليم العالي الجزائري. تظهر النتائج أن استمرارية التعليم من خلال منصات التعلم الإلكتروني لا تزال موضع نقاش خاصة في المواقف غير المتوقعة. الكلمات المفتاحية. جامعات جزائرية ، تحليل نقدي ، كوفيد 19 ، تعليم إلكتروني

1 . Introduction

The beginning of the New Year 2020 has been hit by the COVID 19 pandemic which has shocked the world's populations causing isolation and face to face communication prohibitions. A psychosis climate of fear, questioning and blurred future settled down. All the social and political activities have been harshly hung on. Therefore, a serious decline in the global economy, medical systems and social life standard has severely been felt.

According to the latest surveys, the new virus has affected 210 of the world countries. There are 2,261,425 reported cases, 154,734 confirmed dead, and 579,212 being recovered (Regencia, Siddiqui, and Allahoum, 2020) There are affected countries than others due to COVID 19. The U.S. for instance, the country is presented with the highest rate of infections: 712. 184 reported cases, 32. 823 confirmed deaths, and 59. 532 recovered; followed by Italy which has 127. 434 reported cases, 22. 745 confirmed deaths, and 42. 727 recovered; then Spain which has 190. 853 reported cases, 20. 002 confirmed deaths, and 72. 963 recovered; and France with 109. 252 reported cases, 18. 681 confirmed deaths, and 34. 420 recovered (Corona virus Resource Center, 2020). As the mortality and infections rates increase, research centers and laboratories still challenge to find the appropriate cure to COVID 19.

As COVID-19 outbreak has brought considerable human suffering and major economic disruption, it led policy makers in most world countries to implement confinement and isolation policies so as to contain the spread of the virus closing the main places where people mostly gather either for life subventions or any other businesses. The education domains have been under prohibitions. As a result, schools, colleges, and universities were subjected to closure to contain the Corona virus and stop its fast widespread.

Algeria, as many other world countries, has been drastically affected by the 2020 Corona Virus pandemic spread since Feb. 25th, 2020. According to confident news, an Italian citizen was tested positive for SARS-CoV-2 ('Algerian health minister confirms first COVID-19 case', 2020, para. 1- 2). Then, other cases with Covid-19 were revealed, and the total confirmed cases in Algeria were 2534 cases, including 367deaths as of 18 April 2020('Corona virus: 116 new confirmed cases, 3 new deaths in Algeria', 2020, para. 1). As a result to the COVID-19 pandemic, the Algerian President ordered an immediate cessation of study at schools and universities and all sorts and forms of education institutions to prevent a possible widespread of the Corona virus. As a result of the presidential order, the Minister of Higher Education called upon to move to the use of online education by using online platforms to ensure the education continuity during the quarantine period.

As aforementioned, the paper at hand highlights the status of on- line education in the Algerian universities during COVID 19 sanitary crisis. An analysis approach based on the above collecting data tools and research methodology, we target therefore the ways online teaching and learning through University e-platforms could be conducted.

The present research seeks answers to the following questions:

- a- How has the university community reacted to the new sanitary crisis?
- b- How could primarily the Algerian universities respond to COVID- 19?
- c- What solution measures have been suggested for education continuity at the university?
- d- How was the online education implementation in the Algerian Higher Education field during the COVID- 19?

e- Have these measures proved efficient to rely on aftermath?

2. COVID 19 : Definition, background, and its impacts

2.1. Definition

The new Corona virus which caused the education disruption has had, and will continue to have, substantial effects beyond education. Closures of educational institutions hamper the provision of essential services to education communities. Health experts are concerned because little is known about this new virus and its disasters go very rapidly and dangerously. The virus that causes COVID-19 is a new corona virus that has spread throughout the world. Corona virus is dangerously contagious. (Corona virus, 2020, para. 1) Corona viruses are a large family of viruses. Many of them infect animals, but some corona viruses from animals can evolve (change) into a new human corona virus that can spread from person-to-person. This is what happened with the new Corona virus known as SARS-CoV-2, which causes the disease known as COVID-19. Diseases from Corona viruses in people typically cause mild to moderate illness, like the common cold ('Novel Corona virus Disease', 2020, p. 1). Health experts are still considering the details. They are still learning about the range of illness from novel Corona virus. Reported cases have ranged from mild-illness to severe pneumonia that requires hospitalization. So far, deaths have been reported mainly in older people who had other health disorders (Corona virus, 2020, para. 2)

Like other respiratory illnesses, such as influenza, human corona viruses most commonly spread to others from an infected person who has symptoms through:

- + Droplets rejected through coughing and sneezing ;
- + Close personal contact, such as caring for an infected person;
- + Touching a virus infected object, hand contacts with mouth, eyes before any sanitary measures (washing hands) ('Novel Corona virus Disease', 2020, p. 1)

Though the multiple and ongoing trials for any potential treatment, no specific vaccines or treatments for COVID-19 has been discovered. (Corona virus, 2020, para. 3)

2.2. Background

On 31st December 2019, the Wuhan Municipal Health Commission in Wuhan City, Hubei province in China, reported a cluster of 27 pneumonia cases of unknown a etiology, including seven severe cases, with a common reported link to Wuhan's Huan Seafood Whole sale Market.(a whole sale fish and live animal market selling different animal species) (Wuhan City Health Committee, 2020). The cases presented with clinical features common to several infectious respiratory diseases; such as, fever, and bilateral lung infiltrates on chest radiographs. Authorities placed all cases under isolation, initiated contact tracing activities and applied hygiene and environmental sanitation activities at the market, which was closed to the public on 1st January 2020. At that time, Chinese authorities reported no significant human-to human transmission and no cases among health care-workers (Wuhan City Health Committee, 2020).

On January 9th, 2020, China CDC reported that a novel Corona virus (2019-n CoV) had been detected as the causative agent for 15 of the 59 pneumonia cases ('News X. Experts claim that a new Corona virus is identified in Wuhan', 2020). On January 10th, 2020, the first novel Corona virus consequence was made publicly available. Preliminary analysis showed that the

novel Corona virus (2019-nCoV) clusters with the SARS-related CoV ('Holmes E. Initial genome release of novel Corona virus', 2020).

Since December 31st, 2019 and as for January 20th, 2020, 295 laboratory-confirmed cases of novel Corona virus 2019-nCoV infection, and four deaths, have been reported ('National Health Commission of the People's Republic of China', 2020). The first confirmed Corona virus cases outside China occurred on Jan. 20th, in Japan, Thailand and South Korea. On Jan. 21st, the first case in the U.S. was identified in Washington State.

On Jan. 24th, the first two European cases were confirmed in France. By Feb. 1st, eight European nations had confirmed cases of COVID-19, and a month later that count had risen to 24 countries with at least 2,200 cases, most of them in Italy. On March 11th, Italy reached 10,000 cases and the World Health Organization declared the outbreak pandemic. March also saw exponential spread of the virus throughout the U.S., with all 50 states reporting cases by March 17 (Wood, Adeline, and Talbot, 2020, para. 2- 3). The Corona virus pandemic continues to grow and evolve, as it spreads globally. WHO reports that more than 2.5 million people have been infected and 179,000 died ('WHO Director-General's opening remarks at the media briefing on COVID-19', 2020).

2.3. COVID-19 Impacts

Since its outbreak, the Corona virus continues to wreak havoc in the global economy. As a consequence to its global widespread, COVID- 19 has paralyzed the global economy, hindered economic production, affected supply and air transport throughout the world, weakened global demand, isolated and placed countries under quarantine, and afflicted the financial, aviation, transportation, and tourism sectors with heavy losses.

The slowdown of manufacturing in China because of COVID-19 outbreak is disrupting world trade and could result in a \$50 billion decrease in exports across global value chains (United Nations Conference on Trade and Development, 2020, p. 2). Because China has become the central manufacturing hub of many global business operations, a slowdown in Chinese production has repercussions for any given country depending on how reliant its industries are on Chinese suppliers (United Nations Conference on Trade and Development, 2020, para. 1).

In this context, UNCTAD Secretary-General Mukhisa Kituyi believed that COVID- 19 outbreak and widespread has caused serious risks to global economy, in addition to human threats. Therefore, any decrease in industry or manufacturing in any part of the world will result in a slowdown in global economic activity (United Nations Conference on Trade and Development, 2020, para. 4).

According to UNCTAD estimates, the most affected sectors include precision instruments, machinery, automotive and communication equipment. Among the most affected economies are the European Union (\$15.6 billion), the United States (\$5.8 billion), Japan (\$5.2 billion), The Republic of Korea (\$3.8 billion), Taiwan Province of China (\$2.6 billion) and Viet Nam (\$2.3 billion). The estimated global effects of COVID-19 are subject to change depending on the containment of the virus and or changes in the sources of supply (United Nations Conference on Trade and Development, 2020, para. 6).

2.4. COVID 19: The Algerian Context

The Algerian Ministry of Health confirmed the first Corona virus (COVID-19) case in the country on Tuesday, February 25th. The case in Algeria marks the second in the African continent after the one confirmed in Egypt. COVID 19 as the first victim has emerged in Blida. The epidemiological investigation made it possible to trace the contamination to an 83-year-old Algerian and his daughter residing in France - according to the Ministry of Health. Both were confirmed positive for Corona virus ('Corona virus: in Algeria, 16 members of the same family infected', 2020, para. 1).

In 12 March 2020, Blida soon became the epicenter of the epidemic. Fearing a spread of the virus in the other *Wilaya*, the Algerian authorities decided that same day to close nurseries, schools, and universities. On 17th March, the state announced the closure of all the country's land borders, the suspension of all flights to and from Algeria, and banned all gatherings and markets. On 19th March, 90 cases and nine deaths from COVID-19 were confirmed (Martinez, 2020, para. 1).

On 22nd March, the government stopped all means of public transport and on 23rd March it placed the town of Blida in total lockdown. With only 450 intensive care beds for a population of 42 million inhabitants, Algeria seemed powerless to fight against COVID-19. An extensive awareness-raising campaign through social networks and loudspeakers in the streets and mosques was rapidly implemented. On 4th April, all shops, restaurants and cafés closed and taxis were banned. A curfew from 7 p.m. to 7 a.m. was gradually imposed and extended to all the country's *Wilaya*. The curfew was extended and the time periods changed according to the severe progress of the pandemic. On the therapeutic level, the Minister of Health validated (23rd March) the protocol of treatment with chloroquine associated with azithromycin, praised by Professor Raoult in Marseilles. The Algerian strategy to fight COVID-19 also included a ban on the dissemination of "any statistics other than those of the Minister of Health" (Martinez, 2020, para. 1).

Actually, the situation in Algeria is serious since the number of affected COVID-19 keeps increasing everyday. It has been announced that one hundred and eighty-five confirmed cases with Corona virus (Covid-19) and seven deaths have been recorded over the last 24 hours, bringing the number of confirmed cases to 5182 and that of deaths to 483 ('Corona virus: 185 new confirmed cases, 7 deaths in Algeria over last 24 hours', 2020, para. 1).



Fig. 1: Algeria Corona virus stats tracker. Source: <https://visalist.io/emergency/coronavirus/algeria-country>

It is worth to mention that the Algerian universities had a valuable contribution in the fight against the spread of Corona virus. Several university institutions across the country have rushed to contribute to the broad campaign of solidarity in which various segments and bodies

of society participated to confront the spread of COVID- 19 that swept throughout the whole world, by converting university laboratories into factories to produce sterilizers and distribute them to a number of hospitals.

Accordingly, a group of Master 2 students in the fields of analytical and pharmaceutical chemistry at the Faculty of Sciences of the University Ben Youcef Ben Khedda, Algiers, under the supervision of the faculty teaching staff and its dean, produced an aqueous alcohol solution for the hands according to the scientific recommendations of WHO. This contribution was in fact, to tackle the terrible spread of the new Corona virus. The students produced within one day a significant amount of this solution, estimated at 360 vials with a capacity of 400 ml and dozens of vials with a capacity of 5 liters.

If the University Ben Youcef Ben Khedda, Algiers, had given the opportunity to students and researcher teachers merely supervised the process, the matter differs at other universities across the country, as researcher teachers have embodied this work of scientific innovation and solidarity. This applies to University Lakhdar Hama in El Oued City, where a group of researcher teachers in chemistry were able to produce a sterile solution conforming to the scientific recommendations of WHO.

The same initiative was worked with at Mouloud Mammeri University of Tizi-Ouzou, where it formed a medical team headed by the Rector of the University, including the dean of the Faculty of Medicine, the dean of the Faculty of Sciences and doctors residing in pharmacy and engineers at the laboratory to produce hydro alcohol solutions (Mohamdioua, 2020, p. 2).

For its part, Ibn Khaldun University launched a stream of initiative to produce sterile materials intended to local medical use, where a group of professors and students began at the Faculty of Natural Sciences, with the help of the University laboratories, the production of significant quantities of sterile solutions to be at the disposal of the Directorate of Health in the city of Tiaret.

A group of Doctoral students of chemistry at the Laboratory of Valuation and Promotion of Desert Resources at the Faculty of Mathematics and Material Sciences at the University of Kasdi Merbah of Ouargla, with a similar initiative aimed at supporting public health users in the city. In this context, significant quantities of hand sanitizer as well as ready-to-spray surfaces sterilizer were manufactured according to the standards of W.H.O.

3. Online Education in Algerian Universities during COVID 19

The Corona virus pandemic has not only affected the economic field but the educational systems and environments too and this is witnessed throughout the world countries. This led to the suspension and closure of schools and universities, as a preventive measure to contain the spread of the pandemic that has hit the whole universe.

In Algeria, like in most countries in the world, COVID- 19 has altered the higher education system. In response to the measures taken by the Algerian President, the Ministry of Higher Education resolved to on- line education in light of the Corona virus crisis, approving on an education continuity plan for the Algerian universities that includes details of carrying on on-line courses and completing studies.

The Algerian Minister of Higher Education and Scientific Research, called on the Algerian universities' presidents to lay the ground to ensure the continuity to students to receive the lessons remotely for a period of no less than a month, within the framework called a

pedagogical initiative classified as a precautionary measure due to the outbreak of the Corona virus.

The Minister set the 15th of March 2020 as the first day for launching the implementation of the initiative in practice, pointing out the importance of strict application of the contents of the memo. Also, he stressed in an official courier addressed to the presidents of university institutions on the need to take into account all the necessary technical measures to maintain remote communication between teachers and students (Ministry of Higher Education, 2020). As a result to the aforementioned ministerial instruction, the Algerian university institutions has set up MOODLE platforms to start on- line education continuity so as to complete studies, and bridge the gap between teachers and students on- line.

Taking parallel measures that guarantee the minimum in terms of working career and studying is of great importance in this crisis time. Furthermore, it must be emphasized that the importance of e-learning would make students, teachers, and researchers carry on their tasks virtually, because of the closure of all educational and university institutions. In the same vein, the IAU survey report on the impact of Covid-19 on higher education showed that one of the key challenges encountered by higher education institutions was the sudden shift to distance learning. This challenge comes with different dimensions, most particularly the technical infrastructure, the support tools to use for distance learning, assimilating online teaching pedagogies and finally how to organize and manage exams and student assessments from distance.

However, given the continued virulence of the virus, the majority of the Algerian Universities and education institutions have yet to decide on a reopening date. According to the latest Ministerial suggestions, September 19th, 2020 will be the date to officially re- gain education institutions. These decisions carry enormous social and economic implications.

4. ICT's in the Sanitary Crisis Period

Advances in Information and communication technologies (ICTs) and the flow of information have revolutionized nowadays societies, and accordingly, the current world communities are shaped by sudden growth and development of information and communication technologies which result in great dependency on the knowledge and competence of individuals. As Information and Communications Technologies continue to develop, they have become remarkable entities in all aspects of life. As a result, the use of ICTs has obviously increased since the 1980's which, in return, has fundamentally changed the different practices and procedures of all forms of business and governance. With the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important, and this importance will continue to grow and develop in the 21st century. As ICTs are growing in importance, their integration in education has become a phenomenon of 'normalization'. This idea was stated clearly by Stephen Bax (2011) in the following:

“A technology has reached its fullest possible effectiveness in language education when it has arrived at the stage of *normalization*, namely when it is used without our being consciously aware of its role as a technology, as a valuable element in the language learning process.”

In this context, Banister (2010) and Chai (2013) found that implementing technology mediated language learning within the framework of a social constructivism supports learner-centered learning and learner's autonomy. However, most classroom facilities are too rigid to provide EFL students with individual and collective engagement in both authentic and meaningful language tasks (Alvarez, et al., 2011). Such activities require permanent access to the Internet to enable the learners to search for information and to develop digital as well as language literacy (Thang and Norizan, 2012). Thus, the learners need to communicate within the class, but also to connect with the real world so as to practice the main language skills.

Some decades ago, technological advances and improvements have affected the teaching and learning processes especially at higher education levels. Since ICT tools have emerged and played an important role in our lives, they are integrated as pedagogical tools in education due to the positive feedback they provide to both teachers and learners.

However, despite the fact that improvements have been made in technology, both teachers and students at the University in Algeria are often complaining about the Internet network which is supposed to bring facilities and modern equipments and mainly updated information and knowledge. So, this factor presents a real obstacle and shortcoming. It hinders them from using Internet to connect with their classmates through social network sites, or search the web for downloading materials that help them in their teaching profession and learning process.

5. The Research Method and Tools

This part relates the results obtained through the research tool used to gather data about the current study. As aforementioned, an electronic interview designed to teachers and learners as a research design based on a qualitative research methodology, has been implemented to set the actual and future framework of a successful e-Learning in the Algerian Higher Education. Obviously, it is more qualitative than quantitative because of the necessities of the research paper at hand. Furthermore, having selected the interview as our research tool has been motivated by the fact that the survey allows the collection for further information and more detailed data to get a better exploration and valid answers to our research questions.

In order to analyze the status of online learning in Algerian universities during the corona virus pandemic, the researchers relied as aforementioned on two interviews addressed to students and teacher. As for students' interview, it is divided into four sections. The first section contains personal information about students' ages, gender, English study period at university, number of online courses taken at university, time spent using computer for educational purposes, time spent for exploring the net. The second section contains basically Yes/ No questions about online education. The third section contains questions about statements of online learning. The questions vary from Likert Scale, multiple choice, Yes/ No format, and open- ended questions.

The teachers' interview is structured into two sections. The first section contains personal information about teachers' ages, gender, their degrees obtained, teaching experience, their teaching positions, and which department they exercise at university, and their expertise in working with technology. The second section contains basically questions on the status of

online education at the University. The questions range from Yes/ No, Likert Scale, multiple choice, and open- ended questions.

Furthermore, surveys prove helpful in describing the characteristics of a large population and ensure a more valid and precise sample to gather targeted results in which to draw conclusions and make important decisions. For the analysis and discussion of the gathered data, the questions are treated chronologically according to the importance of the event in the field of education. Therefore, the results are as follows:

6. Results and Discussion

6.1. The Algerian Higher Education Current Situation Analysis (Students' Interview Results)

a- Students' age and gender

According to the data collected, the Algerian universities are characterized by young generations. As illustrated above, the students' ages range from 18- 20, 20- 22, 22- 25, and above 25. Also, most of the students get their Baccalaureate certificates at an early age (between 18 and 20 years old). Moreover, female students represent a high percentage than male counterparts. All students have been studying English at university for five years, the official study period moving from undergraduate level (3 years) to graduate level (Master degree 2years).

b- English study period and Online courses at university

According to students' answers, the number of online courses that students have taken varies from 0 to more than 10 hours related to online study attendance. This can be explained through a number of factors such as the Internet availability and Internet access where students are located because most of the time, students who live in fully served areas are able to get access to online courses. However, students who live in underserved areas find it difficult to get access to online courses. In addition, the Internet debit is a crucial factor which determines access and availability. Within this context too, students explore use the Internet-plugged technology for education purposes from three to more than ten hours per week either for leisure or looking for needed information to consolidate their studies.

According to the above results displayed in the figures, most of the students have a broad understanding of what online education means because they are accustomed to using technology anytime and anywhere. Their answers approached the overall definition of online education which covers distance learning, using the Internet to obtain information and reading lessons of the websites.

Unfortunately, most of the students did not register to an online education program offered by their Universities, or provided by other Universities, whether local or foreign. This in fact, can be explained through many factors such as the lack of online study programs offered by their original Universities, the total reliance on normal education by the universities which emphasize on physical attendance, in addition to the Internet access and availability.

-Online Flexibility and Online Quality

In relation to technology use, most of the students use e-books since they are available online and downloadable. 56% of the students believe that online education is more flexible than normal education because it is up to them to get in touch with their counterparts and their teachers anytime and anywhere. It also provides them with interactivity. However, 66% of the

students believe that online education is not better than normal education. This can be explained by the fact that they totally rely on normal education which offers better communication tools with their teachers. 46% of the students believe that teachers are able to adapt to online education since their university offers them available tools to engage in online education. In addition, the Ministry of Higher Education and Scientific Research has made online education compulsory in time of COVID- 19.

Despite the fact that Algerian universities are obliged to rely on online education because of health protocol and confinement policies, 89%of the students agree that it is not the right time to fully implement online education in the Algerian higher education context. According to them, lots of obstacles referring to the above mentioned reasons still exist and need to be resolved.

- **Teachers' and Students' ability for online adaptability and Creativity**

According to these reasons, 98% of the students believe that schools and universities are not currently able to move to online education. 88 % of the students believe that eLearning does not motivate them for better education because of the above reasons, and eLearning does not help both teachers and students develop their critical thinking skills. Moreover, 88 % of the students believe that eLearning unfortunately, does not motivate them for education. Many students from low-income families lack the basic technology they need to study online and proceed with eLearning including access to a laptop and a reliable broadband connection, along with a quiet place in which to work and complete assessments.

As for eLearning effects of developing creative thinking for teachers and students, 83 % of the students believe that eLearning cannot help both teachers and students develop critical thinking abilities because it cannot build a lot of discussion potentials between students and teachers and introducing story- telling/ writing into the course is very difficult. In addition to this, as teachers and learners are distant from each other, it reveals difficult to plan tasks, or projects as well as create scenarios with problems to set problem solving concepts.

- **E-learning and teaching betterment and productivity**

Still in the same vein, 79 % of the students believe that eLearning does not play an important role in improving the quality of teaching and this does not increase productivity compared to traditional education. The respondents believe that they consistently perform badly through online learning than they do in face to face classrooms. Therefore, taking online courses increases their likelihood of dropping out, as they assume.

All students agree that there exist many barriers to achieve an appropriate eLearning starting from the lack of the Internet access to learners. Furthermore, the low debit of the Internet hinders learners to use the World Wide Web appropriately. One major new phenomenon is addiction to social media use during online class. As a result this affects the students' academic learning outcomes. From another logistic side, time consuming and lack of electronic materials and use make this situation looks difficult to master.

- **The Internet Access facilities to generate e- classroom communication comfort and classmates' e- interaction**

According to the data gathered, students are able to easily access the Internet for their studies (85%) since it is a useful tool for research showing comfort to communicate electronically (90%) as they are accustomed to communicate with their mates and friends

using emails, messenger, and other devices. They are also able to actively communicate with their classmates and instructors electronically (45%), while 55% are not able to do so. Furthermore, our respondents not only feel that their background, expertise, and experience will be beneficial to their studies (67.50%), comfortable with written communications (100%) and able to easily access the Internet as needed for their studies (87.50%) but able to interact with their instructors and /or teaching assistants (90 %) and possess sufficient computer key boarding skills for doing online work (88.75%) with a comfortable situation to write texts on a computer in an online learning environment (100%) as well as to communicate online in English (100 %). They also reveal that they are able to ask teachers questions and receive a quick response during Internet activities outside the classroom (100 %); but feel that face to face contact with the instructor is necessary to learn (100%). The informants show an interesting motivation using the material in an Internet activity outside the classroom (100%), discussing with other students during Internet activities outside the classroom (27.50%), while 72.50% cannot do so and most importantly work in a group during Internet activities outside the classroom (96.25%) in addition to collaborating with other students during Internet activities outside the classroom (20%), while 80% cannot do so. 27.50% of our informants believe that learning is the same as in classrooms and at home on the Internet. As far as practicing English grammar during the Internet activities outside the classroom 87.50% of the interviewed students further this practice. However, 100% believe that learning on the Internet far from the classroom is more motivating than a traditionally delivered course (100%) and that a complete course can be provided by the Internet without any difficulty (27.50%), while 72.50% do not believe so. For course assimilation, 37.50 praise the Internet, while 62.50% cannot do so as they still feel dependent on their teachers' help and support adding that a course is possible via the Internet; but for learning English it may be difficult (10%), while 90% believe it is not.

- **Pre-requisites' and experience' roles in Online education process skills**

In relation to using the techniques of online education process skills, all students confirm that their skills range between advanced (48.75%) and intermediate skills (51.25%). Although Algerian universities implemented online education platforms, 27.50% of the students believe that it looks good since it enables them to be in touch with their teachers who lecture online. However, 72.50% believed that it is acceptable, but it needs to be developed. In another context, 55% of the students believe that moving from traditional education to online education is not suitable for all categories, and 45% believe that they are not able for some technical, educational, and pedagogic obstacles.

Since universities have implemented MOODLE platform to proceed with online education in time of corona virus pandemic, 41.25% of the informants have shown satisfaction; but have added that this needed improvements. 25% stated that is was somewhat acceptable, and 33.75% believed that it was not satisfactory. Moreover, 96.25% of the students confirmed that they could not learn properly using the MOODLE platform at their universities and were not in contact with their colleagues and teachers because there are not only lack of the Internet access, motivation and organization in posting lectures; but teachers do not provide any feedback in the MOODLE platform and this reduces their role's importance.

6.2. Teachers' Interview

-Teachers' background Information and experience with online education use

The collected data related to the second research tool show that the majority of the Algerian university teachers' ages range from (25- 30) to (40- 45 and 50's). However, the Algerian universities' staff is now being rejuvenated due to the LMD system that enables young students to graduate with their Ph D and get recruited as university teachers.

Most of the teachers interviewed (41% and 31%) have a period of one to ten years of integrating technology with their teaching activities, which include using PPT in delivering lectures, using visual aids, using YouTube tutorial videos and emails. This in fact, illustrates that teachers succeed to keep up with technological revolution of the new millennium. Therefore, using ICTs in both their life activities and teaching activities has been apparent.

85% of the teachers believe that their university offers online courses. In fact, the Algerian universities act accordingly to the official instructions which order all universities to start implementing MOODLE platforms to be fully exploited by teachers and students for delivering online courses as well as for evaluations.

Unfortunately, 73% of the teachers could not yet proceed with online teaching, or post online lectures for their students. This can be explained by the fact that these teachers do not sufficiently master the educational technology tools for online teaching/ and learning. In contrast; 27% of the teachers confirm that they deliver online courses at their universities.

-Teachers' reactions to online courses and technical tools' use

Furthermore, regarding the online courses delivery, 45% of the teachers assume that they usually contact ITS Help Desk through e-mails, or phone asking for necessary feedback to proceed with online course delivery in time of COVID- 19. According to these interviewed teachers, ITS Help Desk's intervention is crucial to determine the success of online courses' delivery.

Regarding the mastery of the technical and educational tools, 67% of the teachers confirm that they attend IT workshops on online teaching provided by their university as structured training periods. Moreover, 34% of the teachers believe that they are not prepared to deliver online courses because their universities are not enough prepared because of some logistic matters. As a matter of fact, this is one of the drawbacks of online education in the Algerian context. In addition to this, teachers reveal that they are not fully prepared for online education experience as they received neither technical support nor IT workshops from their respective departments.

However, the gathered data reveal that in delivering online courses to their students via MOODLE platform, teachers confirm the use of the following online services and features.

- Lecture capture- recording, storing, and distributing videos of classroom lectures (45%)
- Export of recorded sessions to open-systems exchange media (37%) Online class discussions (60%):
- E-mail to, from, between students (93%):
- Homework assignment and submission (60%)
- Online testing (22%)
- Student group tools (discussions, file exchange, wikis, blogs, etc) (60%) Upload documents and make available to students (74%)
- Link to external web pages and multimedia asset management (MAM) system (22%)

-Teachers' reactions to online education effectiveness

As far as whether online education helped the teaching/ learning process at their universities, 37% of the interviewed teachers believe that it is ineffective because of technical and organizational problems. In this context, teachers believe that the most effective online methods used in delivering online courses are audio and video learning materials (37%), video- conferencing (30%), and MOODLE and MOOC electronic systems (19%). 71% of the respondents who rate the MOODLE and MOOC electronic systems confirm that it needs more development.

As a matter of fact, teachers assert that they generally restrict the following uses:

- Asynchronous Discussion Forums (45%),
- Instant Messaging and Synchronous Chat Tools (26%),
- Learning Object Libraries (26%),
- Web- Based Video- conferencing (52%).

- Teachers' beliefs and familiarity with e-devices

Our informants confirm that they manage to be familiar with the new devices as their use is extensively exploited mainly regarding the following web conference tools: Voice/ or video-conferencing (30%), text chat (37%), document exchange (52%), and real- time communication among participants (30%). However, 45% of the interviewed teachers reveal that because of the absence of instructional supports to structure online courses, running discussions through forums (61%) designing learning activities (70%), and receiving instructions on how to use MOODLE ZOOM, they feel a great handicap to cope with the new situation. As a matter of fact, the online education through MOODLE platform system provided by the Algerian Higher Education sector in time of COVID- 19 is transformed into a visible and debatable topic.

As a research conclusion, assessing and evaluating the online education through MOODLE electronic system used by the Algerian universities reveals that our universities are not yet ready for online and distance education because of the several problems, issues, disadvantages, and shortcomings found in exercising the MOODLE electronic system by both teachers and students. These can be as follows:

- The MOODLE electronic system Feasibility

- ✚ It is complicated in some features and practices; therefore, both students and teachers need training workshops;
- ✚ Some courses are difficult to deliver online, while others require more face- to- face interaction;
- ✚ The lack of students' computer skills;
- ✚ Not all subjects can be taught online using MOODLE electronic system;
- ✚ Lack of online testing, assessment, and examination;
- ✚ Lack of IT workshops in the use of technology and online technological tools for both students and teachers;
- ✚ Students' inability to comprehend the lessons offered to them because of the lack of face- to- face interaction with their teachers; and
- ✚ The absence of teachers' feedback to answer students' questions and inquiries.

-Technical Difficulties to deal with The MOODLE electronic system

- ✚ Lack of Internet access and broadband connection, which made it difficult to access the MOODLE electronic system;

- ✚ Online education is not available to all students because of their social status and geographic locations which are underserved;
- ✚ The MOODLE electronic system does not allow teachers to post other related materials to students because of the small size space available to them in their MOODLE account;
- ✚ Interruptions which sometimes impede students' interaction;
- ✚ The extent to which the teacher is able to encourage students to enter the floor and interact correctly and continuously without interruption, and here the challenge for students to pay attention to technology, or perhaps the technical problems related to Internet Broadband connection, the access of the Internet, or the unavailability of computers that are the keys to accessing to the MOODLE electronic system.

6.3. The use of hybrid models in online learning

As a solution to the raised problems, Hybrid models can be used in online learning environments. However, one important point to remember is timetabling. If students are expected to participate in live streaming online environments, they need quiet locations to do so. Unless the university has adequate quiet spaces, it can be tricky for students to rush from attending an online class at home to coming in physically for laboratory or workshop classes.

If the individual lecturers are to run hybrid classes, it takes extra skills and effort to ensure that whatever is communicated in the physical environment is clearly articulated to those at home. Unless the staff member has a device, such as a portable microphone that allows them to walk around and still project their voices through the laptop, students who are logged online can struggle to hear what is being said in the classroom. Presetting certain features in online learning tools can help prevent several problems. Zoom, for example, has features that can be preset, such as auto-mute upon entry or auto-record.

6.4. Validation of the Research Questions

a- The university community's reaction to the new sanitary crisis

Most of our respondents agreed on the same reactions: sudden news, total mess, sour reality and the opinions were shared between believable and unbelievable especially that the country was facing a serious social dilemma called "El Hirak". The majority of the students and quite an important number of teachers thought it was a governmental strategy to block and stop the peaceful marches. However, the University setting started to become gradually empty. On the psychological part, an atmosphere of loss, anxiety, fear and unclear future settled as news about this crisis were continuously flashed to the public focalizing most on the ongoing rising numbers of affected people and death.

b- The first Algerian universities' responses to COVID- 19:

As soon as the news about the new virus spread, the Algerian Universities adopted new strategies beginning by prohibiting gatherings, corporal approaches and relied on the e-learning platform to carry on teaching and assessing. The meetings were organized around another web-site to avoid any contamination and virus spread. Teaching and learning documents as well as administrative ones were ordered and sent via e-learning platform and e-mail boxes. The scientific events embedded in conferences, study days and symposiums were all postponed.

c- Suggested measures for education continuity at the university:

As for other countries Universities, the first solution was purely sanitary with leaflets and posters on approximately all the walls, entrances and exits gates. The second solution was purely pedagogical as teachers were recommended to use the University platform and other ICT's devices to support the students with lectures, workshops, readings and evaluations.

d- The online education implementation in the Algerian Higher Education field during the COVID- 19:

Our informants said that they ignored all about the other Algerian universities. However, in regard to the university where they study and teach, some realities were revealed. They are as follows:

- There is a serious problem we encounter during the ordinary days: no network, electric punctures, the 4G is not really of any utility,
- The "Centre de Calcul" administrators do not take our complaints seriously,
- Problem of users names and passwords which most of the time should be reset,
- "Mass Registrations" in any teacher's lectures accounts are not possible especially for the very large classes,
- The use of online Power Point Technique is not appropriate to all the students especially the foreign languages students,
- The learning styles cause a real challenge as most of the studies and students' learning styles are based on the tactile one
- Finally, the demand is extremely higher than the available qualitative and quantitative technological potential

e- The efficiency of the measures to rely on after the sanitary crisis:

A collegial response was agreed on: They need work. There should be tremendous efforts to meet the needs of the teaching and learning community. The technological devices have to be re-considered, restructured and reinforced mainly during this period "the sanitary crisis" if we opt for a salient and equitable education continuity. It is true that some immediate measures have been adapted to this situation as arranging meetings around the "Zoom" device, but for the education continuity giving access to mass registrations, it could have been better if Visio-conferences were managed.

To sum up the findings we cannot but conclude that this is a critical situation when it comes to apply technology in Higher Education in Algeria. We are still in need of an in depth research, analysis, critical thinking, determination and mainly pioneering and leadership. The ideas of time and money necessities are odd ideas as neither money nor time lack for a sustainable education development.

7. Recommendations

The sudden shift from face to face to distance learning is neither an easy way to teach and learn nor 100% surely applicable or appropriate regarding the devices qualities, availability and the teaching methods, or even, the study styles. It is more about how, when, what for to engage in this revolutionary strategy. We have therefore, more to understand the needs and preferences of each individual teacher and learner and constructing a sense of responsible communities with the students, the teachers and the administrators. There must be Communities of collaboration and cooperation where opportunities to work differently but for positive outcomes, an acknowledgement that there are different ways of maximizing the impact of face-to-face and distance learning especially during this very difficult sanitary crisis. This section provides useful resources to support the shift to distance learning. The pandemic situation we are moving through may reveal a positive situation for blended

learning as we believe that this current experience may lead to an increase of blended learning opportunities in the post pandemic world.

As a matter of fact, the following points are some recommendations directed to all teaching professionals and learners as well as administrators.

- a- Improve distant learning as shifting from face to face learning and teaching to distance learning and teaching needs a serious reconsiderations in materials, behaviors, engagements and psychology,
- b-Tools for blended learning: according to Policy Brief: Education during COVID-19 and beyond AUGUST 2020 (The United Nation), the transition from face to face teaching and learning will generate the distance learning experience through real innovations. For this to come true, there should be ICT tools at the disposal of the professionals and learners;
- c-Assessments and exams by distance using e-learning platforms as Moodle, Hotpotatoes, J.Match and any available pedagogical assessing devices,
- d-The Algerian government ought to establish effective forms of online education in order to redirect the focus on delivering alternative learning methods for equal opportunities,
- e-The curriculum resources have to be readjusted to the current situation and after. There should be more lessons, videos, interactive modules to enable students acquire and gain more knowledge and skills,
- f-The professional development must be based on issues to support teachers, parents and learners to consolidate the content and develop skills thanks to communication tools, learning management systems.

8. Conclusion

The present research based on a critical analysis of the Algerian Higher Education current situation has aimed at relating the field of education mainly during the Covid 19 period and useful technological tools for education continuity which can be used as a strategy for a sound education after the crisis. Though there is no configured book to guide appropriate responses, for professionals and educators, the COVID-19 Pandemic is an essential adaptive and transformative challenge. Education leaders must adequately and genuinely design alternative responses bearing in mind the context and the situation. It is therefore a framework to guide an education response to the COVID-19 Pandemic and find out a tool to support education leaders.

The selection of online educational resources and methods intended for students, teachers and parents, aims to support education leaders to continue the process of education during the COVID-19 Pandemic.

REFERENCES

- Bax, S. (2011). Normalizations Revisited: The Effective Use of Technology in Language Education. *International Journal of Computer-Assisted Language Learning and Teaching*, 1(2), 1–5.
- Banister, S. (2010). Integrating the iPod Touch in K-12 education: Visions and vices. *Computers in the Schools*, 27(2), 121–131. <https://doi.org/10.1080/07380561003801590>
- Le Parisien. (2020, March 5). Coronavirus : en Algérie, 16 membres d'une même famille contaminés. Retrieved July 1, 2020, from <https://www.leparisien.fr/societe/coronavirus-en-algerie-16-membres-d-une-meme-famille-contamines-05-03-2020-8273739.php>

- African Times Editor. (2020, February 25). Algerian health minister confirms first COVID-19 case. Retrieved July 1, 2020, from <https://africatimes.com/2020/02/25/algerian-health-minister-confirms-first-covid-19-case/>
- Algeria Press Service (APS.DZ), . (2020, April 18). Corona virus: 116 new confirmed cases, 3 new deaths in Algeria. Retrieved May 13, 2020, from <http://www.aps.dz/en/health-science-technology/33947-coronavirus-116-new-confirmed-cases-3-new-deaths-in-algeria>
- Chai, C., S., Koh, J. H. L., & Tsai, C. C. (2013). A review of technological pedagogical content knowledge. *Education Technology and Society*, 16(2), 31–51.
- Corona virus Resource Center. . (2020, April 7). Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU). Retrieved April 7, 2020, from <https://coronavirus.jhu.edu/map.html>
- Holmes, E. (2020, January 10). Novel 2019 corona virus genome. Retrieved June 15, 2020, from <https://virological.org/t/novel-2019-coronavirus-genome/319>
- Health Commission of Guangdong Province. . (2020, January 20). Our province actively responds to pneumonia-epidemic of new corona virus infection 2020. Retrieved February 14, 2020, from http://wsjkw.gd.gov.cn/zwyw_yqxx/content/post_2876926.html
- Algeria Press Service (APS). (2020, May 7). Corona virus: 185 new confirmed cases, 7 deaths in Algeria over last 24 hours. Retrieved May 19, 2020, from <http://www.aps.dz/en/health-science-technology/34158-coronavirus-185-new-confirmed-cases-7-deaths-in-algeria-over-last-24-hours>
- International Labor Organization (ILO). (2020, May 18). How will COVID-19 affect the world of work? Retrieved June 15, 2020, from https://www.ilo.org/global/topics/coronavirus/impacts-and-responses/WCMS_739047/lang--en/index.htm
- Martinez, L. (2020, April 27). COVID-19 IN ALGERIA: FOR WHOM DOES THE BELL TOLL? Retrieved June 16, 2020, from <https://www.sciencespo.fr/cei/en/content/covid-19-algeria-whom-does-bell-toll>
- BBC news. com. (2020, March 12). Coronavirus: Trump suspends travel from Europe to US. Retrieved April 7, 2020, from <https://www.bbc.com/news/world-us-canada-51846923>
- National Health Commission of P.R. China. (2020, January 21). Epidemic situation of new corona virus infection January 21, 2020². Retrieved June 16, 2020, from <http://www.nhc.gov.cn/yjbs/3578/202001/930c021cdd1f46dc832fc27e0cc465c8.shtml>
- News X. (2020, January 9). Experts claim that a new corona virus is identified in Wuhan. Retrieved June 16, 2020, from http://www.xinhuanet.com/2020-01/09/c_1125438971.htm
- Los Angeles County Department of Public Health, (LACDPH). (2020, March 15). Novel Corona virus Disease (COVID-19). Retrieved June 9, 2020, from <http://www.publichealth.lacounty.gov/media/Coronavirus/FAQ.pdf>.
- China. org. . (2020, April 22). Oil price collapse likely to worsen global economic recession amid COVID-19 pandemic: Egyptian experts. Retrieved June 15, 2020, from http://www.china.org.cn/business/2020-04/22/content_75964287.htm
- Pallini, T. (2020, March 15). 53 airlines are suspending or severely reducing flights as corona virus-related travel restrictions shake the industry — here’s the full list’. Retrieved June 9, 2020, from <https://www.businessinsider.com/coronavirus-global-airlines-suspending-operations-as-demand-worsens-2020-3>
- Allahoum, R., Regencia, T., & Siddiqui, U. (2020, April 18). Corona virus death toll crosses 150,000: Live updates. Retrieved June 17, 2020, from <http://www.aljazeera.com/news/2020/04/coronavirus-deaths-35000-live-updates-200416234342434.html>
- The United Nations, (2020). *Policy Brief: Education during COVID-19 and beyond*. Presented at the United Nations Conference on Trade and Development. . Retrieved from

https://unsdg.un.org/sites/default/files/2020-08/sg_policy_brief_covid-19_and_education_august_2020.pdf

Thang, N. M., Najihah, .M. , & Norizan, A. R. (2012). The use of wireless technology in UKM: Challenges faced and its impact on English language learning. *3L; Language, Linguistics and Literature, The Southeast Asian Journal of English Language Studies*, 18(1), 129–143.

UNCTAD. (2020, March 4). Corona virus outbreak has cost global value chains \$50 billion in exports. Retrieved June 16, 2020, from <https://unctad.org/news/coronavirus-outbreak-has-cost-global-value-chains-50-billion-exports>

WOOD , D., ADELIN, S., TALBOT , R., & WILBURN, T. (2020, December 26). Coronavirus World Map: Tracking The Spread Of The Outbreak. Retrieved December 26, 2020, from <https://www.npr.org/sections/goatsandsoda/2020/03/30/822491838/coronavirus-world-map-tracking-the-spread-of-the-outbreak>

UNO. (2020, April 8). World food prices drop in March due to COVID-19 and oil. Retrieved June 17, 2020, from [//www.un.org/africarenewal/news/coronavirus/world-food-prices-drop-march-due-covid-19-and-oil](http://www.un.org/africarenewal/news/coronavirus/world-food-prices-drop-march-due-covid-19-and-oil)

United Nations: UNCTAD . (2020). *Global trade impact of the Corona virus (COVID-19) Epidemic*. Presented at the United Nations Conference on Trade and Development. Retrieved from <https://unctad.org/system/files/official-document/ditcinf2020d1.pdf>

WHO. (2020, April 22). Director-General’s opening remarks at the media briefing on COVID-19. Retrieved June 10, 2020, from <https://www.youtube.com/watch?v=YGJcbogfKSg&feature=youtu.be>

Wuhan City Health Committee (WCHC). . (2019, December 26). Wuhan Municipal Health and Health Commission’s briefing on the current pneumonia epidemic situation in our city. Retrieved June 12, 2020, from <http://wjw.wuhan.gov.cn/front/web/showDetail/2019123108989>

Xinhua Net. (2020, January 20). Orders resolute efforts to curb virus spread. Retrieved June 11, 2020, from http://xinhuanet.com/english/2020-01/20/c_138721535.htm