

E-Learning challenges in Higher Education Institutions Algeria case study

تحديات التعليم الإلكتروني بمؤسسات التعليم العالي دراسة حالة الجزائر

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Received:1202/2020 Accepted:01/12/2020 publication :30/11/2020

Abstract: Through this research paper we wanted to know the extent to which Algeria can provide a technological and communication infrastructure and how to access universities through the educational process and the emergence of the concept of e-learning. That is, its electronic readiness, and what has been achieved so far through examining the most prominent Algerian experiences in the field of e-learning and the main challenges that face e-learning. The study concluded that despite efforts to provide technological infrastructure and as a result of the loss of control, Algeria's higher education institutions could not establish e-learning because of various challenges that prevent e- readiness access.

Keywords: higher education institutions, Challenges of ICT, E-Learning, E- readiness

Résumé : à travers ce document de recherche, nous avons voulu savoir dans quelle mesure l'Algérie peut fournir une infrastructure technologique et de communication et comment les universités peuvent y accéder à travers le processus éducatif et L'émergence du concept de l'e-Learning, c'est-à-dire sa préparation électronique, et ce qui a été réalisé jusqu'à présent. Et cela en abordant les expériences algériennes les plus importantes dans le domaine de l'e-Learning et les défis les plus importants auxquels est confronté l'e-learning, comme l'étude l'a conclu malgré les efforts déployés pour fournir une infrastructure technologique et, en raison de la perte de contrôle qui y règne, les établissements d'enseignement supérieur en Algérie n'ont pas été en mesure d'y établir l'e-Learning, en raison de l'existence de divers défis qui empêchent l'accès à la préparation électronique.

Mots-clés : établissements d'enseignement supérieur, Défis de TIC, E-Learning, la préparation électronique.

ملخص: من خلال هذه الورقة البحثية أردنا أن نعرف إلى أي مدى تستطيع الجزائر توفير بنية تقنية و اتصالية و كيفية ولوجها الجامعات من خلال العملية التعليمية و ظهور مفهوم التعليم الإلكتروني أي جاهزيتها الإلكترونية، و ما تم تحقيقه حتى الآن . و هذا بالتطرق إلى أبرز التجارب الجزائرية في مجال التعليم الإلكتروني و أهم التحديات التي تواجه التعليم الإلكتروني ،حيث توصلت الدراسة إلى انه على الرغم من الجهود المبذولة لتوفير

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بنية تحتية تكنولوجية و نتيجة لفقدان التحكم فيها لم تستطع مؤسسات التعليم العالي بالجزائر ترسيخ التعليم الالكتروني بها وهذا لوجود تحديات مختلفة تحول دون الوصول للجاهزية الالكترونية.

الكلمات المفتاح : مؤسسات التعليم العالي؛ تحديات ت.م.إ؛ التعليم الالكتروني؛ الجاهزية الرقمية .

I- Introduction :

Various policy reports have raised the issue of industrial transformation of societies into information societies. This debate was accompanied by the belief that ICT can play an important role in restructuring of education. Therefore, traditional education mechanisms will not perform what is required from them to reach this transformation with the necessary quality and efficiency. This is what Bill Gates predicted in the 1990s of the last century by saying: "The information highway will help to raise educational standards for each individual in future generations and will provide the way for the emergence of new teaching methods and a much wider field of choice. (ben ali, p. 101)

This prediction has become a reality today touching all levels of education, the most important of which is university education. Therefore e-learning promoted by information networks has emerged to make the qualitative leap from traditional education to e-learning.

To overcome temporal and spatial constraints in the educational process, to take into account the individual differences of learners, to enable them to complete the educational process in appropriate environments, to advance by their own abilities, to break the barrier of fear and to equalize opportunities, are positive factors that led to the adoption of e-learning by educational institutions.

Therefore, the problem of our research is the extent of electronic readiness of higher education institutions in Algeria to establish e-learning in their institutions? Is it sufficient for that?

Study Hypotheses:

- Available information and communication technology contributed to the emergence of e-learning in Algerian university institutions.
- There are various challenges that prevent the consolidation of e-learning in universities.

Previous Studies:

- **Sogol talebrian and others, ICT in higher education: advantages, disadvantages, conveniences and limitations of applying e-learning to agricultural students in Iran.**

This study talked about using ICT in the country of Iran aimed at reforming educational processes in the Faculty of Agriculture, indicating that the entry of this technology to the educational process and the emergence of e-learning focusing on its advantages and disadvantages, as well as conveniences and restrictions imposed in such a system. In order to make student attendance compulsory, faculty practical courses are the recommended example of integrated learning that removes all the confusion in the learning process. Our study differs from this one in our focus on ICT infrastructure, a case study of Algeria and its impact on the country's e-learning as both an advantage and a constraint on this system.

- **Adnia Petrutapavel and others, ICT and e-learning catalysts for innovation and quality in high education.**

This study came to talk about the readiness of higher education institutions to achieve their technological literacy; change depends not only on technology, but also on more human resources, how they can approach and use all new technologies and e- learning possibilities, in addition to enhancing the quality of higher education through motivating students who will ultimately improve

communication and information exchange. The researcher concluded that higher education institutions must adopt a clear strategy and general policy in order to integrate this educational system into universities and become everyone's priority. They should be aware of how this is evolving in a supportive environment and policy on the national level to integrate information and communication technology into their education. Our study came as an appreciation to this research with more focus on the case study of Algeria and its university institutions and the extent of their awareness of the importance of this system.

- **Yahya Butterdin, Soumaya Ben Amara, the role of e-learning in promoting university education.**

This study highlighted the role of e-learning in promoting university education and how the university professor can promote university educational process and ensure quality with a strategic proposal for how to hire a university professor to update the internet. This study focused on the human resource in controlling e-learning, assuming that the e-learning is established in universities. The human resource is the most important engine of the process that drives recommendations for investing in this resource. Our study will demonstrate the pre-establishment process of e-learning while highlighting the importance of human resources in its control process.

- **Olutala, Adekunle Thomas, Olatoye Oluunke Omotoke. Challenges of e-learning technologies in Nigeria university education**

This paper examines the challenges of e-learning techniques in Nigerian university education so that the role of e-learning in the education and learning process cannot be overemphasized, one of the most efficient tools for advancing knowledge, skills and development in any country. This research paper recommends that the Nigerian government at all levels should help universities with model devices for lecturing students and Internet for teaching with e-learning system. This study did not refer deeply and in terms of numbers to the possibilities that can be provided in Nigeria to achieve the e-learning system, that is to say the country's endeavors and the real strategy to carry out this new educational system in contrast to the Algerian efforts that our study showed through the important statistics and figures that indicate the country's intention to develop its educational systems.

- **UNESCO Institute, Information and Communication Technology in Education in Five Arab Countries, A Comparative Analysis of the Integration of ICT and E- Readiness into Schools in Egypt, Jordan, Oman, Palestine and Qatar**

This study clarifies the e-readiness figures of the previous countries to adopt e-learning in their schools. The results were close in Arab countries, and despite their possession of information and communication technology, as they lack the qualified and framed staff to control these technologies in the field of higher education. This work was a building block of our study and its application on the case of Algeria.

I.1. Information and Communication Technology in Algeria:

I.1.1. Information and Communication Technology:

It is remarkable that the communication technology revolution went in parallel with the information technology revolution, and cannot be separated since they were combined by the digital system, which has developed communication systems and linked networks to information networks.

Information and communication technology is defined as "the sum of the various technologies, tools, means, or systems that are employed to address the content that is intended to be delivered through the process of mass, personal or organizational communication, through which audio, written, pictured, drawn, audiovisual, printed or digital information and data is collected" (through electronic computers). These data and information are stored to be retrieved later in a timely manner. Then, comes the publication of these communication materials, messages or contents, whether they are audio, audio visual, printed, or digital, and moving them from one place

to another or exchanging them. That technique might be manual, automatic, electronic, or electrical depending on the historical development stage of the communication means and the areas covered by this development. (Nouri & araibi, 2009, pp. 2-3).

I.1.2. Information and Communication Technology Infrastructure in Algeria:

The Algerian authorities have spared no effort to ensure the success and development of information and communication technologies and their dissemination to all in order to contribute to the country's well-being, both through the development of an ambitious program "Algeria e-strategy 2013" on the local level, or through launching regional initiatives as the achievement of the extension of the optical fiber between Algeria, Niger, and Nigeria within the framework of the New Partnership for Africa's Development project (NEPAD) on the external level. This is what was stated in the speech of the General Secretary of the Ministry of Post and Information and Communication Technology (MICT) at a telecommunications policy forum in 2009. This indicates that the past decade has been the beginning of a transformation of Algeria's digitization and sparing no effort to provide the necessary infrastructure to move forward. (otaib, 2006-2007, p. 203)

For more details, we would like to go through internal and global figures and statistics that illustrate the evolution of the Algeria's position in the momentum of information and communication technology. At the internal level, we find that the Ministry of Post and Information Technology has adopted a well-defined strategy since the beginning of the millennium. This is what came in the ministry's slogan: Our commitment is the access of everyone to the internet: "Reducing the digital divide" is the challenge that we face. (ITC, 2018)

The Algerian market was opened following the issuance of the Finance Law No. 2000-03 dated on 05/08/2000 for the three mobile operators. As a result, mobile services witnessed a remarkable improvement, with the coverage exceeding 98 percent, which explains the continuing rise of subscribers, reaching 48,87 million in 2017 compared to 47.04 million in 2016, an increase of 6,02 percent, reaching 87.99 percent at the end of 2018.

The third-generation mobile phone service started in Algeria in December 2013 when the government announced the electronic project. In one month 308019 subscribers were registered then in 2017, reaching over 23 million subscribers. The fourth-generation service was launched on 01/10/2016 as an initiative of the Ministry to keep up with the digital economy. (ITC, 2018)

Connectivity to fiber optic network continues in the context of modernizing the infrastructure and services. In late 2017, all municipalities were linked to fiber optic in order to meet the needs of Algerian Internet users, as well as providing a quality service. The international community had not ceased to evolve, reaching about 81055 GB per second at the end of 2017. In 2018, it reached 1050000 GB.

As for the Internet in Algeria, the number of subscribers reached 37, 83 million at the end of 2017, including 34 million mobile phone subscribers. The number is expected to increase further with the use of the high flow of the Internet G4LTE. The number of Internet sites reached 7148 in 2015, and number of institutional sites was 587.

Algeria has one of the highest penetration levels in the Middle East, with Algeria on the backbone of fibers and one of the ftp in Africa.

Algeria's efforts over the past 15 years and the last five years in particular have led to high levels of mobile penetration – broadband and fiber optic to cover the country and rapid growth in terms of infrastructure deployment not only at the local level but also as the regional actor that enables securing communication within remote areas nearby. This is what we can observe in the following table, which shows the pace of internet coverage evolution from 2012 to 7/7 in 2019.

The Algerian efforts to provide the infrastructure made the country progress slowly and improve its ranking, according to ICT index of Algeria from the report of the International Telecommunication Union of 2017, we can note the following: (Union, 2019)

- In 2017, Algeria ranked 102nd globally after it was 106th in 2016. This indicates a significant progress from one year to the next, and by comparing it with other Arab countries such as Egypt, which fell to 106th in 2017 after it ranked 104 in 2016. We can see the difference in the international internet bandwidth whose value in Algeria reached 40014.54 bits/s and in Egypt with a value of 17193.52 bits/s for every Internet user. Similar to Morocco, it is also late in ranking, from 98th, which is far ahead of Algeria in 2016 to 100, so Algeria followed by a difference of two places in 2017. Moreover, Algeria ranks 11th among Arab countries, so that fixed-telephone subscriptions for every 100 inhabitants are 5.14% and mobile phone subscriptions for every 100 inhabitants are 117.02. This indicates a shift in the use of technology. The percentage of families who own a computer is 38.42%, the percentage of families who have access to the Internet is 34.67%, and the percentage of people who use the Internet is 42.95%.
- Fixed wired broadband subscriptions for each 100 inhabitants are 6.92 %.
- Mobile broadband subscriptions for each 100 inhabitants or residents are 46.81%.

This is only evidence that Algerian society needs the Internet more wherever it goes, so it prefers the second subscription over the first one. The number of Internet users reached 2 200 000 with the beginning of 2018, and is expected from the strategic plan 2015-2019 in order to include the high flow and launch The fourth generation 4G that will cover 48 states. Beside completing the coverage with optical fibers while qualifying the local technological product in order to raise it to the level of international standards, in addition to developing technological barns and incubators.

Algeria is also interested in merging the two satellites asat 2 and alsat 1 by national expertise in order to launch them and to ensure that human competencies are updated and rehabilitated in this field, and the establishment of basic space facilities such as the Boughezoul complex.

According to the Global Competitiveness Report of 2019 issued by the World Economic Forum, Algeria ranked 97th on the global level in terms of adopting information and communication technology, where Algeria advanced seven (07) centers during one year after it ranked 83 in 2018. It ranked 61st in mobile subscriptions and advanced to 35th globally in the high-flow phone subscription for 2019. (ITC, 2018)

I.2.The Path of E-learning Emergence:

I.2.1.Information and Communication Technology in Higher Education:

Higher education is of interest to governments, institutions and individuals because of its importance in shaping the future policies of countries and societies. This is what Algeria has consistently pursued by looking for ways to develop higher education and its institutions.

The information and communications technology has also become a hope for university institutions that started facing many obstacles and problems including the increasing number of students, the lack of framed structures and pedagogical buildings, etc. This hope came under the emergence of modern technology as an assisting solution to face these obstacles. (ndiogou, 2011, p. 04)

Information and communication technology in higher education is considered as all what is used in the field of education and learning from information and communication technologies, which are used with the purpose of storing, processing, retrieving and transferring information from one place to another. This works on developing and improving the educational process by all modern means as computers and software, internet technologies such as e-books, databases, encyclopedias, periodicals, educational sites, e-mails, voicemails, written and audio

communication, video conferences, virtual classes, e-learning, digital libraries, interactive TV, etc. (Deif Allah, 2016-2017, p. 86).

Therefore, the Algerian higher education's sector has been modernized on both administrative and educational levels:

- with regard to the management aspect, Algerian universities have developed and improved their services by introducing technological means, especially digital ones, in management and administration including automated media and file management programs materials for students or users in addition to websites on the Internet to define their financial and human capabilities. We can find all the sites of forty-eight states by accessing the Ministry of Higher Education and Scientific Research's electronic portal. The Algerian map was created. Only one click on the state will lead all university sites to appear in it. In addition to that, each university puts an internal electronic network (internet) to define it within the university institution through television broadcasting and operations with the aim reducing time and effort. (Bakhouché, 2015, p. 194) .

- as for the educational aspect, higher education has invested in this technical progress in a parallel way with its methods, the benefits of using these technologies has emerged within educational institutions to establish an integrated education based on these technologies, which is called e-learning. (elsaid attiah, 2017, p. 39) .

1.2.2.E-learning:

The group of E-learning at NCSA has defined it as acquiring and using the knowledge that is distributed and facilitated primarily through electronic means. This form of learning currently depends on networks and computers, but it is likely that it will develop into systems consisting of a variety of channels (such as wireless channels and satellite) and technologies such as mobile phones and personal digital assistant where they are developed and adopted. Electronic education may include a synchronous or asynchronous connection and can be distributed geographically with various time limits. Ko Hang and Harman defined E-learning as providing education (all activities related to teaching and learning) through various electronic media. Electronic media could be the Internet, intranet, and external networks. (malkharang & ghinea, 2013, p. 01) .

Here, E-learning has been defined through its technical and technological components that have entered the educational process, changing its features and leading to the emergence of new types of education go under e-learning.

E-learning is defined as "the education that is characterized by the ease of updating and modifying the information provided, beside increasing the possibility of communication to exchange views, experiences and views between students and their teachers or between students and each other" (ghazali, 2017, p. 36). This definition shows us the advantages that e-learning offers.

Accordingly, we can say that e-learning is that educational system that collects magazines of education through the Internet and teaching using technology in order to develop knowledge for individuals and give them the opportunity to learn anywhere and at any time.

Given the comprehensive concept of e-learning, many objectives can be achieved, the most important of which can be summarized below: (Al-Rousan, 2004, p. 12) .

- Increasing the effectiveness of teachers and increasing the number of students with the different academic branches.
- Helping teachers to prepare educational materials for students and compensating the lack of experience among some of them.
- Providing the educational portfolio in its electronic form to the teacher and the student together, and updating it centrally by the Curriculum Development Department.

- The possibility of compensating for the shortage in academic and training frameworks in some educational sectors through virtual classes.
- Providing admission system in colleges and institutes as well as comprehensive exams in private distance education in a highly credible manner without wasting a lot of student and employee times, as happens in traditional methods.
- Disseminate technology in society and give a broader concept of continuing education and lifelong learning.
- Providing support services in the educational process such as early registration, managing academic branches, preparing study schedules, distributing them to teachers, testing and evaluation systems, and guiding the student through special portals.

Here, I am taken up by a quote that says “E-learning, elephant in the room”. The latter was presented by Professor Dr. Anne Likoy of the Magdeburg University of Applied Sciences in Germany. It was during the sixth annual conference: "Patterns of Education and their Quality Control Standards". This conference was organized by the Arab Organization for Quality Assurance in Education in 2014 where she addressed the attendees saying: “Providing educational programs with new methods (E-learning) in higher education has become a major challenge to the presence of the elephant in the room to the point that it cannot be ignored. (Likoy, 2014, p. 21) .

1.2.3.E-learning at the Algerian University:

In the light of the changes that the Algerian University witnesses especially after the reforms it has known as an educational system that seeks to develop its methods and strategies to catch up with the modern knowledge, this is through the development of a new educational pattern, namely electronic education.

About ten years ago, the Ministry of Higher Education and Scientific Research drew up strategic goals for three years period (2007-2008-2009). One of the goals was "to establish a system of distance education to support education that requires presence". To make it clearer, distance education here is intended to use information and communication technologies of all sorts, from computers to information network, reducing distances and going beyond time to manage the educational process in universities without giving up on the presence training. Here, we find that the breakthrough was clear and based on studies. Where the ministry chose to merge the traditional system with the modern system (E-learning), which is called integrated education as a transitional stage, it is necessary to reduce the risks of radical transformations. (Education, 2019)

This approach allows our country to raise a major challenge for achieving the following goals:

- Absorption of the continuous increasing numbers of learners and to gradually overcome the effects of the inverted pyramid that currently distinguishes learners (the quantitative criterion).
- Improving the quality of training and rapidly approaching international standards in terms of quality assurance (qualitative standard).

This is what has been stated in the 2007 Priorities and Planning Report which was prepared in 2006. The general strategy was drawn in order to reach the desired goals, followed by short-term, medium and long-term plans through which immediate, Mediterranean and somewhat remote priorities were defined. And that is as follows: (Education, 2019).

- **On the short term:** It was characterized by the rational use of human and material resources and the establishment of video lectures network integrating all university institutions, including 13 transmitter sites and 46 receiving sites, but they are used in a simultaneous manner in the presence of the professor and the student by broadcasting video lectures with enabling the system to collect 18 lectures simultaneously through providing the necessary techniques.

The network has been expanded from the entry of 2009-2010 towards the preparatory schools which were also equipped with virtual laboratories and multimedia teaching rooms connected to a private network for video lectures.

The development of an asynchronous e-learning system is based on distance education in the form of customer-distributor with respecting the standards of e-learning (SCROM-IMS -LOM and others).

As a final goal, setting real study paths across the line, which are paths based on taking into account the needs of learners. To achieve this goal, a program has been laid down on 2006. The latter defines the responsibilities of all concerned parties (the National Committee of Virtual Learning, which was established in 2004 according to a decision dated on July 01, 2004 which we did not find any trace of it till this day, the Regional Commission for Education since the beginning of the higher training for graduation, institutions of research centers in the scientific and technical media, and the University of Training).

- **On the medium term:** The distance education system has been set allow the integration of E-learning and television facilities within a vision that goes far beyond the borders of the university, which is already in its favor.

In addition to supporting and developing the Algerian network of research ARN which witnessed fluctuation and dispersion at this stage. This is due to the inability of technology or the technique that is used to support the network despite the large sums that were paid to rent the pillars and lines, which was estimated at 2 billion at that time.

- **On the long term:** A sectional network was to be implemented in the long run as education networks and other research networks. It should have a special structure independent from those of commercial dealers, in addition to giving the sector a container for adequate infrastructure consisting of links between institutions, a national data center and three regional centers. this allows increasing the current capacity from 1.55 Mbps to 2.5 Mbps and even to 10 Mbps, besides increasing current link capacity from 100 Mbps to 1 GB per second.

There should be an information system through the establishment of a set of new integrated services G2C/G2G at the service of students, teachers, employees, and citizens.

A research and innovation platform should be placed within the hands of the researcher. These platforms are similar to the platforms offered by the national research and education networks of technology-making countries. The most important thing for the sector is the wide launch of the distance education system. The network of video lectures and E-learning platforms of distance education sector is considered as a support for the attendance training as it completes and supports it. This is through an open interactive system to exchange information among all the actors.

Launching the IDE @: internet for the development of distance education in Algeria. It is an Algerian European project proposed and sponsored by European Union program TEMPUS for 3 years (2005- 2008). The project aims at providing professors of higher education with the ability to integrate information and communication technology in their pedagogical tasks, and to qualify them to design and administer the distance educational projects within the frame of reforming the higher education and suggesting a new system of LMD then. (daif allah & battouche, 2016, pp. 443-444) .

1.3. Electronic Readiness of Algerian University:

Given the shift in the required information curve with stages of the broad application of information and communication technology policies between different sectors across the country with the changing levels of ICT implementation in educational systems, we cannot say that there is an electronic readiness unless an information and communication technology infrastructure is

reached and used, in addition to the availability of frameworks that control this technology and train teachers to control these technologies (unesco, 2009).

Higher education institutions in Algeria were able to open E-learning platforms thanks to the Algerian developing networks ARN to enhance the content and management of innovative teaching methods which represent the electronic density that allows us to make optimal use of information and communication technology. Therefore, the concept of E-learning would appear and flourish.

In an endeavor by the Algerian University to achieve this, we review the most important experiences through which the embodiment of the concept of E-learning at the Algerian University has emerged.

I.3.1. Continuing Training University Experience:

It is a university that had an experience in attendance trainings in 2008 and 2009. Then it made an investment in information and communication technology and expanded its online education by relying on E-learning and open education platforms. The project of The Virtual University UFCV was launched in September 2001 and it is extending in its first phase over four years with a budget of 7318784 \$. (otaib, 2006-2007, p. 226) .

The Virtual University project falls within the framework of a policy of renewing higher education and it is currently moving ahead after opening several majors and levels of study, namely :

- Academic Master
- Bachelor of Arts
- Certificate of applied studies in business law ,real estate law ,international economic relations law, school and vocational orientation DEUA. (UFC, 2018) .

I.3.2.Francophone University Experience:

The first Francophone University started at the University of Constantine in 2014 in cooperation with the Francophone Academic Agency. According to a statement issued by the University of Mentouri a university was established according to an agreement between the Ministry of Higher Education and Scientific Research and the Francophone Academic Agency. It was a French digital university in Algeria in the east and it was the third after the University of Algiers and the University of Oran. This university would be a link by technical and digital means of technological integration of information and communication, and the delivery of information to students, researchers, and professors. It also offers the opportunity to conduct examinations and discuss notes remotely as well as following up lectures (Boukzaza & others, 2013, p. 11).

I.3.3.Masters for distance experience:

The Ministry of Higher Education and Scientific Research has taken a pioneering step by launching the master's distance learning system, beginning with the 2017/2018 season. The experiment was on the level of five Algerian universities: University of Algiers 01, University of Algiers 03, University of Blida 02, University of Oran, and University of Constantine (Sofiane, 2016). This was after providing digital libraries and platforms of Algerian scientific journals that enable the student or the researcher to obtain information by a click. It was generalized to the rest of the country's universities later. Indeed, this system was activated and was applauded by students. The academic season ended with success and aspiration to open new and other majors for study.

By looking at university website of the country's universities, we find that it has a platform for E-learning through which some electronic lessons are offered. They are in a modest ,ineffective, but not well-optimized way.

I.4.Applied Study of the Various Challenges Facing E-learning:

In order to learn more about the extent to which higher education institutions are ready to receive E-learning as an effective educational system, we decided to study a sample of head of department professors and deputies of departments at Yahia Fares University in Medea, Blida University 01, and Blida University 02 on the challenges that hinder the launch and consolidation of E-learning use .This is to answer three axes :

- What are the most important technical challenges facing E-learning in university institutions ?
- What are the most important human challenges facing E-learning at university?
- What are the most important other challenges facing E-learning in university institutions ?

II– Methods and Materials:

Our study relied on the description of the experiment and its analysis, which is what defines the descriptive analytical approach through collecting indicators and statistics about the study variables from the indicators of information and communication technology in Algeria and Algerian university experiences in electronic education, and the extent of the contribution of the first technological infrastructure to the development and emergence of the concept of E-learning. Algerian universities are the study sample. The study also tackled the most important challenges facing e E-learning institutions of university through a field survey using the method of survey and a questionnaire directed to heads of departments professors and department deputies of university as a tool. The study is in form of a questionnaire distributed to 40 professors and 28 questionnaires were retrieved after excluding two.

III- Results and discussion :

- Through our review of the information and communication technology, and progress in global centers from one year to the next, provided by Algeria, its reflection on higher education institutions was evident through the mentioned experiences of E-learning in Algerian universities. Accordingly, available information and communication technology contributed to the emergence of E-learning in Algerian university institutions.
- the table n°02 shows the phrase “weak internet flow at the university” came at the forefront of the technical challenges facing university by 60.72% **agreeing**, Followed by “no use of modern systems of e-learning as: Moodle and Google Scholar, etc. at a rate of 53,57% **agreeing**, and thirdly “poor follow-up and update of systems and technical and technological devices by university” and the phrase “contentment with the basic methods of technology such as halls equipped with audio-visual devices and text messages” by 42.85% **agreeing**, then the last phrase “the lack of modern equipment provided by the university” was 35.71% with **I agree**.
- Through this table n°03, we find that the phrase “lack of trainings for teachers in the use of technological and technical systems” by 50% came first with **I agree**. Follows “weak language skills, i.e. mastery of foreign languages” by 46,43% .Third, “insufficient awareness of the importance of protection and information security” by 46.44% with **I agree**. Fourth, “lack of trained human staff to operate and interfere in the maintenance of previous technological and information

systems by 42.85 % with **I do not agree**. Fifth and finally is “lack of qualified human capabilities in the maintenance of technical equipments” by 39.28 %, with **strongly disagree**.

- In the table n°04 , we find that “the lack of a clear policy for the future of technology and technology in higher education” and “routine administrative procedures delay the transformation of digital use at university” are in the forefront by 46.43 % with the same answer of **I agree** followed by the two expressions of “lack of financial capabilities allocated to training” and “ lack of financial support for the acquisition of these technological systems” by 42.85 %, the first with the answer of **I agree** and the second **I strongly agree** . Finally, “not involving the private sector in supporting this system” by 35.71 % with **I strongly agree**.

- In view of the challenges facing universities, we found that the weak flow of Internet is the most important technical challenge facing the consolidation of E-learning despite the provision of universities to the basic methods of information and communication technology. While the human challenge is not the absence of human technical capabilities supporting this type of education, but rather the absence of teachers trainings for using modern e - learning systems, which is the most important challenge. The other challenges away from technology challenges and human resources, there is the challenge of transformation which is the procedures of administrative routine and lack of clarity of policy for future use of this system in universities, this refers to the collective will to promote this type of learning. There are different challenges that hinder the consolidation of E - learning in a more advanced way in universities.

IV- Conclusion:

Despite the information and communication technology available in the country and the adoption of the e-learning concept by higher education institutions, followed by the training and renewal of technical and human capabilities and this is through possessing the necessary will .We hope to focus more on identifying clear policies and strategies that they take into account the technical, human, and financial dimension to gain access to the electronic readiness of e -learning .

Here, we see the study’s horizons to find the best use of the possibilities that help establish e-learning in Algerian universities to reach an electronic density through which to achieve excellence .

V- Appendices:

Table (1): Internet Coverage Evolution in Algeria

	2012	2013	2014	2015	2016	2017	2018/2019
Optical fibers length (Km)	46231	50800	61556	70700	76514	127372	145120
Internet band width Mg/s	104448	166000	278000	485155	630150	810155	1050000

Source: Ministry of Post, Information and Communication Technology

Table (2): Results of Technical Challenges

Technical challenges		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Failure to provide modern equipment by university	Repetition	6	4	0	10	8
	Proportion	21.43	14.29	00	35.71	28.57

Weakness in the follow-up and modernization of technical and technological systems and devices by the university	Repetition	1	1	3	12	11
	Proportion	3.57	3.57	10.72	42.85	39.28
No use of modern e-learning systems such as: Moodle, Google Class	Repetition	0	3	0	15	10
	Proportion	0	10.72	0	53.57	35.71
Sufficiency of using the basic techniques of technology such as the halls equipped with audio visual devices and text messages...	Repetition	1	6	0	12	9
	Proportion	3.57	21.43	0	42.85	32.15
Weak internet flow at university	Repetition	0	0	1	17	10
	Proportion	0	0	3.57	60.72	35.71

The Source :Prepared by the researcher, according to statistical data of the research

Table 03: Results of Human Challenges

Human challenges		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Lack of qualified human capabilities in maintenance of technical devices	Repetition	11	9	0	6	2
	Proportion	39.28	32.15	00	21.43	7.14
Lack of trained human staff to operate and interfere in the maintenance of previous technological and information systems	Repetition	7	12	1	7	1
	Proportion	25	42.85	3.57	25	3.57
Awareness is not sufficient of the importance of protection and information security	Repetition	0	1	2	13	12
	Proportion	0	3.57	7.14	46.44	42.85
Weak language skills, i.e. mastery of foreign languages	Repetition	2	10	0	3	11
	Proportion	7.14	35.71	0	10.72	46.43
Lack of trainings for professors in terms of using such technological and technical systems	Repetition	0	10	4	14	0
	Proportion	0	35.71	14.29	50	0

The Source: Prepared by the researcher, according to statistical data of the research

Table (4): Results of Other Challenges

Other challenges		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Lack of financial support for the acquisition of these technological systems	Repetition	4	4	1	7	12
	Proportion	14.29	14.29	3.57	25	42.85
Lack of financial capabilities devoted to training	Repetition	3	2	1	12	10
	Proportion	10.72	7.14	3.57	42.85	35.71
Failure to involve the private sector in supporting this system	Repetition	3	5	4	6	10
	Proportion	10.75	17.85	14.29	21.43	35.71
Routine administrative procedures delay the transformation of the university's digital use	Repetition	1	4	2	13	8
	Proportion	3.75	14.29	7.14	46.43	28.57
Lack of a clear policy for the future use of technology in higher education	Repetition	0	5	7	13	3
	Proportion	0	17.85	25	46.43	10.72

The Source :Prepared by the researcher, according to statistical data for the research

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