



Perception of E-learning during the Health Crisis of COVID-19: Case of Algerian University Teachers

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Abstract

Like almost all the world countries, Algeria is experiencing an exceptional state characterized by a real epidemic of Coronavirus (covid19), which has prompted all institutions (establishments, businesses, businesses, and people) precautions to curb the risks of this pandemic. To this end, the higher education sector has called on the entire university teacher and student community to turn to e-learning to ensure continuity of courses and TD. Our paper is in line with this, with a fundamental objective to analyze university teachers' behavior concerning new information and communication technologies during the health crisis of covid-19. Thus, to shed light on the main handicaps related to online learning in Algeria.

Keywords: Algerian University, Pandemic (COVID-19), E-learning, Moodle platform, Zoom application

Introduction

"One day, people will learn through electronic circuits." *Marshall McLuhan, 1965*

Right now, the world is going through a catastrophic time due to the accelerated spread of an incredibly critical and crucial global epidemic. More than 204 countries, including Algeria, are affected by a coronavirus (World Health Organization, June 2020). In fact, following this health crisis that is hitting humanity hard, the Algerian government tries to get by with less possible damage. To this end, the higher education and scientific research sector has tried to adapt to the situation to meet the university calendar for the year 2020 and avoid the white year's specter by making e-learning or online learning available, in other words, the use of ICT. Modern societies are currently focusing on processing and management while using information and communication technologies. The latter has a significant impact on societies' way of life. They significantly influence all economic, political, cultural, and social components; according to El Abboud (2015), "The use of ICT has social, cultural and economic issues. Thanks to ICT, many companies, such as the United States, Canada, and France, have become knowledge and information societies.

Through technology, these computerized societies offer citizens diverse opportunities in the fields of education, trade, health, etc.

New technologies also enable learning, interacting, exchanging, and transmitting knowledge. Indeed, E-learning is a digital system mechanism that helps virtual teaching and facilitates communication between the learner and the teacher to guarantee full coverage of the teaching medium. The digital economy has become a source of development, wealth, and competitiveness for organizations and countries. Like other countries globally, Algeria has leaned towards ICT as a solution to vary and boost its economy. The Algerian higher education sector has put a strategy to develop the introduction of ICT in educational actions from the academic year (2016/2017). During this period, attention was directed to the follow-up and pedagogical support of newly recruited teachers. Virtual education and the use of ICT in the university are a priority for guardianship, which has provided all the clarifications through Ministerial Order 932 of July 28, 2016 (Eddine Boutebal & Madani)

The Coronavirus (covid19) epidemic has revealed that in the event of a pandemic, the only way to ensure the educational continuity of teaching to students and the scientific exchange between teachers is through new information technologies and "ICT" communication.

Several studies have already been published on the coronavirus pandemic, especially its consequences on the health sector, the labor market, and society. Several studies have focused on the impact of this health crisis on higher education. These studies include the survey conducted by Fordjour Owusu et al.,(2020) on Covid 19 on learning and the Ghanaian

student's perspective (Owusu-Fordjour et al., 2020). Another study of the pandemic and higher education in the United States was conducted by McKinsey's office (Kim et al., 2020). Also, Rashid and Yadav (2020) spoke about covid 19 on scientific research and higher education (Rashid & Yadav, 2020). Another survey was conducted by Aristovnik et al. (2020) on the impact of Coronavirus on students internationally: a global perspective (Aristovnik et al., 2020). UNESCO (IESALC) has also published an article on the situation of Covid-19 and higher education: today and tomorrow by coming out with policies and recommendations for academic institutions around the world (IESALC, 2020). Lassassi et al. (2020) dealt with distance education in Algeria during Covid19 (Lassassi et al., 2020)

The difference between this work and ours is that our work focuses on university teachers' behavior before and during the coronavirus health crisis concerning ICT use. It also focuses on teachers' appreciation of the use of platforms such as Moodle and Zoom. Therefore, our work presents a new and original contribution to e-learning at Algerian universities' level during the Coronavirus by focusing on the teacher.

Our paper is in line with this, with a fundamental objective to analyze university teachers' behavior concerning new information and communication technologies during the health crisis of covid-19. Thus, to shed light on the main handicaps related to online learning in Algeria. Based on the above, we highlight the following problem: How can we judge Algerian University teachers' behavior concerning e-learning during the coronavirus pandemic?

To answer our problem, we have made the following hypotheses:

1. There is a significant link between ICT behavior and the means used by the university teacher
2. There is a significant link between ICT behavior and ICT training
3. There is a significant link between MESRS instructions and online coursing during containment
4. There is a significant link between MESRS instructions and the use of Moodle
5. There is a significant link between MESRS instructions and the use of Zoom

Materials and Methods

This work aims to explore Algerian university teachers' perception of the integration of ICT in education during the health crisis of Covid 19, in other words, e-learning. After a pre-investigation in a first step, we improved our questionnaire by identifying inconsistencies and eliminating comprehension biases. Our (non-probabilistic) sample comprises university

teachers from different Algerian universities using ICT or not during the coronavirus health crisis (covid19). The online questionnaire is the primary method of data collection. We received a response from 557 teachers, and after verification, we retained 544 validated responses for the analysis.

The questionnaire is, therefore, made up of 03 components:

1. Profile of respondents (Gender, Family Situation, Age, Housing Type, University Degree, Teaching Area, Number Of Taught Module, University Establishment)
2. A brief overview of the use of ICT by university teachers (the type of connection, equipment, and means, ICT behavior, ICT training, training time, use of technology)
3. Behavior and perception of university teachers towards e-learning during the health crisis (Covid-19) (MESRS instructions, online course, the support used to put classes online during confinement, satisfaction with Moodle, problems with the use of Moodle, distance education, ICT and improvement of teaching, Improved teaching in Algeria, use of Zoom)

Literature Review

New information and communication technologies have significantly changed interaction in the Educational Environment, especially in learning. Thus, these new technologies have become crucial in education today, especially in disseminating knowledge and know-how. In 1998, the Ministry of Higher Education and Scientific Research established the Directorate General of Scientific Research and Technological Development (DGRSDT), which is tasked with evaluating and organizing human resources and scientific research and developing engineering, scientific and technical information, and technological infrastructures in institutions and universities.

According to Coulibaly et al. (2010), ICTs add value to the higher education sector because they enable a relevant pedagogy mode to better relate to the learner's knowledge. These new technologies present an opportunity to relocate and rethink in place and time the different exchanges between individuals who open new avenues of reflection (Coulibaly et al., 2010). According to Barzman et al. (2020), digital technology has changed higher education content, these tools, and pedagogical forms. They add that students' and teachers' roles radically changed through algorithms, digital platforms, and algorithms (Barzman et al., 2020).

For the two thousand years, the Algerian state has insisted on integrating new communication and information technologies into teaching "a computer for all" with the aim of Hocine, and Faradji (2009) to increase the number of computers in institutions, with the

obligation that these computer tools become real work tools affordable to teachers who are aimed at changing roles, more rigorous than the traditional position, especially, to students because of any new training targets the learner (Faradji & Hocine, 2009)

To this end, well-defined political plans have been in place since 2002. These plans include establishing a technological infrastructure that meets the needs of communication and scientific and research information (Information and Communication Networks Directorate, MESRS).

Another project equips universities with essential technical equipment: computers, internet networks, intranet, data show, tools for video conferencing... etc. another project according to Khalfaoui, H (2005) concerning the virtual library of social and human sciences with the aim of "developing a national policy for the dissemination of scientific and technical information"(Khelfaoui, 2003). For example, the Ministry of Higher Education and Scientific Research oversees several ICT-related research centers and units, including CERIST, which developed the ASJP (Algerian Scientific Journals Platform) for electronic publishing. Algerian scientific journals; we also find CDER, CDTA, CSC, CRSTR... Etc. So ICT has increased intellectual capacity, staff support, and student enrollment in the various platforms created that facilitate their academic lives. The Tic has also strengthened the links between teachers and the university body while offering the transition from a traditional to a digital teaching model. Many digital learning platforms and educational materials have been put online. These new technologies now use audiovisual tools and often involve courses presented in an interactive form and podcast-stored lectures where they can download, listen to and learn (Mohamed, 2016).

E-learning in Algeria began first with introducing the necessary resources and software, and this before moving towards the training and awareness of all university staff (administrators, technicians, teachers, students). The Algerian Ministry of Higher Education and Scientific Research in 2007 projected the national tele-education system, whose goals are divided into three parts:

- A short-term process that allows video conferencing to be used primarily to attract learners while improving training quality.
- A medium-term process of focusing on new educational technologies, with a particular focus on e-learning.
- A stage of integration in which the E-teaching system will be validated and displayed towards "distancing" teaching, with the key, the development of a chain of knowledge aimed at learners' broader audience.

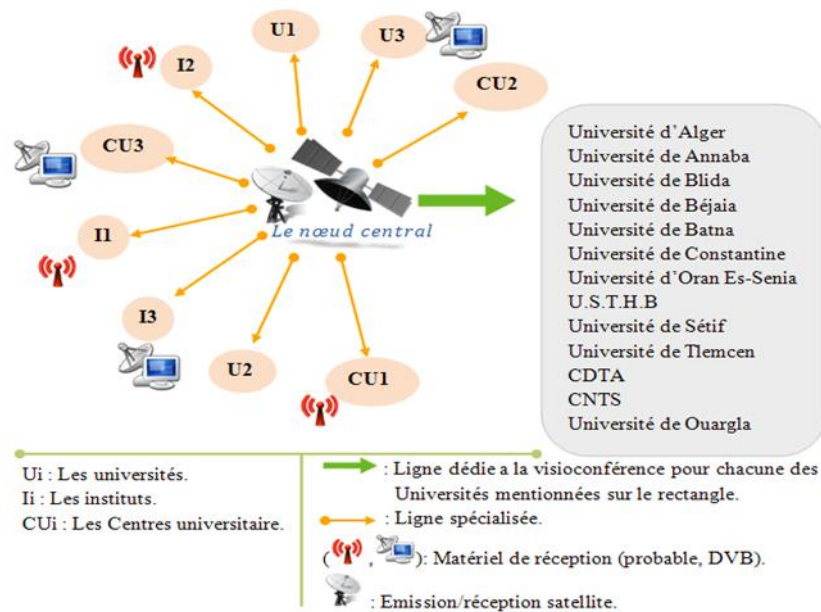


Figure 1. Global Architecture of the Video Conferencing System

Source: https://services.mesrs.dz/e-learning/pg_nationale.php

The establishment of a video conferencing network streamlines human and material resources by integrating all academic institutions, 13 are transmitting sites, and 46 are receiving locations. This network allows the recording and deferred broadcasting of courses; it is operated particularly in synchronous mode, requiring the teacher, tutor, and student's concomitant availability. As soon as the means are fully installed and skills are trained, the system will simultaneously absorb up to 18 videoconferences, thanks to a central node and six multi-site units, placed at CERIST.

According to Barzman and et al (2020) digital technology has changed nature and scientific collectives. According to them, the digital world is changing the way we operate, the motivation for collaborative work and the transformation of research contexts. In recent days, researchers have been using different digital tools to leave "a digital trail" in the virtual world. So, to identify themselves in the scientific world, researchers enrol in networks such as LinkedIn, Research Gate, Twitter and Facebook (Barzman et al., 2020).

Results and Discussion

Profile and characteristics of the sample

The sample of teachers interviewed is 45% male and 54% female. Thus, it comprises 20% Master of Lectures B and 45% of masterful rank (31% Master of Lectures A and 14% teachers). On the other hand, the assistant masters are 24% (15% Assistant Master B and 9% Assistant Master A), and the contractual represent 12%. More than 60% of the teachers surveyed are married, 34% are single, 4% are divorced, and 2% are widowed. 45% of the

teachers surveyed taught between 2 and 4 modules, yet more than 37% led more than five modules. 55% of the teachers interviewed are in the field of economics education, 10% of teachers are in the social sciences, 10% in the field of natural science, 10% in the area of technological sciences, 5% of teachers are in the legal sciences and 3% in the field of political science and external relations, 3% in the area of foreign languages and 3% in the field of medicine and pharmaceuticals.

Table 1. Profile and characteristics of the sample

Description	Details	Frequency	%
Gender M / F	male	245	45%
	Female	299	54%
Family situation	single	186	34%
	Married	323	60%
	Divorced	25	4%
	Widowed	10	2%
Teacher's age	From 25 to 35 years old	169	31%
	From 36 to 45 years	272	50%
	From 46 to 55 years	77	14%
	Over 56 years	26	4%
Type of accommodation occupied	Private property	189	34%
	Functional housing	119	21%
	Rental	29	5%
	With the family	207	38%
University degree	Contractual	63	12%
	Assistant Master A	50	9%
	Assistant Master B	82	15%
	Master of Lectures B	106	20%
	Master of Lectures A	168	31%
	Teacher	75	14%
Number of modules taught	01 module	95	18%
	between 2 et 4 modules	246	45%
	More than 5 modules	203	37%
<i>Teaching Field</i>	Economic and management Sciences (ECG)	299	55%
	Social Sciences	63	12%
	Nature sciences	55	10%
	technological sciences	53	10%
	legal science	26	5%
	Political Science and ER	17	3%
	Foreign language	16	3%
	Medicine and Pharmaceuticals	15	3%

Source: conducted by the researchers based on the survey data

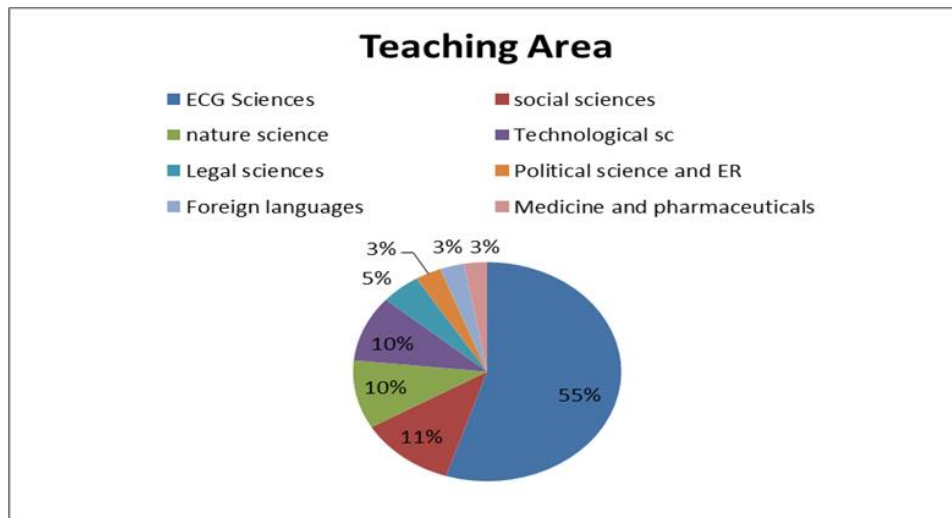


Figure 2. Field of teaching of the teachers surveyed

Source : conducted by the researchers based on the survey data

Descriptive results on the use of ICT by the university teachers surveyed

The 3G/4G connection and ADSL remain the most widely used connection modes for university teachers surveyed. After the project "one PC per citizen" several Algerian households could link their homes to the internet and allow each Algerian to have a micro-computer. Overall, the connection within the university and the Cybercafés are still low. According to the university teachers' survey, the printer, the video projector, the photocopier present the most available means in their faculties or institutes. This makes it evident because the teacher always needs these tools to ensure that the university works appropriately. Teachers can video-project these different digital media from their computers to facilitate communication with students. Even, they can photocopy and digitize materials addressed to students to contribute to learning. These educational, technological tools are highly valued for developing student motivation, so the Algerian university must consider the implementation of ICT at the student and teacher's service to have an added educational value.

Figure 3: University Teacher's perception of the internet connection used

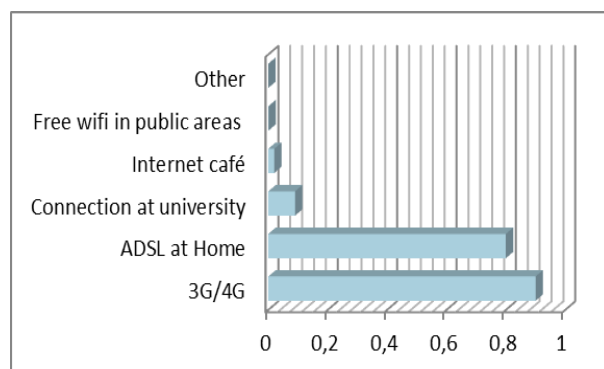
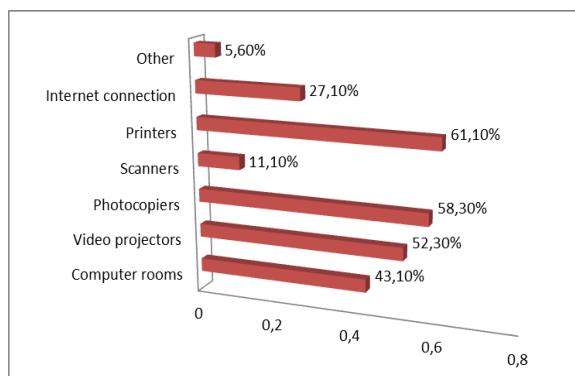


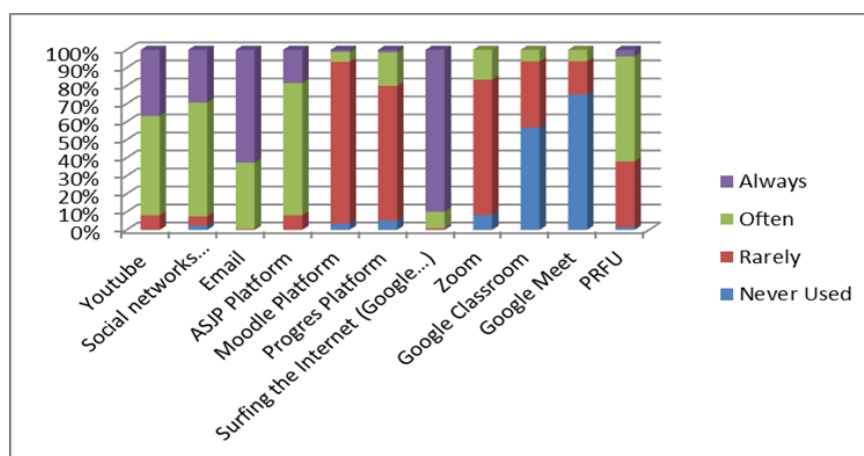
Figure 4: Teachers' perception of teaching equipment available in their faculties



Source: conducted by the researchers based on the survey data

Based on the descriptive analysis, most university teachers surveyed (80%) don't have an excellent connection to the home. Indeed, about 91% of them say that they use the internet and paper (books, articles, poly copies...) to prepare courses and TD, do research, and evaluate. It should be noted that the preparation of studies and TD requires a search time that can now be done more quickly on the internet than in paper media. Finally, the analysis results show that 90% of the teachers surveyed still motivate their students to use new information and communication technologies because they improve learning at home. Figure n° 4 confirms the new trends in ICT used by university teachers interviewed, 92% of them use social networks as their primary means of communication. For formal and informal exchanges, all teachers use "Always" and "often" enamel as a priority channel in their daily newspapers. Almost all interviewees often use the ASJP platform for scientific purposes, in other words, for the publication of research papers. However, 90% of teachers rarely use the Moodle platform dedicated to online teaching courses, indicating that before the health crisis of covid 19, the teachers surveyed did not intend to publish their studies online (70%). About 57%, 75% of the interviewees have never used Google Classroom and Google Meet, respectively; this means that teachers have a moderately low online teaching culture.

Figure 5. Rate of Use of Technology by University Teachers



Source : conducted by the researchers based on the survey data

Behaviour and perception of university teachers towards e-learning during the health crisis (Covid-19)

Most teachers (90%) report that they are aware of the instructions taken by MESRS during the health crisis of covid 19. About 83% of them report having online courses during confinement following instructions taken by MESRS to continue the academic year.

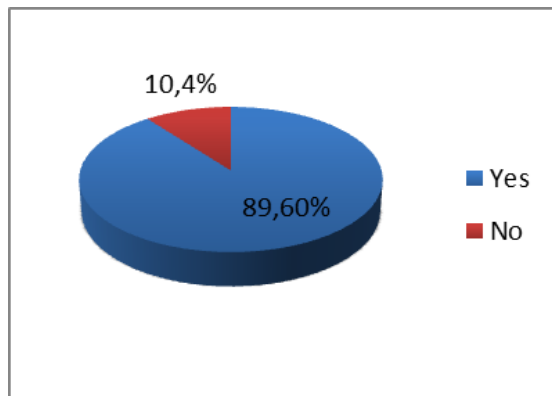


Figure 6. Knowledge of the instructions taken by MESRS during the covid 19

Source: conducted by the researchers based on the survey data

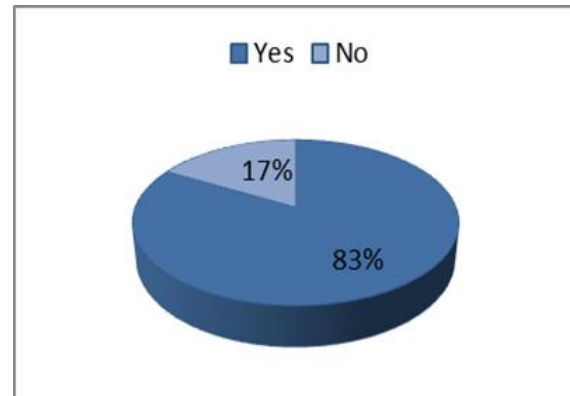


Figure 7. Provide online courses

In contrast, about 80% of respondents said that they had never used distance education before the covid19 health crisis. Of the 453 university teachers surveyed who distributed online courses during the epidemic, 436 (80%) have never taught through the various online platforms before the pandemic. For 70% of respondents, e-learning presents the first experience.

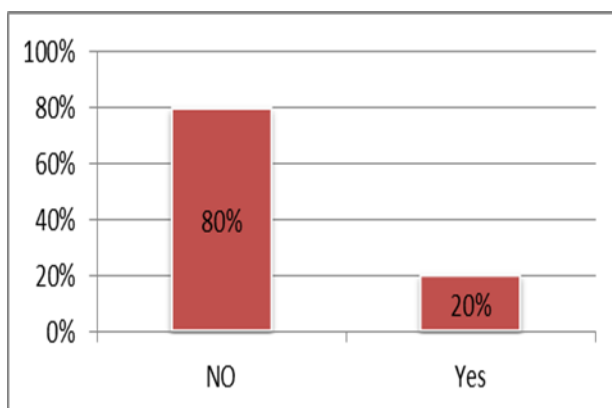


Figure 8. Distance education before covid 19

Source: conducted by the researchers based on the survey data

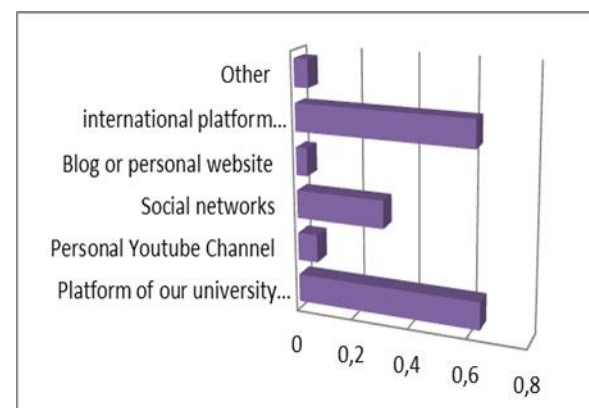


Figure 9. Type of tools used to upload courses

Looking at the responses collected (Figure No 8.) it appears that according to almost all of the teachers surveyed (97%) The Moodle platform is seen as an intuitive and easy-to-handle way. On the other hand, according to 91% of respondents, the Moodle does not allow to work collaboratively. Thus, it is not seen as a means of facilitating communication with students, plus 89% of teachers say that students do not understand well the TD series posted online via Moodle. It should also be noted that 90% of the interviewees are satisfied with the support resources available for teachers at the Moodle platform level. In the end, the level of satisfaction is moderately low. About 39% of respondents would recommend using Moodle.

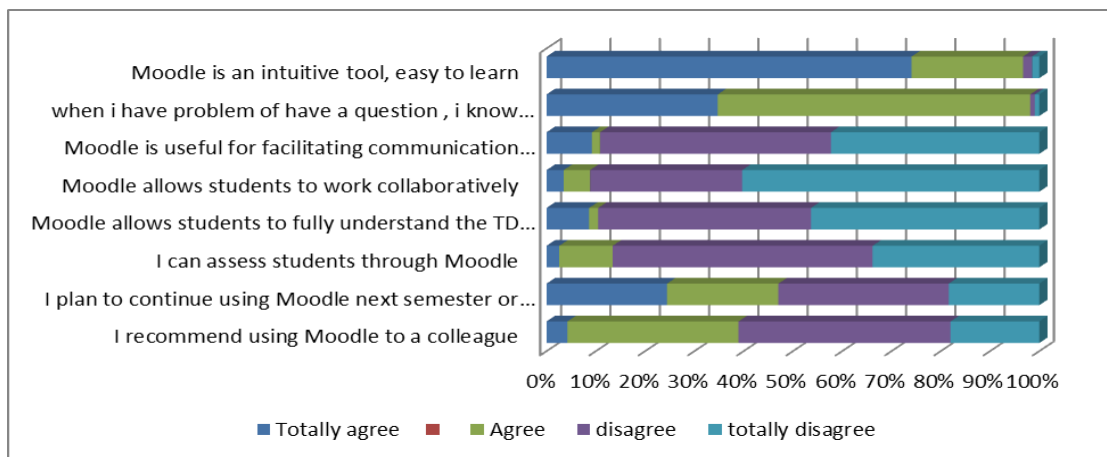


Figure 10. Degree of satisfaction with Moodle

Source : conducted by the researchers based on the survey data

Among the main difficulties reported by the teachers surveyed (Figure No9.) is the problem of connection (92%); as well as the issue of slowness when downloading and uploading files (88%).

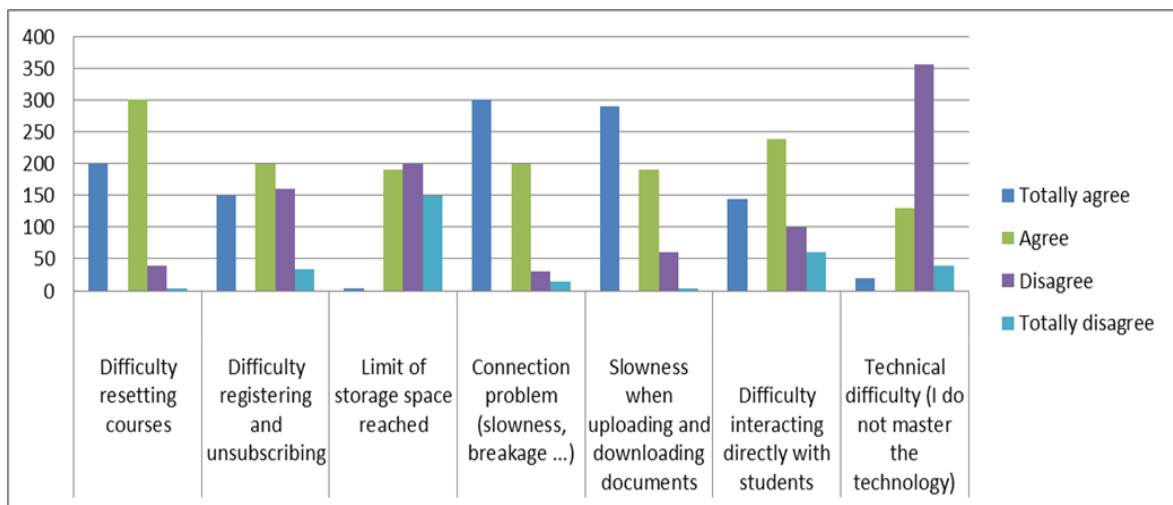


Figure 11. Technical problems encountered when using the Moodle platform

Source: conducted by the researchers based on the survey data

UNESCO (2003) has always mentioned numerous reports on the effectiveness and interest of ICT in addressing the different challenges in educational contexts. Indeed, it relies as much on the innovative stage that new communication technologies bring to the great benefit shown by teachers and students. Our results indicate that for university teachers, ICTs improve the quality of higher education in the sense that they enhance their daily teaching practices; besides, it appears that 59% of the teachers questioned say that ICT helps diversify the content to be taught and makes it easy for the student to understand the teaching content, communicate with teachers and strengthen the links between teacher and student (46%). Also, 79% of respondents admit that the integration of ICTs saves time in the educational process. Finally, about 70% of the teachers surveyed say that these new technological materials provide a space for the student to be more creative, flexible and productive.

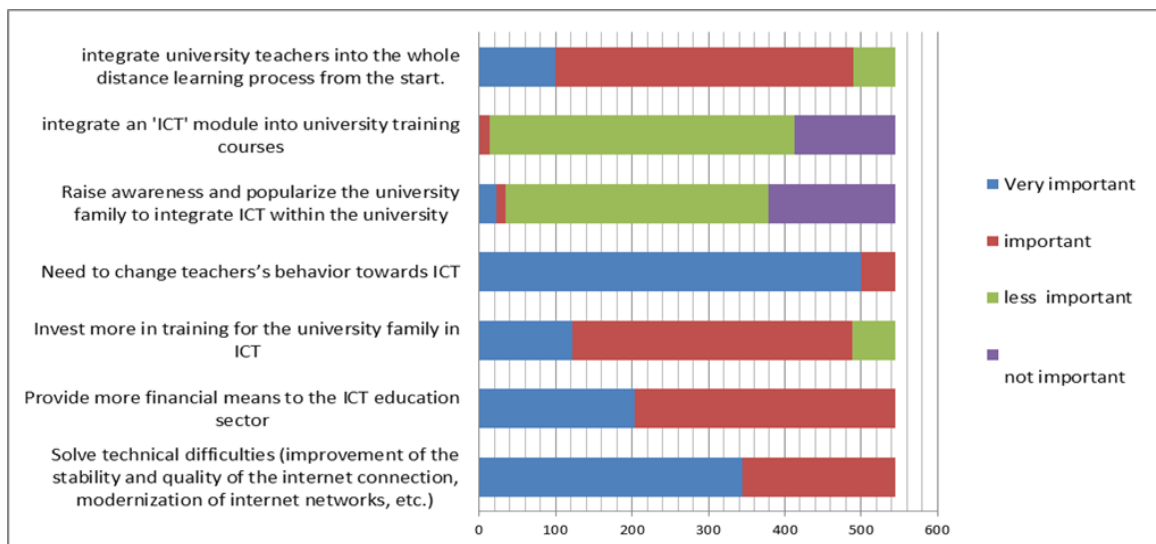


Figure 12. improvements in ICT integration into the higher education sector

Source: conducted by the researchers based on the survey data

The results allowed us to gather many details in terms of the problems encountered and the desired proposals for improvement. In fact, for the integration and use of new information and communication technologies to be successful in Algerian universities, a few factors need to be strengthened. Individual variables are put in place to ensure the proper functioning of this tool. The main proposals, according to the teachers surveyed in order of importance, are:

- The need for change in teachers' ICT behaviour.
- Solving technical difficulties (improving the stability and quality of the internet connection, modernizing internet networks...)
- Provide more financial resources to the ICT education sector.

- Invest more in training.
- Integrating university teachers into the entire e-learning process from the start.

It can then be said that the most crucial reason for the ICT phenomenon in higher education is above all and first of all the "behaviour change" factor, with the need to solve technical difficulties and to improve the stability of the internet connection.

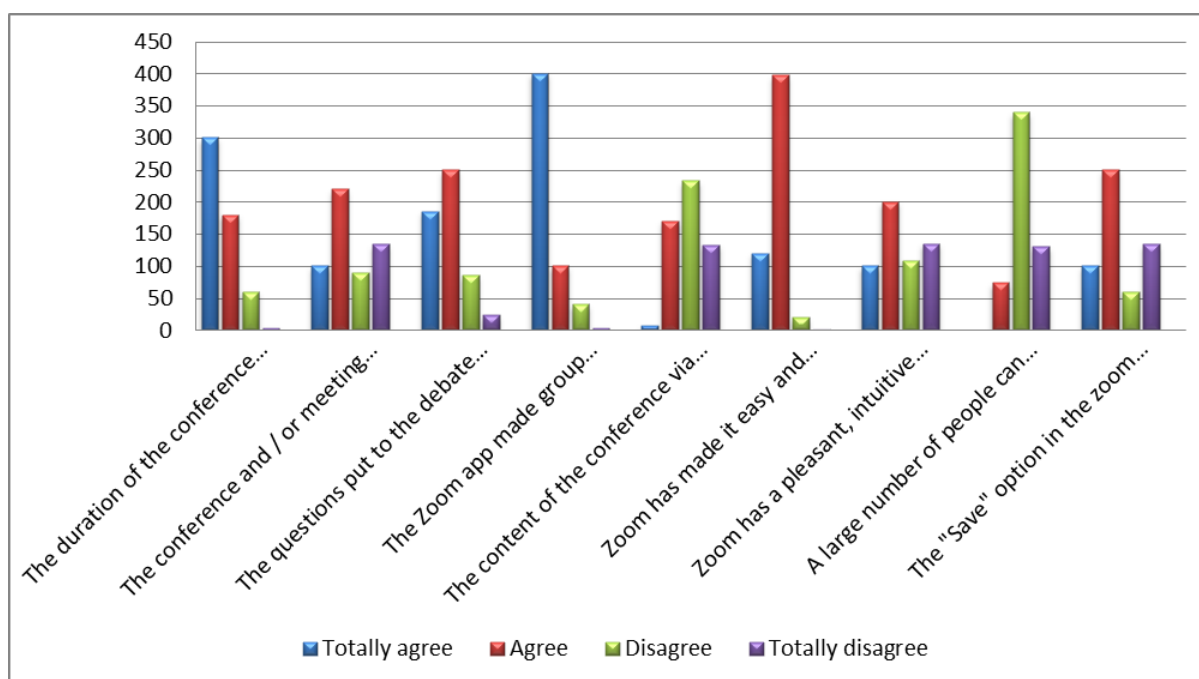


Figure 13. Appreciation of the lessons learned from the Zoom application

Source: conducted by the researchers based on the survey data

Zoom presents one of the leaders in professional video conferencing (official website of the application). During the coronavirus health crisis, most people worldwide adopt the zoom video conferencing app to work. According to Eric Yuan, the creator of this application, the platform exceeded 200 million participants in daily meetings in March 2020, up from 10 million in December 2019. So two million downloads a day, worldwide to socialize during confinement.

We found that several universities, institutes and professionals in the world in general and Algeria are using the Zoom application after the closure of academic institutions because of the epidemic to set up meetings, conferences, and virtual study days to ensure continuity of teaching and scientific research. So 70% of respondents attended meetings and appointments via the Zoom app.

More than half of respondents said that the conference and meeting via the Zoom app were satisfactory; however, 80% said the conference's duration through this application was

too excessive. For 92% of university teachers interviewed, Zoom presents an easy and simple application to manage meetings. Thus, the application has a pleasant, intuitive and easy-to-manage interface according to 87% of respondents, but 86% of them find that a significant number of participants cannot attend scientific conferences because of the lack of technical problems.

Bivariate analysis

We used the Khi-two test in this analysis because the variables in our work are qualitative. The results are posted in the following table:

Table 2. Bivariate analysis

	Crossing variables	Khi-deux At dF=1	Sig,	result
H1	Behavior with regard to ICT * means used	46,445	0,009	Confirmed
	ICT behavior * ICT training	65,034	0,341	Not confirmed
	ICT behavior * type of connection	10,356	0,040	Confirmed
H2	MESRS instructions * online posting of courses during confinement	59,090	0,040	Confirmed
	MESRS instructions * using Moodle	69,340	0,028	Confirmed
	MESRS Instructions * Using Zoom	3,457	0,934	Not confirmed

Source: conducted by the researchers based on the survey data

There is a significant link between ICT behaviour and the university teacher's means from the table above. Algeria's stated political will on ICT is an essential lever for integration in institutions and universities. However, the operation seems long when we know that new technologies in the Algerian university are still delicate due to the lack of resources and equipment allocated throughout the education system. There is no significant relationship between ICT behaviour and cross-breeding. This test shows that the teachers surveyed' training has not influenced their ICT behaviours as well; it does not guarantee the integration and successful realization of technologies within the university. Teacher training in ICT is not a determining factor in behaviour towards new technologies. We found that there is an arm's length relationship between ICT behaviour and the type of connection. This relationship explains the interest that can have different connection tools: ADSL and 3G/4G; teachers are willing to invest financially in improving their teaching practices while using ICT. So we can say that our first hypothesis is partially confirmed.

Based on the crossover table, we distinguished a relationship between MESRS instructions during containment and online courses. Following the measures taken by the Ministry of Higher Education to continue the lessons during the health crisis of Covid19,

Algerian university teachers disseminate the classes in the various platforms set up by MESRS. Also, the second hypothesis is confirmed. University teachers used Moodle, which presents the most commonly used medium to get closer to students and keep courses at bay due to MESRS instructions.

On the other hand, there is no statically significant relationship between the actions taken by MESRS and the use of ZOOM during containment. It appears that the use of the Zoom app presents a personal choice so that the teacher can participate in scientific events during confinement and is not used as a result of MESSRS instructions. It can be said, therefore, that the second hypothesis is partially confirmed.

All countries have taken steps to prevent the spread of Coronavirus, including a ban on public gatherings, closure of schools, institutions and universities. However, this has posed significant challenges for the Algerian university.

Learning through the Moodle platform has proved ineffective in Algeria; because it can hinder understanding and learning. Through the survey carried out, the Moodle prevents students from working collaboratively, so poor communication between teacher-student on the one hand and student-student on the other. In this section, the study by Fordjour et al. (2020) highlighted the importance of collaborative work between students and the present class's pedagogical aspect(Owusu-Fordjour et al., 2020)

Many university teachers do not provide an adequate learning environment (quality internet connection, lack of IT infrastructure and lack of digital culture). Learning occurs when a more knowledgeable person transmits knowledge to a less familiar person for a relatively permanent change(Bateman & Waters, 2013; Greenberg, 2005). During the coronavirus health crisis where teachers and university students resort to online learning that replaces face-to-face contact with virtual contact through the adoption of technological tools such as computers, smartphones... Ect. From this perspective, the most informed actor is absent when they learn alone at home, especially with the new concepts. They need a lot of understanding and explanation and work collaboratively, which is absent through this platform.

The study found that most university teachers never delivered online courses before the epidemic, and e-learning during this period presents the first experience for them. This has led the Ministry of Higher Education to make available the various platforms of e-learning. Those who have put online courses and directed work also complain about the harmful and unstable internet connection, in this sense, some teachers have claimed that e-learning is practical; however, accessibility presents a significant problem for students, for example, the layout of computers, internet, camera, printers, scanners to be able to access it. This presents a real challenge for distance education in Algeria. Therefore, online education's functioning depends

not only on the will but also on other external factors that guarantee its success. These results were validated by Christine and al (2020) in the United States, where they announced that universities could also work with providers of its equipment and state structures to complete the process of online learning.

The Coronavirus epidemic has revealed the real face of the reality of the higher education and scientific research sector in Algeria. We have noticed from the survey carried out that the teaching was not prepared for the use of distance education before this health crisis, it is for this reason, many obstacles appear in the higher education environment such as the lack of quality and quantity of technological and material resources, lack of training for teachers, digital educational content, applications and software. Among the obstacles to the integration of distance education in Algeria is the digital culture, as several respondents add that culture is an essential means to establish an effective process of teaching and learning; this was confirmed by Christine and al (2020), where they argue that distance learning also presents a question of social, emotional, human and cultural needs that need to be addressed to enable students to learn (Kim et al., 2020). It should also be noted that the use of Youtube, social networks, international platforms, and online storage services appear as choices for Algerian teachers. Zhao, et al. (2020) and Xi, et al have already proven the importance of using social networks in e-learning and its participation in establishing a knowledge management process (Zhang et al., 2020; Zhao et al., 2020). In the end, three significant difficulties discussed by the teachers surveyed during the coronavirus crisis (covid-19) can be identified:

1. During the health crisis, the inefficiency of the Moodle platform prevents direct contact (teacher-student) and collective work between students.
2. Poor connection quality;
3. Lack of teacher training in e-learning;
4. Voluntary participation of the Zoom application for scientific and educational purposes on the part of the teachers surveyed.

Higher education and scientific research sector leaders must find quick solutions at the same time useful in this critical moment of covid-19. The aim is to raise awareness among the university family and students of the importance of e-learning, do intensive training in ICT trades, provide teachers with the technical means necessary to succeed in online work, and offer support to the university teacher case of difficulties.

Conclusion

"Covid 19 has shown that the Algerian university is useful and that there is a genius in it," said the Minister of Higher Education and Scientific Research during a meeting at the Research Centre on Scientific and Technical Information (CERIST). Algeria's health crisis has created an obligation to move towards new information and communication technologies through the means available to enable students to pursue their university studies on the one hand and to promote scientific research through the different forms of online learning aimed at teachers and experts. This contribution's main objective is to analyze university teachers' behaviour concerning new information and communication technologies during the Covid-19 health crisis. To achieve this goal, an online survey was conducted among 544 university teachers to determine the reality of e-learning in the Algerian context.

First of all, we have noticed from the survey the political will to integrate new information and communication technologies into the higher education sector. Thus, the health crisis of Coronavirus has led to more and more consideration of online learning and remote work. Therefore, distance learning in Algeria requires planning, manipulation, and training for students and teachers, mainly because this type of knowledge is aimed at 02 million students with different specialities and languages. During this epidemic, the Ministry of Higher Education calls on all universities to use digital platforms to drop courses and TDs so that the student continues to learn, however, it has not presented the entire mechanism of e-learning, in other words, student assessment, interaction with the student in case of misal understanding especially when it comes to technical specialities where the need for TPs is mandatory. The integration of online learning in Algeria has several problems, which leads to the main obstacles that hinder this implementation.

1. The absence of resources, hardware, equipment, software... etc. in academia, at least in most universities, where they do not have computer rooms or software and if computers equip them, their use is low.
2. The lack of pedagogical, methodological and technical support for teachers and students.
3. Lack of motivation among female teachers about the use of new information and communication technologies.
4. Resistance to change: the high cost of acquiring new equipment, the cost of having a high internet speed and other problems constitute a financial obstacle to this integration.

The government needs to rethink its strategies and begin to give new communication and information technologies a top priority, especially in the higher education sector during

this health crisis. The availability of equipment, technological means, computer equipment, and a good internet connection are necessary to have a well-successful online teaching process. We also need to invest more in training, because through the survey we have noticed that the teachers surveyed suffer from a lack of exercise throughout the e-learning process, resulting in the failure achieved at the Moodle platform (lack of direct contact, lack of collaborative work, lack of platform management, difficulty in the remote evaluation...). According to Rashid and Yadav (2020), there are no models to follow or emulate for higher education institutions worldwide in this time of crisis. In the post-pandemic period, Universities must identify these problems that they can face and then make right decisions in the coming months by mobilizing their educational mission to ensure better student learning outcomes and ensure the quality of teaching.

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