THE IMPACT OF HEALTH EMERGENCIES ON TEACHING FROM THE TEACHERS AND THE STUDENTS' PERSPECTIVES: THE EXPERIENCE OF THE FACULTY OF EDUCATION SCIENCES IN MOROCCO. FACING THE COVID-19 PANDEMIC

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Abstract

Introduction: The Covid-19 pandemic crisis was an unexpected exceptional situation that prevented the closure of school premises. In order to cope and ensure the continuation of courses, education officials and administrators were called upon to invest effectively in the implementation of measures for the purposes of distance education and training by providing information and communication technology resources. **Materials and methods:** To achieve our objective, we carried out two simultaneous surveys carried out through two questionnaires administered via Google Forms, to the students and the teachers of the Faculty of Educational Sciences of Rabat in Morocco. **Results:** 73.34% of students were satisfied, 10.66% of the students preferred face-to-face and thought that distance learning cannot replace face-to-face teaching and 16% opted for mixed education. 58.34% of the teachers were satisfied with the situation of distance learning, 20.83% preferred face-to-face and 20.83% were open for the two teaching modes. **Conclusion:** Distance learning has proven to be one of the most effective solutions to meet the needs of learners during such health emergencies crises.

Keywords: Blended learning, Covid 19, Health Crises, Distance Learning, Face to face education, Morocco.

Introduction

Education systems, according to UNESCO, are called to ensure the continued availability of education in difficult situations such as health emergencies, conflicts and post-conflict periods [1]. As for the medical education crisis, it is a problem or situation that the education system is facing, and it calls for a quick decision to face the challenge posed by this problem [2,3].

Information and communication technologies (ICT) refer to all instruments carrying immaterial messages with 03 well identified categories: audiovisual (sound and image), computing (coding and processing of information) and telecommunications (Internet and networks) [4]. ICTs are used to link the internal and external networks of the educational establishment in order to develop and adapt the mobilized human and material resources [5,6].

A health crisis in its general sense is that critical point and decisive moment where the fate of a development is determined, for better or for worse [7].

The crisis reflects three fundamental elements: the unexpected threat, the lack of time and the lack of information.

The Covid 19 pandemic, as an example of health crises, had a great impact on the education systems. Confinement and the closure of schools at the national level seemed to be a logical solution to limit the disease expansion [8]. To mitigate learning losses and reduce wasted time in schools, universities opted for online education strategies with the use of ICT. The knowledge of teachers and administrators on the necessary tools and processes was a major key factor [9, 10]. The pandemic has been a real opportunity for everyone, including those who do not believe in digital, to use technologies.

The Faculty of Education Science (FES), like all higher education establishments, was affected by the Covid 19 health crisis and moved to online education and digital approach. The teachers and the students have encountered difficulties regarding the use of distance learning devices [11]. The objectives of this research study was to address the effectiveness of distance learning mechanisms and to evaluate the perception of both teachers and students of the impact of this health emergency on their quality of practice, the feeling of satisfaction or resistance from teachers and students, and their suggestions to improve this educational approach.

Materials and methods

The study was conducted in the Faculty of Education Science in Rabat. We opted for the method of non-probabilistic which is a quota sampling method. That is, one must assume that the selected people are similar to the unselected ones, in order to make inferences about the population. [12] Our two surveyed samples were made up respectively of all the teachers of the FES as well as the students of the masters of the same establishment.

The proposed sampling plan consisted of representing the two populations according to a certain number of criteria in order to ensure a certain representativeness:

- Teachers with a questionnaire that included 24 questions.
- Students with a second questionnaire comprising 16 questions.

In order to assess higher education practices and detect perceptions among FES teachers and masters students on several aspects of this experience as actors and beneficiaries of distance learning during the Covid-19, we carried out, as working tools, two simultaneous surveys carried out through two questionnaires administered remotely via (Google Forms). The two questionnaires propose to evaluate the practices of distance education implemented by the Faculty of Educational Sciences of Rabat during this pandemic, by drawing up the inventory of the introduction and integration of digital in higher education during COVID-19, and its implications for the future of digital training at the higher education level. They also included open-ended questions to allow the participants to give their opinion. The questionnaires were distributed by institutional means and presented in French. The answers were completely anonymous to preserve confidentiality. It did not require more than (10 to 15) minutes to be completed.

The first questionnaire was completed by 24 teachers from the FESR out of 79 teachers during the period from March 17, 2021 to April 30, 2021. The following is the link to the questionnaire: https://docs.google.com/forms/d/e/1FAIpQLSewGr1zmmpyXNUw6SpVkdHWMnyo8QM5XgEiEWH8zNhypvsa_Q/viewform?usp=sf_link

The second questionnaire was prepared to reach FESR Masters students. It was completed by 150 students during the period from March 17, 2021 to April 30, 2021. The following is the link to the questionnaire:https://docs.google.com/forms/d/e/1FAIpQLSfyWnojn30qOKpdEU2N2qdNM2VWdSdpn_byy3WWo5Tz-avizQ/viewform?usp=sf_link

Results

Impact of COVID 19 Health Emergency on Education from the Teachers' Perspectives

The majority of teachers have access to the internet; 58.3% used ADSL, 25% 'optical fiber' and 25% used '4G'. The most used computer's equipment were: laptops in first position (95.8%), followed by smartphones (41.7%), then desktop computers (25%) and tablets (16.7%). The majority of teachers used virtual classrooms empowered by 'Google Classroom' and 'Microsoft Teams' or through applications such as 'Zoom', 'Google Meet' and 'Moodle' where they deposited their lessons online under form of videoconferences, audio recordings and interactive courses. As for the most effective videoconferencing platforms for distance education, in order, according to teachers' estimates: as first choice 'Google Meet', it comes after 'Google Classroom', then 'Zoom', in last position 'Microsoft Teams ' and 'Moodle' (**Figure 1**). 91.80% used digital media such as (Microsoft Word, PDF, PPT, etc.); 70.8% of the teachers used email exchanges to send lessons, while only 29.2% used social networks (Facebook, WhatsApp, Messenger, etc.) to share course
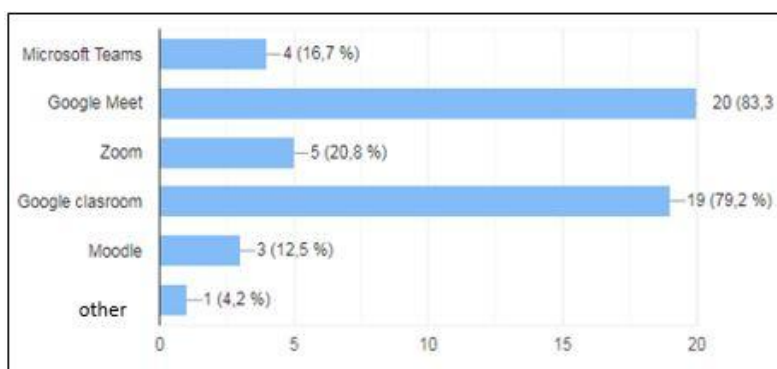

Figure 1: The most effective videoconferencing platforms for distance learning according to teachers' assessment.

During the confinement period, 75% of teachers had (one or sometimes) educational support while the rest did not benefit from this support (**Figure 2**).
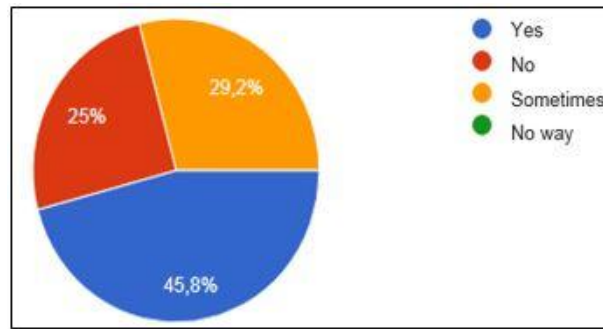
Figure 2: Percentage concerning the pedagogical supervision of teachers.

Regarding the impact of Covid 19 pandemic on the student's achievements during confinement, all the teachers carried it out in the form either of online control through a questionnaire, or via oral exams, or with the development of audio visual methods (presentation, research, report, projects, etc.)

As for the difficulties encountered by teachers during distance learning, they raised the problems of the quality of the internet service and its frequent interruptions which influenced the smooth running of the courses and was a source of difficulty in downloading documents. They also complained about the low interactivity and connectivity with the students, the difficulties related to the management of the classes and the low commitment of the students. Then comes the difficulties related to the use of the platforms (**Figure 3).**
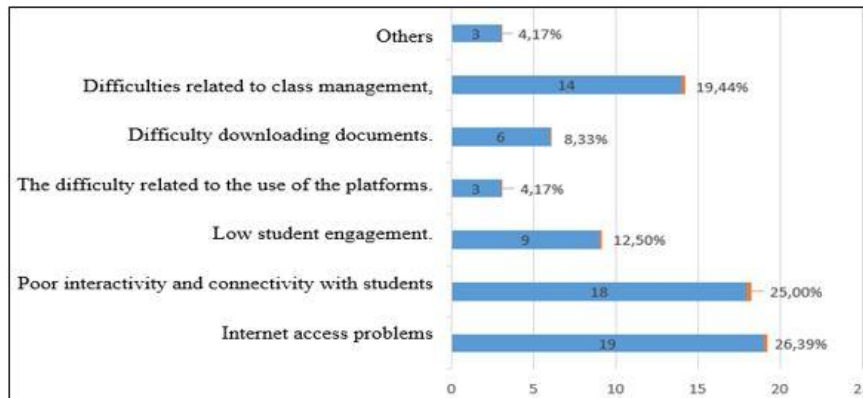

Figure 3: Distribution of teachers' perception according to the difficulties encountered

Regarding the overall assessment of the situation of distance education during covid 19 pandemic, 58.34% of the teachers were satisfied with the teaching situation, but 28.58% of 'satisfied teachers' suggested improvements regarding internet access; 20.83% of teachers surveyed preferred face-to-face, and 20.83% were open to both modes of teaching (**Table I**)

Table I: Overall assessment of the situation of distance education

Global evaluation	Percentage	Workforce
Satisfactory	41.66%	10
Satisfactory, may need improvement	16.68%	4
Unsatisfactory, prefer face-to-face	20.83%	5
The two modes of teaching (distance and face-to-face)	20.83%	5

The main axes suggested by the teachers in order to improve distance-learning systems are (Table II):
- A reliable internet connection
- Continuing education in information and communication technologies (ICT)
- Teachers' equipment with computer tools (tablets, laptops)
- Further strengthening of technical aspects (Quality of distance learning platforms, the use of a dedicated computer assistance team).

Table II: Proposals for improving distance education systems

Proposals	Percentage	Workforce
Reliable internet connection	58.33%	14
Continuous training on ICTs	37.5%	9
Equip teachers with computer tools	54.16%	13
Further strengthen the technical aspects	29.16%	7

Impact of CoVid 19 Health Emergency on Education from the Students' Perspective

Despite the efforts made by FES teachers by putting devices and tools to facilitate learning and communication during the Covid19 confinement period, the students reported many difficulties in terms of distance learning. Indeed, 56.7% of the students complained from the poor quality of the internet connection, its frequent cuts and the slowness in downloading the documents. They also reported the difficulties to have a direct contact with the teachers and the technical difficulties related to the access and the understanding of the functioning of the platforms. However, 30% of the students had no difficulty (**Figure 4**).
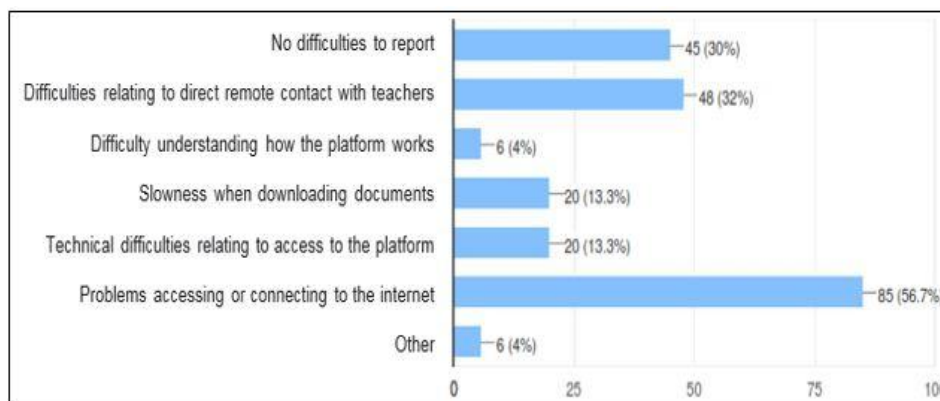

Figure 4: Difficulties encountered by students when taking distance-learning courses

The rate of internet connectivity was very high (either in ADSL, 4G, or Optical fiber (6%)). The most used equipment were laptops (96%) and smartphones (77.3%); while 6.7% and 4% of the students used respectively tablets and computers.

From the students' point of view, the most effective videoconferencing platforms for distance learning were respectively 'Google Meet' (88.7%), then 'Google Classroom' (50.7%), 'Zoom' (25.3%), 'Microsoft Teams' 11.3% and 'Moodle' (11.3%) in last position. 86.7% of students were either very satisfied or rather satisfied from the distance learning experience during confinement, compared to 13.3% declaring rather dissatisfied or not satisfied. The 1/3 of the students suggested improvements concerning:

- Internet debit, with reasonable prices as a necessity for the success of the distance learning.
- The quality of the used platforms.
- The development of the remote evaluation method:

10.66% of the students were not satisfied preferring face-to-face, while 16% opted for both modes of teaching (distance and face-to-face learning methods) (**Table III**)

Table III: Degree of student satisfaction with the general distance learning system

Overall satisfaction	Percentage	Workforce
Very satisfied	47.34%	71
Satisfied to improve	26%	39
The two modes of teaching: distance learning and face-to-face	16	24
Not effective, prefer face-to-face	10.66%	16

Discussion

The health crisis caused by the Covid-19 pandemic has highlighted the need for distance education, which was called to remedy the temporary closure of face-to-face teaching structures during the period of confinement. The most used platforms for distance learning are:

- **Google Classroom**: is a free learning platform for schools, associations and anyone with a personal Google account [13,14].
- **Google Meet**: is a video conferencing service combining of two techniques [14]:

- **Microsoft Teams:** is a collaborative communication application launched by Microsoft in November 2016 [15]
- **Moocs:** (Massive Open Online Course) is an open type of distance learning capable of accommodating a large number of participants [16].
- **Moodle:** "Modular Object-Oriented Dynamic Learning Environment": is a free online learning platform developed from pedagogical principles. Moodle also adds many educational and communicative interaction tools creating an online learning environment [17].

- **Zoom Video Communications** is an American conferencing services company. Zoom offers video calling software for conferences and meetings as well as remote work regarding education and social relations [18].

It was obvious that the experience of distance education in Morocco has shown certain limitations and required prerequisites to be successful. The teachers and the students surveyed in our study confirmed this statement.

According to the study, access to the internet (Either in ADSL, 4G or Optical fiber) was not a limitation for both teachers and students; however, they all raised the problems of frequent cuts and quality of connection, which affected the smooth running of virtual classes due to low interactivity and connectivity. The majority of teachers used virtual platforms sharing lessons online in the form of videoconferences, audio recordings, interactive lessons and digital media (Microsoft Word, PDF, PPT, etc.). The most preferred learning platform was "Google Meet", followed by "Google Classroom" and "Zoom".

The study reported technical difficulties related to the understanding of the platforms functioning, the difficulties for documents downloading, those related to the management of the classes, the low commitment students and the lack of the basic prerequisites for new technologies.

The main axes suggested by either the teachers or the students surveyed in order to improve distance education systems after the Covid-19 pandemic were:

- The demand for a reliable internet connection;
- Continuous training in information and communication technologies;
- Further strengthening of technical aspects (Quality of Distance Education platforms and the use of a team dedicated to computer support);
- Recording of lessons for later viewing in anticipation of certain flow interruptions or network problems;
- The development of the remote evaluation method;
- The teachers also suggested their equipment by computer tools (tablets, laptops)

Despite the difficulties, the level of satisfaction of teachers and students with the general distance learning system was positive with a satisfaction rate of 58.34% and 73.34% respectively in the teachers and the students group.

To better deal with distance education practices concerning the use of technologies by teachers and learners, we have divided all the participants (teachers and students) into three categories according to their degree of satisfaction in relation to the general distance-learning system:

- **The first category** corresponding to all the teachers and students who were totally satisfied with the situation of exclusive distance education.
- **The second category** represented by all the teachers and students who were not satisfied with the situation of distance education and preferred an exclusive face-to-face learning approach.
- **The third category** corresponding to all the teachers and students who were open to bothteaching methods (distance teaching and face-to-face teaching).

Category 1: with total satisfaction regarding the exclusive use of ICT technologies:

The first category believed that amid global developments related to the digitalization of "economic, social and other" fields of great interest to the international community, the field of education should benefit and keep pace with the advancing wave of the pandemic. Covid 19, which made a good reminder to reaffirm the need for digital. This category also thought that teaching has long neglected ICTE, and that it is time to develop it and generalize it like face-to-face teaching.

Based on their experiences with this mode of teaching, all of this category thought that this device was effective, easy, comfortable and perfect; indeed it was the good idea of this difficult epidemic, because it was the only solution to continue the courses and the studies without being infected. To this end, the Distance Education has helped them so much especially to assimilate and ensure the continuation of the courses and to keep the resources to come back to it in case of need; it also allows them:

- To improve learning, self-education, skills in educational technologies and to develop creativity and autonomy in students;
- To facilitate the understanding of the lessons
- Development of the teaching and learning process by giving it a new technological approach,

The representatives of this first category proposed to keep this education system after confinement and to improve it further by multiplying the efforts to develop the level of the platforms and to ensure quality distance education so that it is accessible for all the students.

Category 2: with possible resistance from teachers and learners regarding the use of the technologies

The second category, believed that Morocco is too far to use distance education because of the constraints: The lack of continuous training for teachers in the ICT modules, the internet connectivity and computer hardware problems. They also thought that this approach had negative consequences on the students: psychicologocal effects, stress, fatigue... etc.

The whole "dissatisfied" category suggested that distance learning lacks interaction and communication; distance education does not respond to the practical aspects of learning, and will never be effective such as face-to-face teaching which remains imperative for better learning and better interaction .

Category 3: open to the use of the ICT technologies as a support to the face-to-face teaching approach.

This third category believed that distance education was very efficient but, face-to-face learning will remain the best pedagogy for teaching suggesting the inclusion of distance learning devices in the Moroccan educational system not as an alternative to face-to-face in the event of a crisis, but as a permanent support and an innovation to the conventional face-to-face education system leading to an hybrid teaching approach.

Indeed, face-to-face and distance learning are complementary and will be very helpful when they are deployed according to a well-studied sequence. It may now be necessary to adopt diligent education with the same limited bias for all, in which case distance education develops more than before and can become a viable school attendance assistant.

Factors favoring the use of distance learning within the FESR

We believe that the Faculty of Educational Sciences of Rabat, as an organizational and a decision-making institution, can meet the demand of teachers and students to facilitate their access to ICT and ensure the continuation of learning. For this, we suggest that the classrooms should be equipped with the necessary cameras, microphones and computers. We also believe that colossal resources should be allocated to teachers so that they can carry out their work correctly, particularly in terms of applications to create digital media. There is a need for a real strategy that meets material needs (laptops and internet connection for everyone) and that implements the culture of ethics and that sanctions fraudulent cases that could be associated to hybrid teaching. To this end, we believe that Mohammed the Vth University or the FESR can seek partnerships or agreements with service providers to ensure the quality of internet connections.

Regarding the learning platforms, we recommend the use of the best accessible and easy-to-use platform, with a system that offers undeniable advantages in terms of flexibility and allows students with comprehension difficulties to repeat the courses or obtain additional explanations for an effective communication between teachers and students. It would be interesting to record the courses broadcast on the platforms or on YouTube in sharper and clearer educational video capsules, for later feedback and re-use.

Regarding the strengthening of the technical aspects of distance education, we believe that it is necessary to guarantee constant technical assistance support with the availability of a dedicated support team for the organization of training actions and the preparation of the tutorials. It will be interesting to encourage Distance Education Projects.

The generalization and improvement of distance learning specifically at the FESR level can only take place if all the relevant stakeholders namely: the University, the Faculty, the teachers and the students are really involved in this process. All these actors must work together to make this distance learning experience successful. For this reason, the student-teacher relationship must be re-examined in order to foster an environment of constructive and interactive participation. In a participatory climate, students become aware of their role and the importance of their continuous personal commitment and their responsibility to obtain satisfactory results.

Conclusion

As a major health emergency, the Covid 19 crisis was a real opportunity to use ICT technologies and a source of lessons in the field of education approaches in crisis situations. The distance-learning devices merged as a new, practical and flexible mode of teaching. Both distance and face-to-face approaches should be included in our Moroccan educational system, that is to say "Hybridization".

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