

## Distance Learning

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### Abstract

This article deals with the issue of distance education in training institutions in Morocco during the Covid-19 period, and more particularly in vocational training. It attempts to briefly describe the state of play of distance education at the time of the epidemic by focusing on the difficulties and obstacles encountered by trainers and learners.

We recall that in this work, we have developed two questionnaires, the first is for trainers and the second is for learners, this survey has the main objective of knowing the problems encountered in distance learning during the pandemic. The results of this study show that the majority of trainers and learners were hit by technical and logistical handicaps.

Finally, we believe that this Coronavirus pandemic should serve as a lesson and prepare us to master distance learning in the future through corrective measures at the strategic, economic and social levels.

### Introduction

In a world in perpetual evolution characterized by complexity and where the computer tool and social networks occupy a preponderant place, the digital revolution has become an opportunity for universities and training institutions to prepare students for the digital citizenship and employment of tomorrow through a renewed pedagogy, adapted to the realities of today's society which is increasingly communicating through digital means.

In Morocco, the digital transformation of education and the development of the use of Information and Communication Technologies (ICT) are considered essential conditions for the creation of value, equal opportunities, competitiveness, economic growth and employment. However, it was not until the new COVID19 pandemic that universities and training institutions were obliged to make digital technology an indispensable tool for ensuring pedagogical continuity through distance learning.

The underlying question that deserves to be asked is whether this mode of teaching was able to ensure the desired quality. Our study addresses the following issue:

#### **To what extent is quality assured in distance education?**

To answer this question, we will address the following research questions:

- Do training institutions have the conditions and tools for distance learning?
- What are the constraints and challenges encountered in distance learning?
- What are the areas for improvement and measures to ensure the quality of distance education?

We first proceed by clarifying the basic concepts and describing the state of the art on the use of digital technology in Morocco in the field of training and more particularly vocational training. We then analyze the results of the survey conducted among 50 trainees and 20 trainers of vocational training institutions in the city of Oujda. The objective of this research is to determine the difficulties and problems encountered during distance learning during the period of confinement due to the health crisis of spring 2020. Finally, we will report on the lessons learned, areas for improvement and measures to be implemented to ensure the quality of distance learning.

## 1. Theoretical framework

### 1.1. Presentation of distance learning

UNISCO distinguishes 3 periods of development of distance learning over time:

✓ Correspondence courses :

In 1840, the generalization of the postage stamp in England (Saleh and Bouyahi, 2004) facilitated the postal exchange between teacher and learner which allowed the evolution of correspondence courses (Maeroff, 2003; Kwisnek, 2005).

✓ The use of mass media to disseminate information:

Radio: Salt Lake City Mormon school radio in 1921, University of Iowa radio courses in 1925, Radio Luxembourg educational broadcasts in 1926, Paris PTT University Radio Institute in 1927, beginning of Radio Sorbonne in 1937...

The telephone: combined use in 1942 of radio and telephone in Australia for school support.

Television: first school TV programs in France in 1953.

✓ The use of digital technologies

This is the use of digital media in a multimedia context: internet, micro-computing, mobile telephony, digitization of sound, image and video. It was in the 1970s that universities began to introduce distance learning with the advent of the so-called "open universities" which allow distance learning throughout the world. The first reflections on the introduction of digital technology began in the late 1990s with the development of e-learning. This led to the creation of thematic digital universities (UNT) in 2003. Since 2010, we have seen an acceleration of the phenomenon with the appearance of MOOCs (Massive Online Open Courses), these distance courses open online (Journal officiel de la république française, 2010-2015). With the arrival of information technology (ICT) and the Web, we have reached the 4th generation of distance learning (Power, 2002).

In Morocco, the integration of digital in education has gone through several stages through several reforms (Alem et al, 2012):

✓ The Education Reform (Law 0100), initiated in 2002/2003, consists of the introduction of the LMD system (Bologna process 1999). The great contribution of this new reform was the reference made to ICT both as an object and tools for learning and governance for all disciplines and institutions of higher education.

✓ The Emergence Project of 2005 gave priority to the new professions of information technology and offshoring by giving universities the possibility to train engineers, previously reserved for the large schools of management training.

- The Emergency Program (2009-2012) aims to increase the capacity of universities, improve the quality of training and enhance scientific and technical research. This program emphasized the continuous training of teachers and obliges the university to equip itself with a Digital Working Environment (ENT) and a strategy for integrating educational technologies into the training provided at the university level. In parallel to these programs, the Moroccan government has launched several targeted initiatives dedicated to ICT in education:

✓ The "MARWAN" (MAROC Wide Area Network) (1998): a national non-profit network dedicated to education, training and research. In its new version, MARWAN 3 (2009-2012) offers universities access to high-speed Internet (between 2 and 100 Mbps) thanks to its connection with the GEANT network reserved exclusively for academic traffic.

- Génie Sup (2008) aims to develop the digital culture of all university stakeholders (teachers, students, administrative staff) and to integrate the use of ICT in teaching, training, research and governance of higher education institutions.

- The Moroccan Virtual Campus (CVM) (2004) aimed at the promotion and use of ICT in classroom teaching at the university level, is declined at the level of each university in University Resource Centers equipped with human, technological and financial means to train and support teachers by providing them

with the technological tools necessary for the integration of ICT in teaching (platforms, educational software, etc.).

- Maroc Numeric 2013 is a national strategy aimed at positioning Morocco as a regional technology hub and inserting it, through its companies and universities, into the global knowledge economy. At the level of universities, it consists in supporting them in the equipment and training of teachers.

## 1.2 Basic concepts

### 1.1.1. Distance learning

The French Association for Standardization (AFNOR) defines distance learning as a mode of distance education “designed to allow individuals to learn without traveling to the training site and without the physical presence of a trainer. Distance learning [...] is included in the broader concept of open and distance learning” (Hantem, 2020).

UNESCO defines distance learning as “a mode of education, provided by an institution, which does not involve the physical presence of the teacher responsible for delivering it at the place where it is received, or in which the teacher is present only at certain times or for specific tasks.” (OUERFELLI and GHARBI, 2008).

According to Daniel Peraya (1994) “Teaching at a distance is teaching offline. It is consequently teaching through the mediation of communication media since the teaching content, exercises, work instructions, etc. can only be transmitted to the learner through the intermediary of information and communication media: written documents, traditional or computerized audiovisual media, new communication and information technologies (NCIT).

We join these definitions to define the teaching or the distance training as a mode of training that uses the New Technologies of Information and Communication to teach what does not imply the physical presence of the trainer and the learner while using a didactic material: web site of the course or other sites on line, books or other texts, visual or sound documents, videos, etc.

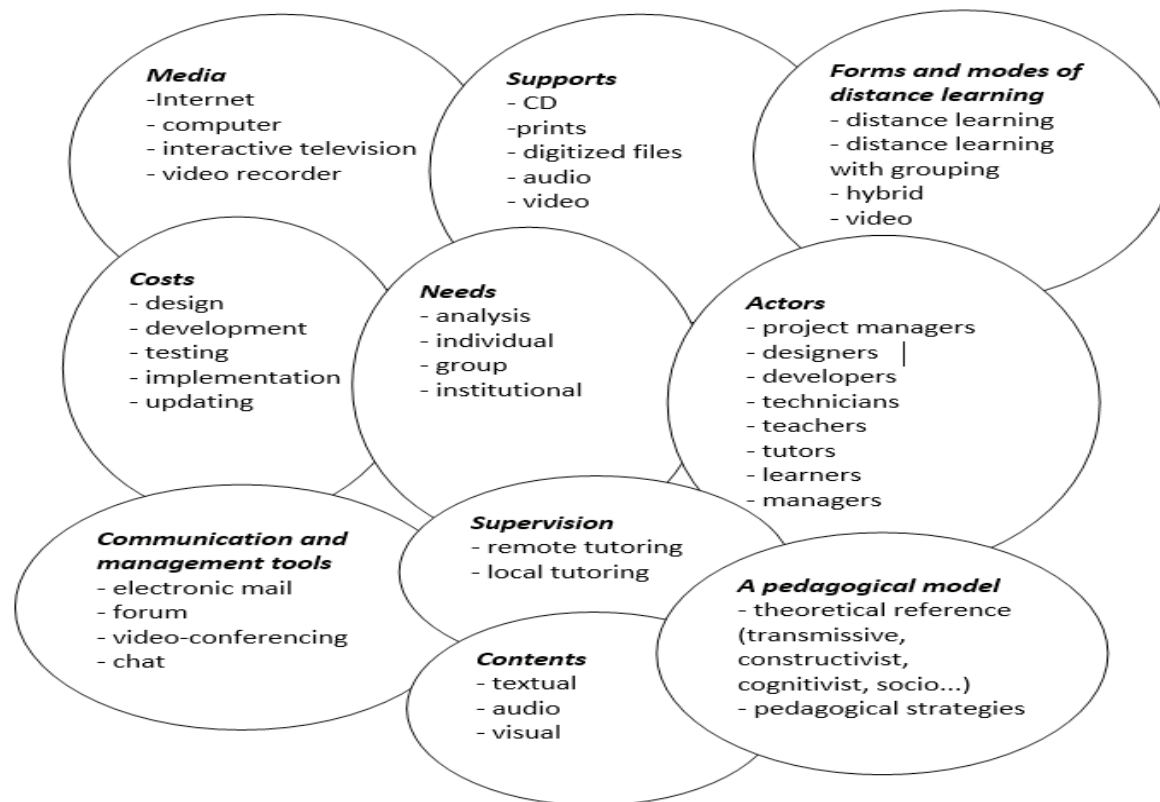
#### ✓ Distance learning device

A distance learning device refers to “a set of actors (learners, tutors, training managers) and technical tools (educational resources, exchange tools, platforms) organized in space and time, according to a learning

goal” (Hugues, 2004).

The distance learning device is a complex system, it implies a management, a preparation and a particular organization and includes several components summarized in the following diagram:

Distance learning system, Abbassi Mustapha (2005)



### 1.1.2. Educational continuity

Pedagogical continuity is a new concept that emerged with the closure of educational institutions due to the pandemic, it aims to ensure the continuation of training while maintaining the link between the learner and the trainer throughout the learning process by using digital media, teacher-created resources and available editorial resources (Ministry of National Education and Youth in France. 2020)

The work required should be regular. It must be possible to carry out the work in an appropriate amount of time, explicitly indicated. The time devoted to each teaching area must be correlated with the usual timetable.

### 1.1.3. Digital pedagogy

The new pedagogies that accompany digital technology are often learner-centered methods: the focus is on the learning process and not on teaching, and the student’s participation in the learning situation must be active. The difference with previous models is that the student can no longer be considered a passive receiver of knowledge. He already knows where to find it, and is used to going and looking for it himself. They do not always do so in an adequate manner. He must be accompanied in the autonomy and self-construction or co-construction of knowledge (Maubourguet, 2018).

It seems essential to redefine teaching and learning methods to adapt to the student’s world, to his or her frame of mind, to the contemporary society characterized by the circulation and mass distribution of

information and knowledge.

#### **1.1.4. Digital Citizenship**

For Mossberger, Tolbert and McNeal, digital citizenship is defined as the “ability to participate in society online” (2008, p. 1), with digital citizens simply being those who use digital technologies on a daily basis (Greffet and Wojcik, 2014).

The work of the Council of Europe thus states: “Digital citizenship refers to the effective and positive handling of digital technologies (creating, working, sharing, socializing, researching, playing, communicating and learning), active and responsible participation (values, skills, attitudes, knowledge) in communities (local, national, global) at all levels (political, economic, social, cultural and intercultural), engagement in a dual process of lifelong learning (in formal, informal and non-formal structures), and the continuous defense of human dignity.” (Orme2019 meetings).

The skills necessary for any citizen to be able to participate effectively in a culture of democracy are not acquired automatically, but must be learned and practiced. Thus, education has a key role to play in helping young people acquire the skills and competencies they need to become active citizens. Many countries are developing “digital citizenship education” to encourage young people to develop skills, engagement and creativity online, as well as an awareness of the legal implications of their activities.

#### **1.3. Distance learning in Morocco**

In the face of the health crisis caused by the Covid-19 pandemic, physical distancing has become one of the essential measures to stop the spread of the virus. This distancing caused the closure of schools, universities and all training institutions, as well as the interruption of many literacy and lifelong learning programs, which disrupted the lives of 1.6 billion learners in over 190 countries” (UNESCO 2020).

In Morocco, classes were suspended from Monday, March 16, 2020 in all educational institutions, vocational training and academic institutions, whether private or public; “This decision is part of the preventive measures aimed at containing the spread of the Coronavirus ‘Covid-19’, and is applicable to all public and private higher education institutions, executive training institutions that are not part of universities, schools and language centers under the authority of foreign missions, and private language and tutoring centers”, said Minister AMZAZI in a press release from the Ministry of National Education, Vocational Training, Higher Education and Scientific Research, dated March 13, 2020. The field of education was then faced with an emergency situation giving rise to a rapid intervention to propose alternative solutions. It is the distance learning which was then imposed as an alternative to the stop of the face-to-face teaching in order to ensure a pedagogical continuity.

At the level of vocational training, the OFPPT has launched -on March 19, 2020- a distance learning system for the benefit of its trainees, through a system of virtual classes allowing groups, all levels, to follow their courses online under the supervision of their trainers, following a programming and appropriate schedules. In this sense, and according to a press release of the OFPPT of May 22, 2020, 904 803 hours of training were provided during the period of containment, through 300 718 virtual sessions conducted for the benefit of trainees, all levels, in addition to the sharing of 3 271 validated training content (presentations, videos, software, etc.). For the practical works, the OFPPT teams worked for the production of simulation videos which were shared progressively with the trainees. The digital library, available to all trainees since the beginning of the training year, also gives them access to more than 40,000 reference works, covering various fields.

To follow their training online, trainees will receive invitations on their e-mail addresses to participate in training classes led by their trainers according to a schedule decided by each school director. At the same time, all the content of the training modules and the practical workbooks will be available on the Microsoft

Teams sharing platform.

Given the persistence of the Coronavirus pandemic, the OFPPT has opted for the hybrid training mode for the 2020-2021 and 2021-2022 training years. OFPPT trainees will continue to benefit from the digital content made available to them through OFPPT ACADEMY, the e-learning platform dedicated to language learning, as well as the Scholar Vox digital library.

## 2. Research Methodology

The theoretical framework has allowed us to know the device of distance learning as well as the efforts made at the national level to introduce this mode of training in Moroccan training institutions, which serves as a reference to answer our research question “To what extent is quality assured in distance learning?”

Indeed, several efforts have been made by the different actors of education and training to ensure pedagogical continuity during the pandemic, without forgetting the efforts and personal initiatives of teachers and trainers through the design and dissemination of video capsules, the use of social networks most used in Morocco to stay in touch with their students: Facebook and WhatsApp. However, in practice, shortcomings have been raised, some of which are due to problems with the technology, others have more to do with the administration, teaching methods or learners.

To get a realistic idea of the results of distance learning in training institutions, we deemed it necessary to carry out a field study through two questionnaires, one addressed to 20 trainers and the other to 50 trainees. We selected the participants on a voluntary basis, while respecting the criterion of their participation in distance learning during the period of confinement.

Through this study we were able to identify the difficulties and obstacles encountered during distance learning by answering the following research questions:

Do training institutions have the conditions and tools for distance learning?

What are the constraints and challenges encountered in distance education? To facilitate the analysis of the results, we used the Sphinx Plus2 (V5) software.

## 3. Analysis of Results and Lessons Learned

The results of this study are summarized as follows:

### - Trainers

75% of trainers report difficulties in using the technology.

More than 87% of trainers say that the difficulties are technical. The problem in distance learning is not the use of technology itself, but how it is used in the design and delivery of courses. Indeed the design of a course must be developed with the help of technology and media experts.

The COVID-19 pandemic has transformed training methods. This change was difficult to manage for 80% of the trainers, especially since they were not prepared either psychologically or technically. Among trainers, reluctance is often an expression of resistance to change.

75% of the trainers interviewed fear that their courses will escape them when they are placed on a platform, even if it is closed.

In an open-ended question about the reasons for this concern, some trainers raised the issue of intellectual property, stating that resources had been found on the Internet when they were not intended to be distributed outside the institution.

95% of instructors believe that physical distance makes it more difficult to assess the learner's level of understanding of the course content. It deprives the instructor of the learners' non-verbal responses. With off-line feedback, communication via technology can be a barrier to assessing learning.

For 90% of trainers, preparing a course to present at a distance requires more effort and time than a face-

to-face course, trainers must work hard to achieve their objectives

More than 70% of trainers were not sufficiently engaged because they did not regularly integrate ICT into their learning and training practices.

The majority of trainers (90%) found that a large number of learners are not motivated for distance learning and this is felt especially in the mornings when most of them are no longer connected or are online but not responding to their trainer's call.

95% of the trainers found that the cognitive abilities to use technology differ from one learner to another and therefore their ability to assimilate the courses delivered online is different.

85% of the trainers believe that there is a lack of autonomy of the learners, noting that they are not able to work on their own.

According to 70% of the trainers interviewed, online teaching will continue to be part of training practices after the pandemic, alongside face-to-face training.

In conclusion, the pedagogical innovations made possible by digital technology require a significant personal investment from each teacher. Currently, the conditions necessary for teachers to be fully committed to the development of digital teaching methods are not in place.

On the one hand, the budgetary constraints encountered create a climate that is generally not conducive to the support of personnel and do not encourage the implementation of new projects that require a significant personal investment over time.

On the other hand, the issues of training, career, task definition, quantification of activity, and intellectual property have not been sufficiently addressed to date.

## **- Learners**

***Problem of support and use of the digital tool:*** more than 90% of learners consider that they were not sufficiently supported in the use of the digital tool during distance learning.

***Problem of interaction:*** more than 90% of learners find that interaction with trainers is insufficient in distance learning,

For 70% of the trainees, it is easier to intervene in the face-to-face course than at a distance.

***Feelings of isolation, boredom and anxiety:*** The majority of learners felt these feelings because they were alone in front of their computer or smartphone in the physical absence of their trainers and colleagues. Indeed; they consider their training institutions not only a place of learning, but also a place of social life where they can build friendships and share

***Problems of access to digital tools:*** 30% of learners stated that they do not have access to digital tools and 78% do not have access to an internet connection. Moreover, the majority use their smart phones to follow the courses, knowing that their small screens are less user-friendly for browsing the Internet, downloading texts to read or watching videos

94% of learners are not able to apply the knowledge acquired in distance learning and for 92% of learners surveyed, distance learning did not allow them to consolidate and improve their knowledge.

***Health problems:*** 80% of learners responded that they suffered from health problems while taking their online training: they had trouble sleeping, they ate in an unbalanced and disorganized manner and had a lot of difficulty waking up in time for their morning classes, with particular difficulties in concentrating.

## **- Challenges to be met**

According to JOSIANNE and MARILYN (2013), there are four challenges to distance course design:

- ***The challenge of student autonomy:*** Taking a course partially or entirely at a distance requires a great deal of autonomy on the part of students. It is therefore important to identify the cognitive and socio-emotional profiles of the learners in order to anticipate their possible difficulties and to provide them with resources to make them more autonomous and persevering.

- ***The challenge of an explicit pedagogy:*** In order for the student to be able to make his or her own way, the pedagogical scenario must be explicit. Particular attention must be paid to the formulation of learning targets and the proposed learning process, while allowing the student to make choices and contextualize the learning process according to his or her interests, needs and objectives.
- ***The challenge of collaborative design:*** The design of such a course requires the mobilization of a variety of skills. Even if he remains the sole person in charge of his course, the professor benefits from the expertise and experience of other actors (tutors, teaching professionals, programmers, computer graphics designers, multimedia specialists, etc.).
- ***The challenge of mediating the course:*** There are many options available to the professor today regarding the media format to be used for the course and the activities that can be carried out at a distance. It is therefore necessary to make an enlightened choice in terms of mediatization, motivated above all by pedagogical concerns.

## Conclusion

To conclude, while this pandemic has caused loss of life and disrupted our lives in every way, it has accelerated the digital transformation that began decades ago.

Whatever the outcome of the crisis and its aftermath, it is clear that with the emergence of 5G and IoT, digital technologies will continue to transform the way we live and work. Half of the world's population is expected to be using 5G by 2024. By 2030, up to 125 billion networked Internet of Things (IoT) sensors and devices will be installed in our homes, cars, offices and streets, creating completely new living and working environments.

The field of education should also benefit from this transformation, as the integration of 5G networks into educational systems should be able to make connectivity issues a thing of the past and ease the logistics of educational institutions. Thanks to its extremely low latency rate, 5G can offer faster, more reliable and more fluid teaching methods.

In Morocco, we believe that face-to-face and distance learning are complementary and will be very useful when deployed in a well-studied sequence, bearing in mind that e-learning would never replace the teacher, which is why this new mode of teaching should be considered as an addition, an added value that would enrich face-to-face teaching

Teaching should start with face-to-face sessions, then move on to a synchronous or asynchronous distance learning phase and end with face-to-face sessions to consolidate, evaluate and, if necessary, correct.

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