Pedagogical Communication in Hybrid Mode in the COVID-19 Pandemic Era, Practices in Morocco and Reflections

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This article aims to analyze the performance of the hybrid education initiated in Morocco by the Ministry of National Education, Vocational Training, Higher Education, and Scientific Research to ensure pedagogical continuity in the context of the COVID-19 pandemic and following the emergence of the Omicron variant.

To this end, we relied on online questionnaires, targeting 104 learners on social media in order to highlight the performance of pedagogical communication and hybrid teaching based on their own experiences. The results show that most of them prefer this hybrid teaching model, despite the setbacks of this new educational form, including technical problems namely linked to poor connectivity, and the crashing of the platform, in addition to the lack of direct interaction and supervision, especially during the remote learning mode. The vast majority of respondents believe that education in Morocco can go digital in the medium and long term without the circumstances related to the pandemic.

Keywords: hybrid teaching, COVID-19, Omicron, pedagogical communication

INTRODUCTION

Morocco had declared a state of health emergency to prevent the spread of the virus. For this reason, some sectors of activity choose to use information and communication technologies (ICT) to accomplish their tasks remotely (telework). In the field of education and training, the Ministry of National Education, Vocational Training, Higher Education and Scientific Research announced at the beginning of 2022, following the measures taken in 2020 at the beginning of the pandemic, that a new health protocol is being implemented. It includes the closure of classrooms when there are more than 3 confirmed cases, and the implementation of distance learning for a period of 7 days. If more than 10 cases are recorded in different classrooms, schools must close and implement distance learning for at least one week in agreement with the local authorities. Public and private educational institutions had recorded 553 positive cases of Covid-19, resulting in their temporary closure, according to the weekly bulletin of the Ministry of National Education, Vocational Training, Higher Education and National Scientific Research from January 31 to February 5, 2022. To ensure the continuity of education for the 2021/2022 school year, the pedagogical communication has taken a new form. Educational institutions have therefore opted for distance learning,

allowing teachers to ensure the continuity of courses and assessments, mobilizing various information communication technologies (ICT), including platforms (Moodle, video conferencing applications, live broadcasting, social networks, etc.).

The functioning of pedagogical communication in the digital age is generally illustrated by the simplified diagram of Shannon's information theory:

FIGURE 1
SHANNON'S INFORMATION THEORY

Source: Authors
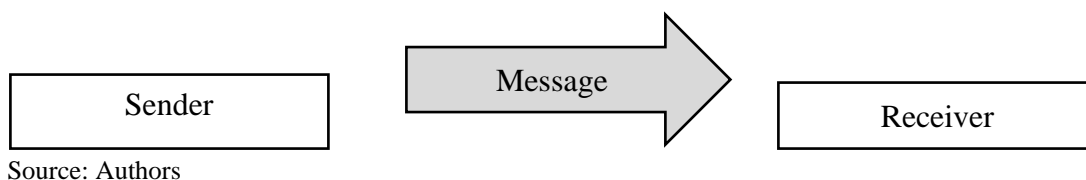
Thus, the hybrid system of education/training consists in choosing between face-to-face and/or distance learning depending on the health conditions.

Being faced with this situation, several questions arose, including:
- Do educational institutions have the tools for hybrid teaching?
- Have teachers and learners been able to adapt to this mode of education/training?
- What is the effectiveness of distance education according to students?
- Has Morocco been able to adapt to this wave of innovation in educational communication?
- What are the learners' preferences in the hybrid mode?

In this article, we will provide some answers to these questions. The objective of this study is to present the performance of a hybrid teaching model in Morocco. Therefore, we will be testing the hypothesis that hybrid teaching meets the health conditions; certainly, the distance learning model has limitations.

Several studies have shown difficulties, even dysfunctions encountered in distance learning, among them a national survey on the perception of distance learning. It was conducted by a collection of six teachers and coordinated by the professor at the Faculty of Legal, Economic and Social Sciences of Mohammedia, Taoufik Benkaraache, entitled "Educational continuity and distance learning in times of confinement: perception and satisfaction of the stakeholders", published in May 2021, revealing the first results[1].

It turned out that the rate of dissatisfaction of students was enormous, about 79% were either little or not satisfied with distance learning during the total confinement, part of the problem being directly related to the infrastructure: connection problem, crashing of the platform, the lack of involvement of institutions and academic bodies.

In this article, we will first try to recall the different definitions, types and characteristics of hybrid teaching, and then we will address the situation of distance teaching and the performance of hybrid teaching through a questionnaire survey.

TEACHING: DEFINITIONS AND TYPES

Definitions

Legendre (1993, p. 507) defined teaching as "a communication process with the purpose of inducing learning; in other words, teaching is a set of conscious communications and decision making by a person or group of people interacting as an agent in an educational setting."

Deborah L. B. & al (2008, p. 395) pointed out that "teaching includes everything that teachers need to exercise to support students' learning; that is, interactive work and all the tasks that appear in lessons to make them easier to understand."

Teachers also need to plan lessons, assess learners' work, write and grade assessments, explain class work, ask for homework, and practice in-class exercises.

TABLE 1
DIFFERENT DEFINITIONS OF TEACHING

Study of teaching	
Gage (1963, p.96)	Any form of interpersonal influence designed to change the ways in which other people can or will behave.
Legendre (1993, p.507)	A process of communication to bring about learning; a set of communication and decision-making acts intentionally implemented by a person or a group of persons interacting as an agent in an educational setting.
Not (1987, p. 59)	Bringing up learning activities and backing them up with appropriate materials. These materials consist of information that one puts out for others to grasp.

Source: Philippe D., (2008), What is teaching? Some necessary and sufficient conditions of this activity, https://journals.openedition.org/rfp/2098

Distance Learning and Hybrid Learning
Distance Learning

Distance learning is now a mode of teaching organized by educational institutions, through the voluntary use of information and communication technologies (ICT), without involving the physical presence of the teachers and learners.

Indeed, for Aourik et al (2020), *"ICTs increase the possible communication between Internet users, while facilitating sharing, socialization, and collaboration. They allow easy access to information and communication resources without obligations or constraints in terms of time and space."*

Characteristics of Distance Learning (Distant Education)

Several authors have tried to identify the characteristics of distance learning. These characteristics, among others, can be summarized as follows:

- **Flexibility:** Distance learning is characterized by its flexibility despite spatial and temporal differences. Eric U. (2003) described temporal flexibility as *"the essence of distance learning: it is one of the three basic concepts that various definitions of the discipline attempt to establish, in addition to spatial separation and technological mediation."*
- **Contextualization:** My M'hammed D. et al. (2006) stated that *"distance learning allows the individual to learn in their immediate context. It thus maintains direct, immediate and permanent contact with the different components of the environment, facilitating the integration of scientific knowledge with practical knowledge and the transfer of knowledge."*
- **Engagement:** Amy J. C. (2018) stated that, *"Learner engagement is critical to the success of online courses. Without engagement, the learners feel isolated and disconnected. An engaged learning environment is characterized by the degree to which learners actively participate in thinking, talking, and interacting with other learners and instructors about the course content."*

1-2-2 Hybrid Teaching

Hybrid teaching is a combination of different modes of teaching, namely: face-to-face teaching and distance learning. Marcel L. (2015) stated that *"the principle of diversity in teaching methods favors hybridization, even the mixing of different modes of interaction."*

THE CONTEXT OF HYBRID EDUCATION IN MOROCCO

Since the emergence of the COVID-19 pandemic in Morocco in March 2020, health measures have been put in place, including comprehensive confinement measures to prevent the spread of the virus.

In addition, some business sectors have adopted digital technologies in their services to ensure continuity of their services (i.e. education/training) by opting to use ICT.

Before the start of the 2021/2022 school year, the Moroccan institution gave parents and guardians the opportunity to choose between face-to-face and distance learning methods for learners.

In early 2022, after a new Omicron variant the Coronavirus emerged in Morocco, the nation's Ministry of National Education, Vocational Training, Higher Education and Scientific Research made it mandatory for institutions with positive cases to opt for distance learning.

According to the World Health Organization (WHO), Omicron is a worrying and faster spreading variant of Covid-19.

The Ministry of National Education, Vocational Training, Higher Education and Scientific Research also empowered the superiors of universities and schools to decide on the mode of teaching according to the health conditions.

METHODOLOGICAL APPROACH

In the era of the Covid-19 pandemic, particularly with the Omicron variant, teachers from different school levels found themselves in charge of ensuring the continuity of their courses with a hybrid model, which has revolutionized the educational landscape in Morocco.

The objective of this paper is to analyze the performance of hybrid communication, particularly distance education models, to test the hypothesis that hybrid education meets health conditions; admittedly, distance education models do have constraints.

The study focused on a deductive approach, through an online questionnaire, given that Vilatte, (2007) considered *"the questionnaire as a quantitative method that is applied to a set especially a sample that must allow statistical inferences."*

The online questionnaire is mainly intended for learners, as it is the most suitable model for this wave of digital and for our target, with an average duration of 15 to 20 minutes, conducted through Sphinx online, and consisting of 20 questions. It is divided into 4 parts. The first section includes the student's socio-professional situation. The second part is based on the attitudes of learners in hybrid mode courses, especially distance learning.

The third part is devoted to the attitude of teachers in distance learning, and the fourth part addresses issues related to communication in the digital age.

For the data analysis, we used descriptive and explanatory statistical techniques. The questionnaire was released online on the month of February 2022 targeting Moroccan learners via social networks (Facebook, Instagram and WhatsApp) by guaranteeing their anonymity throughout the data collection process.

Thus, we will try to verify the test mode of Shannon's information theory which shows that only the sender (the instructor) passes the message to the receiver (students).
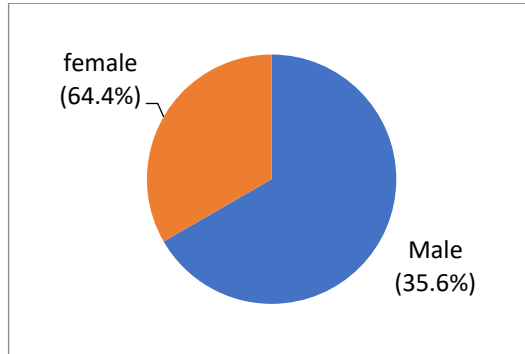
The analyses of the present survey were carried out through the Sphinx software.

RESULTS AND ANALYSIS

Socio-Professional Status of the Total Sample

104 learners answered the questions pertaining to this study. 64.4% were women and 35.6% were men.

FIGURE 2
DISTRIBUTION OF RESPONDENTS BY GENDER

Source: Authors

The majority of respondents were between 18 and 24 years of age (75%); followed by 24 and over (10.6%); between 14 to 18 years of age consisted of (9.6%); and between 9 to 14 years of age was at (4.8%).

FIGURE 3
DISTRIBUTION OF RESPONDENTS BY AGE
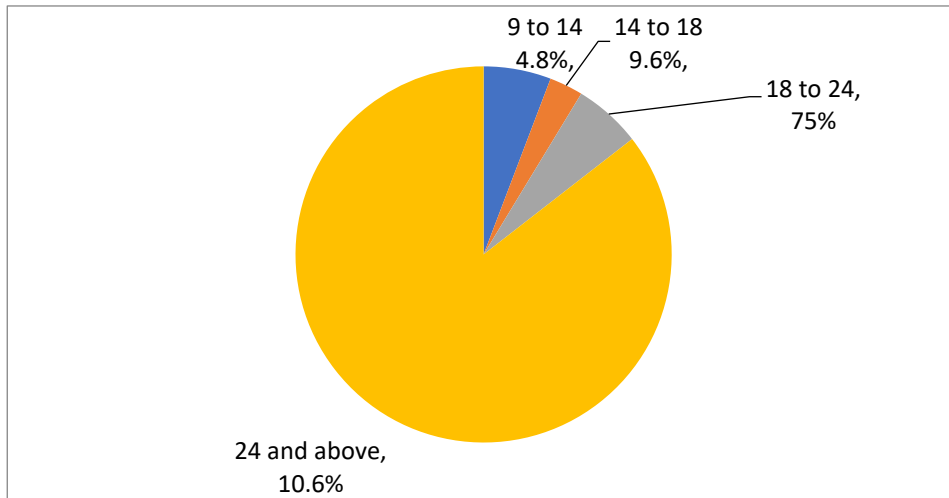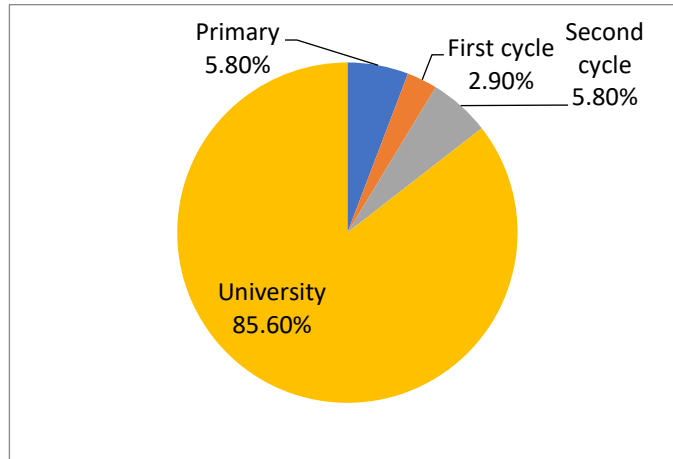

Source: Authors

TABLE 2
SUMMARY OF THE FIRST TWO ANSWERS CROSSING:
WHAT AGE RANGE ARE YOU IN? /YOU ARE A

What age range are you in?	You are a		
	FEMALE	MALE	TOTAL
9 to 14	80%	20%	100%
14 to 18	70%	30%	100%
18 to 24	65%	35%	100%
24 and above	45%	55%	100%

Source: Authors

Most of the respondents who answered the questionnaire were university students (85.6%).

FIGURE 4
DISTRIBUTION OF RESPONDENTS ACCORDING TO LEVEL OF EDUCATION
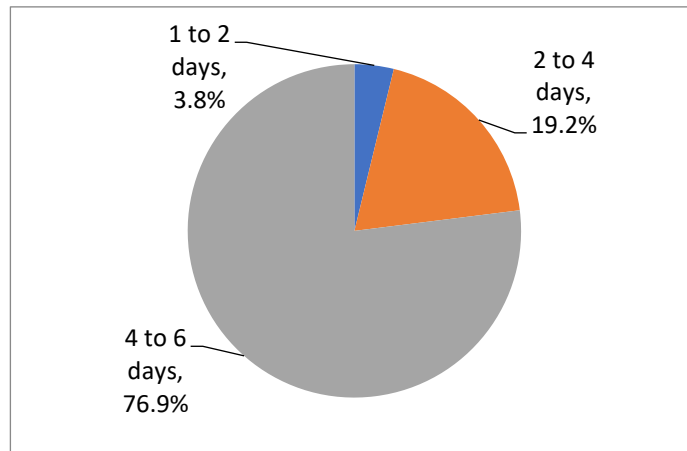

Source: Authors.

Attitudes of Learners Towards Hybrid Courses, Especially Distance Learning

The majority of students have 4 to 6 days of classes per week (76.9%), then 2 to 4 days (19.2%), and a minority of them (3.8%) have 1 to 3 days of classes per week.

FIGURE 5
DISTRIBUTION OF RESPONDENTS ACCORDING TO THE DURATION OF COURSES PER WEEK

Source: Authors

TABLE 3
SUMMARY OF THE LEVEL OF EDUCATION AND THE DURATION OF COURSES PER WEEK CROSSING: YOUR LEVEL OF EDUCATION / HOW MANY DAYS DO YOU STUDY IN A WEEK?

Your level of education	How many days do you study in a week?			
	1 to 2 days	2 to 4 days	4 to 6 days	TOTAL
Primary	0%	0%	100%	100%
First Cycle	0%	33%	67%	100%
Second Cycle	0%	33%	67%	100%
University	4%	19%	76%	100%

Source: Authors

46.2% of the respondents spent 6 hours or more in front of their smartphones per day, then 3 to 6 hours (44.2%), and a minority spent 1 to 3 hours (9.6%).

FIGURE 6
DURATION OF SMARTPHONE USE PER DAY
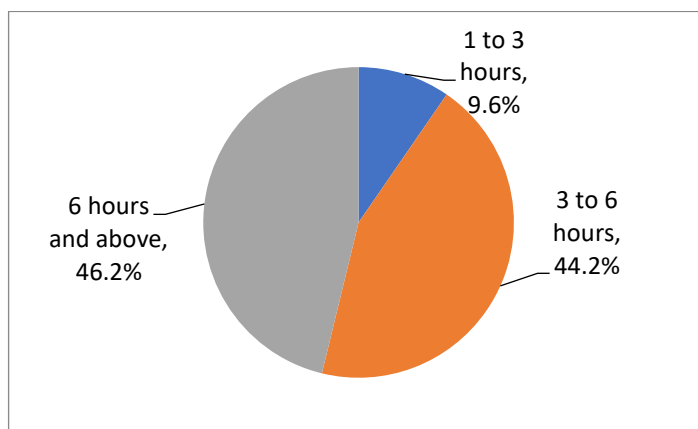
Source: Authors.

54.8% of the respondents consulted ICT regularly to access online courses; followed by those who access ICT 3 times per week, with 28.8%; then the once a week (11.5%); and finally a minority who only consulted ICT once a month (4.8%).
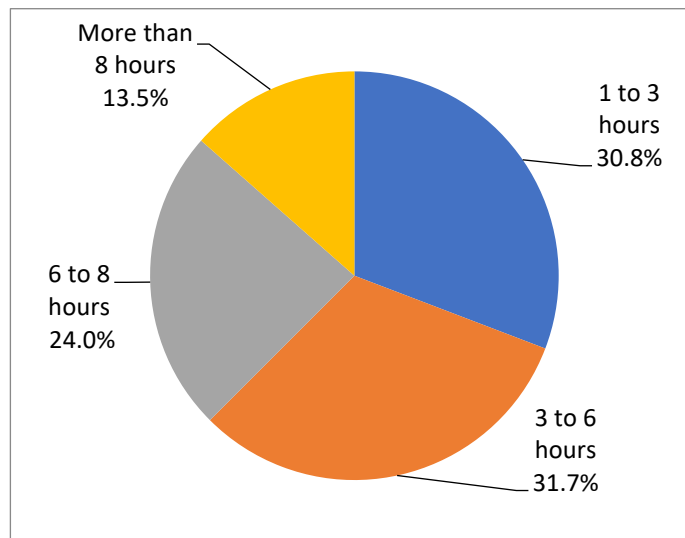
FIGURE 7
FREQUENCY OF USE OF ICT TO ACCESS ONLINE COURSES:
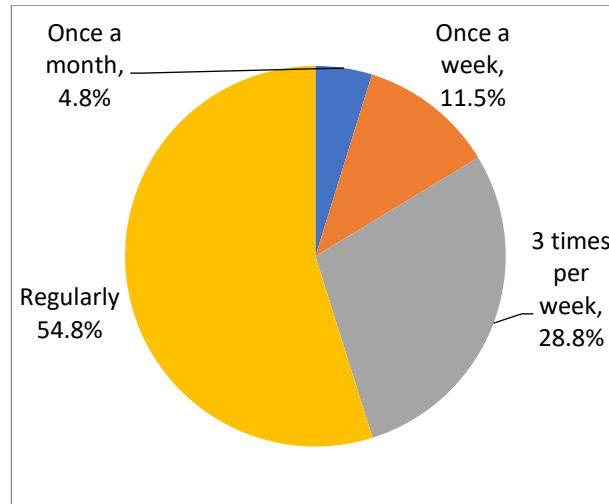
Source: Authors

The majority of respondents spent 3 to 6 hours of their time using ICT for other purposes (31.7%); followed by a frequency of use of ICT of 1 to 3 hours (30.8%); 6 to 8 hours (24%); and then the more than 8 hours (13.5%).
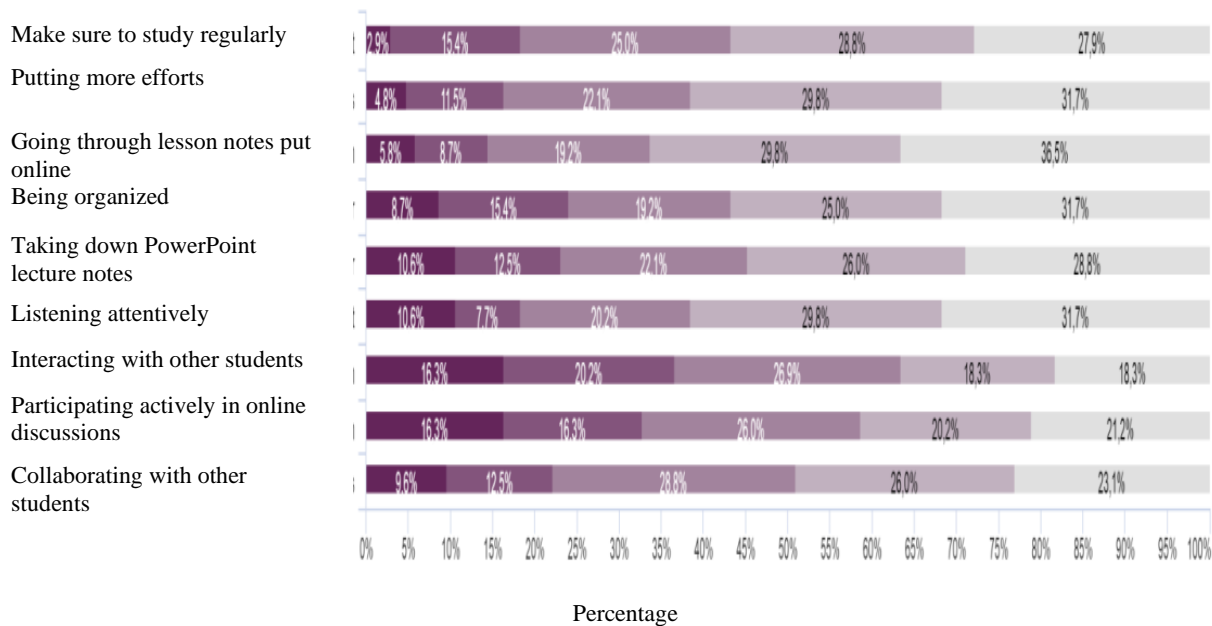
FIGURE 8
FREQUENCY OF USE OF ICT FOR OTHER PURPOSES BY DAY

Source: Authors

The majority of students engage in listening and reading carefully, taking notes of PowerPoint readings to ensure they have understood the material during online courses, as well as interacting with other learners and the instructor via the platform chats, video conferencing applications or via e-mail.

FIGURE 9
DISTRIBUTION OF THE RESPONDENTS ACCORDING TO THE CHARACTERISTICS AND BEHAVIORS THAT DESCRIBE THEM THE MOST DURING THE ONLINE COURSES

Source: Authors

The respondents who consider themselves globally responsible in distance learning (62.5%), against 37.5% of them who do not consider themselves as such.
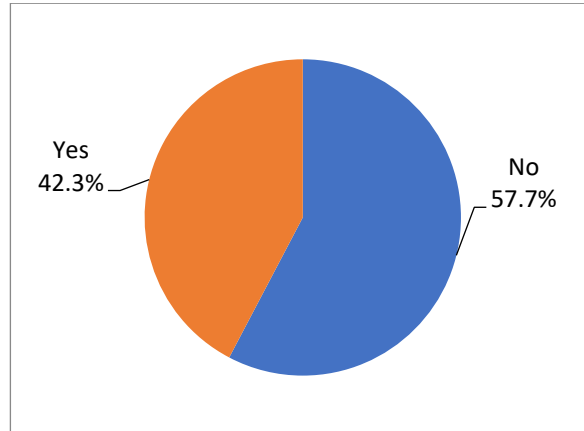
FIGURE 10
SENSE OF RESPONSIBILITY OF THE LEARNERS IN DISTANCE LEARNING
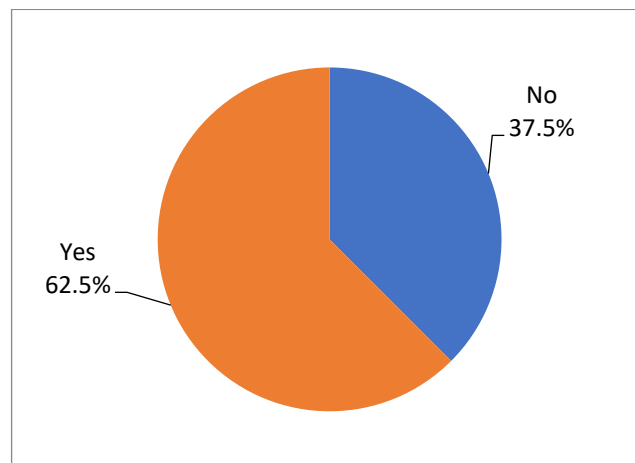
Source: Authors

More than half of the learners do not find it difficult to express themselves during online courses (57.7%), against 42.3% of them who encounter this problem, citing as factors the lack of interaction and exchange, the failure of communication between students and teachers. They argue that not only does the teacher only present the course most of the time, but the lack of physical contact also discourages some of them from expressing themselves.
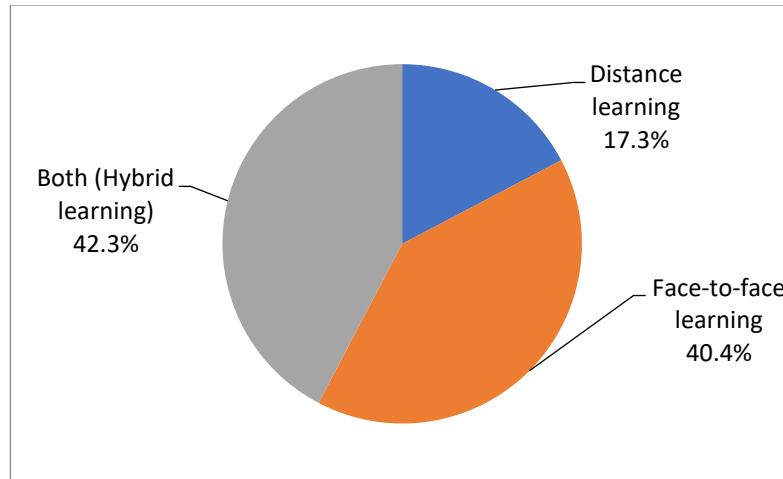
FIGURE 11
RATE OF DIFFICULTY FOR EXPRESSING ONESELF DURING ONLINE COURSES

Source: Authors

42.3% of the respondents prefer the hybrid mode of teaching; followed by face-to-face teaching (40.4%); with a large minority of them preferring the distance learning mode (17%).

FIGURE 12
LEARNERS' PREFERENCES OF TEACHING MODE
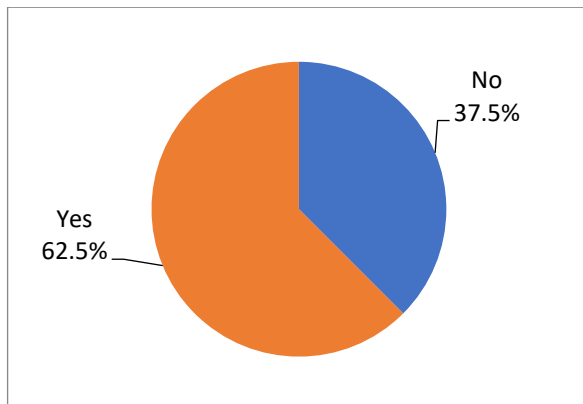

Source: Authors

Attitudes of Instructors in Distance Learning
The Missions, Activities, Course Requirements That Mostly Motivate Learners to Interact in a Distance Learning Course

The majority of learners cited oral tests, interactive lessons, questions/answers, work to be done in small groups, and presentation of projects to be handed in as their motivating factors.

62.5% of learners feel comfortable participating in online/distance courses, compared to a minority of 37.5%.
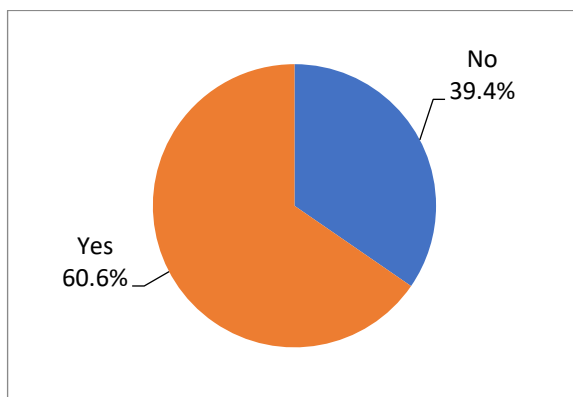
FIGURE 13
COMFORT OF PARTICIPATING IN ONLINE COURSES

Source: Authors

60.6% of the respondents affirmed that instructors are well versed in the use of ICT, against 39.4% who did not affirm it for the following reasons. Firstly, instructors are content with basic methods, PDFs, videoconference platforms, and oral tests for evaluation. Also, it must be recognized that they are faced with a non-habitual use of ICT, without being really trained for the most part.
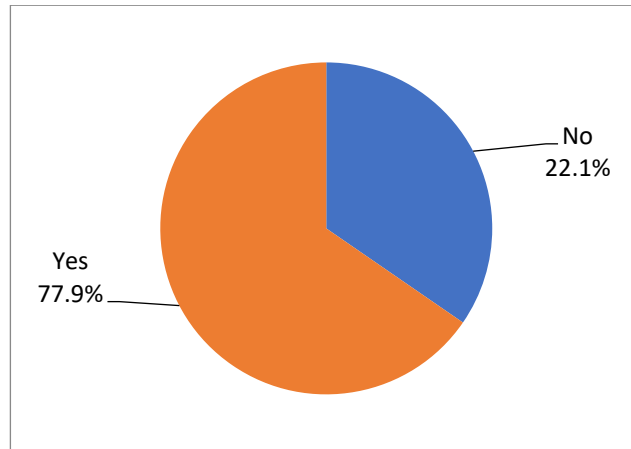
FIGURE 14
ICT SKILLS

Source: Authors

The majority of the respondents affirmed that the language used during the online courses is easy to understand (77.9%), against a minority of 22.1%.

FIGURE 15
LANGUAGE USED DURING ONLINE COURSES

Source: Authors.

Recommendations of Activities Within the Context of Digital Pedagogical Communication According to the Learners

The interviewed learners proposed recommendations for making the online courses more attractive, below is an extract of their suggestions:

- Putting quizzes, interactive exercises, and links to other resources.
- Putting the camera to use, call students to answer questions.
- Optimizing explanation time so that the student does not lose concentration.
- Improving connection speeds for all institutions.
- Developing a platform especially for university students according to the field studied.
- Shorter sessions, using video clips instead of videoconferences as the lectures, the possibility to write on the screen in a legible manner, as on a board.
- More discussion and activities other than the merely presenting the course and slides.
- Simplifying lectures into diagrams and charts.
- Taking breaks between sessions.
- Quizzes and educational/serious games like Kahoot.
- Establishing a climate of trust and ease for students.

Communication in the Digital Age

70% of respondents find that interaction is weaker in distance learning than in face-to-face learning, compared to a minority of 29.8%.
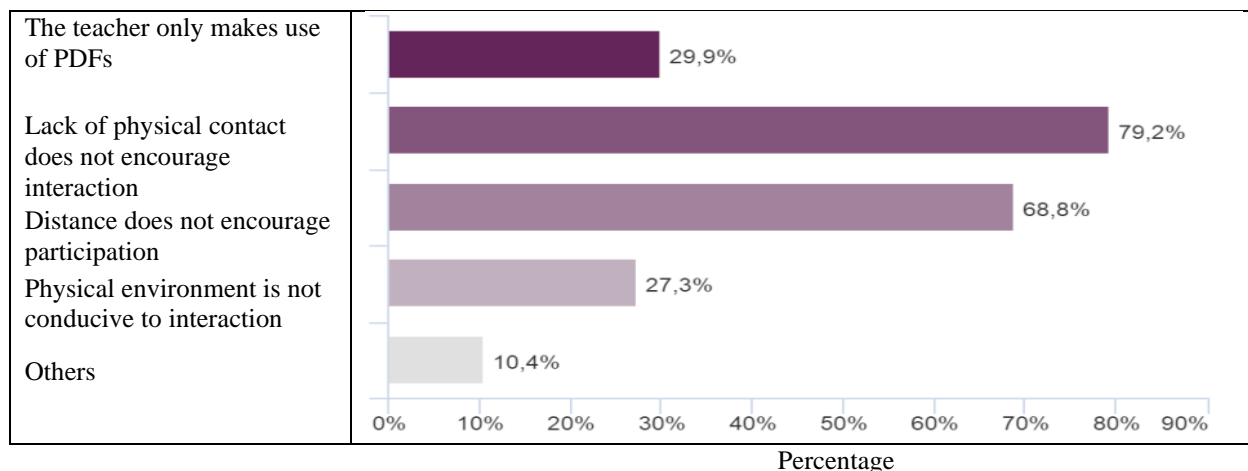
FIGURE 16
INTERACTION IN DISTANCE LEARNING
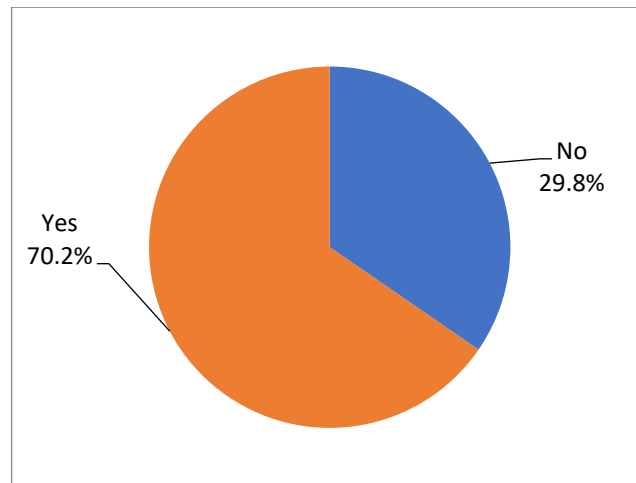
Source: Authors

79.2% of learners said that the lack of physical contact does not encourage interaction, 68.8% also said that the distance factor does not encourage participation, and 27.3% of them consider that the physical environment is not conducive to interaction.

FIGURE 17
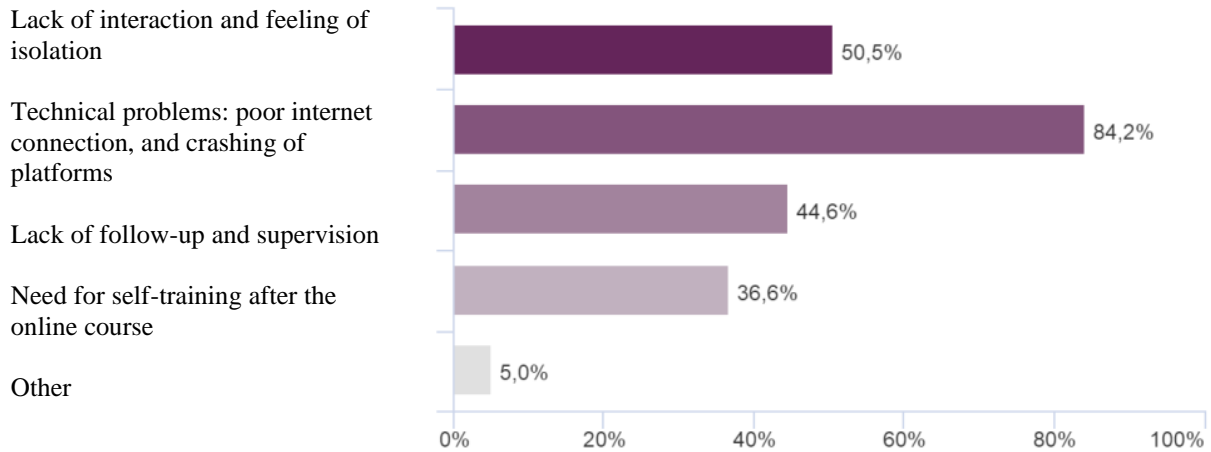**FACTORS OF LACK OF INTERACTION**

Source: Authors

Technical problem is therefore the first dysfunction encountered in distance learning for the majority of learners (84.2%), namely poor connectivity, and crashing of the platform.

50.5% of learners feel isolated, and 44.6% of them say that the lack of supervision and follow-up is one of the problems encountered, followed by the need for self-study after online courses (36.6%).

5% of them added other problems, among the limitations of distance learning cited by the students; just to mention some: they say it is difficult to carry out studies 5 days a week.

If the evaluation system is done online as well, it often does not do justice to the efforts (one semester of work for 10 min of MCQs very random in both content and scoring).

FIGURE 18
PROBLEMS ENCOUNTERED IN DISTANCE LEARNING MODE

Lack of interaction and feeling of isolation — 50,5%

Technical problems: poor internet connection, and crashing of platforms — 84,2%

Lack of follow-up and supervision — 44,6%

Need for self-training after the online course — 36,6%

Other — 5,0%

Source: Authors

The vast majority of learners (94.2%) experienced technical problems during online courses, while a minority of 5.8% did not.

FIGURE 19
TECHNICAL PROBLEMS IN DISTANCE LEARNING MODE

No 5.8%

Yes 94.2%
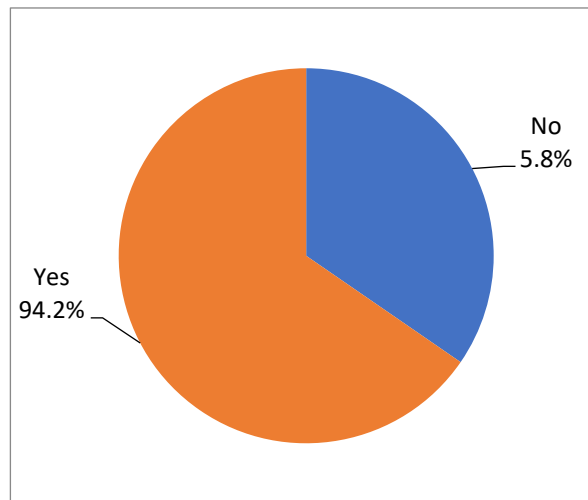
Source: Authors

39.4% of learners encountered technical problems occasionally, 24% of them encountered these problems quite often.

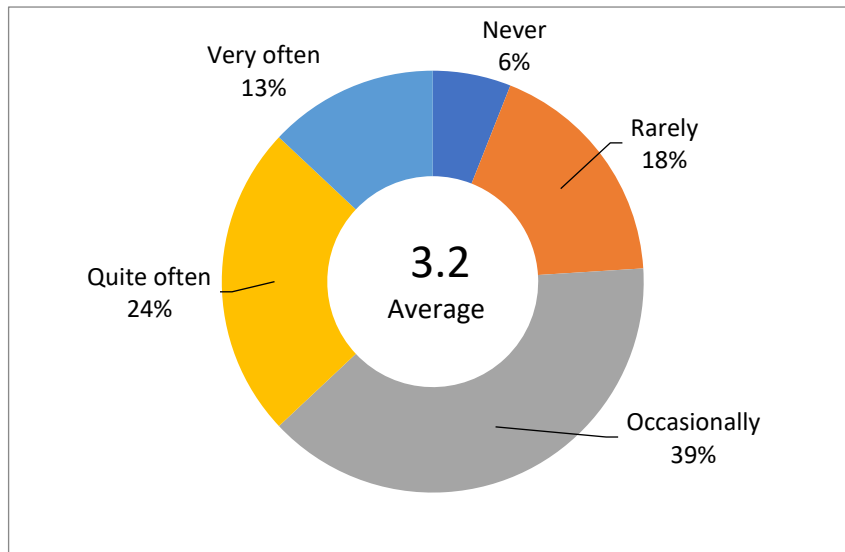18% of them rarely encountered technical problems, with 12.5% of them encountering it very often, against a minority of 5.8% who never encountered such a problem.

FIGURE 20
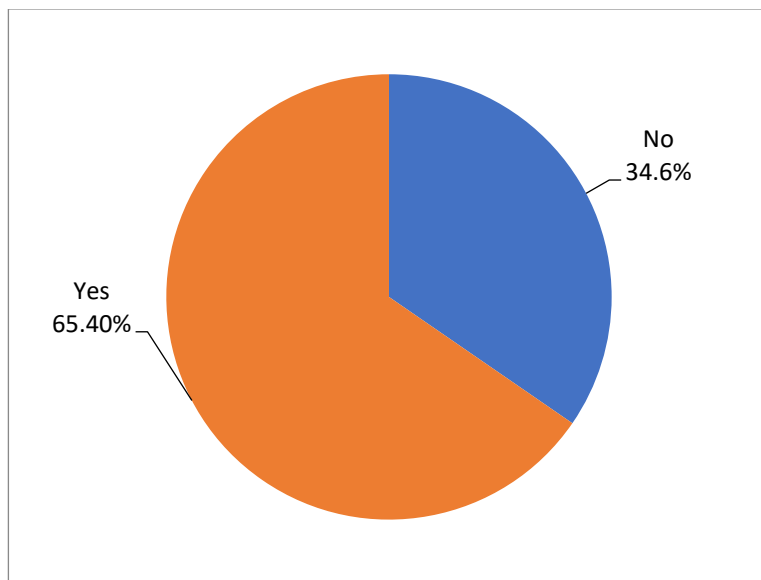**FREQUENCY OF TECHNICAL PROBLEMS IN DISTANCE LEARNING**
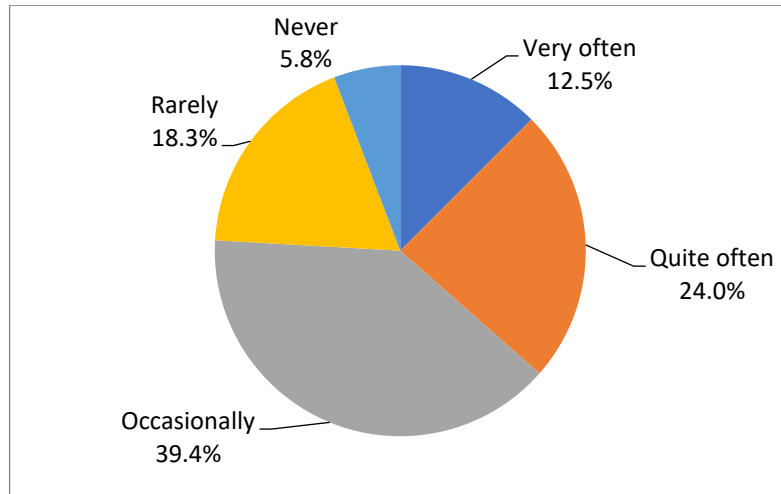
Source: Authors.

IF YES, HOW OFTEN?

The vast majority of respondents believe that education in Morocco can go digital in the medium and long term (65.4%), compared to (34.6%).

FIGURE 21
WITHOUT THE CIRCUMSTANCES RELATED TO THE PANDEMIC, CAN EDUCATION GO DIGITAL IN THE MEDIUM AND LONG TERM IN MOROCCO?

Source: Authors

CONCLUSION

Education in Morocco has undergone several changes in order to be able to adapt to the circumstances related to the COVID-19 pandemic, especially the Omicron variant, as well as to ensure the continuity of courses. Several initiatives and decisions have been taken, including the adoption of hybrid teaching as an alternative to be able to meet up with the mode of teaching according to the health conditions. However, the learners report that the part of the hybrid teaching which is done from a distance encounters difficulties, even dysfunctions, either at the technical level; these include the problem of connectivity (internet connection) and the blocking of platforms, or even the lack of interaction. Despite these shortcomings, the survey confirmed that the hybrid mode of teaching is the most preferable according to learners, even estimating that Morocco can go digital in the medium and long term.

Several efforts have been made to adopt and develop information and communication technologies (ICT) in teaching, education and training by opting for the creation of online platforms, such as Telmid Tice and Massar for studies up to the baccalaureate level.

Recently, the Minister of National Education, Vocational Training, Higher Education and Scientific Research signed in February 16 a partnership agreement with mobile network operators Inwi and Orange in order to support digital learning in educational institutions.

ACKNOWLEDGEMENT

ENDNOTE

1. PDF) Pedagogical continuity and distance education in a period of confinement: Perception and satisfaction of stakeholders (researchgate.net)

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APPENDIX: ONLINE QUESTIONNAIRE

Thank you for completing this questionnaire on pedagogical communication in hybrid mode, distance learning / face-to-face in order to help us have relevant results to our research study.

Questionnaire	
Date of visit:	Time (hours):
Socio-professional status Your age range:	Gender: Male Female
Nº Questions	**Tick your answer**
1 Your level of education	- Primary - First cycle - Second cycle - University
2 Learner's attitude How many days do you study per week?	- 1-2 days - 2-4 days - 4-6 days
3 How much time do you spend with your Smartphones, per day?	- 1-3 hours - 3-6 hours - 6+ hours
4 How often do you use ICT to study or access online courses?	- Regularly - 3 times a week - Once a week - Once a month
5 How much time per day do you spend using ICT for other purposes?	1-3 hours 3-6 hours 6-8 hours More than 8 hours

6	In distance education, what characteristics, and behaviors, most describe you? From 1 to 5, according to the frequency of use	- Making sure to study regularly - Putting in more effort - Checking course notes online to make sure you understand the material - Getting organized - Taking notes from lectures, PowerPoint or video lectures or videoconferences - Listening/reading carefully - Interacting with other learners and the instructor via the online platform chat, video conferencing applications or via email - Actively participating in small group discussions - Collaborating with other learners
7	Are you equally responsible in distance learning as you are in face-to-face learning?	Yes – No
8	Is it difficult to express yourself in online courses? If so, why?	Yes – No
9	Which learning mode do you prefer most, in terms of learning efficiency?	-Distance learning Face-to-face teaching -Both (Hybrid learning)
10	Instructor Attitude What assignments, activities, course requirements most compel you to interact in a distance learning course (please name one or two)?	Response text space
11	Do you feel comfortable participating in online courses?	Yes – No
12	Do you feel that the instructors are well versed in the use of ICT? If not, why not?	Yes – No Response text space
13	Is the language being used during distance learning easy to understand?	Yes – No
14	What are your activity recommendations vis-à-vis pedagogical communication to make you more interested in the course content (please list one or two)?	Response text space
15	Communication in the digital age Do you think interaction in distance learning is weaker than in face-to-face?	Yes - No
16	If yes, what are the factors?	- The teacher is content with PDFs - The lack of physical contact does not encourage Interaction - The distance does not encourage participation - The physical environment is not conducive to interaction

		- Others:
17	What are the problems you encounter most often with distance learning?	- Lack of interaction and feeling of isolation - Technical problems: poor connection, platform crashing - Lack of follow-up and supervision - Need for self-study after the online course - Others:
18	Did you encounter any problems at the technical level (poor connection, crashing of platforms, disabling of sound) during the distance learning?	Yes – No
19	If yes, how often?	Never Rarely Often Most of the time
20	Do you think that education, even without the circumstances related to the pandemic, can go digital in the medium and long term in Morocco?	Yes- No