Interacting to learn online

What support for students in the context of a health emergency?

Rachid El Ganbour[1]. Mehdi Kaddouri[2]. Morad El Ganbour[3]

[1] CEDUC Laboratory, Faculty of Letters and Human Sciences, Oujda, Morocco
[2] CEDUC Laboratory, Faculty of Letters and Human Sciences, Oujda, Morocco
[3] CLEHN Laboratory, Faculty of Letters and Human Sciences, Oujda, , Morocco
[1]r.elganbour@ump.ac.ma; [2]m.kaddouri13@ump.ac.ma;
[3]e.morad@hotmail.fr

Abstract. In a complex and uncertain pandemic context, our issue arose from the observation of interactions between teachers and learners in a natural environment at the Faculty of Letters and Human Sciences in Oujda, Morocco. By describing the device in which this interactional process takes place, we seek to know how this unavoidable presence of digital technology has affected the practices of accompanying students of humanities and social sciences. In this sense, we seek to understand whether teachers are aware of the pedagogical dimension of distance and how they have managed the distance (s) / presence (s) relationship.

Methodologically, the research is intended to be a case study that advantageously forms part of a qualitative paradigm. The main results showed that the boundaries between usual coaching practices and those emerging online are not yet clearly drawn. The study also revealed the diversity of perceptions and coaching practices, difficulties of different kinds, but also online dynamic reflecting innovative interactional practices

Keyword

Keywords: Digital, Online interactions, Moodle platform, Case study, Covid-19

Introduction

The health emergency facilitated by COVID-19, was marked by both its scale, complexity, and its ability to generate distress and anxiety. At the university, the abrupt shift from face-to-face to online teaching destabilized teaching practices (Villemonteix, 2016) and deeply questioned the viability of old methods. The health crisis situation required universities to implement a set of measures to ensure "pedagogical continuity" and to allow face-to-face and online teaching to coexist within the same "mold" as the health situation changed.

In this particular context, where the "setting" of the university is becoming different, face-to-face teaching is undergoing an increasing reduction in the space it occupies in

favour of distance learning. Our attention is thus focused on the examination, in a natural environment, of this situation which has shaken up professional identities (Dubar, 1998) and which has put in place new pedagogical alternatives. For teachers, putting courses online and interacting with students represents a subjective experience that is characterized by a progressive discovery of the potential uses of digital technology in education. On the learners' side, a set of difficulties has been raised (Six, 2020; Mercier, 2020), including the separation of the physical learning environment and a whole part of the university experience to learn online. Efforts since the health crisis have moved distance learning into the shadow of face-to-face. However, teachers' uses of digital tools have often been marked by techno-pedagogical difficulties that limit any apparent vigor.

In this state, it is necessary to decipher the underside of this situation, which seems a hypercomplex object of analysis. In our case study (FLSHO), we pay particular attention to the interactional dimension (Mangenot, 2007; 2013) since the crisis. However, understanding the nature of distance education in such emergency situations and online education itself and the boundaries that draw its limits is necessary.

1   Theoretical and terminological clarifications

1.1   Distance learning in emergency situations

While online education requires a whole pedagogical engineering to design a priori, learning, assessment and communication activities, distance education in emergency situations (Charles et al., 2020) is characterized by an alternative, adaptive and temporary change due to crisis circumstances. In this sense, UNESCO states that it is essential in crisis contexts, to support learning opportunities (UNESCO, 2019). For its part, the Italian International Cooperation states that education in emergencies is "a set of conceptual activities that allow learners to continue learning in a structured way, even in situations of emergency, crisis or long-term instability." (COOPI, 2018).

Through this brief distinction, we seek to clarify the context of our study, also marked by the interweaving of several factors that revealed multidimensional ruptures. However, the practices observed in the field showed a strong opacity concerning the pedagogical conception of distance and presence.

1.2   Learning in a pandemic context between distance(s) and presence(s)

Distance learning is an ancient practice that has been developed since the postage stamp in the 19th century. Today, it is becoming common to evoke distance learning once students experience difficulties of physical presence. However, for almost thirty years, distance is no longer limited to only spatiotemporal breaks, but covers other dimensions.

Jacquinot (1993, 2002) proposes to consider, in addition to geographical distance, 4 types of distance to be tamed: The "technological distance" related to the facilities or obstacles of access to distance learning platforms and associated technological artifacts; the "socio-cultural distance" which refers to the separation between the universe

of instituted training and those excluded from the educational system; the "socio-economic distance" which relates to the gap in the investment made in training; finally, the "pedagogical distance" which separates the person engaged in learning and the person in charge of teaching. (Jacquinot, 2002)

Gavelle and Maitre de Pembroke also propose two other forms of distance: the "relational distance" linked to the interactional relationship between the teacher and the learners and between themselves and the "cognitive distance" which concerns the differences between the cognitive abilities of the interactants. (Gavelle and Maitre de Pembroke, 1999)

In terms of presences (Kawachi, 2011; Jézégou 2012, 2014, 2019), Jézégou distinguishes between socio-cognitive presence "generated by the transactions existing between learners to jointly carry out the activities necessary to resolve a problematic situation within a digital communication space", socio-affective presence which "results from certain forms of interactions that allow for the creation of a socio-affective climate conducive to transactions", pedagogical presence which comes from certain forms of social interactions of coordination, moderation and animation that the trainer maintains with the learners; this pedagogical presence allowing, according to the cases, to support the socio-cognitive and socio-affective presences. (Jézégou, 2019).

It is therefore desirable to succeed in the presence at a distance (Peraya, 2014), which appears to be "one of the components of the efficiency of the devices" (Deschryver and Charlier, 2012). Also, the Serres report (1992), proclaims the reduction of all these possible distances "between the sources of knowledge and all those who want to learn or train" which would allow to found "the University without distance" (Jacquinot, 1993).

1.3   The case study as a qualitative research approach

The case study is an approach to qualitative research (Creswell, 2007). Two paradigms have shaped its evolution. The first is described as interpretivist, while the second is post-positivist. Stake places the case study in the socioconstructivist or interpretive paradigm (Stake, 1995). According to him, it allows for the study of phenomena and contextual factors through the interaction of the researcher and the case(s) being studied. For Eisenhardt (1989) and Yin, (2003), the case study fits advantageously into a post-positivist paradigm (Eisenhardt, 1989) that requires a research design marked by rigor and careful verification of results and potential biases. In real life (Gall & Borg, 2007), the case study examines a social entity and aims to understand a problem by studying one or more cases over a period of time. The researcher uses different sources of information to conduct in-depth data collection to understand behaviors in real (Berg, 2000) or uncontrolled situations.

2   Research methodology

Considering the problematic and the objectives of the research, we conducted an exploratory study (Yin, 2003, 2009) that aims at understanding the manifestations of the

unexpected presence of the digital since the health crisis in the teaching practices in general and the accompaniment in particular at the FLSHO.

2.1 Research Questions

Our research design aims to answer the questions that serve as a basis for the discovery and understanding of the phenomenon. These are the following questions:

1- How have FLSHO teachers used digital services and tools to remotely support learners since the health crisis?

2- Has the crisis allowed us to go beyond the stage of adapting to health requirements to the genesis of innovative support practices, taking into account the distance/presence relationship?

3- How can we think about the post-pandemic phase to set up a flexible process that can effectively support learners?

2.2 Data collection and study design

Two steps were selected. The first one aimed at defining the research problem and the aspect to be studied. For the spatial scope (FLSHO), we scrutinized the manifestations of the forced and unexpected presence of the digital in online coaching practices. For the temporal scope, the study covered 2 sessions: the spring 2020-2021 session and the fall 2021-2022 session.

The second step aimed to understand in depth the nature of the uses, where the focus is on the technological object, of the practices where the emphasis is on the human being (Fauré, 2008) and of the difficulties sensed by the teachers and students. Data collection was carried out as close to the field as possible and was based on a set of tools, in particular, the observation of online activity on the Moodle platform of the faculty[1] , the survey of difficulties encountered by students using a questionnaire[2] online, in addition to semi-structured interviews with teachers (10), and students (23) in a triangulation perspective. Thus, we proceeded to an analysis (Miles and Huberman, 2003) that aimed to converge these data and analyze in detail the interactional process between teachers and students since this crisis.

2.3 Sampling method

The total number of FLSHO students[3] is 13,692, representing 18% of all students at the university[4], while the number of those who responded to the questionnaire is

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[1] The observation on the http://flshoelearning.ump.ma/platform took into consideration the indicators of frequency of connection, visited spaces, actions carried out (consultation, downloading, interaction...), connection time...

[2] The questionnaire posted on:
https://docs.google.com/forms/d/e/1FAIpQLSfbsFMKzi4wbZpl83vGfHVrqLN565wkbL0qut_afLo2CG_Glw/viewform aims to collect information about the students (e-mail address, department, field of study, semester, nature of the problems encountered)

[3] http://lettres.ump.ma/

[4] http://www.ump.ma/

1,158, representing 8.5% of the students enrolled at the FLSHO. In terms of interviews, the preferred strategy is non-random or purposive sampling based on the construction of a sample representing a maximum of characteristics typical of the population under study (Desabie, 1963). Seven areas were studied:

- The field of literature and linguistics
 Arabic studies, Amazigh studies, French studies, English studies
- The field of historical and geographical sciences
 History/geography
- The field of sociological studies
 Sociology
- The field of religious sciences
 Islamic studies

This simple, embedded case study (Yin, 2003) thus involves a research design that includes the unit (FLSHO) and the seven domains:

Case of the Faculty of Letters and Humanities of Oujda		
Built-in analysis unit 1 : Arabic Studies	Built-in analysis unit 2 : Amazigh studies	Built-in analysis unit 3 : French studies
	Built-in analysis unit 5 : Islamic studies	
Built-in analysis unit 4 : English studies	Built-in analysis unit 7 : Sociology	Built-in analysis unit 6 : History-geography

Fig. 1. Overview of simple embedded cases according to Yin (2009)

2.4   Data Analysis method

The method of analysis opted for a systematic method based on the work of Miles and Huberman. Three main steps were selected (Huberman and Miles, 2003):
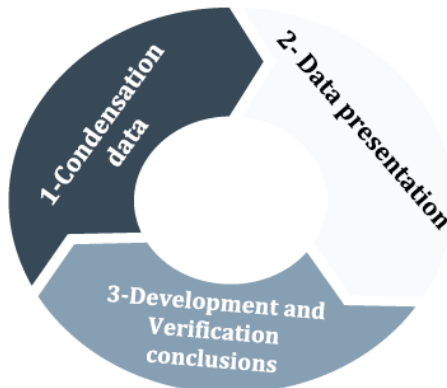

Fig. 2. Steps in data analysis from Miles and Huberman (2003)

Data condensation is a mechanism for performing operations on the raw data collected by giving it meaning. The difficulty of handling narrative data compared to numerical data required the use of a code system (symbols, keywords serving as descriptors for a concept) while retaining the meaningfulness of the information. The next step of developing categories and themes seems to be the most difficult but also the most creative (Marshall & Rossman, 2014). Recall in this sense that a category can be defined as a grouping of related or similar codes (labels) (McMillan & Schumacher, 2006).

The second phase of data presentation captures the main ideas. According to Miles and Huberman (2003), data are presented and grouped around matrices and figures that facilitate data visualization. The interpretation phase usually occurs as the analysis proceeds. It also includes verification and inter-rater validation of the conclusions in terms of their plausibility, rigor and confirmation. The risks of this phase concern the control of representativeness, researcher's effects, triangulation...

3   Results and discussion

Following the qualitative analysis approach adopted, we carried out a series of operations on the data collected in order to attribute meaning to them. At the analysis level, we will discuss the results obtained in accordance with the research questions and the approach outlined above.

The processing of the narrative and numerical data integrated a coding system for the former and a univariate statistical processing for the latter. Our reflective activity allowed us to organize the themes according to three categories or axes of analysis:

- The online student support/difficulties axis
- The Teacher Perceptions/Student Perceptions axis of the experience
- The axis Innovative interactional practices / Conservative interactional practices

3.1   Accompaniment/Difficulties

In response to the first research question related to the experience of online tutoring as well as the difficulties inherent to this situation, we noticed that the first priority of putting courses online was not the tutoring of students, but mainly the putting of courses online. This is verified statistically through the comparison between the number of courses and connections on the platform on the one hand and the communication and accompaniment services active at the beginning of the Spring 2020 session on the other:

Table 1. Online activity during the first 45 days of educational continuity

Number of online courses	Number of connections to the platform by students	Number of teachers who frequently use the Moodle platform
296 for 6 classes per day	12,154 connections	69

During this period, 1005 courses were put online at the level of all the institutions affiliated to the University Mohammed Premier (UMP) against only 200 courses before the pandemic. As for the connection, the total number of accesses to the different platforms of the UMP amounts to 16,742. 42% of the connections belong to the FLSHO where almost 300 courses have been put online, at a rate of 6.58 courses per day.

Regarding the frequency of course access, we found that it was higher in the spring 2020 semester. We report that there were 235 instructors who accessed their courses frequently while 282 instructors only accessed the platform once during the first half of the spring 2020 semester. Yet, the number of accesses decreased in the fall 2021 semester. This may be due to the use of hybrid or face-to-face instruction following the relatively improved health situation in the country.

For the coaching process, we analyzed the digital traces on the platform which provided us with rich data on the usage patterns of digital tools by teachers and students. The use of communication and coaching services on the platform is illustrated below:

Table 2. Use of communication and support tools (Spring 2020 session)

Support and collaboration tools					Communication tools			
Quiz	Wiki	Glossary	MCQS	Total	Forum	Chat sessions	BigBlueButton	Total
31	7	7	5	50	211	117	90	418

In view of these results, we can develop a fairly clear idea of the interaction practices in relation to the tools "that instrument them" (Mangenot, 2007). This interaction can be manifested mainly through communicative activities in an asynchronous way on forums or synchronously via videoconference services (BigBlueButton) or "Chats". These tools promote flexibility, collaboration and feedback at any time on the exchanges to contribute to the discussions. It is important to point out that the number of messages on the existing forums before the health crisis was not very significant. However, there was a significant increase in discussions (5294), messages posted (5992) and topics initiated (1634), during the two observation sessions, with the spring 2020 session accounting for more than 70% of these records.

We also note that the FLSHO occupies the first place in terms of the use of all the tools of the platform with 50 activity spaces and 418 communication spaces. However, the "Feed- Back" tool remains the least used despite its crucial importance for students. The platform records only 6 feedbacks addressed to students in the form of messages.

Regarding the difficulties encountered by the students, the administration of the questionnaire allowed us to collect 1158 responses distributed over the two sessions as follows:

☐ Spring semester 2020-2021: 977 responses

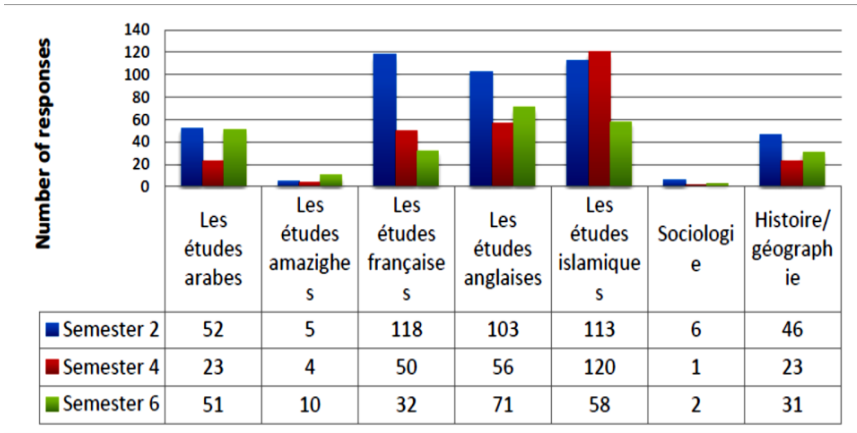☐ Fall semester 2021-2022: 181 responses

	Les études arabes	Les études amazighes	Les études françaises	Les études anglaises	Les études islamiques	Sociologie	Histoire/géographie
Semester 2	52	5	118	103	113	6	46
Semester 4	23	4	50	56	120	1	23
Semester 6	51	10	32	71	58	2	31

	Les études arabes	Les études amazighes	Les études françaises	Les études anglaises	Les études islamiques	Sociologie	Histoire/géographie
Semester 1	12	1	32	29	29	2	15
Semester 3	4	0	2	5	10	0	5
Semester 5	9	0	5	1	17	1	2
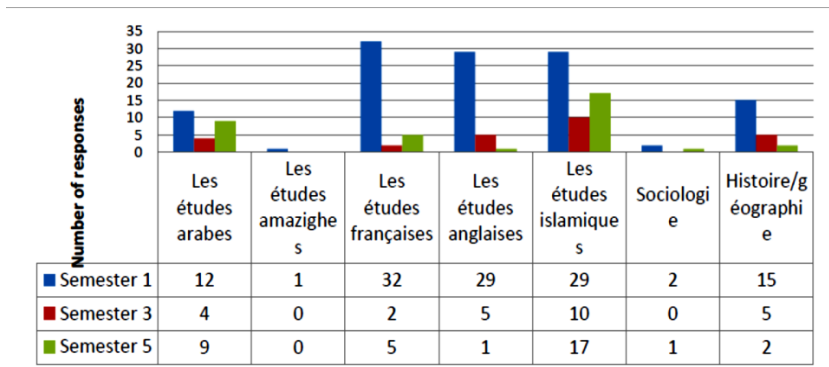
Fig. 4. Challenges to FLSHO students (Fall 2021 semester)

At the beginning of the operation of putting the courses online, the teachers were accompanied by the technical-pedagogical support teams of the university. In addition to the online resources, some teachers recorded video clips for the benefit of their students, while others preferred to digitize the paper versions already available. In this case, the presentation of the courses does not introduce any prior pedagogical scripting that provides for a thoughtful use of digital technology and a communication scenario with the students.

In parallel with this teaching dynamic, the problems reported by students are more recurrent among newly enrolled students (all disciplines combined). Thus, 81% of this category have problems related to connection, access to the platform, connection information (login, password), 11% encounter difficulties in consulting courses on the platform and 8% experience difficulties in communicating with teachers (Mercier, 2021). The number of queries with the 2021-2022 start of the school year reported a decrease from the spring 2020 semester when digital-related experiences were in their infancy.

3.2   Teachers perceptions/students perceptions

For this axis, we administered semi-structured interviews with a sample of teachers (10) and students (23). The latter were chosen for reasons of triangulation of the data collected on the questionnaire and observed on the platform.

For teachers, the obstacles expressed can be defined according to several factors, including resistance to change, heterogeneity of profiles and skills (Mercier, 2021), insufficient training, the perceived usefulness of technologies, and the burden of teaching and coaching online. It is difficult for teachers to combine online work time with training and self-study time. Statements illustrate this situation:

I think that training teachers on how to use digital technology to support and interact with students online remains the key to success. (T.4)
I am not entirely comfortable with the use of technology for teaching and coaching students, as the machine can in no way replace the teacher. (T.10)
In general, what I did on the platform was to deposit the documents that my students needed (T.3)

Teachers repeatedly emphasize the role of training and placing all individual actions and initiatives within a well-defined institutional framework, with a view to giving e-learning a formal status in teaching practice:

> *On the contrary, I think technology has made it much easier for teachers. I plan to continue using these digital tools to teach, but also to communicate with students. The only difficulty that may arise is good training that facilitates the integration of these technologies in a thoughtful way.(T.7)*
> *If we want to talk about the issue, we need to institutionalize all these personal uses. You can't qualify these individual initiatives with the integration of digital in the university! (T.1)*

On the students' side, the presence of the teacher fosters a feeling of security and permanent support. The tutorial functions (Rodet, 2003) that the teacher can provide can cover the cognitive dimension concerning disciplinary content, and the socio-affective, motivational and metacognitive dimensions. Such a presence allows, among other things, to reduce the feeling of isolation and to initiate a sense of belonging and collaboration. Responses received from students illustrate these needs:

> *Especially during the lockdown, we needed to communicate even remotely with each other and with our teachers. It would be beneficial for us to use the communication spaces on the platform like we did with some teachers. (S. 3)*
> *We did not benefit from the contact moments with all the teachers. Sometimes, we only have the course materials on the platform, whereas we need to communicate and exchange with our classmates (S.6)*

The lack of communication spaces, however, could make contact and interaction more difficult or impossible. In response to this need, because they do not have control over setting 9

up a forum on the Moodle space, students have opened their own communication spaces on social networks. However, they generally believe that teachers are in the best position to make online communication more cost-effective:

> *We still have our group on the social network (...) to communicate and exchange with each other, but the teacher's role remains decisive, especially to decide on certain ideas or to explain certain passages during the discussions that we have around the modules (S.19)*

It is therefore necessary to understand the nature of the difficulties posed to the students, which does not only concern their relationship to knowledge and to others, but also the technical dimension which poses innumerable obstacles:

> *The majority of students do not have a stable connection, they do not all have computers to connect to the platform or attend a chat session. The technical problems are major and are the main difficulty for us (S.5)*

Such difficulties for teachers and students require some reorganization of training engineering at the university to best adapt to these unexpected situations. The flexibility of the training system will allow for rapid adaptation and seamless transition from one modality to another. Offline access solutions can play a key role in solving student login issues.

3.3   Innovative support practices/ Usual support practices

In terms of cognitive support, more than 4,145 digital resources have been put online on the FLSHO platform, which represents 23% of all digital resources at the university level. At this level, we note a preference related to textual resources (92%) over multimedia resources (8%). The beginning of this experiment was characterized by the priority use of PDF documents with a rate measured at 68.09% of all resources. This preference refers to the anchoring of a usual practice of cognitive support which consists in providing reading materials to students, this time online.

The transposition of usual practices is also reflected in the use of digital resources by simply scanning existing course materials to put them online without any accompaniment or explanations. In terms of usage, digital resources (slideshows, word processing, PDF format, images and Zip archives) are the most used, to introduce a course, a learning activity, to carry out individual or group work.

This diversity of choice refers to the simultaneous presence of different professional attitudes towards digital technology, which sometimes confuses students by not having the same course and support structures. We now analyze the relationship between innovative and conservative support practices.

In the context of the second research question, the transition from face-to-face to online teaching has led to a change in practice for the majority of teachers, who have moved from the production of monomodal documents to the production of multimodal documents that allow the combination of different iconic, linguistic and auditory modes. However, some teachers have favored the means used before the crisis, in particular the use of printed or digitized materials (images). This attitude of reproduction only allows a simple transposition of the same existing resources to another medium (image) and another environment (the digital platform).

We point out that the vision around distances and presences to be tamed is not yet installed at the system level. Administrative actions and field practices still consider distance as a simple spatio-temporal rupture, hence the importance of training in this area. The ideal would therefore be to be able to ensure a presence at a distance on the pedagogical, socio-cognitive and socio-affective levels.

For our third research question, we stipulate that COVID-19 could soon generate different attitudes that vary between returning to usual practices and maintaining innovative support practices that are characterized by the richness of multimodal resources and the use of synchronous and asynchronous communication tools and the development of a collective consciousness around virtual learning communities.

In perspective, the establishment of an open and flexible digital ecosystem will promote the flexibility of the training device and the availability of a large number of techno-pedagogical possibilities to students. We believe that the maintenance of these innovative practices is significantly dependent on the necessary techno-pedagogical conditions that can exist within an overall digital strategy that takes into account all of these stable and emerging variables.

Conclusion and perspectives

The analysis carried out allowed us to identify difficulties, preferences and usage trends related to resources, communication tools and support activities since the health crisis. The main conclusions show that the emergency situation induced by the COVID-19 pandemic has significantly destabilized the support practices. At this level, the boundaries between usual coaching practices and emerging online coaching practices are not yet clearly delineated.

In order for online support to be an innovative practice, we propose, based on the results of the research, that it must be designed according to a pedagogical concept of presence and distance. The accompaniment and training of teachers and students in the use of various digital services, particularly digital platforms, remains a strategic entry point in the appropriation of various online communication and interaction tools. The Moodle platform studied in this research shows itself to be an open techno-pedagogical device that brings together human and material resources for learning and interaction.

The experience with online teaching in emergency situations has led to the emergence of innovative practices among some teachers that have triggered a whole dynamic of production, but also more "conservative" practices that are often linked to the usual. To accompany these constant changes, we think of a set of possible entries that concern the training of teachers, the reinforcement of the digital infrastructure, the mutualization of strategies, experiences and resources and finally the adoption of a flexible system integrating several possibilities (hybrid, distance, face-to-face, co-modal teaching...) that put the student at the center of the process.

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