Perceptions of University Teachers and Students on Hybrid Teaching in Morocco

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***Abstract*—This research aims to examine the perceptions of university students and teachers about hybrid teaching in higher education level in Morocco after the COVID-19 pandemic, as well as the challenges that both parties face when providing or following this type of teaching. The research methodology is based on a qualitative and quantitative study. This will give us an overview on hybrid teaching in Morocco. A questionnaire was addressed online to teachers and students from various disciplines and different Moroccan universities. Following this, we were able to collect 439 responses. The data were processed using simple statistical analysis. The results of this study show that hybrid teaching is becoming, after the pandemic, increasingly popular in Moroccan higher education and highly appreciated by teachers and students. However, some students have difficulties to follow it. As a result, it can be said that this mode of teaching may provide a future solution to the problem of overcrowding in Moroccan open-access universities.**

***Keywords*—hybrid teaching, perceptions, constraints, higher education**

I. Introduction

Over the past decade, the world has witnessed a rapid advance in digital technology and its use in all areas of life. This digital evolution has had a major influence on the world of education [1–4], including higher education. According to Veltsianos (2016), higher education is going through a period of transformation due to emerging technologies [5]. The use of these technologies in teaching has been strengthened in Morocco and other countries around the world especially during the COVID-19 pandemic. Indeed, during this period, due to the closure of all schools and universities, many establishments, particularly universities, switched to distance and then to hybrid teaching [6, 7]. However, the integration of new technologies in education does not necessarily imply an improvement in the relationship between teachers and students [8].

II. Literature Review

Hybrid teaching consists of courses in which activities take place face-to-face in a physical classroom and online in a synchronous or asynchronous manner [4, 9, 10]. This teaching modality has become very well known, especially after the pandemic situation of 2019, which disrupted traditional forms of teaching and learning [11, 12].

In the study of Peraya *et al.* [13], the notion of hybrid applies to "any training device (course, continuing education) based on a digital environment (e-learning platform). According to Deschryver *et al.* [14] "hybrid devices are ... at the crossroads of three major fields of action and research, from which they can benefit respectively: distance learning, face-to-face training and digital and network technologies."

According to recent literature reviews, several actors predict a major advance in hybrid courses in higher education in the near future. Even some authors consider that the hybridization of teaching will be the norm in higher education [15]. This is due to the convergence, over time, of teaching and learning environments towards face-to-face and online teaching [16–19].

This teaching and learning modality preserves interaction between students and teacher. It minimizes the disadvantages generally associated with online courses, such as lack of support, feelings of isolation and reduced interaction [20–23]. As a result, many authors identify hybrid courses as an alternative for increasing student engagement and thus improving learning quality [24–28].

Hybrid courses also reduce the need for teachers and premises, and improve access to education, especially for students living in remote areas or with family or professional responsibilities [3, 27]. Then, it reduces the cost of travel for learners and teachers, and of printed materials [29, 30]. In addition, one of the major advantages of hybrid courses, according to the scientific literature, is the flexibility of time and space granted to students [17, 31].

However, several research studies have shown that teachers and students face difficulties when teaching and learning online due to a lack of technical means, high Internet costs and a limited Internet access [32–34].

Today in Morocco, after the COVID-19 pandemic crisis, the Ministry of Higher Education, Scientific Research and Innovation, has decided to implement a hybrid teaching system, especially at higher education, with a view to creating modern digital universities [35]. Faced with this situation, we proposed the following research questions:

1) What are students' and university teachers' perceptions of hybrid teaching?
2) After the pandemic, do Moroccan students prefer face-to-face, distance or hybrid learning?
3) What are the reasons why university students and teachers accept or refuse to take or provide hybrid courses after the pandemic?

In order to provide some answers to these questions, the rest of our article is divided into two paragraphs. The first one

is devoted to the presentation of the method and methodology of the work. In the second paragraph, the results will be presented and discussed. Finally, we will end with a conclusion.

III. Materials and Methods

The research method is based on a shared online questionnaire survey among teachers and students of higher education from various Moroccan universities.

A. Participants

We used an online questionnaire to reach all Moroccan university teachers and students in order to conduct a broad study on the preferred teaching technique used by educators and learners in higher education. Out of them, 439 answered the survey. 42% participants are undergraduate students and 58% are university teachers from different disciplines (biology, chemistry, math, French, economics, computer science, Arabic, law, sociology, educational science.....). This enabled us to draw up a general portrait of the place of hybrid courses in higher education in Morocco.

B. Questionnaire

Online surveys are one of the increasingly used means of gathering data. They are easy to administer and inexpensive, especially when participants are geographically distant [20, 36]. For this reason, we chose the online questionnaire survey for our research. A web link directs participants to the questionnaire which contains two types of questions: open and closed ones. To ensure the reliability and validity of the questionnaire, it was analyzed by four experts and tested on a sample of three teachers and 10 students from our university.

1) Closed questions

The closed-ended questions are based on issues relating to:

1) Knowledge of hybrid teaching;
2) Preferred teaching method (face-to-face, distance, hybrid);
3) Experience with hybrid teaching and the nature of the activity respondents have taken advantage of or used;
4) The available means to ensure or follow hybrid studies;

To deepen our knowledge of participants' responses. We also included open-ended questions.

2) Open questions

The quality of qualitative data collection depends first and foremost on obtaining rich, sufficiently detailed and diversified data to provide a complete view of hybrid teaching [37]. To this end, open-ended questions were asked about the strengths of each type of teaching, the effectiveness of hybrid teaching and the obstacles to applying it in Morocco.

C. Methodology

The method adopted in this research is based on a combination of qualitative and quantitative methods, which enables us to obtain more in-depth results. Such a methodology makes it possible to exploit the strengths of each of the qualitative and quantitative methods. It also makes it possible to extend and reinforce research findings [38, 39]. Data were collected from a sample of 184 students and 255 university teachers using an anonymous online questionnaire (Google Forms). The survey took approximately 15 minutes to complete.

Survey results were recorded in Google Forms, and an Excel spreadsheet was used to collect answers. Descriptive statistics of the survey responses are presented in graphical and tabular form, with displayed percentages. The analyses presented in this work depend on the nature of the questions. They are based mainly on descriptive statistics results for closed questions and on content analysis method [40] for open questions. This method involves fragmenting the answers and then identifying those which have the same meaning. Each fragment is then characterized by a keyword so we can distinguish the different categories. Then we finally calculate the percentage of each category. Students' responses were collected around the beginning of the second semester of the 2022/2023 academic year.

The results of this study will be useful for moving towards a more effective hybrid teaching method, and could help those in charge to adapt this mode of teaching to meet future challenges.

IV. Result and Discussion

A well-presented results section coupled with a convincing discussion will definitely prove the novelty and importance of your study. It should provide a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn.

A. Closed Questions

In this section, we focused on closed questions. After eliminating non-answers for each question, we counted the answers according to their nature and then calculated the percentages to assess the proportion of these answers in relation to all the questions. In what follows, we present and analyze the results in graph form.

1) Are you familiar with hybrid teaching?

The results of the analysis show that 88% of respondents are familiar with hybrid teaching, and around two-thirds of these are teachers (56%). Only 12% of respondents are unaware of this teaching method, and more than three quarters of them are students (10% at the beginning of the undergraduate and Master's cycle) (Fig. 1). Despite the low percentage of students who are unaware of hybrid teaching, it's important to take this into consideration to understand the reasons behind it.

Based on these results, we can say that Moroccan university pedagogy has undergone a remarkable change after the pandemic. Indeed, after decades of face-to-face teaching, both teachers and students are now familiar with another mode of teaching: hybrid teaching. In Morocco, as in countries all over the world, this type of teaching is becoming increasingly common in higher education. This is in line with the literature and is justified by the fact that this type of teaching offers flexibility in terms of time and space, allowing learners to choose when and where they learn [41].

2) Do you prefer face-to-face, distance or hybrid teaching?

Analysis of the results shows that half of the respondents

(51%) prefer face-to-face teaching (teacher presentation/student note-taking) as a teaching method (27% of students and 24% of teachers). Just under half (46%) of respondents prefer hybrid teaching (28% of teachers and 18% of students). On the other hand, a small percentage (3%) of respondents prefers distance learning (2% of teachers and 1% of medical, biology students) (Fig. 2).

From these results, we can see that more than half the students surveyed have a preference for face-to-face teaching.

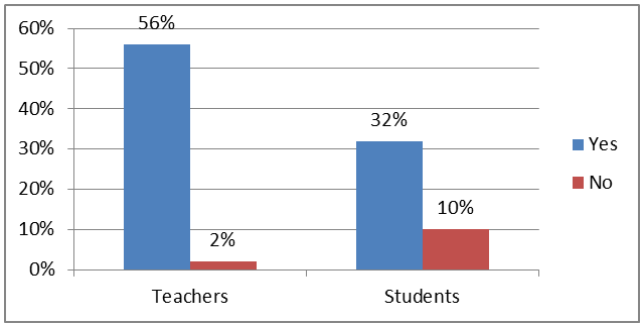

Fig. 1. Distribution of respondents according to their knowledge of hybrid teaching.

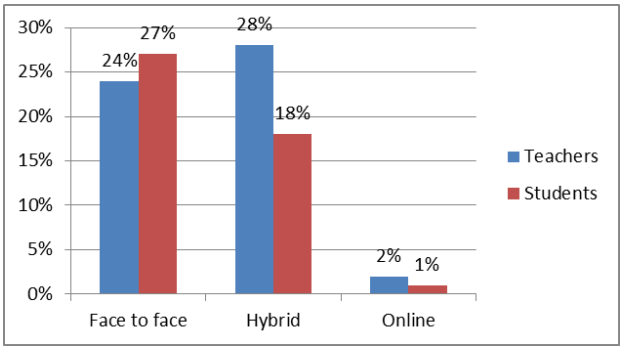

Fig. 2. Distribution of respondents by preferred type of education.

These results also show that more than half the teachers surveyed prefer hybrid teaching (28%), while 24% prefer face-to-face teaching. A very small percentage of respondents chose distance learning. Based on these findings, we may conclude that a sizable portion of teachers and students from various kingdom institutions believe that face-to-face teaching remains the best option. The question is, why do students prefer face-to-face teaching? Is it a lack of training in hybrid teaching, or a lack of resources to provide it?

3) After the pandemic, did you use or follow hybrid teaching activities?

According to Fig. 3, we can see that 78% of participants have used or followed hybrid teaching activities, more than two-thirds of them are teachers (56%).

On the other hand, 22% of respondents had never taken part in or used hybrid teaching activities after the pandemic (almost half of them are students-10%) (Fig. 3). These results are in line with those obtained in question 1, where we found that 10% of students were unaware of hybrid teaching.

4) Do you think students can afford to take part in hybrid teaching?

Most respondents (80%) stated that students do not have the means to access hybrid teaching. More than half of them are students (43%). On the other hand, 20% of respondents said the opposite, and three quarters of them were teachers (15%) (Fig. 4).

To deepen our findings on hybrid teaching, we thought we should introduce some open-ended questions.

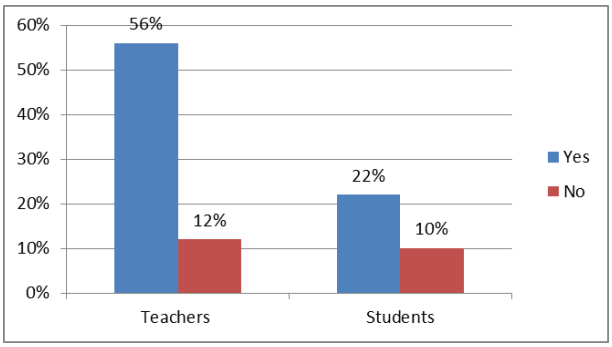

Fig. 3. Distribution of respondents by use of hybrid teaching.

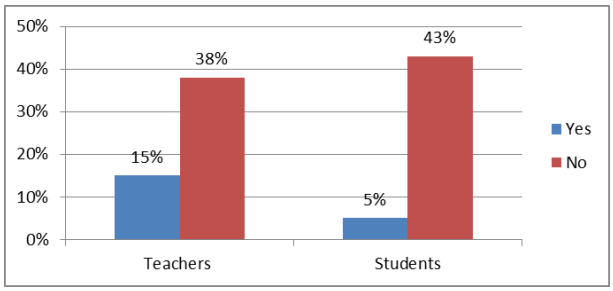

Fig. 4. Respondents' opinions on student resources.

B. Open Questions

In this section, we focused on open-ended questions based on the strengths of each type of teaching, the effectiveness of hybrid teaching and the obstacles to its application in Morocco.

After eliminating surveyed population non-responses. We have numbered the data. The formulations proposed by the respondents were divided into categories. The results are presented in Tables 1–4.

1) In your opinion, what are the advantages of your preferred teaching method?

a) Preference for distance learning

Participants' responses on the advantages of distance learning are grouped together in Table 1. The table is divided into three categories: "displacement", "freedom" and "expense".

Table 1. Distribution of participants' responses on the advantages of distance learning

Category	Formulation examples	% of respondents
I	Avoids displacement	1.8
II	More time freedom	2.5
III	Less expenses	1.2

These results show that respondents who preferred distance learning based their choices on the means and availability, rather than on pedagogical quality.

b) Preference for face-to-face teaching

Respondents' answers on the advantages of face-to-face teaching are grouped together in Table 2.

According to this table, the most preponderant response

(20%) is "it's easier to explain or understand" (category I). The two categories II and IV (14%) are complementary to each other, as both indicate that contact between students helps reduce feelings of isolation.

This result is in line with data from our literature search, where several researchers [20–23] have highlighted that distance learning can create a sense of isolation among learners.

Table 2. Distribution of participants' responses on the advantages of face-to-face teaching

Category	Formulation examples	% of respondents
I	Easier to explain or understand	20
II	Allows real, active contact between students	4
III	More effective for assessing student knowledge	11
IV	Students don't feel isolated	10

For category III, respondents chose face-to-face teaching because of its effectiveness in assessing students' knowledge.

We can see that the percentage of respondents to question 2 who chose face-to-face teaching (51%) is higher than the percentage of those who gave its advantages (45%). In our opinion, this difference can only be justified by the refusal to use technology in teaching and learning. Indeed, studies have shown that the use of the Internet is still not accepted by some students and teachers [42].

c) The preference for hybrid teaching

The results of the analysis show that 46% of respondents prefer hybrid teaching. Their responses on the advantages of hybrid teaching are grouped in Table 3.

Table 3. Distribution of participants' responses regarding the benefits of hybrid teaching

Category	Formulation examples	% of respondents
I	More flexibility for teachers and students.	25
II	Makes learning and teaching easier	10
III	The best way to benefit from the advantages of face-to-face and distance learning	6
IV	Allows you to save time and money	5

According to Table 3, the most preponderant response is flexibility for teachers and students of hybrid teaching (Category I). These results are in line with the literature [26]. In category II, 10% of respondents indicated that hybrid teaching facilitates teaching and learning. 6% of respondents reported that hybrid teaching combines the advantages of distance and face-to-face teaching (category III). This result is in line with that of Kurt and Yildirim [43]. For category IV, respondents based their choice on saving money and time.

2) If you think that students don't have the means to afford hybrid teaching. In your opinion, what types of resources are lacking?

To find out more about the resource's students lack, we thought about this question, which complements the fifth closed question. The results show that 85% of respondents stated that students do not have access to the Internet and do not have the digital means to ensure blended learning. More than half of these were students (49%). A small percentage of respondents (5%) stated that there is a lack of training in hybrid teaching. The results of the analysis of responses are shown in Table 4.

These results may explain those obtained for question 2, which indicates that more than half the students surveyed prefer face-to-face teaching. They also explain the results of question 3, which indicates that the percentage of students who have followed their studies, after the pandemic, in a hybrid way remains low. These results are also in agreement with those of the literature [44].

Table 4. Distribution of students' answers about the resources they lack

Category	Formulation examples	% of respondents
I	We need training in this type of teaching	5
II	We need much wider access to the Internet	55
III	Lack of digital resources	30

V. Conclusion

The aim of this article was to study teachers' and students' perceptions of hybrid teaching after the COVID 19 pandemic. The method used in this research is based on a combination of qualitative and quantitative methods. The results of the analysis show that hybrid teaching has become increasingly popular in Moroccan higher education, especially since the pandemic. Indeed, most respondents are familiar with this type of teaching and have benefited from or used hybrid teaching activities after COVID-19. On the one hand, almost half of respondents prefer hybrid teaching, as it offers greater flexibility for teachers and students and meets the needs of the teacher-learner relationship. On the other hand, half of those who prefer face-to-face teaching believe that it is more effective for the transmission, acquisition and assessment of knowledge. However, only a very small percentage of respondents prefer distance learning.

In this research, it was practically verified that hybrid teaching can be applicable as a mode of teaching at the higher level in Morocco provided that the Moroccan government resolves the problems of access to remote content for students. To do this, the Moroccan government needs to make a greater effort to adopt and develop information and communication technologies in Moroccan universities, starting with the allocation of financial aid to students for the purchase of hardware and the provision of free Internet access. We also need to improve network quality in rural and isolated areas. This would solve the major problem of overcrowding in open-access Moroccan universities.

Although this study provides general information on university students' and teachers' perceptions of hybrid education, its generalizability is limited by the fact that respondents' disciplines were not taken into consideration. It would also be useful, in a future study, to examine the degree of hybridity that can ensure more effective teaching.

Conflict of Interest

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

AB did the data analysis and collection and wrote the main construction of the paper; I.C.H collaborated on the design of survey questions and data collection; R.O perform literature review; M.O contributed to the writing and translation of the paper; L.M has proofread and finalize the report. All authors had approved the final version

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