

Exploring the Impact of Covid-19 Pandemic on the Online Learning Experience of Higher Education Students in Morocco

Rdouan Faizi^a

ENSIAS, Mohammed V University in Rabat, Morocco

Keywords: Education, Covid-19, Remote Learning, Students.

Abstract: As a consequence of the global Covid-19 pandemic, educational institutions worldwide have been compelled to shut down their physical facilities to mitigate the spread of the new coronavirus. Faced with the immediate need to maintain educational continuity, the majority of these academic establishments shifted from traditional classroom instruction to remote education. Nevertheless, this sudden transition away from face-to-face teaching has ignited extensive discussions among educators, students, and parents regarding the effectiveness of distance learning in ensuring a high quality education under these specific conditions. In an effort to investigate the impact of the Covid-19 outbreak on students' learning experiences, our objective in this study is to examine how students perceive the widespread adoption of online learning during the pandemic. Based on the results of a survey that we carried out amongst higher education students in Morocco, it was revealed that despite the considerable efforts that were made by educational authorities to deliver courses through various online platforms and formats, the students' overall satisfaction with the imposed online learning mode is notably low. Specifically, only 30.9% of respondents reported satisfaction, while approximately 66% expressed dissatisfaction with the e-learning solutions introduced during the pandemic.


1 INTRODUCTION

Since the emergence of Covid-19 as a global pandemic, the lives of millions of people around the globe have been profoundly affected. In fact, given the tight restrictions that have been imposed by governments in an attempt to stop the spread of the new coronavirus, people have been forced to quickly adopt distinct and new ways of working, learning and interacting with each other. Consequently, this unprecedented outbreak has devastating effects on all sectors. Nevertheless, one of the domains in which the impact of Covid-19 is really noticeable is education. In fact, as a result of the lockdown that has been forced by the coronavirus pandemic, most educational institutions worldwide have decided to close their premises and temporarily discontinue on-campus learning. This closure has heavily disrupted the learning process of more than 1.5 billion of students and learners across the globe (Amemado, 2020; Sahoo et al., 2021).

To cope with this abrupt and massive closure of universities and schools, the academic community all

over the world has been forced to try other ways of teaching and learning. In this vein, distance-learning solutions have been implemented to ensure education continuity. However, this sudden disruption has generated a lot of debate amongst educators, students and parents regarding the efficiency of this change and to its potential impact on students' learning experience and academic performance. Taking into consideration these concerns, our objective in this paper is to explore the experience of Moroccan higher education students with the full adoption of remote learning as an alternative solution to face-to-face instruction during the Covid-19 outbreak.

The rest of this article is structured as follows. Section Two examines the Moroccan education policy during the coronavirus pandemic. Section Three explores the students' perceptions and attitudes towards the use of remote education in these circumstances. Section Four discusses the results of the study and gives some recommendations. Finally, Section Five summarizes the findings of the present research work.

^a <https://orcid.org/0000-0003-4156-8113>

2 MOROCCAN EDUCATION POLICY DURING THE COVID-19 PANDEMIC

Since the emergence of the new coronavirus as a global pandemic, education has severely been impacted in Morocco. In fact, as the first cases of this pandemic were confirmed in the country, the ministry of education announced that all educational institutions from pre-primary to tertiary close their premises as of 16 March 2020 (El Kahkahi, 2020). This nationwide closure has greatly affected 8,943,156 learners in the country, including 513,208 higher education students (UNESCO, 2020).

Faced with the pressing need to guarantee, at all costs, education continuity for this huge number of affected learners, education authorities quickly decided to replace classroom-based learning/teaching with distant education. This has been carried out through the implementation of a series of measures.

The first and probably the major measure that was taken to prevent the spread of Covid-19 and to ensure education continuity in the country was to launch a national remote learning initiative via Telmid-TICE. The latter is an online learning support portal specifically dedicated to the Moroccan learner. In a report published by the ministry of education in April 2020, it was revealed that the platform hosts 3,000 learning materials covering a wide variety of subjects including French, Arabic and mathematics and is daily accessed by more than 600,000 primary and secondary education students (Kasraoui, 2020a).

Nevertheless, though Internet penetration in Morocco reached 69% in January 2020 (Statista, 2022) and despite the fact that a large portion of Moroccan students widely use the Web for educational purposes (Faizi & Rudneva, 2021; Faizi & El Fkihi, 2018), there are many students from low-income households who cannot afford Internet access at home. For this reason, the three Moroccan telephone operators and internet providers joined the national efforts in ensuring pedagogical and learning continuity and in promoting equal opportunities among Moroccan students. In this respect, the three internet providers provided all students with access to educational content on the Telmid-TICE platform free of charge (Kasraoui, 2020b). Indeed, with no internet subscription, students of all levels can have access, under the same conditions, to all digital resources posted online. To make optimal use of this e-learning platform, the ministry of education launched a toll-free number through which students, parents as well as educational and administrative staff

can have answers to any request or question regarding the optimal use of the distance learning platform.

However, there are still many students who do not have the necessary means or equipment that would enable them to have access to the Internet. Consequently, besides the learning materials that are made available on the national e-learning platform, an additional educational program that targets students cut off from education due to a lack of internet connectivity was launched on public television channels (Naji, 2020). Shortly after the closure of educational institutions, pre-recorded videotaped lessons started being aired for primary and secondary school students. In a press released published on April 2, 2020, it was reported that up to 56 courses were broadcast every day and that a total of 730 lessons were aired since the beginning of the distance education program (Kasraoui, 2020a).

Despite these great efforts in supporting learning during the pandemic, there are still students who have limited access to TV and/or internet. Since there is a high risk that the nationwide closure of educational institutions widens the learning gap between students from less advantaged socio-economic backgrounds and/or rural areas and those who are from more advantaged backgrounds, many supplementary initiatives have been made by the ministry of education and by the civil society to offer primary school students printed and take-home learning resources to ensure that all students are engaged in learning during the lockdown.

For their parts and as a result of the coronavirus pandemic, higher education institutions have also been forced to switch from face-to-face to full online learning (Draissi & ZhanYong, 2020; Elouahsouss, 2020). Although some of these institutions have experience in delivering courses online, namely via Learning Management Systems such as Moodle, many were still stuck with traditional learning/teaching procedures. Nonetheless, given the abrupt transition to online education, many video conferencing tools such as Google Meet, Microsoft Teams and Zoom have moved from being unfamiliar apps to popular tools in the daily lives of many university students and faculty members.

Given the long lasting confinement and its severe repercussions on students' learning, the ministry of education decided to reopen schools in the new 2020-2021 academic year, but issued a strict health protocol to ensure the safety of all students when they are back to school. Nonetheless, school attendance is optional, as long as students follow classes remotely. In fact, parents were given the option to choose between in-person and distance education for their children.

Taking into account all these constraints, the majority of Moroccan primary, middle and high schools adopted a hybrid learning program that consists of a combination of on-campus instruction and online-learning to optimize the teaching/learning experience. But since most families opted for onsite-learning and taking into account the social distancing regulations imposed by the authorities, students in most schools were at school on alternating days or at different times of the day.

In higher education institutions, which are the main focus of the present study, enforcing social distancing is not always an easy task. In actual fact, given the huge number of students enrolled in tertiary education, online learning has been widely adopted.

3 STUDENTS' PERCEPTIONS TOWARDS REMOTE EDUCATION DURING THE PANDEMIC

As Covid-19 has resulted in the closure of educational institutions across the world, millions of learners were out of the classroom as of March 2020 (UNESCO, 2020). Consequently, education systems worldwide have been forced to find alternatives to face-to-face instruction so as to guarantee the students' right to education. To this end, many institutions have adopted web-based teaching/learning on an unprecedented scale, often in combination with a widespread broadcast of prerecorded materials on television or radio.

With this sudden shift away from classroom-based teaching/learning, there has been an ongoing debate concerning the potential impact of such a move on the education sector in general and on the students' learning experiences and their academic achievements in particular. In fact, despite the very tangible benefits that distance education offers to both learners and teachers, many educators, students as well as parents still question its usefulness, quality and value under these pandemic circumstances. Factual evidence that confirms or refutes such concerns is, therefore, needed. In this respect, the objective of the present section is, thus, to explore the students' perceptions and attitudes towards the use of distance education as an alternative to traditional classroom-based teaching and/or learning.

3.1 Research Methodology

In an attempt to examine the impact of Covid-19 on teaching and learning, a research study was carried out amongst Moroccan higher education students to view how they perceive the full adoption of online education during the pandemic. To this end, an Internet-based survey was administered to students from various engineering schools in Morocco. Our choice of these educational institutions is not at random. In fact, our purpose is to see to what extent students, who already have the required knowledge and digital skills, are ready and willing to embrace the sudden transition to online learning.

The survey was sent to the students via email in November 2021 and was answered by 460 subjects. Our choice of an online rather than a traditional paper-based questionnaire was mainly driven by the fact that the former has greater reach, cost effective, flexible and less time consuming in retrieving and analyzing data (Faizi, 2018a).

Ethical approval for this research study was obtained from all the informants. Indeed, all the prospective respondents were informed before the study (via email) about the main objective of the survey and were assured that their participation is completely anonymous and is entirely voluntary.

The survey is based on two sets of questions, namely closed-ended and open-ended questions. The former set can be answered by choosing from a discrete set of responses, while the latter category helps gain the students' opinions and feedback that have not been captured by closed-ended questions. The questionnaire includes two major parts. The first part collects factual data about the subjects while the second explores the students' perceptions and attitudes towards using distance education during the coronavirus pandemic.

3.2 Data Processing

Just like most educational institutions around the world, the engineering schools from which the subjects come from cancelled classroom-based instruction and shifted to remote learning and teaching as part of their responses to Covid-19. One of our first objectives in this study was, therefore, to assess students' readiness to adopt a fully online learning. For this purpose, the surveyed students were inquired about the digital devices they use for online learning as well as the type internet connection they possess. Results are given below:

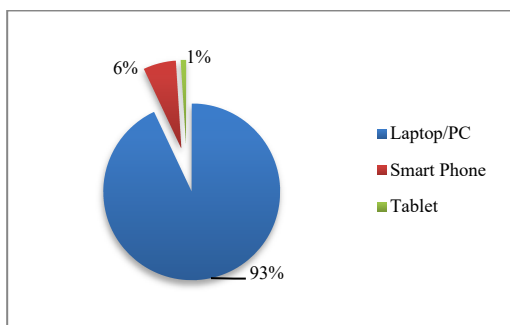


Figure 1: Equipment used to access online learning.

As the figure clearly shows, most of the students (i.e. 93%) have access to the online courses via laptops or PCs. This totally goes in contradiction with some previous studies that reported that mobiles have become the most popular devices that students prefer to use for e-learning purposes (Abbasi et al., 2020; Yilmaz, 2016; Roberts & Rees, 2014).

As for internet connection, though the informants make use of different types of internet connection, the results of the survey revealed that all surveyed students have basic internet access that allows them to use remote learning tools. Our findings concerning the digital equipment that the students use as well as their accessibility to the internet are not really surprising because the participants in the survey are specialized in IT. As such, a PC or laptop and an internet connection do seem to be major requisites in their studies.

Having claimed to have the digital means to access online educational resources, the students were further inquired about the platforms that they use for distance learning. For this purpose, they were asked to select from a wide range of choices, the tools that use. Upon examination of the retrieved data concerning this query, it was revealed that the informants are not confined to using one single platform. The students' answers can be summarized in the figure given below.

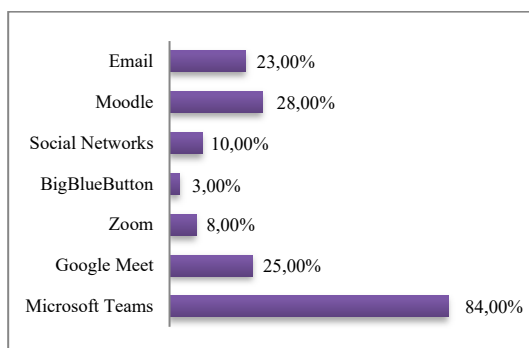


Figure 2: Online tools used to deliver courses.

Although the target population of this study belongs only to engineering educational institutions, the findings of the survey have demonstrated that the subjects use a large pool of digital applications. Nevertheless, the most commonly used is Microsoft Teams. This does in no way minimize or underestimate the quality or educational value of other video conferring tools (such as Google Meet, Zoom, BigBlueButton). In this respect, it has been found out that the use of a specific application rather than another has been imposed in some way by the educational authorities and students have no say in this matter. In fact, apart from Moodle, which seems to be the most popular learning management system in Moroccan higher education institutions, videoconferencing apps vary from one institution to another. In this sense, while Microsoft Teams is more common in the colleges understudy, other higher education institutions would opt for other applications.

Despite the dominance of video conference apps in remote education during the coronavirus pandemic, online courses are delivered in a variety of formats. This is illustrated in the figure below.

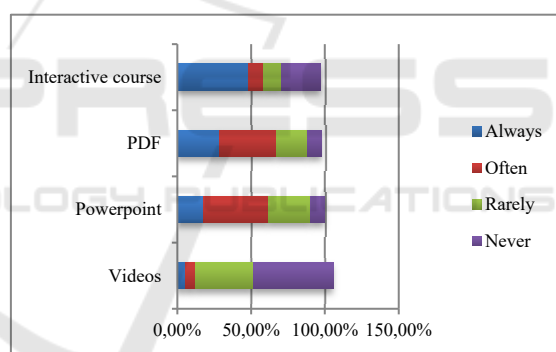


Figure 3: Formats of online courses.

As the figure explicitly shows, the most widely used format during the pandemic is the interactive course. This interaction between students and teachers is usually made possible by video conferencing tools (namely Microsoft Teams), which facilitate synchronous learning and by Moodle which incorporates a set of collaborative and participative features that help teachers and students interact with each other. In addition to this learning mode, the findings of this study show that courses are also made available to students in other formats, namely PDF, PowerPoint presentations and videos.

Given the growing debate amongst students, educators and parents as to the effectiveness of remote education in the Covid-19 pandemic, the surveyed participants were asked to rate their overall

satisfaction of their personal experience with distance education. The students' opinions are illustrated below:

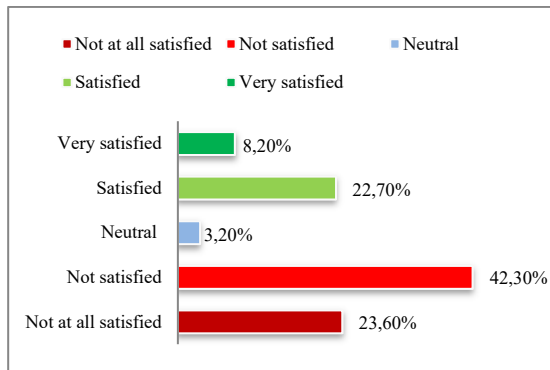


Figure 4: Students' satisfaction rate of distance education.

As is clearly displayed, most of the respondents are dissatisfied with distance learning. In fact, excluding 30.9% who expressed contentment, 65.9% of the participants in the survey are not satisfied with the e-learning solutions adopted during the pandemic.

To get information about the causes that lie behind this dissatisfaction with remote education, the students were further asked about the difficulties that they encountered while learning online. The major stumbling blocks that the students faced are exhibited in the following figure.

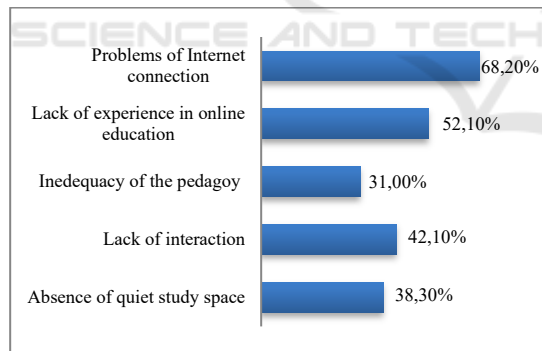


Figure 5: Problems that students faced with remote education.

As the figure shows, there are many challenges that hinder students from effective learning. Yet, the major problem that was reported by the surveyed students is technical (Faizi & El Fkihi, 2020). In this respect, 68.20% of the informants noted that the main problem is the lack of a reliable internet connection. This finding sounds surprising for two reasons. First, though the surveyed students are specialized in information technologies, they do not seem to have the requisite digital technologies to participate in

online education. Second, even if the proportion of the overall population that uses the internet reached 69% when education shifted to distance learning (Statista, 2022), a large number of students do not have a consistent internet connection that would enable them to participate effectively in the online learning process. In fact, since broadband internet in Morocco is still prohibitively expensive, many students from low-income households or middle classes usually find it difficult to stream educational videos or use video conferencing educational tools such as Google Meet, Microsoft Teams or Zoom. The educational digital divide between students who have easy and affordable access to information technology resources and those who do not have certainly grown wider during this pandemic.

In addition to the lack of reliable internet connectivity, 52.1% of the informants also claimed to suffer from a lack of experience in online education. However, this problem affects not only students but teachers as well. This is simply because full-time distance education is still a new experience and both stakeholders did not have the necessary time to get ready and well prepared for this sudden transition from face-to-face to online learning/teaching.

The third major problem that a considerable number of students (i.e. 42.1%) mentioned is the lack of communication and interaction between faculty and peers. Although the learning mode that is widely used in the institutions under study is synchronous (mainly via Microsoft Teams), a little or no interaction seems to take place between teachers and students. Therefore, rather than making beneficial use of video conferencing tools as a means to enhance interaction between students and instructors, these platforms seem to serve only as a one-way channel of communication that is used by teachers mainly to lecture. Consequently, students' involvement in this lecture teaching method is confined to listening and often taking notes during the lecture.

Besides the aforementioned challenges, there are other obstacles that negatively affect the students' learning. In this respect, 38.3% of the participants in the survey noted that they do not have a quiet place where they can study. For such students, the ideal place for learning is the classroom. Moreover, 31% of the informants stipulated that the teaching methodologies adopted by faculty members are not adequate. Indeed, while these teaching approaches have proven to work well in face-to-face settings, they argued to be ineffective in an online environment.

Given the potential benefits associated with online education and taking into consideration the

challenges that have just been highlighted, the informants were asked to voice their opinion as to the possibility of using remote education as an alternative to face-to-face teaching/learning. Nevertheless, the majority of the subjects (i.e. 61.6%) converged on the idea that distance education cannot take the place of classroom-based teaching or learning.

4 DISCUSSION AND RECOMMENDATIONS

The findings of the present study have demonstrated that in spite of the substantial efforts exerted by educational authorities to ensure education continuity during the Covid-19 pandemic, there are many barriers that hinder engineering students from making beneficial use of online learning. Given the fact that these hurdles are caused by various factors (e.g. technical, pedagogical, social, personal, etc.), it was a difficult task for both teachers and students as none of them is fully prepared for this sudden shift from face-to-face education to online instruction (Gormaz-Lobos et al., 2022; El Omari, 2023; Belamghari, 2023). These findings do, actually, go in line with those of many research studies carried out in different countries (Yusuf et al., 2020; Aboagye et al., 2021; Edelhauser & Lupu-Dima, 2020; Akhasbi et al., 2021). Consequently, students whose conditions are more favorable would look for other ways to enhance their learning (Faizi et al., 2013; Faizi et al., 2015; Faizi, 2018b). By contrast, those who do not have the means to study online are more likely to feel isolated and disengaged and their learning experience and academic performance will be severely impacted (Wise et al. 2022; Antoni, 2020).

Based on the results of the above study, it is quite evident that the Covid-19 outbreak has severely affected the teaching/learning process in a variety of ways and has, thus, resulted in learning losses and inequality amongst students. Nevertheless, despite all these negative repercussions, this pandemic has offered educational authorities an ideal opportunity to mitigate these challenges and to leave their dysfunctional strategies behind them. In this respect, several recommendations should be considered in the ongoing coronavirus pandemic and during potential future outbreaks. Some of these are given below:

- Equip students with reliable high speed internet and digital devices to support educational connectivity

- Pinpoint and develop educational practices that can meet the learning needs of various groups of students
- Train instructors to guarantee efficient online/blended curriculum delivery and assessment
- Implement learning recovery programs that will allow students who have fallen behind to achieve the education and curriculum goals

These recommendations will certainly help Moroccan higher education institutions strengthen their education systems and be better prepared for future challenges.

The recent recognition, through regulatory frameworks and policies in 2022, of e-learning as a new and official means of education, alongside traditional face-to-face underscores the significance of the previously outlined recommendations and signals a major milestone in the evolution of the Moroccan educational landscape. As Morocco formally acknowledges the legitimacy of online education, these strategies become even more crucial for the successful integration and enhancement of digital learning experiences within the education system.

5 CONCLUSION

Our objective in this paper was to investigate students' perceptions towards the full adoption of distance learning during the Covid-19 pandemic. In this vein, on the basis of the survey study that was carried out among Moroccan higher education students, it was found out that the distance learning mode that has been imposed during the outbreak is not satisfactory. Therefore, to enhance the students' remote learning experience and academic performance, more efforts should be made to overcome all the challenges that students encounter while learning online.

REFERENCES

- Abbasi, S., Ayoob, T., Malik, A., & Memon, S. I. (2020). Perceptions of students regarding E-learning during Covid-19 at a private medical college. *Pakistan Journal of Medical Sciences*, 36(COVID19-S4), S57.
- Aboagye, E., Yawson, J. A., & Appiah, K. N. (2021). COVID-19 and E-learning: The challenges of students in tertiary institutions. *Social Education Research*, 1-8.

- Amemado, D. (2020). COVID-19: An unexpected and unusual driver to online education. *International higher education*, 102, 12-14.
- Antoni, J. (2020). Disengaged and Nearing Departure: Students at Risk for Dropping Out in the Age of COVID-19. TUScholarShare. DOI: <http://dx.doi.org/10.34944/dspace/396>
- Akhasbi, H., Belghini, N., Riyami, B., Benitto, M., & Gouttaya, N. (2021). Moroccan Higher Education at the Time of Covid-19: Issues and Challenges: A Case Study among Master Students Business Administration at IGA Casablanca. In *CSEDU* (2) (pp. 73-85).
- Belamghari, M. (2023). Emergency remote learning in Morocco as a response to the Covid-19 pandemic: students' perspectives. *Learning: Research and Practice*, 9(1), 39-56.
- Draissi, Z., & ZhanYong, Q. (2020). COVID-19 Outbreak Response Plan: Implementing Distance Education in Moroccan Universities. Available at SSRN 3586783.
- Edelhauser, E., & Lupu-Dima, L. (2020). Is Romania Prepared for eLearning during the COVID-19 Pandemic? *Sustainability*, 12(13), 5438.
- El Kakhahi, R., Moustaine, M., Hafidi, M., Zouhair, R., & Errakhi, R. (2020). Coronavirus disease (COVID-19) in Morocco: situation update and proposed remedial measures. *Germes*, 10(2), 129.
- El Omari, H., Chlouchi, K., Talbi, F. Z., Benboubker, M., Alaoui, M. M., Lahouiti, K., ... & Lalami, A. E. O. (2023). E-learning experience during COVID-19 pandemic management: Perception of secondary schools teachers' in Morocco. *Scientific African*, 19, e01536.
- Elouahsoussi, R. (2020). Moroccan Universities Opt for Online Classes Amid Indefinite Suspension. Morocco World News. <https://www.morocoworldnews.com/2020/03/296221/moroccan-universitiesopt-for-online-classes-amid-indefinite-suspension/>
- Faizi, R., El Afia, A., & Chiheb, R. (2013). Exploring the potential benefits of using social media in education. *International Journal of Engineering Pedagogy (iJEP)*, 3(4), 50-53.
- Faizi, R., Chiheb, R., & El Afia, A. (2015). "Students' Perceptions Towards Using Web 2.0 Technologies in Education". *International Journal of Emerging Technologies in Learning (IJET)*, 10(6), 32-36.
- Faizi, R. (2018a). Teachers' perceptions towards using Web 2.0 in language learning and teaching. *Education and Information Technologies*, 23(3), 1219-1230.
- Faizi, R. (2018b). Moroccan Higher Education Students' and Teachers' Perceptions towards Using Web 2.0 Technologies in Language Learning and Teaching. *Knowledge Management & E-Learning*, 10(1), 86-96
- Faizi, R., & El Fkihi, S. (2018). Investigating the Role of Social Networks in Enhancing Students' Learning Experience: Facebook as a Case Study. *International Association for Development of the Information Society*.
- Faizi, R., & El Fkihi, S. (2020). Incorporating Web 2.0 technologies in education: Opportunities and challenges. In *Proceedings of the 28th International Business Information Management Association Conference-Vision* (pp. 3242-3248).
- Faizi R., Rudneva M. (2021) Higher Education Students' Perceptions Towards Using Facebook as a Learning Platform. In: Huang YM., Lai CF., Rocha T. (eds) Innovative Technologies and Learning. ICITL 2021. Lecture Notes in Computer Science, vol 13117. Springer, Cham.
- Gormaz-Lobos, D., Galarce-Miranda, C., Kersten, S., & Hortsch, H. (2022). Attitudes and Perceptions of Teaching Staff About the Online Learning During the COVID19 Pandemic: A Case Study of Engineering Education. *International Journal of Engineering Pedagogy*, 12(3).
- Kasraoui, S. (2020a). 600,000 Students Access Morocco's Remote Education Website Each Day. Morocco World News. <https://www.morocoworldnews.com/2020/04/298416/600000-studentsaccess-moroccos-remote-education-website-each-day/>
- Kasraoui, S. (2020b). Moroccan Students Enjoy Free Internet Access to Education Websites. Morocco World News. Retrieved from <https://www.morocoworldnews.com/2020/03/297143/moroccostelecommunications-operators-offer-free-internet-access-to-education-websites/>
- Naji, A. (2020). Les systèmes éducatifs à l'épreuve de la Covid: l'exemple du Maroc. *Revue internationale d'éducation de Sèvres*, (84), 23-29.
- Roberts, N., & Rees, M. (2014). Student use of mobile devices in university lectures. *Australasian Journal of Educational Technology*, 30(4)
- Sahoo, B. P., Gulati, A., & Haq, I. U. (2021). Covid 19 and Challenges in Higher Education: An Empirical Analysis. *International Journal of Emerging Technologies in Learning*, 16(15).
- Statista (2022). Penetration rate of internet users in Morocco 2017-2022. Retrieved from <https://www.statista.com/statistics/1172770/internet-penetration-rate-morocco/>
- UNESCO. (2020). COVID-19 Impact on Education: Global monitoring of school closures caused by COVID-19. Retrieved from <https://en.unesco.org/covid19/educationresponse>
- Wise, S. L., Kuhfeld, M. R., & Cronin, J. (2022). Assessment in the Time of COVID-19: Understanding Patterns of Student Disengagement during Remote Low-Stakes Testing. *Educational Assessment*, 1-16.
- Yilmaz, O. (2016). E-Learning: Students Input for Using Mobile Devices in Science Instructional Settings. *Journal of Education and Learning*, 5(3), 182-192
- Yusuf, B. N. M., & Ahmad, J. (2020). Are we Prepared Enough? A Case Study of Challenges in Online Learning in A Private Higher Learning Institution During the Covid-19 Outbreaks. *Advances in Social Sciences Research Journal*, 7(5) 205-212.