

From Crisis to Innovation: Post-Modern Perspectives on Online Teaching during COVID-19 in Algerian Higher Education Context

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Received: 27/8/2024 Accepted: 9/12/2024 Published:21/12/2024

Abstract: Although COVID-19 tends to connote a negative impact, especially on education, it has, on the bright side, urged developing countries like Algeria to mandatorily opt for including online teaching, for the first time, to adapt to the given situation. Since then, reforming the educational sector through ICTs to cope with the demands of the advanced information-age society that Algeria is surrounded by has become the motto of the Ministry of Higher Education and Scientific Research. Indeed, a real change and effort on the part of the Ministry have been felt lately toward promoting online teaching in Algerian universities to leverage the quality of education and curricula and modernise the sector as a long-term objective. Therefore, the present paper overviews the developments made during and after COVID-19 and highlights the issues that came across the shift from traditional to online-based teaching by portraying the studies tackled in this regard.

Keywords: Algeria, COVID-19, Higher Education, Post-Modern Era, Online Teaching

1. INTRODUCTION

Since 2003, billions of dinars have been devoted to equipping the Algerian Ministry of Higher Education and Scientific Research (MHESR) with the necessary materials and platforms for distance education. Despite the government's continuous efforts to inculcate the culture of online teaching through digital tools, projects, video lectures, virtual classrooms, and even international collaborations (Benkara Mostefa, 2024), teaching online was not a common practice within the Algerian university (Kerras & Salhi, 2021; Ghounane, 2022). Indeed, before 2020, most Algerian universities summarised online instruction as sharing educational resources with students via emails (Bin Herzallah, 2021) or social media tools like Facebook groups or WhatsApp (Hadjeris, 2021). However, the COVID-19 pandemic revolutionised the situation (Benghouala & Benamirouche, 2024; Souidi & Mahboubi, 2024). The health crisis had not only global political, economic, and social drawbacks but also educational ones. The situation has not spared Algeria, which, similarly to other countries worldwide, had to close the doors of its educational institutions since COVID-19 meant the lockdown of education (Chikh, 2024; Kherra, 2024; Maaziz & Ghendir, 2023; Sarnou, 2024; Boutkhil & Maouche, 2020). Henceforth, for six months, i.e., from March to September 2020, all traces of onsite teaching stopped in the country (Kerras & Salhi, 2021).

Online teaching was adopted to save the day, or in that particular context, not to ruin the remaining days of the exceptional academic year 2019-2020 (Kelkoula & Belhamel, 2024; Ghounane, 2022). This long period of absence of teaching was due to an ill implementation of online teaching (Laifa et al., 2023) because of several reasons. At that moment, teachers found themselves being obliged to teach online (Maaziz & Ghendir, 2023) without mastering the online teaching process (Aouissi, 2024; Mezazra & Daoui, 2024) as it was a new experience for them that they did not receive training for (Benyahia, 2023), nor the students did (Abdaoui & Aggoune, 2023; Kerras & Salhi, 2021; Ghounane, 2022). Most institutions were not sufficiently equipped for online teaching (Souidi & Mahboubi, 2024) due to a lack of experience and the custom of traditional teaching that did not imply ICT tools (Benghouala & Benamirouche, 2024; Chelghoum & Chelghoum, 2020; Hadjeris, 2021; Kelkoula & Belhamel, 2024), so it took time to get started and find the most suitable strategy to launch the online teaching operation. On the bright side, it was also the beginning of distance learning and the period upon which teachers' way of teaching and students' way of learning changed (Benyahia, 2023; Souidi & Mahboubi, 2024).

The Algerian university underwent various changes and difficulties throughout the last four years to reach the actual situation. Therefore, the present work is a descriptive study that analyzes the online teaching situation in the Algerian higher education sector across the periods before, during, and after the COVID-19 pandemic, and outlines the number of challenges

encountered in this shift. It depends on a qualitative methodology, based on reviews of literature and case studies, to compare the findings of different existing literature on the impact of the pandemic on online teaching and learning.

The purpose of the work is to serve as a preliminary exploration, collecting qualitative data on participants' experiences and perceptions to describe several online engagements, technological barriers, and teaching/learning outcomes.

The main objectives of this study revolved to answer the following questions:

- What are the primary challenges faced by teachers and students during the transition to online teaching after the pandemic?
- How has online teaching experience during the pandemic influenced the adoption of digital tools and platforms such as Moodle in post-pandemic education in the Algerian context?

2. COVID-19: The Starting Point of Online Teaching

Thanks to COVID-19, the Algerian university, like many Arab and developing countries that were not familiar with distance learning, was pushed to embark on the journey of online teaching for the first time, where no room was left for traditional teaching as it could not fit that situation (Benyahia, 2023; Hadjeris, 2021; Kherra, 2024; Maaziz & Ghendir, 2023; Mezazra & Daoui, 2024; Sarnou, 2024; Souidi & Mahboubi, 2024; Kerras & Salhi, 2021). As a tool for online teaching, the MHESR opted for the Modular Object-Oriented Dynamic Learning Environment, i.e., Moodle-an open-source online educational platform employed for managing and customising online courses (Bekhtaoui & Hachem, 2024; Bin Herzallah, 2021; Hadjeris, 2021). Being rich in features, Moodle allows teachers to track the enrolled, connected, and active students as it provides a detailed account of their students' activities. It also enables them to test the students, record their scores, upload documents in different formats, and even engage in synchronous and asynchronous chat discussions (Bin Herzallah, 2021).

It should be noted that Moodle was already implemented in many Algerian Universities a couple of years ago, before COVID-19. Being free and available, the platform was, thus, the magical solution from the standpoint of the Ministry. However, many teachers were not accustomed to teaching with it. Though manuals on Moodle use were provided to them, technical support and administrative help were needed (Hadjeris, 2021; Laifa et al., 2023; Souidi & Mahboubi, 2024). Not mastering the platform, and many of them not even the ICT tools, teachers felt lost, and the first year of COVID-19 teaching was restricted to uploading PDF and Word documents (Benyahia, 2023; Hadjeris, 2021; Kelkoula & Belhamel, 2024) that learners were asked to consult and submit the provided assignments after accounts were created to them at the level of all faculties (Bekhtaoui & Hachem, 2024). Hence, these students were left alone without any explanation from their instructors (Kerras & Salhi, 2021). The problem with the adopted teaching process is that

it was missing an essential component of teaching: teacher-student interaction (Benyahia, 2023; Kerras & Salhi, 2021; Ghounane, 2022), as well as teachers' feedback (Boutkhil & Maouche, 2020), and assessment that was left until September when students resumed class (Hadjeris, 2021).

In the second year of the pandemic, hybrid teaching began to be used in the Algerian university by devoting three weeks to online sessions and one week onsite. Unlike the first year, when no interaction was done with the student, that year, videoconferencing was introduced via Teams as the Ministry invested in Microsoft accounts with institutional emails, and all teachers and students had access to them. Google Meet, Google Classroom, or Zoom were also used by some teachers (Chikh, 2024; Hadjeris, 2021; Maaziz & Ghendir, 2023; Teyebi & Yaiche, 2024; Yerboub & Bensemmane, 2024; Ghounane, 2022). The problem with hybrid teaching was that students lacked the motivation to learn online (Teyebi & Yaiche, 2024). Despite teachers' efforts, instructors soon felt demotivated due to the lack of participation from their students' part during the online sessions (Benyahia, 2023; Hadjeris, 2021; Kelkoula & Belhamel, 2024). Such a type of instruction creates many issues regarding students' adaptation to this new mode of learning that they were not familiar with (Kharra, 2024).

In the third year of COVID-19, the Algerian university came to regular onsite teaching, but the Ministry decided to extend the experience of hybrid teaching up to the present day (Abdaoui & Aggoune, 2023; Bekhtaoui & Hachem, 2024) by adopting it for some cross-disciplinary modules (Ikhlef, 2024; Kherra, 2024) called in the Caneva of the MHESR "transversal units" (Chikh, 2024; Yerboub & Bensemmane, 2024;) like, for instance, French as far as the Department of English is concerned, and are taught on Moodle. Since the COVID-19 period, especially during the last two years, the Ministry has not ceased incorporating ICTs in higher education and began by investing in materials for distance learning and virtual classrooms (Bin Herzallah, 2021; Bouguetaf & Benmekki, 2024; Laifa et al., 2023; Sarnou, 2024).

3. The MHESR Continuous Efforts during the Post-COVID-19 Era

Before COVID-19, many Algerian teachers reproached the insufficiency of teacher training, a statement confirmed in the studies of Aouissi (2024), Hadjeris (2021), Laifa et al. (2023), Maaziz and Ghendir (2023), Sarnou (2024), Souidi and Mahboubi (2024). The Algerian government's long-term preoccupation and focus has always been the provision of software and hardware and different online platforms, while the human resources, who are supposed to be the actual investment needed as they would train teachers as part of their professional development, were neglected (Laifa et al., 2023; Sarnou, 2024). In the post-COVID-19 period, the Ministry has reinforced training by requesting intensive training for all teachers done by newly-recruited teachers. The latter, since 2016, are subject to mandatory online techno-pedagogical training supervised by the University of Constantine that lasts one year to confirm their teaching

position (Hadjeris, 2021). These teachers are trained in using pedagogical ICT-based platforms like Moodle, Opale, and edX (MOOCs) and are shown how to design online lectures and craft online pedagogical scenarios. Thanks to this training, the former trainees have become trainers to their colleagues, who usually tend to be their previous teachers or supervisors, by sharing their know-how and know-what that were transmitted to them by the trainers of Constantine University. This shows that the Ministry's investment and the effort of Constantine University did not go in vain.

Another novelty proposed by the Ministry since the pandemic was the launch of online academic Bachelor's and Master's degrees in various domains within the University of Continuous Education. The latter has provided platforms devoted to learning specialties like finance, law, technical English, accounting, and journalism, to name a few (Bouguetaf & Benmekki, 2024). In addition to that, the Department of English at Tlemcen University hosts, for the first time, an online Bachelor's degree in English studies. For this sake, a classroom equipped with the necessary materials for distance education is at the disposal of teachers in the department, and students from different regions of Algeria attend these online sessions both synchronously and asynchronously. In this online setting, teachers, most of whom are newly recruited teachers trained on Moodle, are teaching using the platform whose version has been updated for this end. Indeed, many extensions for videoconferencing, like Google Meet and Jitsi, various types of quizzes, as well as plugins, which did not exist before COVID-19, have been added. Hence, Tlemcen University experienced the shift from online teaching that was summarised to mere uploading of PDF and Word documents on Moodle during the COVID-19, to the use of hybrid teaching on Teams in the second year of the pandemic to a whole online Bachelor's degree. In the latter, most of the teachers who were trained on Moodle use the platform to apply the vision of online teaching, with direct teacher-student interaction and online formative assignments.

In addition to the Moodle training, the Ministry has taken other measures to prepare teachers to adopt digital practices and encourage them to shift to online teaching. As a case in point, posting online lectures on Moodle has become part of the evaluation grid designed by the MHESR. It is worth noting that in the Algerian higher education system, university teachers go through different career credentials to finally have the status of professor. Thus, to shift from one rank to another, they must fulfil several criteria and accumulate some points through scientific publications, supervision of Master's/doctorate students, teaching, participation in conferences, following the set evaluation grid, and posting online lectures is part of it. After several years, they deposit their documents, and a national commission of the Ministry assesses each teacher's files. Depending on the number of points they obtain, they are classified per domain, nationally, and then a quota is accepted. After that, they would move from being assistant professors (commonly known in the Algerian system as *Maître de Conférences classe*

B) to associate professors (Maître de Conférences classe A) after three years of teaching experience in the LMD system, and then to professors after five years. Although scientific publications are a mandatory criterion to pass, teaching online should not be neglected because it would add extra points that could make the difference between one teacher and another in the final ranking and, thus, in their careers.

Furthermore, Algerian university teachers have the possibility to benefit from some days/weeks abroad through internships or scientific leaves each year. To be able to go, there is also an evaluation grid that the Ministry has designed, comprising criteria and a number of points to be accumulated, and once again, publishing lectures on Moodle is part of that grid. Following quite the same procedure as the above-cited one, but this time done locally at the level of each university, a commission gathers, teachers are classified according to the obtained number, and a quota is then selected. To push teachers to adopt Moodle further, the Ministry organised a national contest for the best-designed Moodle course among university teachers. It should be noted that there is a National Committee of Distance Education that supervises all the above-cited elements at the level of the Algerian universities (Bouguetaf & Benmekki, 2024; Ikhlef, 2024). In addition to that, the Ministry adopted the "0-paper policy" so that to favour digital tools. These examples portray the extent to which the Ministry is willing to promote the use of digital tools, Moodle, and, hence, online teaching, and are a clear indicator of the modernisation of the Algerian higher education system.

4. Challenges of Online Teaching in Algeria

Online teaching in Algerian higher education, being in its embryonic phase of implantation (Benmadani, 2024; Benghouala & Benamirouche, 2024; Mezazra & Daoui, 2024; Sarnou, 2024; Yerboub & Bensemmane, 2024), faced and still faces several challenges that often appear in academia when linking the country with distance learning (Benmadani, 2024; Benghouala & Benamirouche, 2024; Bin Herzallah, 2021; Chelghoum & Chelghoum, 2020; Laifa et al., 2023; Sarnou, 2024). The first element that was quite surprising was to discover that most teachers did not use ICTs in their teaching practices prior to the pandemic. As a case in point, in studies carried out by Hadjeris (2021) and Kelkoula as well as Belhamel (2024) about teachers' use of online teaching in Algeria, the informants admitted never using ICT when teaching before COVID-19. The participants in both pieces of work did not view teaching during the pandemic as "online" instruction since they were not mastering the platform, which they found hard to use, never taught online, and lacked digital literacy. This situation is due to a fear of embarking on online learning, what Ghounane (2022) refers to as technophobia, and cannot lead to the success of online teaching in Algeria as the students were not exposed to online teaching before the pandemic (Hadjeris, 2021; Kerras & Salhi, 2021).

Moreover, some teachers' philosophy regarding teaching tends to be deeply rooted in a traditional conception that focuses on a teacher-centred approach rather than a student-centred one (Sarnou, 2024). Such a vision represented by resistance to change (Ghounane, 2022) hinders the instructors from being open to innovation, change, and adaptation, critical elements of online teaching (Sarnou, 2024). They are conscious of the potential that online learning could have for their professional and academic enhancement (Mezazra & Daoui, 2024). Furthermore, it is customary for some Algerian instructors' personalities that professionalism in education is restricted to having diplomas and certifications rather than developing skills (Maaziz & Ghendir, 2023). Hence, online teaching is not considered a priority for some, but it is rather a mere second option due to a lack of an ICT culture (Aouissi, 2024; Hadjeris, 2021). As a result, they lack digital competence. The latter was a remark made by students in Abdaoui and Aggoune's (2023) work, who assessed their instructors' teaching practice during online sessions. The respondents reported their teachers' struggle with simple tasks like changing the slides of a PowerPoint, which consequently affected the management of the session. Another criticism from students can be found in Benyahia's (2023), in which they viewed the lectures published by their teachers online as long and ambiguous. This situation is caused by the non-mastery of the online teaching pedagogical process, which is completely different from traditional teaching (Aouissi, 2024; Kelkoula & Belhamel, 2024; Mezazra & Daoui, 2024; Souidi & Mahboubi, 2024).

The unfamiliarity of students and teachers with online teaching is due to the policy adopted in Algeria: free education for all, applicable from primary to tertiary education. Though this policy provides, on the one hand, equity for education to all citizens, especially for people with low income, it has, on the other hand, led to an increasing number of graduate and postgraduate students enrolled in the universities whom the country could not provide ICT tools to them as it could not equip all the institutions (Hadjeris, 2021; Laifa et al., 2023; Sarnou, 2024; Souidi & Mahboubi, 2024). It should also be highlighted that Algeria is described as a heterogeneous society (Bekada et al., 2015) with different socioeconomic situations that differ from one region to another and from one individual to another. As a consequence, during COVID-19, several students from low-income families did not even own a computer (Hadjeris, 2021; Sarnou, 2024; Boutkhil & Maouche, 2020), but, on the contrary, owned phones. This statement is confirmed through a study carried out by Mezazra and Daoui (2024) in which the authors administered a survey via the MHESR platform to 13389 students enrolled in various universities nationally. The results showed that the majority of them, representing 53,9%, used smartphones to have access to the internet. As a result, learning on Moodle on the phone rather than on the computer could pose challenges for them in accomplishing a number of tasks (Kherra, 2024).

It should be brought to one's attention that the number of active mobile connections in Algeria is estimated in 2024 to be 50.65 million, exceeding the

total population, which is estimated to be 45.95 million (DataReportal, 2024). Nevertheless, there is a sort of contradiction in today's generation, "Gen Z," regarding their ICT practices. Though they are supposed to be accustomed to technology and be digital natives, their competence is mostly shown on social media only (Kherra, 2024; Sarnou, 2024). This statement is confirmed in a study carried out by Benmadani (2024) in which the participants, who are students at Setif University, revealed that they use technological tools extensively, but their utilisation is directed towards social media sites rather than educational ones. These Algerian young students lack a key component of online education: digital literacy (Abdaoui & Aggoune, 2023; Kherra, 2024; Sarnou, 2024; Kerras & Salhi, 2021). According to Sarnou (2024), digital literacy is represented in mastering the ICT tool for doing research, solving problems, learning, navigating the internet, mastering software, creating content, and communicating. The author believes that these are the skills that should be taught and emphasised in the training provided by the Ministry as it would equip students with the essential skills for personal, academic, and professional development. Digital literacy, and more specifically, digital dexterity, is more useful for these young people than social media skills.

Moreover, the students in Sarnou's (2024) work favoured face-to-face learning, reducing their motivation and engagement to learn online as it does not match their learning style. The lack of students' motivation online is reported in the work of Abdaoui and Aggoune (2023), Benmadani (2024), Benyahia (2023), Bouchareb et al. (2023), Boutkhil and Maouche (2020), Ghounane (2022), as well as Chelghoum and Chelghoum (2020). In these two last-mentioned studies, as a case in point, the informants viewed the online experience to be frustrating and challenging. However, one cannot generalise the findings on all Algerian students as their experiences differ from one university to another. As a case in point, opposite results were found in the work of Babou (2023), Kherra (2024), and Laifa et al. (2023), in which the participants expressed satisfaction with online learning over face-to-face for usefulness, easiness, flexibility, and accessibility matters.

Another problem with online teaching in Algeria is the connectivity issue, principally related to its quality and speed, which have been described as poor and low, respectively (Benyahia, 2023; Hadjeris, 2021; Ikhlef, 2024; Kherra, 2024; Sarnou, 2024; Boutkhil & Maouche, 2020), slow (Kelkoula & Belhamel, 2024; Mezazra & Daoui, 2024; Teyebi & Yaiche, 2024), unstable (Laifa et al., 2023), and inconsistent (Souidi & Mahboubi, 2024), disturbing by that the content delivery of the online classroom (Kherra, 2024). Consequently, bad connectivity is another reason behind students' demotivation to learn online and their preference to stick to traditional teaching (Abdaoui & Aggoune, 2023; Benmadani, 2024; Bouchareb et al., 2023; Chelghoum & Chelghoum, 2020). Moreover, some students, primarily those who live in rural and desert areas, are deprived of the internet (Benmadani, 2024; Sarnou, 2024; Hadjeris, 2021). On a positive note, it is

worth highlighting that the government has made a tremendous effort to cover the connectivity issues and enhance the internet quality, compared with the previous years, and provide internet throughout Algeria. Consequently, the country registers 33.49 million internet users in 2024 with an internet speed that shifted from 11,01 megabits per second in 2023 to 12.32 megabits in 2024 for fixed internet and to 21.36 for cellular networks, according to DataReportal. In the light of these challenges, some recommendations are proposed.

5. Recommendations

One cannot deny the tremendous efforts deployed by the MHESR in providing teachers with training. Still, it has been criticised for focusing on technical skills rather than emphasising a crucial element that most teachers do not master: online teaching pedagogy. As a result, there is a pedagogical gap between what is needed from teachers and what is taught to them (Souidi & Mahboubi, 2024). For this reason, the training should not be any training but a quality pedagogical one that would inculcate the true spirit and culture of online teaching and learning to teachers. It should result from an agreed methodology and syllabus designed by experts in the field of didactics and distance learning and authorities. It could be adapted from existing international sources accredited to be effective practices in other countries and then commonly adopted by all the Algerian universities for unified practices. It would enable teachers to differentiate between online and traditional teaching while also knowing how to mix the two modes of instruction and to rely on strategies that would motivate students, hopefully increase their participation online, and raise students' awareness of the importance of distance learning in nowadays society. The process of digitizing the educational sector may be daunting for both students and teachers as it would require time, energy, effort, and joint collaboration on their part, thus, undoubtedly leading to the enhancement of the current teaching/learning situation.

6. CONCLUSION

Four years ago, given the socioeconomic situation of the Algerian university and the challenges that surround it, no university teacher imagined that teaching online would be feasible. Indeed, the shift from traditional onsite teaching to an online one was sudden since neither teachers nor learners were prepared for and accustomed to. Consequently, the digitisation of teaching did not reflect the reality of the Algerian university, where teachers and students were not using ICT as a teaching/learning practice, and the universities were not equipped to handle online teaching. This absence of an ICT culture, as Hadjeris (2021) and Aouissi (2024) refer to, hinders the success of online teaching and creates a technological gap. Nevertheless, the exceptional COVID-19 period, with its ups and downs, was managed successfully thanks to the efforts deployed by the MHESR. Since the

pandemic, the latter has witnessed a real transformation compared with the previous years and intends to adopt hybrid teaching through Moodle, for now, and in the future.

Investing on distance learning and all forms of digital tools is the novel strategy that the Ministry has employed lately. It could be said that the adoption of online teaching in Algeria would be a step forward to modernising and enhancing the higher education sector that would fit today's digitised world in the long term. These changes bring many questions to one's mind: Will Hybrid teaching or Blended learning be the new or modern teaching mode of Algerian universities? Will this be the most suitable solution to cover the increasing number of students? There are no answers to these questions for the moment. They will be revealed in the future, which seems to be promising.

7. Bibliography List :

- Abdaoui, M., & Aggoune, A. (2023, December 12-13). *Online Learning through Google Meet for Moodle: The Need to Maintain Accessibility and Visibility of Algerian Universities' Websites in the Post-COVID Era*. The First Online International Conference on Teaching and Learning in Post-COVID: Reality and Expectations, Saida, Algeria.
- Aouissi, K. (2024). E-learning realities and challenges: A case of Ghardaia University in Algeria. *Filosofija Sociologija*, 35. <https://doi.org/10.6001/fil-soc.2024.35.2.9>
- Babou, M. (2023). The Inclusion of Digitalization into the Universe of Teaching EFL -Linking Education with Future Prospects. *مجلة الانسان والمجال*, 9 (2), 244-257. <https://www.asjp.cerist.dz/en/article/233550>
- Benkara Mostefa, A. (2024). The Role of E-learning in Achieving the Quality of Higher Education. *مجلة قانون العمل و التشغيل*, 9 (1), 103-117. <https://www.asjp.cerist.dz/en/article/243282>
- Brada, A., & Dahmani, F. (2024). The Significance of Digitization Projects in the Algerian Higher Education Sector for Enhancing Educational Quality. *افاق للعلوم*, 9(3), 90-101. <https://www.asjp.cerist.dz/en/article/246498>
- Bekada, A., Arauna, L. R., Deba, T., Calafell, F., Benhamamouch, S., & Comas, D. (2015). Genetic heterogeneity in Algerian human populations. *PLOS ONE*, 10(9), e0138453. <https://doi.org/10.1371/journal.pone.0138453>
- Bekhtaoui, A., & Hachem, A. (2024). Evaluation of Distance Education at the Algerian University from the Students' Perspective. *ALTRALANG Journal*, 6(1), 349-360. <https://www.asjp.cerist.dz/en/article/249935>
- Benghouala, M. A., & Benamirouche, H. (2024). E-learning Implementation Factors in the Algerian Higher Education Sector: A Structural Analysis via ISM Method. *مجلة البحوث التربوية والتعليمية*, 13(1), 873-890. <https://www.asjp.cerist.dz/en/article/243076>
- Benmadani, S. (2024). Investigating the Challenges of the Implementation of E-Learning in the Algerian EFL Context. *Eddissi Languages Journal*, 3(1), 49-57. www.asjp.cerist.dz/en/article/246218

- Benyahia, A. (2023). Teaching and Learning in the Digital Era : Changing Roles and Expanded Responsibilities. *ALTRALANG Journal*, 5(3), 304-318. <https://www.asjp.cerist.dz/en/article/238134>
- Bin Herzallah, M. (2021). E-Learning at the University of Algiers Reality and challenges. *Journal of Distance Learning and Open Learning*, 9(16), 73-91. <https://doi.org/10.21608/jdlol.2021.168484>
- Bouchareb, A., Gasmi, M., & Boumediene, H. (2023). The Impact of COVID-19 Pandemic on Learning: Investigating Introverted EFL Students' Motivation and Attitudes in Algeria. *الأكاديمية للدراسات الإنسانية والاجتماعية*, 15(2), 497-504. www.asjp.cerist.dz/en/article/228104
- Bouguetaf, M., & Benmekki, N. (2024). E-learning as a mechanism to ensure quality higher education in Algeria. *إفاق العلوم*, 9(3), 351-362. <https://www.asjp.cerist.dz/en/article/246516>
- Boutkhil, G., & Maouche, S. (2020, 11-19 Nov). *Assessment of online learning in Algerian universities during COVID-19* The 29th International Conference on Digital E-Learning” between Urge and Necessity", Iraq.
- Chelghoum, A., & Chelghoum, H. (2020). The Covid-19 Pandemic and Education: Big Changes ahead for Teaching in Algeria. *ALTRALANG Journal*, 2(2), 118-132. <https://www.asjp.cerist.dz/en/article/139887>
- Chikh, I. (2024). Blended learning: A student-centered approach. *Revista Universitară de Sociologie*(1), 30-38.
- DataReportal. (2024). *DIGITAL 2024: ALGERIA*. Retrieved 30/07 from <https://datareportal.com/reports/digital-2024-algeria>
- Ghounane, N. (2022). Learning in the Algerian Context during the Pandemic: Is it online or offline? *Arab World English Journal (AWEJ)* 2nd Special Issue on Covid 19 Challenges (2) 492- 503. DOI: <https://dx.doi.org/10.24093/awej/covid2.33>
- Hadjeris, F. (2021). Revisiting sustainable development goal 4 in the context of COVID-19 pandemic: A case study of online teaching in Algerian higher education institutions. *Human Behavior and Emerging Technologies*, 3(2), 160–168. <https://doi.org/10.1002/hbe2.245>

- Ikhlef, L. (2024). E-learning and digital culture: Evaluating the level of digital proficiency in an educational setting. *مجلة المفكر*, 19 (1), 649-662. <https://www.asjp.cerist.dz/en/article/249259>
- Kelkoul, N., & Belhamel, A. (2024). Exploring the Role of Online Education in Teachers' Professional Development in the post- Covid Era. The Case of Teachers of Mohamed Lamine Dabaghine, Setif 2 University. *مجلة النص*, 11 (1), 489-506. <https://www.asjp.cerist.dz/en/article/250706>
- Kerras, N., & Salhi, S. E. (2021). University Education in Algeria during the Covid-19 Pandemic: Limitations and Challenges . *Arab World English Journal*, 12 (3) 16-35. DOI: <https://dx.doi.org/10.24093/awej/vol12no3.2>
- Kherra, N. (2024). Exploring Online Learning in University: Bridging the Gap between Practice and Perception. *International Journal of Asian Education*, 5, 134-140. <https://doi.org/10.46966/ijae.v5i2.387>
- Laifa, M., Giglou, R. I., & Akhrour, S. (2023). Blended learning in Algeria: Assessing students' satisfaction and future preferences using SEM and sentiment analysis. *Innovative Higher Education*, 1–27. <https://doi.org/10.1007/s10755-023-09658-5>
- Maaziz, A., & Ghendir, N. (2023). Distance education at the Algerian university: What tools and what means to manage a crisis situation? *Aleph*, 10(3), 135–147. <https://www.asjp.cerist.dz/en/article/223858>
- Mezazra, A., & Daoui, C. (2024). Innovation in the educational process through the utilization of high technology to build a flexible educational system: A field study in Algerian universities. *مجلة اقتصاد والأعمال*, 8(2), 1003-1014. <https://www.asjp.cerist.dz/en/article/239473>
- Sarnou, D. (2024). Beyond access: Empowering Algerian students in online learning through digital literacy and a pedagogy of abundance. *EDUTREND: Journal of Emerging Issues and Trends in Education*, 1(2), 76–91. <https://doi.org/10.59110/edutrend.324>
- Souidi, C., & Mahboubi, A. (2024). Professional Development for Educators: Preparing for Blended Learning as the New Teaching Standard. *Proceeding of the First Online International Conference on Teaching and Learning in Post-COVID: Reality and Expectations, Saida, Algeria, ATRAS*, 39-50.

- Teyebi, S., & Yaiche, W. (2024). Assessing the Efficacy of Moodle: Perspectives from Educators and Learners at the English Department, Ahmed Salhi University Centre, Naama. *أطراس*, 5 (2), 109-128. <https://www.asjp.cerist.dz/en/article/250439>
- Yahiaoui, F., Aichouche, R., Chergui, K., Brika, S. K. M., Almezher, M., Musa, A. A., & Lamari, I. A. (2022). The impact of e-learning systems on motivating students and enhancing their outcomes during COVID-19: A mixed-method approach. *Frontiers in Psychology*, 13, 874181. <https://doi.org/10.3389/fpsyg.2022.874181>
- Yerboub, R., & Bensemmane, F. (2024). Onsite and Online Summative Assessment and EFL Learners' Perceptions of Task Engagement within Hybrid Instruction: Case of Master's Students at the University of Algiers 2. *مجلة البحوث التربوية والتعليمية*, 13 (3), 115-134. <https://www.asjp.cerist.dz/en/article/248874>