DigiTeL Pro

Professional development in digital teaching and learning

I04-A1 Report

UOC-OUNL-UNINETTUNO

CC BY SA 4.0

Document details

Document title	An open access report on the state of art research, innovation and good practices of online and distance education and conclusions related to the COVID 19 context
WP (if applicable)	IO4
Document version	First version
Lead author	Albert Sangrà
Other authors	Montse Guitert, Isabella Riccò, Francis Bouns, Ileana di Pomponio, Juliana Raffaghelli
Confidentiality Status	Public
Date	2nd May 2022
CC License	CC BY SA 4.0

Versioning and Contribution History

Revision	Date	Author	Organisation	Description
1	12-05-2022	Diogo Casa Nova	Universidade Aberta	

Table of Contents

Introduction

At the beginning of the pandemic several universities decided to move rapidly to online education, even though they did it without practical knowledge of what online education is and without the necessary technology (Sangrà et al., 2020), but with a great will of continuing providing education in a critical moment. In this regard, it is crucial to understand that what most universities were doing during the lockdown was not online education, but emergency remote teaching (ERT), i.e., a temporary shift of instructional delivery to an alternate delivery mode due to critical circumstances (Hodges, 2020). Online education has a history that dates far beyond the ERT experimented during pandemic, it has evolved along the lines of technological, pedagogical, organizational and societal developments (Harasim, 2000; Larreamendy-Joerns & Leinhardt, 2006). However, during the first lockdown teaching solutions and practical tools were used in order to face the emergency situation, but with the initial idea to come back to face-to-face education as soon as possible. In this sense, the pandemic offered the opportunity to experiment innovation and started to take into consideration online learning as a new possibility.

The first part of this report pretends to provide a not exhaustive synthesis of contemporary research carried out during the first phase of pandemic (mainly 2020) on the challenges and conditions generated by migration to online education. The second part takes into account the literature oriented to the impact of the COVID-19 on higher education and the design and development of online and distance learning courses thanks to the expertise of online education institutions and the collection of good practices.

Online and distance learning at the beginning of COVID-19: the transition

This section shows literature review on the online and distance learning education at the beginning of the pandemic when education was forced to move online. The literature represents mainly the institutions who are not used to online learning where teaching and assessment shifted from face-to-face to online just because of the crisis. However, it also tackles an example of consequences of the pandemic on online education institutions, which in some cases also experimented difficulties and challenging situations, even though those were especially related with a decreased interaction of students and professors due to their personal circumstances.

12 articles have been collected for this section, all of them were written in English. The articles show different approaches and methodologies. In particular, there are quantitative and qualitative studies, which used different techniques of gathering data (questionnaire, survey, forum), systematic reviews and theoretical studies. Articles involve mainly different European countries at the same time, with some specific studies carried out in UK, Netherlands, Germany and Poland, and an extra EU study done in Afghanistan. The main target are higher education professors and students.

Literature review: first phase of pandemic

1

Citation details: Mulrooney, H., and Alison Faith (2020). COVID-19 and the move to online teaching: impact on perceptions of belonging in staff and students in a UK widening participation university, *Journal of Applied Learning & Teaching* 3(2)

Methodology/type of study conducted: Quantitative and qualitative methodology by means of the questionnaire "Belonging' at university in an online world: Staff & student perspectives".

Participant type: 208 students (higher education) and 71 academic staff

Discipline: Education

Country: UK

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: The publication reflects on how the pandemic may impact on perceptions of belonging and social identity through the lens of online education. A questionnaire with qualitative and quantitative data has been circulated between students and staff to collect this information during the first lockdown. Both students and academic staff highlighted not having to commute and the increase flexibility and convenience of online teaching as potential advantages. While academic staff could see the benefit of establishing their social presence online using their voices and faces and encouraging active engagement of students using online quizzes and interactive sessions, students were less likely to perceive the benefits of such approaches. Many students actually did not know what was happening or where to go for help when they first went online in March 2020 and would have appreciated more support and clear instructions for IT and course material. An advantage of online education in an extreme situation was the fact that it helps to reduce loneliness and support mental health through connection with others. In this way, students felt still part of a community by sharing the same goals. However, both academic staff and students expressed concern about the difficulty of forming relationships virtually and highlighted the lack of social interaction. Finally, some tips to help the building-up of an online community were shared (mix asynchronous and synchronous sessions, using audio and video facilities, clear netiquette guidance, encourage engagement between institutions).

2

Citation details: Maddumapatabandi, T. D., and Gamage, K. A.A. (2020) Novel coronavirus (COVID-2019) pandemic: Common challenges and responses from higher education provider. *Journal of Applied Learning & Teaching*, 3 (2), pp.40-50.

Methodology/type of study conducted: Systematic review based on citation databases of peer-reviewed literature

Participant type: the review of web-based provisions of selected universities, institutional and national policy documents, survey reports, and other studies.

Discipline: Education

Country: No specific country

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: This paper systematically reviews such responses from higher education providers in various parts of the world and evaluates the challenges and impacts on supporting students in learning and teaching during COVID-19. The paper focuses especially in the challenges of emergency remote teaching and online learning. Firstly, not all universities were well prepared for a complete online teaching and learning transformation in terms of infrastructure and technology and not all the professors had capacities to teach in virtual education. Moreover, due to the restrictions and limitations associated with each discipline, it was not possible to conduct assessments entirely on virtual online platforms. Secondly, isolation and social distance had negatively impact on students' ability to focus on their studies, sometimes they had lack of self-discipline. Health and well-being challenges must also be taken into account. In conclusion "online education needs to be designed and structured, the quality of delivery ensured, and there needs to be alignment between program learning outcomes and expected student standard"(Maddumapatabandi, 2020, 46).

3

Citation details: García-Morales, Víctor J., Garrido-Moreno, Aurora, Martín-Rojas, Rodrigo (2021), The Transformation of Higher Education After the COVID Disruption: Emerging Challenges in an Online Learning Scenario, *Frontiers in Psychology*, 12.

Methodology/type of study conducted: Theoretical study

Participant type: No specific target

Discipline: Education

Country: No specific country

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: Students report that one of the major challenges in adapting to online learning during the pandemic was existing technical problems. Some authors highlighted the ways online education can amplify the digital divide both for students and professors. In this sense, universities must guarantee that students from less privileged socioeconomic backgrounds are not disadvantaged. Another challenge is the difficulty to maintain attention in a purely online context due to the following issues: boredom, sense of isolation, lack of time to follow the different subjects, and lack of self-organizing capabilities. Finally, in order to avoid the insurgence of the sense of

isolation is necessary to find the optimum balance of individual student-centered learning and collaborative learning, fostering virtual communities of practice to enhance student peer engagement and collaboration.

4

Citation details: Di Gesú, M. G., & González, M. F. (2020). The imposed online learning and teaching during COVID-19 times. In M. G. Di Gesú & M. F. González (Eds.), *Cultural views on online learning in higher education: A Seemingly Borderless Class* (Volume 13, pp. 189-201). Springer International Publishing. https://doi.org/10.1007/978-3-030-63157-4_11

Methodology/type of study conducted: Authors collected different kind of resources such as newspaper articles, emails, and procedures, and gathered feedback from students and teachers who participated in meetings and classes. No further details were given about the methodology or analysis.

Participant type: Higher education, university (described as "colleagues", also mentioning "teachers" and "students")

Discipline: Not mentioned

Country: Various

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: This article gives a summary of resources gathered. These confirm the general findings. The pandemic was disruptive, teachers and students experienced fear, anxiety and all kinds of problems trying to provide education and learn. But they also found solutions. Authors are of the opinion that the *culture of presence* is essential for universities. This culture is interrupted due to the pandemic. Main conclusion of the paper,, is: "The pervading culture of the presence has been suspended and even the traditional delivery of online learning has been recreated. A new online lecturer/ student is emerging." (p. 1)

5

Citation details: Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online learning and emergency remote teaching: opportunities and challenges in emergency situations. *Societies, 10*(4), Article 86. https://doi.org/10.3390/soc10040086

Methodology/type of study conducted: Qualitative study, use of a forum to discuss challenges, followed by analysis of secondary sources (web, legislation, statistics) about Italy

Participant type: Researchers, teachers/professors, organisations/institutes

Discipline: Asked people with expertise in ICT, social sciences and education

Country: European countries and Lebanon

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: Pandemic also provide opportunities for online education. Challenges encountered could result in innovation in education, new pedagogies, technologies, etc. These should take an holistic approach. Challenges encountered also again highlight the inequalities between students. *Technological Challenges*: lack of Internet connectivity and electronic devices, insufficient bandwidth, not only for disadvantaged families, but also middle-class families with multiple children, or parents who have to work (at home). Using resources without creators' permission, certification and proper supervision were emphasised. *Pedagogical Challenges*: Pedagogical patterns must be different in virtual classrooms. In the virtual classroom, the educator is more like a moderator and consultant, and lessons cannot be arranged as in a physical classroom. Therefore, learning, especially guidance and feedback, should be given in a different way increasing the technological skills of all the actors involved. Free content not always usable building a sense of community between learners and teachers and producing interactive and engaging lessons. *Social Challenges* loss of human interaction between teachers and students as well as among students: students with special needs

6

Citation details: Khan, M. A. (2021). COVID-19's impact on higher education: A rapid review of early reactive literature. *Education Sciences, 11*(8), Article 421. https://doi.org/10.3390/educsci11080421

Methodology/type of study conducted: Rapid review of peer-reviewed literature published from 1 March 2020 to 10 July 2020

Participant type: Higher education, university education, college education, school education

Discipline: Various

Country: Various

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic:

The author performed a rapid review of literature and 8categorized findings in five categories: digital learning, e-learning challenges, assessing the digital transition, the psychological impact of covid and the creation of collaborative cultures. For each of the categories some examples are provided

Digital learning:

- Several studies showed a positive influence in that technical skills of staff improved, educational systems were restructured, better opportunities to provide feedback to students and a progress in using ICT and student digital competences
- Other studies showed a negative impact: staff and students had to migrate in very short time, just one option for learning; lack of contact/interaction poor teaching results; unfair access to tools, resources; concerns over efficacy and viability of institutions

E-learning challenges

- Change management challenges, e-learning system technical issues, financial issues, technology factors, e-learning quality system factors, cultural factors, self-efficiency elements, and trust factors having to learn using technology in very short term
- Negative: time constraints, changes in assessment, and consequences for student involvement and relationships
- Positive: possibility of developing new resources and fostering academic collaboration
- Impact on the student body and on student ability to deal with online learning; increased disparity impoverished populations
- Inability to use online learning systems

Publications present findings and recommendations on pedagogical, methodological, and tactical aspects.

- From pedagogical aspect it is important to adopt strategies for designing online courses that make building relationships between educators and learners more effective, whilst continuing to meet the goals of the curriculum
- From methodological aspect it is important to identify technical difficulties and provide solutions
- Tactical aspects refer to readiness to adapt to change, institutional policies and clear expectations

Psychological impact of COVID-19

- Mental health issues for staff and students
- Changing pedagogical roles, acting as mentor, learning designer
- Additional challenges in other areas of academic life, particularly in terms of the academic labour market, and the impact on the pattern of student recruitment, not to mention the local economies
- Pandemic called for a complete change in educational delivery and assessment

More attention needed for

- Create a community for academics
- Online collaborative learning for students
- Development of new and better technological resources
- Sustainable student support
- Right to be educated

7

Citation details: van der Spoel, I., Noroozi, O., Schuurink, E., & van Ginkel, S. (2020). Teachers' online teaching expectations and experiences during the Covid19-pandemic in the Netherlands. *European Journal of Teacher Education, 43*(4), 623-638. https://doi.org/10.1080/02619768.2020.1821185

Methodology/type of study conducted: Two surveys, content analysis, quantitative and qualitative data

Participant type: Dutch educators involved in teaching in 2019 200 participants have been involved (40% from higher education, and the rest from primary, secondary education, and vocational education)

Discipline: Education

Country: Netherlands

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: The aim of this study is to compare teachers' perception regarding their online teaching expectations before pandemic and experiences after a month of online teaching. Prior to the Covid19-Pandemic, 17% of the participants used technology in less than 10% of their lessons. The following online teaching expectations and experiences are tackled:

- Male teachers had more positive experiences than their expectations
- Teachers with average amount of experiences regarding the use of ICT tools prior to remote teaching had more positive experiences
- More aware of the possibilities of technology
- Stimulate creativity
- Digitalisations stimulate innovation
- Negative aspects: interaction, monitoring students, lack of required resources
- Teacher training programmes should be on facilitating interaction, monitoring students, and the difference in methodology and pedagogy between online and offline teaching; added value of the use of ICT, such as flexibility, time efficiency, differentiation, and the opportunity to monitor students' learning processes online; include (formative) testing and implementation and activation of feedback processes
- Optimise the design of these programmes regarding group composition and form of the training; collaboration and interaction across different sectors; more personalised and flexible training

8

Citation details: Aristeidou, M., & Cross, S. (2021). Disrupted distance learning: The impact of covid-19 on study habits of distance learning university students. Open Learning: *The Journal of Open, Distance and e-Learning*, 36(3), 263-282. https://doi.org/10.1080/02680513.2021.1973400

Methodology/type of study conducted: survey

Participant type: Undergraduate students of British Open University

Discipline: Online Education: undergraduates curriculum design panel and university-wide sample

Country: UK

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: This study looked at the effect of the pandemic on OUUK students who are already fully familiar with online education as student of an open university. Nevertheless, OUUK had to make several changes, like cancelling assessment and physical events. Many students experienced negative effects of the pandemic, had problems managing their workload and faced difficulties due to decreased interaction. The workload and reduction in interaction are predictors of student activities. Socio-economic factors predicted a negative impact on assessment. Personal circumstances such as employment had a negative impact on learning activities, while family circumstances, personal health issues impacted more on assessment activities. Low interaction with teachers and tutors impacted learning activities. Starting students (introductory level) were less likely to engage in assessment activities.

9

Citation details: Zawacki-Richter O. The current state and impact of Covid-19 on digital higher education in Germany. *Hum Behav Emerg Technol*. 2020 Dec 3:10.1002/hbe2.238. doi: 10.1002/hbe2.238. Epub ahead of print. PMID: 33363276; PMCID: PMC7753568.

Methodology/type of study conducted: Theoretical article

Participant type: Academic students

Discipline: Education

Country: Germany

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: The present article reports on effects of the Covid-19 pandemic on teaching and learning at universities in Germany. It examines the question of whether the current practice of Emergency Remote Teaching in the online term 2020 will lead to an acceleration of the digitalization of teaching and learning, and on what we can build upon in this development. While the acceptance of e-learning tools was slightly declining before the Covid-19 outbreak, it is to be assumed that the demand for digital offers will rather increase. Despite some reluctant reactions, it can be assumed that the current situation will have a positive effect on digital innovations in university teaching in Germany due to the pressure of the crisis, the great commitment of many teachers, and raised expectations. Whether there will be a fundamental innovation or change of university teaching triggered by the Covid-19 outbreak, seems questionable. Representative studies on the practice of Emergency Remote Teaching are not available for Germany: "It seems that we probably will not have this data in the near future, because planned or approved projects on the topic do not seem to be in sight". Based on the mixed situation described in the paper, it would be tempted to predict that the current situation will provide a certain boost to the development of digital higher education in Germany.

10

Citation details: Rizun M, Strzelecki A. Students' Acceptance of the COVID-19 Impact on Shifting Higher Education to Distance Learning in Poland. *Int J Environ Res Public Health*. 2020 Sep 5;17(18):6468. Doi: 10.3390/ijerph17186468. PMID: 32899478; PMCID: PMC7558862

Methodology/type of study conducted: Quantitative research by means of an online survey to obtain data from 1692 Polish undergraduate and graduate students in both full- and part-time study. The study tested and used the adapted General Extended Technology Acceptance Model for E-Learning (GETAMEL) in the context of coronavirus pandemic.

Participant type: Undergraduate and graduate students (n= 1692)

Discipline: Education

Country: Poland

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: This paper is dedicated to the higher education institutions shifting towards distance learning processes due to the global pandemic situation caused by COVID-19 in 2020. The paper covers the pandemic situation in Poland generally, analyzing governmental ordinances and tracking the gradual extension of restrictions for educational institutions. The purpose of the study is to investigate the influence of Experience, Enjoyment, Computer Anxiety, and Self-Efficacy on students' acceptance of shifting education to distance learning. Results showed that the best predictor of student's acceptance of shifting education to distance learning is Enjoyment, followed by Self-Efficacy. Both Perceived Ease of Use and Perceived Usefulness predict student's Attitude Towards Using and Intention to Use the distance learning. The findings improve understanding regarding the acceptance of distance learning and this work is therefore of particular interest to teachers and practitioners of education. It was found out that students have a medium feeling that distance learning has been enhancing their effectiveness and productivity; their self-efficacy with distance learning is also medium; students consider distance learning IT tools to be very intuitive, and they are generally comfortable with using computers and the internet; they plan to use distance learning often during the semester. However, despite the positive opinions about distance education, the students would like to go back to traditional education.

11

Citation details: Noori AQ. The impact of COVID-19 pandemic on students' learning in higher education in Afghanistan. *Heliyon.* 2021 Oct;7(10):e08113. Doi: 10.1016/j.heliyon.2021.e08113. Epub 2021 Oct 4. PMID: 34664032; PMCID: PMC8516193.

Methodology/type of study conducted: The study has employed a mixed method research design to collect both quantitative (numerical) and qualitative (descriptive) data. Data were collected using an online survey questionnaire and a semi-structured interview. The researcher first collected quantitative data and then the qualitative data.

Participant type: higher education students (n= 592)

Discipline: Education

Country: Afghanistan

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: The study aimed to find out the impact of the COVID-19 pandemic on students' learning in higher education in Afghanistan. It also attempted to explore whether students' demographic variables such as gender, class, and age had any significant influence on their responses. It will address the following research questions: What is the impact of COVID-19 pandemic on students' learning in higher education? Do the participants' demographic variables, i.e., gender, class and age have a significant impact on their responses? Is there any relationship between students' perception of teaching and learning and the impact of COVID-19 pandemic on students'

learning? The finding of the study revealed that the majority of students have not experienced constant and effective online learning and teaching during the COVID-19 pandemic because they were facing lack of enough facilities and resources. These limitations have hindered students' engagement in learning in higher education. The study found that the majority of the respondents indicated that they have not experienced constant online teaching and learning during the COVID-19 pandemic in Takhar University, Afghanistan. It also revealed that almost all of the respondents agreed that the COVID-19 pandemic has negatively affected their learning and they felt that they did not study for years. Moreover, the results of data analysis showed that there was statistically no significant difference in the responses of the students by their gender. However, they revealed that there were statistically significant differences in students' responses by their class and age. In addition, the finding of the study exposed that there was a statistically significant relationship between teaching and learning and the impact of COVID-19 pandemic on students' learning in higher education of Afghanistan.

12

Citation details: Oliveira G, Grenha Teixeira J, Torres A, Morais C. An exploratory study on the emergency remote education experience of higher education students and teachers during the COVID-19 pandemic. *Br J Educ Technol*. 2021 May 18:10.1111/bjet.13112. doi: 10.1111/bjet.13112. Epub ahead of print. PMID: 34219758; PMCID: PMC8237053.

Methodology/type of study conducted: Data were collected following a qualitative research design. To understand how the learning was mediated by ICT tools and how students and academic teachers experienced this extraordinary learning context, a qualitative study based on semi-structured in-depth interviews was conducted. 30 interviews (20 students and 10 teachers) were carried out and data were obtained and analyzed following a thematic analysis approach.

Participant type: academic teachers and students

Discipline: Education

Country: Portugal and Brazil

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic The study aims to understand how the learning was mediated by technology during the early stages of the pandemic and how students and teachers experienced this sudden change. The paper identifies and characterizes the educational process, the technological tools used in this new educational setting and personal adaptation of higher education students and teachers during these unprecedented times. The results show the following: an increase in teacher–student interaction (out- side classes), new opportunities and content development; difficulties in control assessment fraud, constraints in attaining the desired learning outcomes and lack of training; resilience of students to adapt and adopt the new technologies, despite the negative personal experience lived in terms of productivity, motivation, workload and mental health. Results provide evidence on the adoption of remote education technologies due to the pandemic with impacts on the education process, ICT platforms usage and personal adaptation. Implications for practice and/or policy. The paper makes

evidence-based recommendations on how higher education institutions can leverage this experience to prepare for future disruptions and in- crease the use of ICT tools in their regular learning environment

Covid-19 impact in high education and online education strategies

This section shows literature review related to the progresses, consequences, good practices, and impact of COVID-19 in high education. Particular attention on the strategies used to face the main challenges, as well as the tools and tips suggested by experts from online learning are tackled.

10 articles have been collected for this section, mostly of them written in English, and one in Spanish. The studies include both literature review article, research studies carried out using mainly qualitative methodology (by means of autoethnography, observation, survey, and interviews), reports, and good practices. As the previous section, most of the texts include different European countries at the same time, but there are some exceptions: studies carried out in UK, Romania, Spain, and Netherland. The main target are higher education professors and students.

Literature review: impact and solution strategies

1

Citation details: Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., Koole, M. (2020), Online University Teaching During and After the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity, Postdigital Science and Education 2 (3).

Methodology/type of study conducted: Exploratory study with 4 expert interviews. Experts has been selected following these criteria: (1) more than 1000 citations on Google Scholar, with online teaching and learning innovation forming a major part of their research; (2) more than a decade of working as an online teacher; (3) experience with different national education systems.

Participant type: Experts in online learning

Discipline: Education

Country: No specific country, experts where from Switzerland, Australia, Spain and Canada

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: Three main topics have been selected in order to improve the online learning expertise of teachers without previous experience. First topic is learning design. A careful design of activities is needed, this means taking into consideration a mix of design approaches (synchronous, asynchronous, online, offline), accurately describing them and selecting the ones with adequate level of difficulty for students' capabilities and expectations. Second topis is teacher presence, intends as (1) cognitive presence, focused on how teachers take into consideration students' preparedness to participate in the online learning experience, (2) social presence, referred to social

communication channels and encouragement of interaction, and (3) facilitatory presence, embraced teachers' facilitatory discourse. Third topic is assessment. Experts suggest to make self-regulation a part of the assessment, for example, through self-reflections or portfolios, as well as propose self-paced, asynchronous activities. Both approaches shift the focus onto students as responsible for their own learning, which is important also for avoiding teachers' burnout.

2

Citation details: Koulaxi, A.M., Kong, Jessica (2022), Re-thinking virtual writing retreats in the Covid-19 higher education environment, Journal of Applied Learning & Teaching 5 (1)

Methodology/type of study conducted: Qualitative methodology, using autoethnography, observation and participants' qualitative feedback after 44 writing retreats on Zoom for a total of 352 hours.

Participant type: Master's full-time students and Graduate Teaching Assistants from the London School of Economics and Political Science (UK).

Discipline: Education

Country: UK, but students came from several countries

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: Writing retreats sessions are a good strategy to foster writing productivity, during the pandemic the virtual version of these sessions were tasted with good results. After 44 zoom writing retreats sessions from 9.30 (am) to 5.00 pm (with a break in the middle) with a repetitive structure, working in a mute (with or without camara) and short breaks, students felt quite satisfied in terms of community building. In particular, participants highlighted that during the retreats were able to communicate with others sharing the same social identity about their academic concerns, with the feeling of being recreating a library in a virtual mode, i.e. building a space that force concentration and motivation. Moreover, these virtual spaces helped students to combat isolation they were experimenting during the lockdown, as well as maintain productivity in a contest of crisis. The interest part of this tool is that, even though its virtual version has been forced by the pandemic situation, it could be included in context of blended or online education.

3

Citation details: Watermeyer, R., Crick, T., Knight, C., & Goodall, J. (2021). COVID-19 and digital disruption in UK universities: afflictions and affordances of emergency online migration. *Higher Education, 81*(3), 623-641. https://doi.org/10.1007/s10734-020-00561-y

Methodology/type of study conducted: survey of n = 1148 academics working in universities in the United Kingdom (UK) and representing all the major disciplines and career hierarchy

Participant type: Academics, those who worked in an higher education (university) setting

Discipline: various

Country: UK

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: Impact is larger than just the teaching and learning process. There are financial and economic consequences as well as changes and consequences for student recruitment, sustainability, HRM, job security, etc. Impact on workload: will increase over the next 3 years. Respondents feared for continuity of higher education, expecting that HE that already have invested in online education to benefit more and create competition. Feared for sustainability of universities, student recruitment to be impacted, sustainability impacted due to high tuition fees.

4

Citation details: Daniel, S. J. (2021). After COVID-19: Can quality teaching be sustained? *Change: The Magazine of Higher Learning, 53*(2), 6-10. https://doi.org/10.1080/00091383.2021.1883970

Methodology/type of study conducted: Not applicable

Participant type: Not applicable

Discipline: not applicable, general higher education

Country: not applicable

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: John Daniel has a long experience with online education and drawing on findings during pandemic concludes that it will be demanding for higher education to design their education after the pandemic. Unlike schools, higher education applies varying pedagogical models and didactics and some already employ some form of digital education. Higher education recruit students nationally if not internationally and it is unsure whether the drop in international enrollments will be countered. A common quality framework should be applied to education – regardless of delivery mode. Higher education now needs to consider how to continue and cannot rely on their remote teaching strategies. Campus universities and open universities need to collaborate. Student's level of study need to be taken into account. A holistic approach should be taken into account.

5

Citation details: Whitelock, D., Herodotou, C., Cross, S., & Scanlon, E. (2021). Open voices on COVID-19: Covid challenges and opportunities driving the research agenda. *Open Learning: The Journal of Open, Distance and e-Learning, 36*(3), 201-211. https://doi.org/10.1080/02680513.2021.1985445

Methodology/type of study conducted: Not applicable (is editorial)

Participant type: Students, teachers, institutions

Discipline: various, higher education

Country: various

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: Pandemic caused many challenges: teachers having to use approaches and teaching methods they are not familiar with, insufficient access to technology and tools, fear for diminished quality, negative effects on students' well-being, achievement, and future prospects. Despite the many challenges teachers and students faced, the pandemic offers opportunity for innovation of education and new educational approaches. Findings also indicate the need for further research in e.g. teacher professionalization, supporting students, student self-efficacy and issues like assessment, learning design, learning analytics and practical skills training that have been not addressed as well in literature on the effect of the pandemic.

6

Citation details: O'Dea, X., & Stern, J. (2022). Virtually the same?: Online higher education in the post covid-19 era. *British Journal of Educational Technology, 53*(3), 437-442. https://doi.org/10.1111/bjet.13211

Methodology/type of study conducted: Editorial

Participant type: staff and students

Discipline: various

Country: Asia, Canada, USA, UK

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: On the one hand the pandemic made clear the technical and pedagogical challenges and difficulties and issues related to wellbeing. On the other hand the pandemic offered opportunity for innovation of education and pedagogies. Despite the long experience with these forms on online teaching and learning, it seems that this did not result in sustainable changes. The current literature on the impact of Covid tend to focus on negative aspects and longer term research is needed to evaluate the effectiveness of online learning and teaching. More information is needed on the effect at meso and macro levels.

7

Citation details: Dumulescu D, Pop-Păcurar I, Necula CV. Learning Design for Future Higher Education - Insights From the Time of COVID-19. *Front Psychol*. 2021 Jul 15;12:647948. doi: 10.3389/fpsyg.2021.647948. PMID: 34539481; PMCID: PMC8448099.

Methodology/type of study conducted: Dissertation

Participant type: Teachers, learning designer

Discipline: Education

Country: Romania

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: The aim of the paper is to formulate specific learning design recommendations for developing effective didactic strategies and addressing the current worldwide critical issue: dealing with digitization of higher education in the immediate future. The authors provide some expert insights based on empirical observations on teaching and assessment practices connected with psychology models applied in education. They propose a model of university classes aimed at bringing together their experience as teachers of psychology and didactics with evidence-based cognitive-educational theories and practices. The challenges which the COVID-19 pandemic brought to academia triggered the need to find answers to many existing reflective and research questions concerning the specificity of online education. The integrated work-model the authors designed as an example of online learning method is based on the complex dynamic and constant interaction between cognitive, emotional-motivational, and social aspects of learning, which are responsible for academic performance, especially in online settings and pandemic stressful context. The effectiveness of university teaching in the post-digital era is strongly connected with the ability to create cognitive-transferable learning experiences, emotionally safe learning environments, while promoting an active autonomy-focused approach for self-regulated learning.

8

Citation details: Guitert, M. (2020). La colaboración en red para docentes y para estudiantes in Decálogo para la mejora de la docencia online (Sangrà et al.). Barcelona: UOC.

Methodology/type of study conducted: Theoretical article

Participant type: /

Discipline: Online Education

Country: Spain

Language: Spanish

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: The objective of the article is to offer some guidelines to introduce the networking collaborative learning in an efficient way. The text is part of a book written by experts from UOC which is specialize in online learning. Collaborative learning is a process of interaction and reciprocity between students, which facilitates the joint construction of a common goal based on individual work. This approach can be used also in the online environment, bearing in mind that technology can be useful, but it should be used correctly. In this regard, some issues must be taken into account. Firstly, what has been called culture of collaboration: each member must have in mind that their work is subjected to the common goal. Secondly, organization and planification, i.e. the importance of

defining roles, define the rules of operation, and planning the processes. Thirdly, communication must be periodic, concise, clear and appropriate to the standards of Internet attitude (netiquette). Finally, assessment: each member of the student team must evaluate their own work and the one of the rest of the members of the team.

9

Citation details: EADTU (several authors) (2020) The Envisioning Report for Empowering Universities. (pp. Pages). Maastricht, NL: EADTU. Retrieved from https://tinyurl.com/empower-report-

Methodology/type of study conducted: Theoretical report

Participant type: the target is higher education professionals

Discipline: Education

Country: Netherlands

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: The Envisioning report is a selection of good practices and studies done by the experts connected to EADTU's EMPOWER programme. The report tackles the importance of designing learning that requires institutional strategies and frameworks in order to implement innovative methods in teaching and learning. Moreover, a strong motivation of a professional teaching staff and continuous commitment from the top management of a higher education institution is also needed. Several practices carried out in European higher institutions are shared in this report in order to inspire experts and professor to innovate higher education.

10

Citation details: European Training Foundation (2020). Webinar Series on Best Practice in Distance Learning https://www.etf.europa.eu/en/news-and-events/news/webinar-series-best-practice-distance-learning, https://openspace.etf.europa.eu/, https://www.youtube.com/user/etfeuropa

Methodology/type of study conducted: Practices

Participant type: The target is higher education professionals

Discipline: Education

Country: Europe

Language: English

Brief description of the aim of the publication as well as benefits, barriers, and needs of the online education emerged during the first phase of the pandemic: To help practitioners move from a crisis response to a more systematic approach, the European Training Foundation (ETF) has scheduled a series

of webinars to connect and support practitioners and policy makers in ETF partner countries. The events were multilingual and included presentations by representatives of ministries, training agencies and schools from different countries, including ETF partner countries and European Union Member States.

Conclusion

Covid-19 and high education: main challenges

The main challenges experimented during the first phase of pandemic from the institutions used to face-to-face learning where related with social and technological issues, as well as the inequality between students.

- SOCIAL CHALLENGES: COMMUNITY BELONGING AND CULTURE PRESENCE

The absence of face-to-face contact was one of the main issues of the emergency remote teaching during the first phase of pandemic. Students and academic professors highlighted the importance of belonging to a community in order to work better, interchange ideas, being proactive and creative. In some cases this was not possible in online learning environment, where people experimented feeling of loneliness and lack of motivation. However, in a moment of social distance, moving to online learning was also a way to establish and maintain virtual relationships and this issue helped students to avoid the feeling of complete abandonment. Several studies highlighted also situations of burnout and workload as factors which contributed to generate anxiety and pressure to provide education or to delivery tasks. As positive elements of online learning not having to commute and increasing of flexibility have been highlighted.

- TECHNOLOGY AND DIGITALIZATION CHALLENGES

Several issues emerged in relation with technology and digitalization challenges. Firstly, not each university was well prepared for a complete online teaching and learning transformation in terms of infrastructure and technology, not all the professors had teaching capacities for virtual education, and some of them found quite difficult to adapt the pedagogical activities to the virtual environment. In this regard, personal characteristics of academics teachers play a crucial role in adopting technology in education. One study reported also gender differences relating to teachers' perceptions on the use of ICT; according to Van der Spoel (2020) male teachers had more positive experiences than their expectations, compared to female teachers. Second, in many cases students needed more support and clear instructions, and experimented technical problems. Due to restrictions and limitations associated with each discipline, it was not always possible to conduct assessments entirely on virtual online platforms and controlling plagiarism and fraud became challenging. In this sense, the pandemic called for a complete change in educational delivery and assessment. Finally, students highlighted the difficulty to maintain attention in online environment to do all the activities requested, as well as difficulty to have self-organizing capabilities. The results of Rizun's study (2020) showed that the best predictor of student's acceptance of shifting education to distance learning is enjoyment, followed by self-efficacy. Positive elements related to the use of technology have also been highlighted. In particular, some authors tackled how technology helped to provide better opportunities, by developing new resources, fostering academic

collaboration, and stimulate innovation. However, a global change in terms of e-learning system and change management must be planned.

- MALAISE AND INEQUALITY BETWEEN STUDENTS

Personal and family circumstances and health issues related to the lockdown and the pandemic had a negative impact also on education. In this sense, families with multiple children, or parents who are engaged in smart working had difficulties to carry out learning activities and the pandemic helped to push forward inequality between students. Impact on the student body and on student ability to deal with online learning increased disparity on the impoverished populations. In this sense, universities must guarantee that students from less privileged socioeconomic backgrounds are not disadvantaged. These issues affected also students and professors enrolled in online institutions which were used to work virtually, but who also observed a decrease of interactions which impacted learning, engagement and assessment activities.

Covid-19 and high education: learning from online education experts

The impact of COVID-19 on higher education is undeniable as the pandemic shocked societies worldwide. According to a survey (Watermeyer et al., 2020) carried out in UK and involving 1148 academics from several disciplines, the majority of respondents reported "affliction" in relation with their role as educators due to the increasing of workload, the diminishing of communitarian values, the technicization of their work, and the disembodied and depersonalized purveyor of education. Moreover, the impact of pandemic is not only related to the teaching and learning project; challenges for student recruitment, market sustainability, academic labour-market, and local economies have been also highlighted. In this context, several institutions decided to accelerate the process of online courses implementation as Covid-19 obliged them to rethink about the idea of hybrid or online education and innovate its system. In this regard, some progresses have also been introduced due to the pandemic situation, some institutions saw the opportunity to put into practice the implementation of the virtual environment, and online education experts are crucial to include this approach in a more efficient way. With this aim, collaboration between experts in online learning and professionals (academic professors, technical experts, institutions' leaders) who want to introduce online learning in their institutions is needed. According to Daniel "think of distance education as a student sitting on a three-legged stool. One leg is learning materials; a second is student support; the third is organization and logistics. If any one of these legs is weak, the student may fall" (2021: 10). A significant challenge for academic professors have been their lack of pedagogical content knowledge needed for teaching online (Rapanta et al., 2020), as transforming all existing course modules to an online mode requires well-planned, highly structured lesson plans and teaching materials (Maddumapatabandi, 2020). As mentioned previously, online learning it is not just a replication of what has been planned for the face-to-face sessions. Cognitive, motivational, emotional and social components must all be considered while designing an online course (Dumulescu, 2021).

Zawacki-Richter (2021) emphasizes two issues which are critical for success: 1) the existence of a coherent support system for students along the student lifecycle and 2) the existence of a systematic and professional instructional design process with an appropriate technical infrastructure and a faculty support system. According to this author, support must be understood both in the broad sense (e.g., student counselling, library services) and in the narrow sense in relation with the learning process (e.g., in online tutorials). Taking this into account, academic professors cannot have the same role in online and

face-to-face education. In online education they should be considered also as facilitator who takes students into consideration and encourage interaction. A mix of design approaches (synchronous and asynchronous, online and offline) can help to build up an online community of learning. Good practices from online learning higher institutions concerns both concrete open educational resources and practices (open education in European academic library; building an OER-OEP system, fighting against the digital divide) learning analytics and artificial intelligence, continuing education, and curriculum and course design (open box modules, co-design educational content, gamification design process) are collected in "the Envisioning Report for Empowering Universities" (EADTU-2020). Others tips provided from experts concerns using self-regulation during the assessment so as to help students to became responsible for their own learning, and apply several pedagogical models and didactics with the aim of implement an holistic approach.

In addition, It is necessary to take into account that the social dimension of learning, namely, the collaboration between peers on problem-solving, project development or just knowledge building through good discussions, requires time and training. Some concrete tool usually used face-to-face can be shifted in online modality, as the example of the writing retreats session who helped students to face the lack of motivation and self-organization, or the networking collaborative learning approach tools (virtual debates, which can be carried out in a classroom group with a medium-low level of complexity, or digital projects promoted by a restricted group of students, which requires a high level of structuring and a complex culture of collaboration). However, several rules must be taken in mind in order to carry out an efficient collaboration from the establishment of the activity objective, through the planification and the communication, until the assessment. In this regard, network collaboration between professors helps to improve pedagogical practices, facilitate professional development and the social dimension, with the final aim to improve teaching digital competence.

Bibliography

(this part refers only to articles which are not included in the literature review)

Daniel, S. J. (2021). After COVID-19: Can quality teaching be sustained? *Change: The Magazine of Higher Learning, 53*(2), 6-10. https://doi.org/10.1080/00091383.2021.1883970

Harasim, L. (2020). Shift happens: online education as a new paradigm in learning. *The Internet and Higher Education*, 3 (1-2), pp. 41-61.

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020, March 27). The difference between emergency remote teaching and online learning. Educause Review.https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

Larreamendy-Joerns J, Leinhardt G. Going the Distance With Online Education. *Review of Educational Research*. 2006;76(4):567-605. doi:10.3102/00346543076004567

Sangrà, A., Badi, A., Cabrera, N., Espasa, A., Fernández-Ferrer, M., Guàrdia, L., Guasch, T., Guitert, M., Maina, M., Raffaghelli, J. E., Romero, M., & Romeu, T. (2020). *Decálogo para la mejora de la docencia online*. Barcelona:UOC.

License used: This work is licensed under a Creative Commons Attribution Share Alike 4.0 International License: https://creativecommons.org/licenses/by-sa/4.0/

With this license, you are free to **share** copy and redistribute the material in any medium or format. You can also **adapt** *r*emix, transform and build upon the material for any purpose, even commercially**.**

But only Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

ShareAlike — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.

Disclaimer: The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.