

ACCELERATED VIRTUALIZATION OF HIGHER EDUCATION IN TIMES OF PANDEMIC: THE CASE OF AN ECUADORIAN UNIVERSITY

Adriana Ornellas¹, & Miguel Herrera Pavo²

¹ Faculty of Psychology and Education Sciences, Universitat Oberta de Catalunya (Spain)

² Faculty of Education, Universidad Andina Simón Bolívar (Ecuador)

Abstract

The purpose of the paper is to present and discuss the impact, challenges, and opportunities that the COVID-19 pandemic and related lockdowns have caused to the teaching and learning model of an Ecuadorian Higher Education Institution: the Universidad Andina Simón Bolívar (UASB). The discussion will be led from the perspective of various educational actors and different levels of decision-making.

At the beginning of 2020, the COVID-19 pandemic that confined a large part of the world's population to their homes and paralyzed activity in practically all areas of human action, forced a rethinking of education at all levels. In addition, the massive closure of schools and universities led to the deployment of distance learning modalities through a variety of formats and online platforms, replacing traditional educational processes.

Experts have called *emergency remote teaching* for this sudden and unforeseen shift of face-to-face classes to virtual modalities. This name comes to highlight that the solutions adopted in a very short period, in many cases, could not be based on well-founded models of e-learning and a well-planned learning process. Still, rather traditional practices were transferred from face-to-face education to online platforms, maintaining their conventional forms in terms of methodologies, teacher and student roles, typologies of activities, evaluation models, and so on.

The work presents the case study of the successful transformation process of a Higher Education institution based on a face-to-face model to a remote model to continue providing training to its students despite the disruption caused by the confinement derived from the health crisis of COVID-19.

The analysis of the data collected through a variety of methods that included interviews with faculty, the analysis of institutional documents, and a student survey highlights the complexity and adequacy of the strategies implemented by the educational community to make the transition from an emergency remote teaching to a quality online learning ecosystem.

Keywords: COVID-19 pandemic, higher education, emergency remote teaching, effective online learning.

1. Introduction

The COVID-19 pandemic has shaken the foundations of education around the world. Educational institutions at all levels have been compelled to adopt emergency solutions, migrating from face-to-face settings to online platforms, which the experts call *emergency remote teaching* (Hodges, Moore, Lockee, Trust and Bond, 2020). *Emergency*, because it arises as an immediate response to an unexpected lockdown situation, with a remedial character. *Remote*, as opposed to face-to-face, although not necessarily identifiable with e-learning. *Teaching*, as it focuses primarily on instruction rather than learning. In this sense, in contrast to e-learning experiences designed from the ground up as a robust online educational ecosystem, emergency remote teaching is a provisional shift of traditional education to an alternate delivery mode to continue providing access to instruction by transferring face-to-face practices to online settings. It is essential to know how to differentiate these two concepts not to continue perpetuating the myth that online learning has lower quality than face-to-face education when unsatisfactory results are found when assessing the implemented experiences.

The research generated on online and distance learning that has been carried out for years has shown that the quality and effectiveness of online learning results from a systematic process of design, planning, and development, grounded in well-founded theories, models, and standards (Hodges & others,

2020; Means, Toyama, Murphy, and Bakia, 2013). Swan (2003) suggests that effective online learning in higher education should provide:

- Clear goals and expectations for learners.
- Multiple representations of course content.
- Frequent opportunities for active learning.
- Frequent and constructive feedback.
- Flexibility and choice in satisfying course objectives.
- Instructor guidance and support.

In turn, Means, Bakia, and Murphy (2014) highlights the complexity of the design and decision-making process in online learning through nine dimensions: modality, pacing, student-instructor ratio, pedagogy, instructor role online, student role online, online communication synchrony, the role of online assessments, and source of feedback.

This paper takes some of these aspects and dimensions as a reference to analyze the process followed by the Universidad Andina Simón Bolívar (UASB), a fully face-to-face university when the pandemic broke out, to implement a quality and effective online learning ecosystem, passing through an emergency remote teaching.

2. Objectives

The specific objectives of the study were:

- To analyze the emergency remote teaching solutions implemented in higher education due to the lockdown imposed by the COVID-19 pandemic.
- To describe the impact, challenges, and opportunities caused by the pandemic in the online learning strategies of a higher education institution from the perspective of various educational actors and different levels of decision-making.
- To assess the adequacy of the solutions implemented considering pedagogical and technological factors related to the quality and effectiveness of online learning in higher education.

3. Context

The UASB was established by the Andean Parliament in 1985 and is part of the Andean Integration System. In addition to its status as an autonomous academic institution, it enjoys the status of a public international law body. It has headquarters in the city of Sucre, national headquarters in Quito, local headquarters in La Paz and Santa Cruz, and offices in Bogotá and Lima.

The University conducts research, teaching, and services for the generation and transmission of scientific and technological knowledge. Its academic focus is postgraduate education, offering master's degrees, doctoral programs, and specialized studies diplomas. The University has the largest offer of postgraduate programs in Ecuador, especially international doctoral programs, with extensive international cooperation and exchange of professors and students from the Andean Subregion, Latin America, North America, and Europe.

The UASB Ecuador Headquarters (UASB-E), where this case study is situated, was founded in 1992. Currently, it is the center for advanced studies with the broadest range of scholarship programs and financial support in the country. Nine academic areas operate at the Ecuador Headquarters: Environment and sustainability, Cultural Studies, Law, History, Health, Education, Social and Global Studies, Communication, and Management. In addition, 14 postgraduate degrees, 27 professional master's degrees, 7 research master's degrees, 7 doctoral programs, and two postdoctoral programs are offered.

When the pandemic broke out, this offer of programs was fully face-to-face. Not even blended programs with some degree of virtualization existed.

Although the University already had a Virtual Education Management Department (UGEV), its activity had been limited to supporting the development of some sporadic MOOCs and assisting academic staff in the use of the virtual education environment that supported face-to-face activity as a repository of resources or in the development of specific activities.

Next, we will see that this offer has undergone important changes due to the COVID-19 pandemic.

4. Design

This study has been developed through a case study method. Three techniques were used to collect data: interviews with academic staff, institutional documentary analysis, a synchronous online focus group, and a student survey.

The objective of the interviews was to identify the opportunities and obstacles faced in the virtualization process of the university programs due to the need derived from the pandemic from the key actors' point of view in the decision-making process. Three key actors were interviewed: the General Academic Director of the University, the director of the Virtual Education Management Department, and the director of the Faculty of Education.

The synchronous online focus group that involved two professors and two students from the Faculty of Education helped to delve into various aspects of the lived experience of teaching and studying remotely, such as the skills they have had to develop, the advantages and disadvantages of virtual education, among others. The focus group was developed through a videoconference channel and recorded for later analysis.

The documentary analysis focused on the documents that set the guidelines and regulations for emergency remote teaching when the pandemic broke out and on the subsequent proposal of a pedagogical model for online learning in the new normality.

The questionnaire was applied to a sample of 166 students from three master's programs in the Faculty of Education. A total of 129 students (78% of the sample) voluntarily answered the questionnaire.

The following provides an analysis of some of the results achieved by applying the described methods.

5. Results

5.1. First moment: Emergency remote teaching

When the pandemic broke out in the 2020 academic year, the UASB-E had 1,295 students with whom the University undertakes to continue all educational activities remotely, according to the possibilities of each teacher, either using videoconference tools, virtual classrooms, email, telephone communications, or requesting the delivery of final papers. These remedial solutions involved a good number of decisions and actions related to technological infrastructure, training, and support for academic staff and students, administrative management, etc., in a very short time.

The director of the Virtual Education Management Department (UGEV) points out that most teachers had no experience in virtual teaching, nor had they previously used the virtual learning environment in their classes. In this sense, the first challenge was to address instrumental skills related to using the Moodle platform and other tools and programs necessary for virtual education. The second included the techno-pedagogical dimension of using the tools for teaching purposes. For example, those who chose to continue their classes synchronously were taught to use Zoom to make their presentations or keynote talks and divide the group creating small rooms to generate collaborative dynamics. At the same time, those who opted for an asynchronous model had to be taught the possibilities of communication and dynamization of the joint activity offered by Moodle.

The concern for the continuity of a model as similar as possible to the face-to-face model was evident, as well as the desire for a prompt return to face-to-face activities. This period was also characterized by the massive adoption of the synchronous model based on videoconferencing, although other models were also explored, including the asynchronous collaborative model. The academic community was clear on the idea that a shift was not being made to online education - since it is a complex process that involves specific instructional planning, the preparation of visual resources, and requires digital skills for teachers and students, among other fields - but to an emergence remote teaching.

The advance of the pandemic made the academic community aware that its activity would continue to be carried out virtually during the following academic year and that, therefore, it was necessary to launch actions to digitize the processes that would facilitate its operation as an online university. These actions include conceptualizing a techno-pedagogical ecosystem for online learning, as we will see next.

5.2. Second moment: A techno-pedagogical ecosystem for online learning

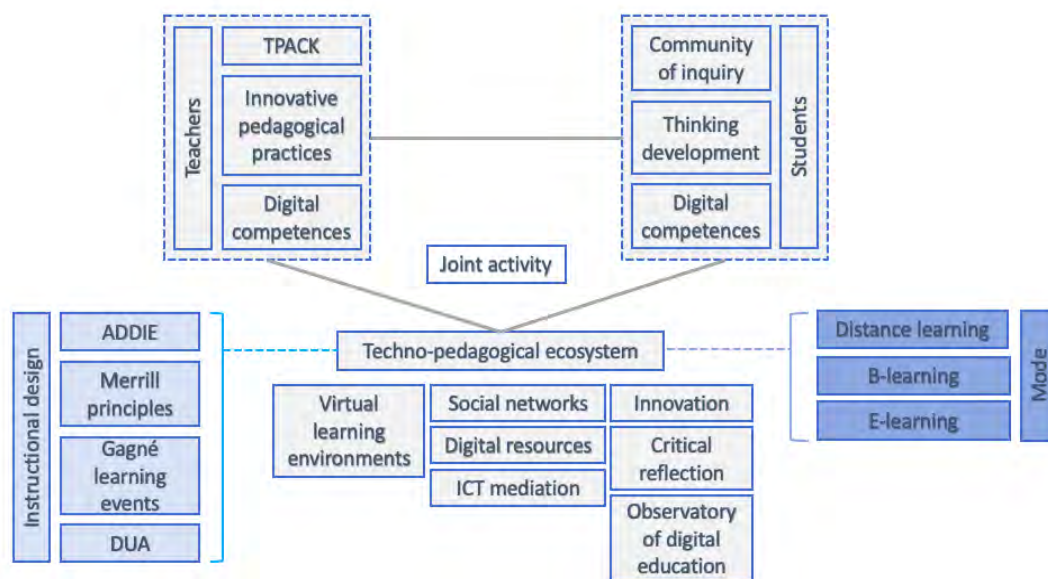
In the 2021 academic year, the number of students in the UASB-E had increased to 3,504. The virtual modality had allowed the participation of students from all the provinces of the country: 68% of the students who answered the questionnaire stated that they could not currently carry out their studies if they were taught fully face-to-face.

This period is marked by a fluid debate and collaboration between academic and management staff. According to the Faculty of Education Director, there was a great concern among the academic staff about the quality of the programs transferred to online environments. In his words, "*Traditionally, virtual education has been considered lower quality. We did not manage to define a single model for planning online teaching. Still, we managed to determine what our possibilities were, with the help of colleagues in the area who had expertise in virtual education*".

As a result of this institutional process of reflection, design and planning emerged *Andina Virtual*, a techno-pedagogical ecosystem for online education that aims to be a reference model in Ecuador and the Andean region. This ecosystem is built based on the following axes:

- A virtual education management unit that led a careful design, planning, and implementation process of the most appropriate model to respond to the University's mission in collaboration with the educational community.
- Creating a techno-pedagogical ecosystem of services, resources, networks, and digital learning environments that interact with each other to guarantee quality and inclusive education in diverse non-face-to-face modes, promoting a new ecology of learning.
- The collaborative instructional design of a specific syllabus for the subjects of the different programs to be taught in different non-face-to-face teaching modalities.
- The continuous training and personalized support for academic staff and students.
- A pedagogical model focused on defining clear goals and expectations for learners, student learning activity, collaborative and active learning, multiple representations of course content, and support and feedback.

Figure 1. The UASB's techno-pedagogical ecosystem. Source: UGEV.



6. Conclusions

When we close this paper, two years have passed since the pandemic broke into our lives to leave traces on an entire generation, many of them yet to be known. The academic offer of the UASB continues to be carried out in a virtual model due to the sanitary conditions that still affect many Latin American countries. When asked if they consider that online education has the same quality as face-to-face, 70% of the students surveyed said yes. Also, 91% affirm that they would again carry out online studies. These results show the enormous transformative potential of online education and endorse the adequacy of the transition to virtuality implemented by the UASB.

Regarding the main obstacles and difficulties that students have encountered when facing virtual education, the most recurrent answer is time management. The students expose the complexity of coordinating work, studies, and family obligations. They also emphasize that the virtual modality has increased the tasks they must carry out and the materials they must consult for it. Collaborative work is especially a concern for students who, coming from completely face-to-face experiences and with little digital competence, do not conceive of asynchronous collaboration and have difficulties coordinating synchronous meetings with classmates. The quality of the internet connection is also a major obstacle. Connections are unstable, and power outages sometimes occur, making it difficult to keep synchronous sessions. Despite this, the synchronous model continues to be the most attractive for many students, who miss interacting with the teacher, solving doubts in real-time, socializing with classmates, and joint reflection. The students also underline among the negative aspects of virtual education the lack of interaction with classmates, human warmth, not getting to know each other better, in short, the social and emotional dimension of face-to-face. Furthermore, the development of synchronous activities has also

caused boredom with the screens, reinforcing in some cases a romantic vision of face-to-face learning that, after two years, is distant. Thus, the students miss masterclasses, direct dialogue, and face-to-face accompaniment of the teacher, pointing out that in virtuality, for this reason, the objective of the learning activities is sometimes lost.

As for the positive aspects of studying in the virtual modality, the students highlight several, especially the flexibility. The flexibility allows them to live outside the city and still access a prestigious university. In addition, they can connect from anywhere to the virtual campus and synchronous class sessions, organize their time and follow their own learning pace. Furthermore, students point out they have acquired new skills such as virtual collaborative work, self-regulation, communication, time management, planning, and autonomous learning, which they would have never acquired in face-to-face education. These students, who are also teachers, highlight how they have learned the use of tools in their learning process that they have later been able to apply in their teaching. In conclusion, they have developed new ways of teaching and learning.

References

- Hodges, C., Moore, S., Locjee, B., Trust, T., and Bond, A. (2020). The difference between emergency remote teaching and online learning. *EDUCAUSE Review*. Retrieved February 27, 2022, from <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>.
- Means, B., Bakia, M. and Murphy, R. (2014). *Learning Online: What Research Tells Us About Whether, When, and How*. New York: Routledge.
- Means, B., Toyama, Y., Murphy, R., & Bakia, M. (2013). *The effectiveness of online and blended learning: A meta-analysis of the empirical literature*. *Teachers College Record*, 115(3).
- Swan, K. (2003). Learning effectiveness: What the research tells us. In J. Bourne & J. C. Moore (Eds.), *Elements of quality online education, practice, and direction* (13–45). Needham, MA: Sloan Center for Online Education.