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COVID 19 AND HIGHER EDUCATION: CHALLENGES AND POSSIBILITIES IN THE TRANSITION TO ONLINE EDUCATION IN LATIN AMERICA

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Abstract

A documentary review was carried out on the production and publication of research papers on the study of the variable Higher Education during COVID 19 and its Challenges in the Transition to

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Online Education. The purpose of this bibliometric analysis is to know the main characteristics of the volume of publications registered in the Scopus database during the period 2020 and January in Latin American countries in 2022, achieving the identification of 612 publications. The information provided by this platform was organized by means of tables and figures, categorizing the information by Year of Publication, Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics were described, the position of different authors regarding the proposed topic was referenced by means of a qualitative analysis. Among the main findings of this research, it is found that Brazil, with 217 publications, is the Latin American country with the highest production. The area of knowledge that made the greatest contribution to the construction of bibliographic material referring to the study of education in higher education in COVID 19 was social sciences with 251 published documents, and the type of publication that was most used during the aforementioned period was the journal article, which represents 75% of the total scientific production.

Keywords: higher education, online education, COVID 19.

1. Introduction

Since 2020, thanks to the health crisis declared by COVID 19, most interactions underwent changes, including the way of imparting knowledge in higher education, since there was an accelerated transition to online classes by restricting physical contact and limiting the social contact of a large number of people on the same campus, so it was not possible to teach in a classroom. Over the last few years, certain challenges have arisen when implementing this methodology in Latin America, such as technological illiteracy, limited access to digital tools, lack of connectivity, the lack of preparation of higher education institutions for distance education and the change in the quality of education.

Technological illiteracy is a common topic in many studies currently, because although this is called a technological era, teachers do not have a great knowledge of how to access platforms and digital tools and students, although born in this technological era, have a poor handling of technological platforms for education. For this reason, in order to implement online education, it is necessary to provide seminars to strengthen this educational model.

Latin America is one of the regions with the highest rates of poverty and inequality in the world, so there are several delays regarding connectivity and access to technological tools in vulnerable populations, which makes it more difficult to implement mediated education because they do not have access to the Internet or technological devices that allow them to enter classes. One of the biggest

problems when implementing online education in an accelerated way is the quality with which knowledge is imparted, since most universities were not prepared for this educational model, which can affect the quality of education by not having the necessary actions to ensure a good professional education that guarantees the integrity of the student. Umaña-Mata (2020) speaks of the suspension of the operation of educational centers and institutions when there was a moment of uncertainty about what was going to happen with the classes and what would be the changes in the so-called “new normality”, a suspension that affected the operation of the institutions by having to redirect their educational plans and adapt to the current situation.

Therefore, it is important to know, in terms of bibliographic resources, the current state of research on Higher Education during COVID 19 and its Challenges in the Transition to Online Education, Therefore, a bibliometric analysis of the scientific production registered in the Scopus database during the period 2020-2022 is proposed to answer the question: How has the production and publication of research papers related to the study of the variable Higher Education during COVID 19 and its Challenges in the Transition to Online Education been during the period 2020-2022?

2. General Objective

To analyze from a bibliometric and bibliographic perspective, the production of high impact research papers on the variable Higher Education during COVID 19 and its Challenges in the Transition to Online Education in Latin American higher education institutions during the period 2020 and January 2022.

3. Methodology

Quantitative analysis of the information provided by Scopus under a bibliometric approach on the scientific production concerning Higher Education during COVID 19 and its Challenges in the Transition to Online Education is carried out. Likewise, it is analyzed from a qualitative perspective, examples of some research papers published in the area of study mentioned above, from a bibliographic approach to describe the position of different authors on the proposed topic.

The search is performed through the tool provided by Scopus and the parameters referenced in Table 1 are established.

3.1 Methodological design

Table 1. *Methodological design.*

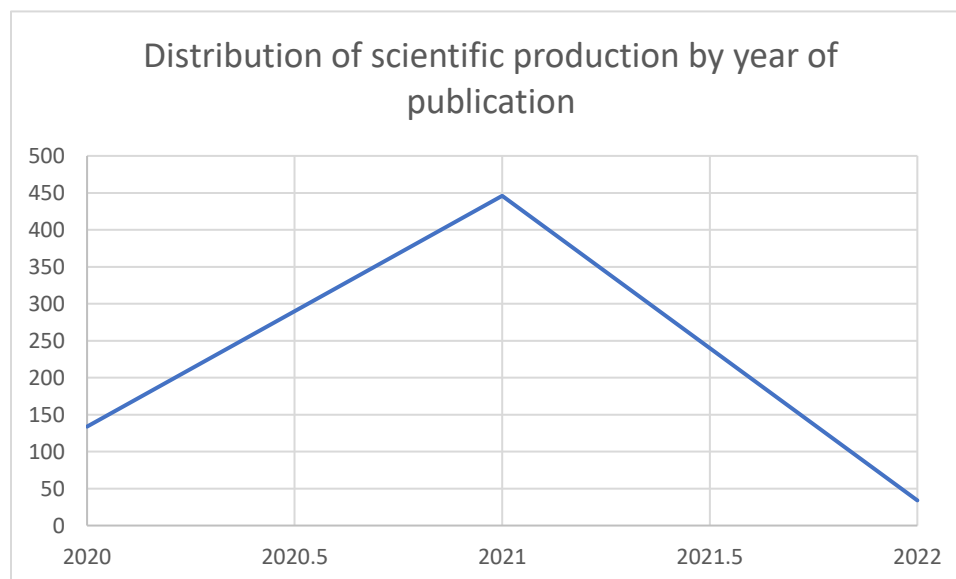
	PHASE	DESCRIPTION	CLASSIFICATION
PHASE 1	DATA COLLECTION	Data was collected using the Scopus web page search tool, through which a total of 612 publications were identified.	Published papers whose study variables are related to Higher Education during COVID 19 and its Challenges in the Transition to Online Education. Research papers published during the period 2020 and January 2022. Limited to Latin American countries. Without distinction of area of knowledge. Without distinction of type of publication.
PHASE 2	CONSTRUCTION OF ANALYSIS MATERIAL	The information identified in the previous phase is organized. The classification will be made by means of graphs, figures and tables based on data provided by Scopus.	Word Co-occurrence. Year of publication Country of origin of the publication. Area of knowledge. Type of publication
PHASE 3	DRAFTING OF CONCLUSIONS	After the analysis carried out in the	

there are socioeconomic factors, anxiety, economies and quality of life which determine the scope of these changes by affecting both physical and mental health, since as a result of this abrupt change there was an increase in the number of people affected by mental disorders and diseases, in addition to affecting the income of a large number of people in Latin America, which also affects access to higher education.

4.2 Distribution of scientific production by year of publication.

Figure 2 shows how the scientific production is distributed according to the year of publication, taking into account the period from 2015 to 2020.

Figure 2. *Distribution of scientific production by year of publication.*



Source: Own elaboration (2021); based on data provided by Scopus.

2021 is the year with the highest number of publications registered in relation to the variables under study with a total of 446 papers within which is the one entitled "*Learning beliefs, time on platform and academic performance during COVID-19 in STEM university students*" (Lobos et al., 2021). This paper analyzes the relationship between STEM students' learning beliefs at the beginning of ERT (T1) with the time dedicated to the task of their learning management systems (LMS) and their final academic performance taking into account the utility they give to educational platforms where The results show that students manifested mainly negative beliefs about learning opportunities during emergency remote education so it is concluded with the need to analyze the role of teachers in the implementation of online education.

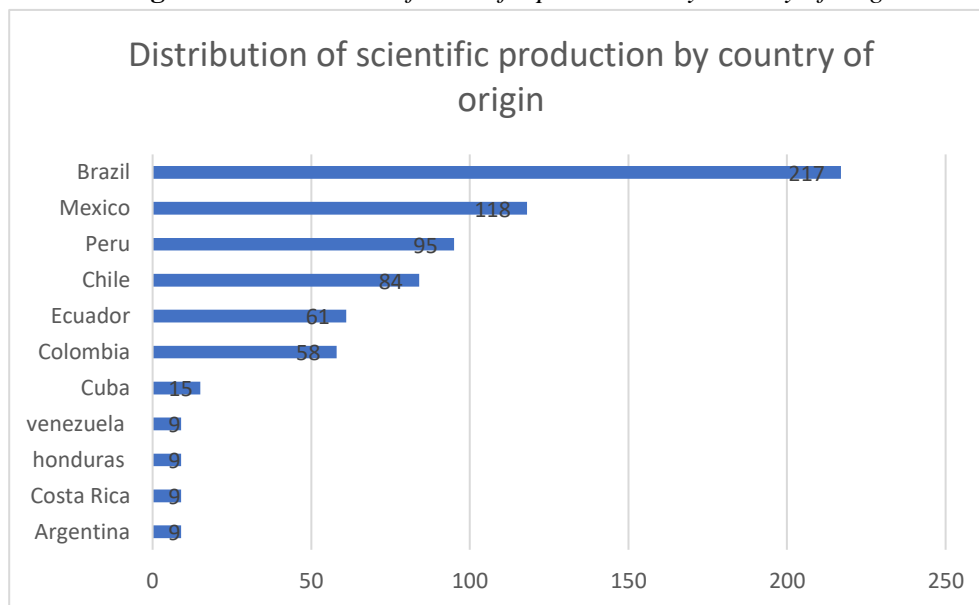
In second place is 2020 with 136 publications, among which is “*Impact of virtual education in times of pandemic at the University of Lima Norte*” (Gomero-Fanny et al., 2020), with the main objective of measuring the impact of the use of technological tools in higher education. Thanks to COVID 19 and its consequences, measures had to be taken that are adaptable for both students and teachers. In this study, where the population was the student body and faculty of the Universidad Lima Norte, it was concluded that students and teachers adapted to virtual teaching with the technological resources they had at that time.

In third place is 2022, which has 34 publications during the month of January, within these publications is the article entitled “*Expectations and Experiences with Online Education During the Pandemic of COVID-19 in University Students*” (Lobos et al., 2022), where it was possible to evaluate the effects of emergency remote teaching through questionnaires directed to students where the expectations and, subsequently, the experiences of university students about online education were studied, giving as a result that students present low expectations with respect to peer relationships and the comparison with face-to-face education.

4.3 Distribution of scientific production by country of origin.

Figure 3 shows the distribution of scientific production according to the nationality of the authors.

Figure 3. *Distribution of scientific production by country of origin.*

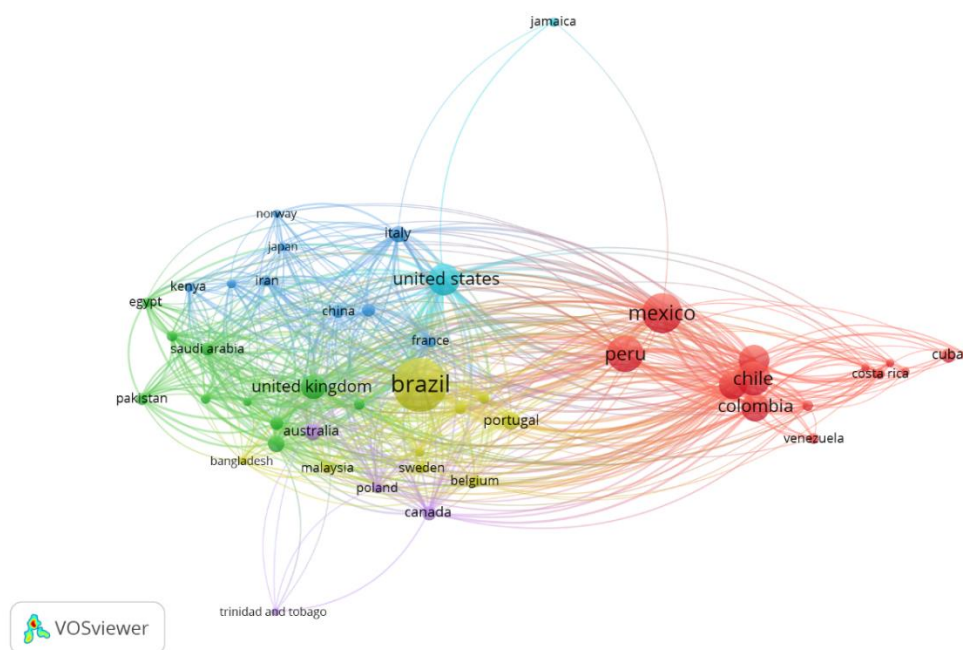


Source: Own elaboration (2022); based on data provided by Scopus.

Brazil is the Latin American country with the largest contribution to research related to higher education and its transition to online education during COVID 19, presenting 217 papers, including “Digital transformation shaping structural pillars for academic entrepreneurship: a framework proposal and research agenda” (Garcez et al., 2022). This paper identifies new patterns, methods, skills and other discoveries in aspects such as management, information systems and cultural sciences. This study does not analyze the ways in which COVID has affected the way in which education is delivered but because of it, teachers and students saw their digital transformation accelerated and intensified, so it is necessary to inquire into the pillars that support academic entrepreneurship.

At this point, it should be noted that the production of scientific publications, when classified by country of origin, presents a special characteristic and that is the collaboration between authors with different affiliations to both public and private institutions, and these institutions can be from the same country or from different nationalities, so that the production of an article co-authored by different authors from different countries of origin allows each of the countries to add up as a unit in the overall publications. This is best explained in Figure 4, which shows the flow of collaborative work from different countries.

Figure 4. Co-citations between countries.



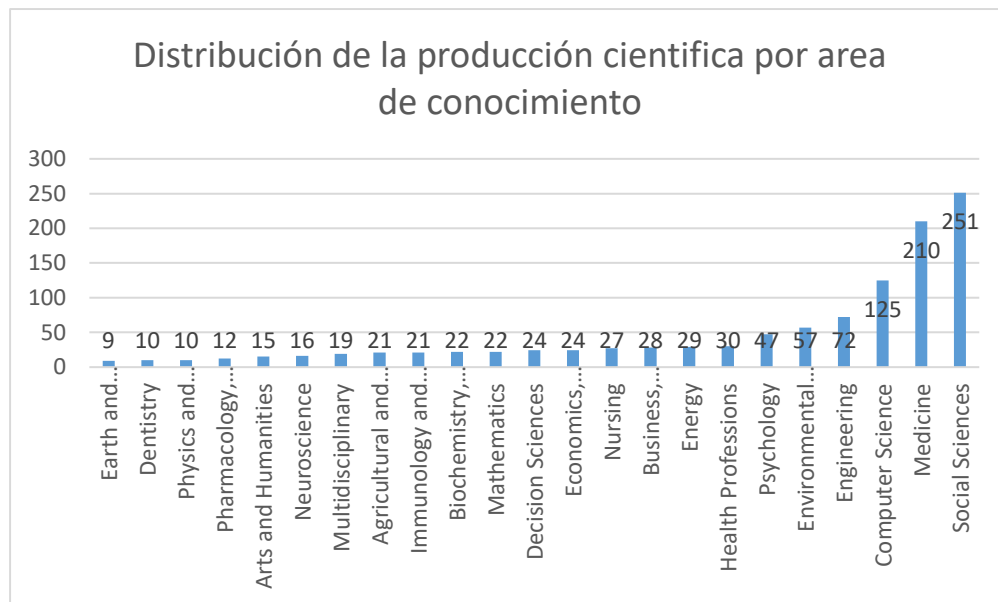
Source: Own elaboration (2022); based on data provided by Scopus.

As mentioned above, Brazil is the Latin American country with the largest number of researches related to the variables under study, having researches in collaboration with authors mainly from the United States, Australia and the United Kingdom, which shows the interest of countries outside Latin America in knowing how higher education has been managed during COVID 19. In second place is Mexico, which presents 118 documents in Scopus and has some co-authored research with Jamaica, Italy, Peru and Chile, among these publications is the one entitled “*Perception of teachers in the selection of virtual learning platforms: A case of Mexican higher education during the COVID-19 crisis*” (Zamora-Antuñano et al., 2022). This article analyzes the perception of teachers of Higher Education Institutions regarding the use of Virtual Learning Platforms (VLP) in the transition from the Traditional Educational Model (face-to-face) to the Emergency Remote Teaching. It was found that more than 60% of the respondents had experience in the use of Moodle, Google Classroom and Blackboard since most teachers had received training to learn how to use these digital platforms, so it is concluded that although the transition from face-to-face to online education was accelerated, thanks to the bases that were previously taught to teachers this process was effective.

4.4 Distribution of scientific production by area of knowledge

Figure 5 shows the production of scientific publications distributed according to the area of knowledge through which the different research methodologies are executed.

Figure 5. *Distribution of scientific production by area of knowledge.*



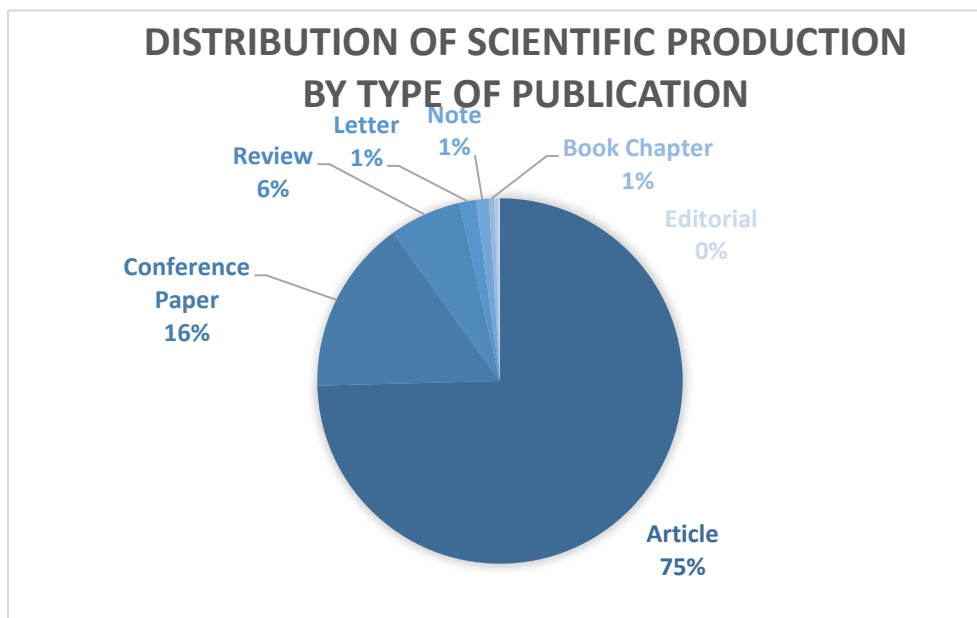
Source: Own elaboration (2022); based on data provided by Scopus.

The area of knowledge with the highest number of publications registered in Scopus is social sciences with a total of 251 documents, among which is “*Intention of university students to continue using online learning tools and technologies: an international comparison*” (Soria-Barreto et al., 2021). In this paper, it was possible to study the intention to continue online learning in the post-COVID-19 period in higher education. This analyzed through the comparison of the education systems of three countries Spain (Europe), Chile (Latin America) and Jordan (Asia), which differ economically and culturally. Large differences were obtained in the education systems but all agreed on autonomous learning, so a proposal is presented to make learning more sustainable in complex environments.

In second place is medicine, an area of knowledge that presents 210 documents, in third place is computer science where 125 documents were written following the guidelines of the topics related to this area. Within these publications is “*School culture and digital technologies: Educational practices in universities in the context of the covid-19 pandemic*” (González-Nieto et al., 2021). This document analyzes the influence of ICT in education, the impact of the COVID-19 pandemic in higher education and its role for the future, and the macro social changes in educational systems and public policies derived from the COVID-19 pandemic. This study was conducted at the Universidad Autónoma Metropolitana, Campus Cuajimalpa, a public educational institution in Mexico by means of surveys to students and professors and semi-structured interviews to directors, professors and students. In which a satisfactory response to the use of digital tools was found, and although some shortcomings were identified, it was concluded that the UAM continues to ensure access to quality education from online classes.

4.5 Type of publication

Figure 6 shows how the bibliographic production is distributed according to the type of publication chosen by the authors.

Figure 6. Type of publication

Source: Own elaboration (2022); based on data provided by Scopus.

As shown in Figure 6, within the different types of publications, 75% of the total number of documents identified through Phase 1 of the Methodological Design, correspond to Journal Articles, among which is the one entitled “*Educational impact on Ecuadorian university students by COVID-19 context*” (Benalcázar et al., 2022). This article studies the impacts on the social areas of Ecuadorian university students such as education, economy, physical and mental health, and access to telecommunications through surveys of 1841 students from 6 public and 5 private universities in Ecuador. Thanks to this research, it was found that most of students wish to return to face-to-face classes due to various factors, but also that students in higher semesters wish to continue in online education, so future research on the factors that influence this decision is proposed.

In second place, there are conference proceedings that represent 16% of the total number of documents identified in this study. In third place are reviews to which 6% of the collected documents belong, and within these documents is “*Moving the boat! Shaken by the COVID-19 crisis: a review of teaching competencies in ICT*” (Montiel & Gomez-Zermeño, 2022). This document raises the challenges brought about by COVID-19 in higher education through a review of the literature where 23 documents were identified, so it was obtained that frameworks such as UNESCO could guide institutions to accelerate the development of educational strategies for post-crisis implementation, COVID-19 and concluded with the need to develop plans and projects, such as the ICT framework.

5. Conclusions

Thanks to the bibliometric analysis proposed in this research, it can be determined that Brazil is the Latin American country with the largest number of bibliographic records in the Scopus database during the period between 2020 and January 2022 with a total of 217 documents. The scientific production related to the study of Higher Education during COVID 19 and its Challenges in the Transition to Online Education has presented an important growth during the above mentioned period, going from 134 publications in 2020 to 446 units in 2021, that is, the creation of bibliographic records was greatly increased in a period of 2 years, which indicates the importance of researching about the challenges and possibilities that higher education institutions face in their implementation of online education during the COVID 19 crisis.

Higher education in Latin America in recent years has undergone a change in its educational models since thanks to COVID an accelerated transition from face-to-face classes to online classes was made, this entails many challenges in its implementation but also many potential benefits. Among the challenges faced are the lack of training for both students and teachers in the use of educational platforms in order to ensure their correct use and take advantage of them to a greater extent, the inequality gaps in Latin America which do not allow certain vulnerable populations to have access to the Internet or to technological tools that make remote classes possible and finally, the shortcomings in the delivery of knowledge that can translate into a loss in the quality of education.

In the benefits of being able to access information and higher education from anywhere at any time, this measure is very helpful for students living in areas of difficult access to higher education institutions. All of the above allows to conclude the importance of knowing the theory or bibliographic resources that seek to awaken the interest of HEIs in training teachers in order to eradicate technological illiteracy and to offer projects that seek to help all students access to a good internet connection and have technological tools. It is for this reason that the need for studies such as the one presented in the present document is highlighted, which makes a tour of those texts that address the aforementioned topic, in order to give the reader a broad view of the current situation of the bibliography on Higher Education during COVID 19 and its Challenges in the Transition to Online Education.

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