

DIGITILIZATION IN LATIN AMERICAN HIGHER EDUCATION UNDER COVID-19

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Abstract

A documentary review was carried out on the production and publication of research papers related to the study of the Digitization of academic content in Higher Education Institutions in Latin America during Covid-19 in the period between 2020 and 2021 following the Romero et al. (2022) approach. The purpose of the bibliometric analysis proposed in this document is to know the main characteristics of the volume of publications registered in the Scopus database during the period 2020-2021 by Latin American institutions, achieving the identification of 133 publications in total. The information provided by this platform was organized using graphs 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 through qualitative analysis. Among the main findings of this research, it is found that Mexico was the country with the highest production with 33 publications. With 74 published documents, the area of knowledge that contributed the most to the construction of bibliographic material relating to the study of the digitization of academic contents by institutions of higher learning during the Covid-19 pandemic was Social Sciences, and the type of publication that was most commonly used was the journal article, accounting for 55% academic research.

Keywords : Higher Education Institutions, Covid-19, Digitization.

I. INTRODUCTION

Covid-19 is a virus whose transmission began in the Wuhan region of China in 2019 and quickly spread to countries on different continents, so the World Health Organization (WHO) decreed a pandemic because of the same disease in March 2020, to which a large percentage of countries responded to the suggestion to order citizens, mandatory restrictive quarantine, thus avoiding crowds through social distancing. Many economic sectors were impacted, particularly trade, because the declaration caused significant uncertainty due to the unknown and unpredictable future, and such operations were

halted, at least in the traditional sense (Inter-American Development Bank, 2020).

The education sector was no stranger to the pandemic caused by the Covid-19 disease and resulted undoubtedly affected as classroom attendance was suspended until further notice, forcing teachers and students to recreate the academic environment through virtual tools such as those suggested by Dave Cormier and Bryan Alexander in Canada in 2008, called MOOC (Massive Open Online Course) (Lopez-Meneses & Vazques, 2020). This model was designed to expand educational coverage to people who for many reasons could not access academic training centers in person. In this way,

what previously represented an option in training, became the only alternative to be able to continue the teaching-learning processes. However, the digitization of academic content alone did not represent the only challenge of education during Covid-19, so other variables of special attention were highlighted, such as the motivation of both teachers and students. For the first group, the main objective of the educational management, since most of the educators have not been familiar with the use of virtual tools.

One of the main strategies used by institutions was continuous training in the use of platforms designed for this purpose (Artavia & Castro, 2019). In this way, they sought to ensure success in the fulfillment of academic commitments by students. The above represents one of the many challenges that the education sector faced during the Covid-19 pandemic, so knowing the implications of the restrictive measures regarding the digitization of academic content during that period, became a priority for the scientific community. For this reason, the development of this article has been raised, seeking to answer the question: How has been the production and publication of research papers on the study of the digitization of academic content during the Covid-19 pandemic during the period 2020-2021?

2. General Objective

To examine the creation of high-impact research articles on the variable Digitization in Latin American Higher Education during the Covid-19 pandemic in the years 2020-2021 from a bibliographic standpoint.

3. Methodology

A quantitative analysis of the information provided by Scopus is performed under a bibliometric approach to the scientific production concerning the Digitization of academic content by Latin American Educational Institutions during the Covid-19 pandemic at the Latin American level. Likewise, it is analyzed from a qualitative perspective, with examples of some research works published in the area of the study mentioned above, from a bibliographic approach to describe the position of different authors on the proposed topic.

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

3.1 Research method

Table 1. *Methodological design.*

| | PHASE | DESCRIPTION | CLASSIFICATION |
|----------------|-------------------|---|---|
| PHASE 1 | DATA COLLECTION | The data collection is carried out using the Scopus web page search tool. | Published documents whose study variables are related to the study of the digitization of academic content by higher education institutions during Covid-19. Research articles published in Latin American institutions. Research papers were published during the period 2020-2021. Without distinction of the area of knowledge. Without distinction of the type of publication. |
| PHASE 2 | ANALYSIS MATERIAL | The information identified in the previous phase is organized. The classification will be made through graphs, figures, | Word Co-occurrence. Year of publication Country of origin of the publication. |

4.2 Scientific output organized by year.

Figure 2 shows how scientific production is distributed according to the year of publication, taking into account the period from 2020 to 2021.

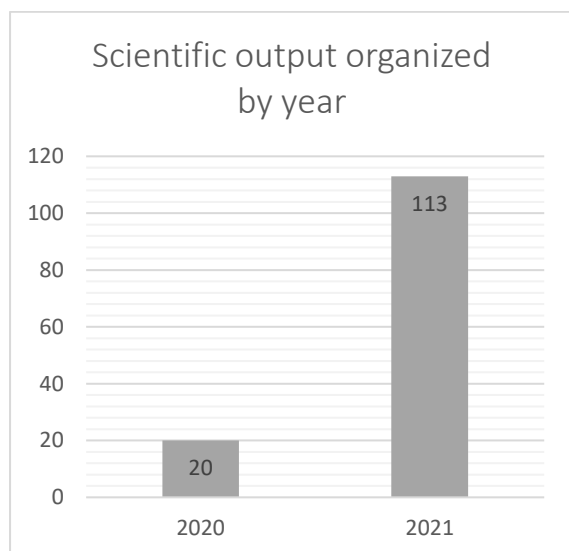


Figure 2. *Scientific output organized by year.*

Source: Elaboration by the authors based on the Romero et al. (2022) method.

The annual distribution of scientific production shows how the execution of research projects that are published in high-impact journals indexed in the Scopus database, starts in 2020 with a total of 20 publications and ends in 2021 with 113 documents. The above takes into account that these were periods of 12 complete months each so that the volume of research would give closed data if it is taken into account that the Covid-19 variable was started when 2019 was already elapsed.

It is important to note that the objective of studies related to education in times of pandemic seeks to measure the impact that the virtualization of content has on the stakeholders around it, such as teachers, students, parents, and government actors, among others. The article "Impact of virtual education in times of pandemic at the University of North Lima" (Gomero-Fanny, et al., 2020; Rico et al., 2022), was a conference article whose goal was to examine the impact of digital innovations in higher education Lima, Peru, stood out among the papers carried out in 2019 that seeks information such the one mentioned previously. The study evidenced a high percentage of

adaptation on the part of teachers and students to the use of technological tools to give continuity to the academic calendar, despite not having a clear knowledge of the use of such didactic material by virtual means, to which each of the aforementioned groups went, generating great adaptability and skills necessary to make correct and efficient use of the platforms designed for educational purposes. In this way, the article concludes by stating that although the generalized uncertainty among students and teachers due to the sudden and mandatory change in the methodology that went from face-to-face to virtuality, ended up potentiating the strengths in communication even when the remote sessions were presumed to limited interest due to the lack of expertise in using technological devices and programs (de la Puente et al., 2020; de la Puente et al., 2021).

4.3 Geographic coverage of research publications.

Figure 3 displays the distribution of scientific output according on the authors' nationality.

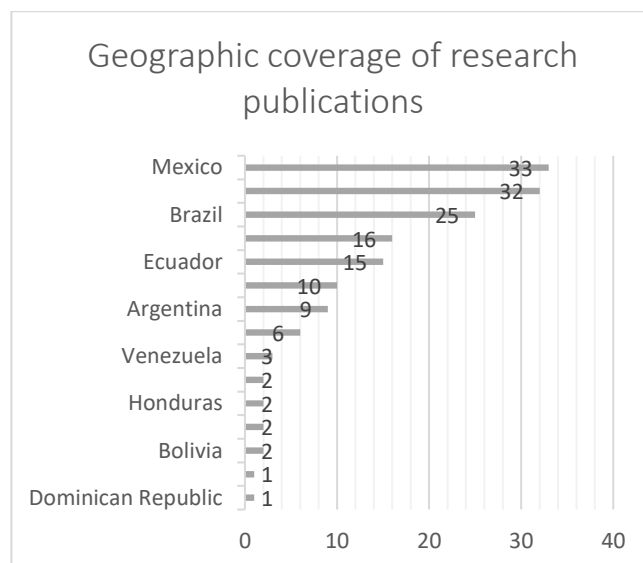


Figure 3. *Geographic coverage of research publications.*

Source: Elaboration by the authors based on the Romero et al. (2022) method.

It is essential to remember that the total research development is dispersed according to the nation of origin of the entities through which the research articles were published, to visualize the research level of each of them, within the capacity of articles published recognized through the implementation of Phase 1 of the

applied method. Taking into account that, for this article, publications from Latin American countries were taken, it was established that Mexico, a country belonging to this community, presented the largest number of publications during the period 2020-2021 related to the study of the Digitization of academic content during the Covid-19 pandemic, with a total of 33 documents registered in Scopus. It was followed by Peru with a total of 32, and Brazil and Chile in third and fourth place with 25 and 16 publications respectively.

Ecuador was in fourth place with a total of 15 documents, including the one entitled “Digital andragogical competencies of Ecuadorian higher education teachers during the COVID-19 pandemic” (Mendoza et al., 2021). The results enhanced the digital skills of professors, such as “knowing how to be” which refers to developing the use of communication technologies usage; “knowing”, meaning the constructed skills of professors developed by their organizations. Then “Knowing how to live together” suggests the methodologies needed to develop effective and critical communication to build new knowledge through two-way information. Finally, “Knowing how to do” involves the application of all the knowledge acquired through continuous education and training, with the correct and effective methodology for each training process within the remote or virtual environment, whether asynchronous or synchronous.

The academic publishing process, when classified by country of origin, is based on authors' cooperation with different affiliations and nationalities so co-authored papers allows each of the countries to add up as a unit in the overall publications. Figure 4 shows the flow of collaborative work within Latin America.

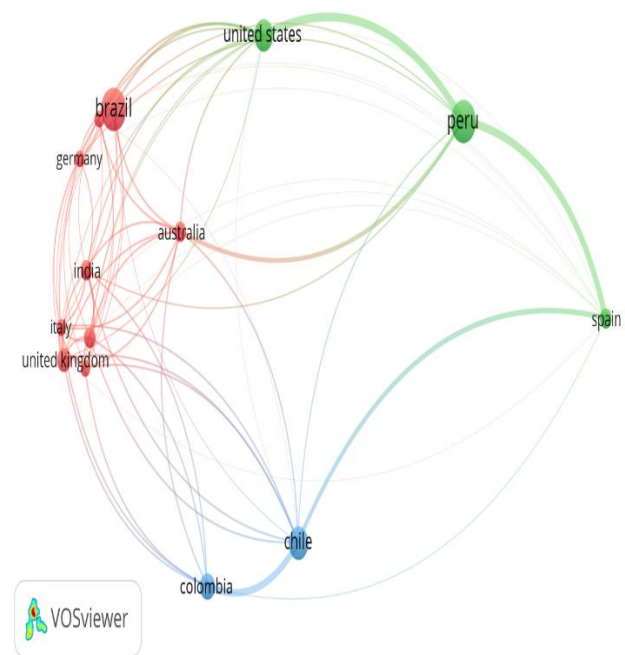


Figure 4. *Co-citations between countries.*

Source: Elaboration by the authors based on the Romero et al. (2022) method.

Figure 4 shows how international collaboration has been in the development and execution of research methodologies in the search for the generation of new knowledge. The level of international co-authorship of researchers affiliated with Peruvian institutions stands out, which presents research with Spain and the United States. Brazil, on the other hand, registers participation with authors from Germany, Australia, India, Italy, and the United Kingdom.

A clear example of international participation in the execution of research projects from which scientific publications are derived is the article presented by Colombia, which ranked sixth with a total of 10 publications, entitled “Digital competence, role stress, and commitment: towards positive mental health in Latin American teachers” (Deroncele-Acosta, et al., 2021), which had the participation of authors affiliated to institutions in Peru, Brazil, and Ecuador, and whose purpose was to evaluate the level of role stress (ambiguity, conflict, and overload), engagement (vigor, dedication, and absorption) and digital competencies of 300 teachers from six Latin American countries: Peru, Colombia, Chile, Brazil, Mexico and Ecuador, by identifying

great emotional burden in the face of the abrupt change of methodology and the submission to the use of technological devices to carry out their role as trainers. It is vital to identify these levels of stress because, given the pressure received by the teaching staff, it is common to find situations in which their mental health is affected. For this reason, the study developed a tool to measure adherence to the teaching-learning processes, taking into account factors such as motivation and skills in the use of technological resources.

4.4 Research output by field of study.

Figure 5 depicts how research publication are dispersed as shown in the fields of knowledge in which the various research approaches are carried out.

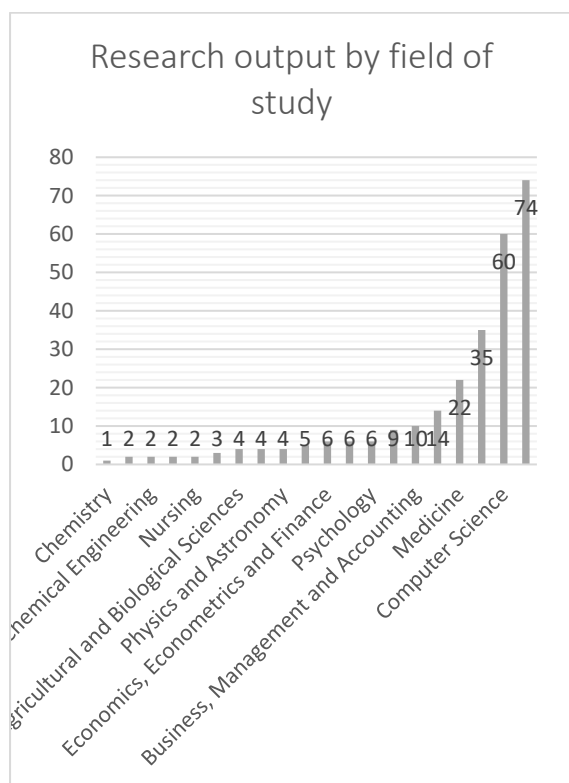


Figure 5. *Distribution of scientific production by area of knowledge.*

Source: Elaboration by the authors based on the Romero et al. (2022) method.

Social Sciences is identified as the most influential area of study through Scopus. A total of 74 publications were developed from the social study and its implication in the community. The article “Virtual education in times of COVID-19: Perceptions of university

students” stands out (Avendaño, Luna, & Rueda, 2021), which analyzed students’ perception regarding virtual education during COVID-19. The above, as instrument to know the level of adaptation of this group alike to the new learning methodologies based on the use of technological tools during the Covid-19 pandemic. A similar experiment carried out a 31-item Likert-type questionnaire to 608 students enrolled in the faculty of business sciences of a public university in the city of Cúcuta (Colombia), obtaining a generalized favorable perception of the professor’s effort to maintain the rhythm of the academic calendar.

The area of Computer Science is located in second place with 60 documents, highlighting the use of technological tools for educational purposes which requires theoretical bases the adaptation of digital media, and the design of virtual programs. Both requires training based on the knowledge of programming and generation of audiovisual content.

4.5 Type of academic output

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

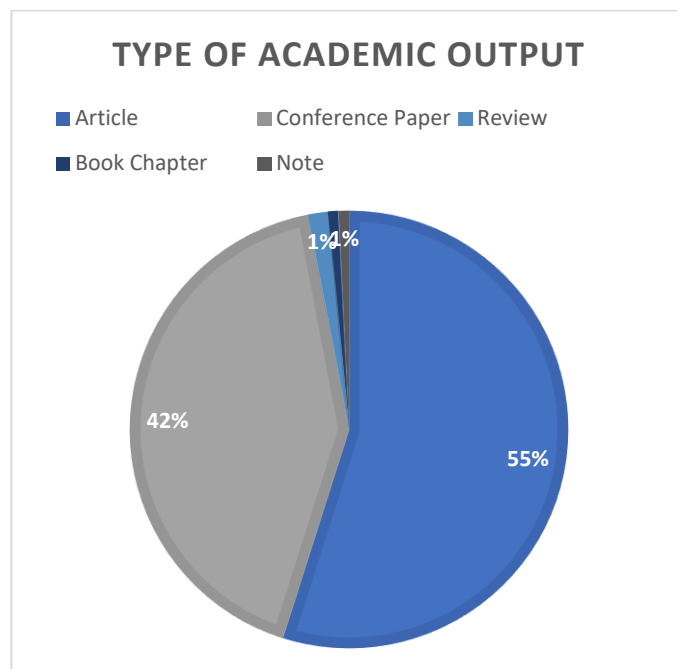


Figure 6. *Type of academic output.*

Source: Elaboration by the authors based on the Romero et al. (2022) method.

It is evidenced by Figure 6 that 55% of the research works identified through the execution of Phase 1 of the Methodological Design proposed for the development of the present research, correspond to Journal Articles, followed by Conference Articles with 42% and Reviews in third place with 1%. The review "Online classes in the context of higher education in times of pandemic" (Machado, Soso, & Kampff, 2020) was found within this last group of research, to analyze what institutions of reference for education suggest about initiatives for the restructuring of Higher Education in the local and global (global) contexts during the pandemic.

The organizations analyzed were the International Association of Universities (IAU), the Organization for Economic Cooperation and Development (OECD), the World Bank, the Ministry of Education (MEC), among others. The article emphasizes the importance of giving continuity to pedagogical processes, among which are: the development of inclusive and equitable pedagogical projects, the training of teachers to work on virtual platforms, and support for students to involve them and reduce the feeling of isolation.

5. Conclusions

Thanks to the bibliometric review carried out in this article, it was possible to establish that within the distribution of the volume of scientific production identified under the search parameters established in the methodology for the Scopus tool, the countries with the highest number of published documents were Mexico, Peru, and Brazil with 33, 32 and 25 documents respectively. The above allows inferring that within the search for the generation of new knowledge from the experience lived by the educational sector, questions arise that involve the design of effective methodologies to give continuity to the academic training process even in times like the one the whole world went through due to Covid-19, which forced a large number of activities to be suspended to avoid an increase in the number of contagions and deaths due to the same disease.

In this way, educational institutions were forced to use existing technological tools to continue the academic calendar; however, many obstacles were identified not only in the three

countries mentioned above but throughout the Latin American community, among which it was found that the gap of social inequality was even more noticeable. The impact generated by this problem urged state institutions to design measures and programs in partnership with the same educational institutions to help this group of citizens so that they could have access to education even in times of pandemics. It is possible to generate a diagnosis of the Latin American situation regarding the effect that the Digitalization of academic content during the Covid-19 pandemic, which among the student community turned out to be favorable, according to the position of different authors mentioned in this document, who conclude that students have been receptive to the change even when they also faced difficulties to carry out a correct learning, such as the constant interruptions in the Internet service, difficulty to separate homework during the time destined to virtual classes, among others.

According to the studies cited, it is possible to affirm that the process of adaptation to the use of technological tools to attend their classes synchronously turned out to be effective because it is possible to affirm that this methodology will continue to be a trend that students could continue to implement in post-pandemic times. On the other hand, teachers presented, in certain cases, high levels of stress due to the work overload to which they were subjected since many of them not only had to continue with their usual labor but were also assigned the task of digitizing all the academic content and adapting it to the tools proposed by the educational management in their institutions. This was an unprecedented challenge in the exercise of the teachers' functions; however, the continuous training and education of teachers in the knowledge of technological tools managed to generate confidence within the teaching staff, which triggered a rapid adaptation to the new methodologies as stated by the authors in the research that has been cited in this document.

The findings emphasize the importance of generating new knowledge through documentary reviews like the one proposed in this article, because it is possible to compile all current information on a specific topic in this way, making it a valuable resource for the development of new and better strategies, in this case, digital approaches for teaching in Latin American higher education.

REFERENCES

- [1] Artavia, K., & Castro, A. (2019). Implementation of technological tools in distance university higher education. *Educacion Superior*, 13-30.
- [2] Avendaño, W. R., Luna, H. O., & Rueda, G. (2021). Virtual education in times of COVID-19: Perceptions of university students. *Formacion Universitaria*, 119 - 128.
- [3] Anselmo Fortoul-Díaz, J., Cortes-Santacruz, F., Perez-Rojas, D., Torres-Rios, E., & Antonio Carrillo-Martinez, L. (2021). Project-based learning using internet of things as an educational tool in COVID 19 era with a hybrid context for engineering students. Paper presented at the ACM International Conference Proceeding Series, 111-117. doi:10.1145/3510309.3510327 Retrieved from www.scopus.com
- [4] Arango-Vásquez, S. I., & Manrique-Losada, B. (2021). Rethinking an ICT-mediated teaching strategy during the COVID-19 pandemic. Paper presented at the Proceedings - 11th International Conference on Virtual Campus, JICV 2021, doi:10.1109/JICV53222.2021.9600352 Retrieved from www.scopus.com
- [5] Araoz, E. G. E., Roque, M. M., Ramos, N. A. G., Uchacara, H. J. M., & Araoz, M. C. Z. (2021). Academic stress in peruvian university students in COVID-19 pandemic times. [Archivos Venezolanos De Farmacologia y Terapeutica, 40(1), 88-93. doi:10.5281/zenodo.4675923.
- [6] Armada Pacheco, J. M. (2021). Digital strategies for health education on leishmaniasis. [Boletín De Malariología y Salud Ambiental, 61(3), 468-475. doi:10.52808/bmsa.7e5.613.012.
- [7] Avendaño, W. R., Luna, H. O., & Rueda, G. (2021). Virtual education in times of COVID-19: Perceptions of university students. [Formacion Universitaria, 14(5), 119-128. doi:10.4067/S0718-50062021000500119.
- [8] Balmaceda Castro, I., Rusu, C., & Aciar, S. (2021). Student eXperience: A survey in argentinian universities about education in the pandemic context doi:10.1007/978-3-030-90179-0_30 Retrieved from www.scopus.com
- [9] Baron-Ramirez, N., Gallegos, J. C. P., Sprock, A. S., De La Torre, B. A. T., Contreras-Castillo, J., & Romero, J. C. M. (2021). Distance learning as an emergency strategy: Students' opinions about its implementation during the COVID-19 pandemic. Paper presented at the Proceedings - 2021 16th Latin American Conference on Learning Technologies, LACLO 2021, 158-164. doi:10.1109/LACLO54177.2021.00023 Retrieved from www.scopus.com
- [10] Beltran-Sanchez, J. A., González-Treviño, I. M., & Dominguez, A. (2020). Digital education in times of COVID-19: The experience of medical educators. Paper presented at the ACM International Conference Proceeding Series, 26-31. doi:10.1145/3429630.3429633 Retrieved from www.scopus.com
- [11] Bernaola, A. R., Tipula, M. A., Moltalvo, J. E., Sandoval, V. S., & Andrade-Arenas, L. (2020). Analysis of the use of technological tools in university higher education using the soft systems methodology. *International Journal of Advanced Computer Science and Applications*, 11(7), 412-420. doi:10.14569/IJACSA.2020.0110754.
- [12] Biotto, C. N., Herrera, R. F., Salazar, L. A., Pérez, C. T., Luna, R. M., Rodighieri, P. M., & Serra, S. M. B. (2021). VIRTUAL PARADE GAME FOR LEAN TEACHING AND LEARNING IN STUDENTS FROM BRAZIL AND CHILE. Paper presented at the IGLC 2021 - 29th Annual Conference of the International Group for Lean Construction - Lean Construction in Crisis Times: Responding to the Post-Pandemic AEC Industry Challenges, 340-349. doi:10.24928/2021/0203 Retrieved from www.scopus.com
- [13] Bollela, V. R., Medeiros, I. S., & Telles, S. (2021). Remote education in times of pandemic: Reflections in the academic context. *Medicina (Brazil)*, 54 doi:10.11606/issn.2176-7262.rmrp.2021.184771 [Remote education in times of pandemic: Reflections in the academic context].
- [14] Bravo, J., Arangurí, M., Alarcón, R., & Li, F. (2021). Raising awareness in the adoption of COVID-19 preventive measures in higher education students

- through an epidemiological surveillance mobile app. Paper presented at the CEUR Workshop Proceedings, , 3037 77-85. Retrieved from www.scopus.com
- [15] Calvo-Niño, W., Meneses-Claudio, B., & Delgado, A. (2021). Implementation of an fm radio station to facilitate remote education in the district of cojata. *International Journal of Engineering Trends and Technology*, 69(10), 118-127. doi:10.14445/22315381/IJETT-V69I10P215.
- [16] Camargo-Velastegui, D., Velastegui-Montoya, A., & Chang-Silva, R. (2021). Emerging remote assessment in times of the COVID-19 pandemic: Analysis of experience in higher education. Paper presented at the Proceedings of the LACCEI International Multi-Conference for Engineering, Education and Technology, , 2021-July doi:10.18687/LACCEI2021.1.1.402 Retrieved from www.scopus.com
- [17] Caratozzolo, P., Friesel, A., Randewijk, P. J., & Navarro-Duran, D. (2021). Virtual globalization: An experience for engineering students in the education 4.0 framework. Paper presented at the ASEE Annual Conference and Exposition, Conference Proceedings, Retrieved from www.scopus.com
- [18] Cárdenas Cabello, F., & Luna Nemecio, J. (2020). On line evaluation ahead of covid-19 pandemic: Challenges and opportunities for mexican universities. [On line evaluation ahead of covid-19 pandemic: Challenges and opportunities for Mexican universities. *Universidad y Sociedad*, 12(6), 393-403. Retrieved from www.scopus.com
- [19] Carvalho, D. B. F., Gabrielle Dos Santos Barbosa, C., Luiz De Souza, C., & Haddad Borges, M. (2021). Performing virtual events during COVID-19 pandemics: The case of the startups fair and hackathon for new educational technologies in the campo das vertentes region in brazil. Paper presented at the Proceedings of the 39th ACM International Conference on the Design of Communication: Building Coalitions. Worldwide, SIGDOC 2021, 289-293. doi:10.1145/3472714.3473906 Retrieved from www.scopus.com
- [20] Castaneda, D. I., & Cuellar, S. (2021). Knowledge sharing in business education. *Sustainability* (Switzerland), 13(7) doi:10.3390/su13073657
- [21] Castaneda, D. I., & Cuellar, S. (2021). Knowledge sharing in business education: Systematic review. Paper presented at the Proceedings of the European Conference on Knowledge Management, ECKM, 138-144. doi:10.34190/EKM.21.009 Retrieved from www.scopus.com
- [22] Chamorro-Atalaya, O., Morales-Romero, G., Quispe-Andía, A., Trinidad-Loli, N., Caycho-Salas, B., León-Velarde, C., & Gamarra-Mendoza, S. (2021). Distance education and student satisfaction regarding the pedagogical support services provided in virtual teaching-learning environments. *International Journal of Emerging Technologies in Learning*, 16(20), 255-262. doi:10.3991/ijet.v16i20.24559
- [23] Chans, B. C., Mosna, L. G., Moreiro, F. S., & Arduino, G. A. (2020). Teaching strategies for remote teaching implemented in the bachelor's degree in information systems at the universidad nacional del nordeste. Paper presented at the 2020 IEEE Biennial Congress of Argentina, ARGENCON 2020 - 2020 IEEE Biennial Congress of Argentina, ARGENCON 2020, doi:10.1109/ARGENCON49523.2020.9505419 Retrieved from www.scopus.com
- [24] Charbonneau-Gowdy, P., & Salinas, D. (2020). Test-run: Mediating changes to online assessment practices in a teacher education setting. Paper presented at the Proceedings of the European Conference on e-Learning, ECEL, , 2020-October 104-112. doi:10.34190/EEL.20.141 Retrieved from www.scopus.com
- [25] Chévez-Reynosa, M. N. A., Rodríguez-Rosell, M., & Aguaded, I. (2021). "Oh, and now who can help us?" COVID-19 and higher education in el salvador. *Journal of Higher Education Theory and Practice*, 21(2), 221-228. doi:10.33423/JHETP.V21I2.4132
- [26] Cordova, M., Floriani, D. E., Gonzalez-Perez, M. A., Hermans, M., Mingo, S., Monje-Cueto, F., . . . Salvaj, E. (2021). COVID-19 and higher education: Responding to local demands and the consolidation of e-internationalization in latin american universities. [Academia Revista Latinoamericana De

- Administracion, 34(4), 493-509. doi:10.1108/ARLA-01-2021-0020.
- [27] de la Puente Pacheco, M. A., Guerra Florez, D., de Oro Aguado, C. M., & Llinas Solano, H. (2021). Does Project-Based Learning work in different local contexts? A Colombian Caribbean case study. *Educational Review*, 73(6), 733-752. doi: 10.1080/00131911.2019.1694489
- [28] de la Puente Pacheco, M. A., de Oro Aguado, C. M., & Lugo Arias, E. (2020). Understanding the effectiveness of the PBL method in different regional contexts: the case of Colombia. *Interactive Learning Environments*, 1-14. doi: 10.1080/10494820.2020.1740745
- [29] Deroncele-Acosta, A., Medina-Zuta, P., Goni-Cruz, F. F., Ramirez-Garzon, M. I., Fernandez-Aquino, O., Roman-Cao, E., . . . Santiago, E. G. (2021). Digital Competence, Role Stress, and Engagement: Towards positive mental health in Latin American teachers. *Proceedings - 2021 16th Latin American Conference on Learning Technologies, LACLO 2021* (pp. 83 - 90). Arequipa: IEEE.
- [30] Gomero-Fanny, V., Acuña-Jeferson, C., Espinoza-Max, A., Ruiz-Bengy, A., Calderón-Angie, R., & Andrade-Arenas, L. (2020). Impact of virtual education in times of pandemic at the University of North Lima. *2020 IEEE Biennial Congress of Argentina, ARGENCON 2020 - 2020 IEEE Biennial Congress of Argentina, ARGENCON 2020*. IEEE.
- [31] Inter-American Development Bank. (2020). Higher Education in the Times of Covid-19. Washington, D.C. Retrieved from <https://publications.iadb.org/publications/spanish/document/La-educacion-superior-en-tiempos-de-COVID-19-Aportes-de-la-Segunda-Reunion-del-Di%C3%A1logo-Virtual-con-Rectores-de-Universidades-Lideres-de-America-Latina.pdf>
- [32] Lopez-Meneses, E. G.-G., & Vazques, E. (2020). Strengths and Weaknesses of Massive Open Online Courses (MOOCs) versus other teaching models in socio-educational contexts. *Formacion Universitaria*, 77-84.
- [33] Machado, K. G., Soso, F. S., & Kampff, A. J. (2020). Aulas on-line no contexto da educação superior em tempos de pandemia. *Curriculo sem Fronteiras*, 633 - 655.
- [34] Mendoza Velazco, D. J., Cejas, M. N., Cejas Martinez, M. F., Vinuesa Naranjo, P. G., & Falcón, V. V. (2021). Digital andragogical competences of Ecuadorian higher education teachers during the COVID-19 pandemic. *European Journal of Educational Research*, 1341 - 1358.
- [35] Romero, M. Á. M., Alexa, S. N., Luzuriaga, E. S., Prado-Juscamaita, J. I., y Falcón, I. D., & Sánchez, T. A. (2022). REMOTE WORK IN THE COVID-19 ERA: A HOLISTIC APPROACH. *Journal of Language and Linguistic Studies*, 17(4).
- [36] Rico, H., Rico, F., de la Puente, M., De Oro, C., & Lugo, E. (2022). SBL Effectiveness in Teaching Entrepreneurship Skills to Young Immigrant Mothers Head of Household in Colombia: An Experimental Study. *Social Sciences*, 11(4), 148.