

Educación abierta en América Latina en el marco de las nuevas recomendaciones de la UNESCO

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RESUMEN

La educación abierta presenta opciones para apoyar las competencias digitales, especialmente en tiempos de recomendaciones internacionales y entornos complejos. En noviembre de 2019 la UNESCO emitió nuevas recomendaciones para movilizar la educación abierta, por esas fechas también aparecieron señales de pandemia. Este artículo se enfoca en el contexto de América Latina para analizar sus prácticas de educación abierta en este marco, con el fin de localizar los desafíos y oportunidades vinculados a las recomendaciones globales y la vinculación con la formación de profesorado. Se ha utilizado el método de revisión sistemática de la literatura (SLR), a partir de la identificación de 253 artículos sobre el tema de la educación abierta, en los sistemas de indexación Web of Science (WOS) y Scopus, desde 2014 hasta 2019. De esta base, se identificaron las 15 publicaciones de autores de América Latina que constituyeron la base de análisis para este SLR. Se aplicaron criterios de inclusión, exclusión y calidad para obtener la información más relevante. Los resultados muestran la distribución geográfica de los autores, el tipo de metodología utilizada, las prácticas, las dimensiones, las áreas transversales, los retos y las oportunidades vinculadas a las recomendaciones. Este documento aporta valor a la luz de las nuevas recomendaciones de la UNESCO y de los tiempos de pandemia, para los entornos de formación, la localización de las innovaciones educativas y el impulso de la educación y la investigación futuras.

PALABRAS CLAVE: Educación abierta; SLR; competencias digitales; innovación educativa; Educación Superior; Razonamiento complejo.

Analysis of open education in Latin America in the framework of UNESCO's new recommendations

ABSTRACT

Open education presents options to support digital competences, especially in times of international recommendations and complex environments. In November 2019 UNESCO issued new recommendations to mobilize open education, around that time signs of pandemic 2019 also appeared. This article looks at the context of Latin America to analyze its open education practices in this framework, in order to locate challenges and opportunities linked to global recommendations and the link with teacher training. The method of systematic literature review (SLR) has been used, based on the identification of 253 articles on the subject of open education, in the indexing systems: Web of Science (WOS) and Scopus, from 2014 to 2019. From this base, the 15 publications of authors from Latin America were identified that constituted the basis of analysis for this SLR. Inclusion, exclusion and quality criteria were applied to obtain the most relevant information. The results show the geographical distribution of authors, the type of methodology used, practices, dimensions, cross-cutting areas, challenges and opportunities linked to recommendations. This document provides value in light of new UNESCO recommendations and pandemic times, for training environments, the location of educational innovations, and the impetus for future education and research.

KEYWORDS: Open education; SLR; Digital competences; Educational innovation; Higher Education; Complex Reasoning.

Introduction

The first two decades of the 21st century continue to show us and demonstrate the dynamic need for change that institutions around the world must have to adapt to new scenarios and digital competences. It is a matter of course that interconnection and communication have changed the way we stay in the world. If we refer to the formative environments, whatever their nature, it becomes even more essential and necessary to creatively expand the forms of interaction between people who wish to improve and take advantage of the world in which the media have taken on a preponderant role, so much so that they are capable of defining political agendas. These media have established and expanded ways of teaching and learning, removing the barriers and boundaries that traditional classroom walls contained in limited geographies. Distance education continues to crystallize and consolidate its potential; this reality, although it has come closer to increasing the number of people who can access distance education, has not yet achieved democratization on a large scale. In this sense, open education may make it possible to extend the educational impact to a greater number of people.

In times of crisis, like the one experienced with the Covid-19 pandemic, global open education is presented as an alternative to increase the potential of educational

practices and tools that achieve open access to meet the needs of personal contact and communication, as new strategies for training. Vicario-Solórzano (2021), coordinated a network project with academics from many Mexican institutions, where they contribute a model of continuity of educational services in an emergency context and its crisis stages, highlighting academic, organizational and technological components; in this model, innovation, collaboration and open education are precious assets. Supporting the understanding of what openness implies, in the sense of seeking innovation, and taking advantage of the fact that today's information and communication technologies (ICT) require attention to the principles of transparency, access, participation and democracy (Schlagwein et al., 2017). Speaking of free access in the educational context is something that does not necessarily go hand in hand with technology, if it is seen as a type of philosophy that allows us to achieve the right to education (Tur et al., 2017). Accordingly, it also warns about barriers to the democratization of knowledge and presents some alternatives to try to remove them, based on the fact that this movement needs first to look inward, discuss its current practices and present more inclusive and flexible approaches, so that they can later be applied in the educational context (Mishra, 2017). In this framework, open education refers to a movement of opening up knowledge and processes with practices, resources, technologies, evaluation, accreditation, learning and strategies that allow the construction and dispersion of knowledge.

Studies on the open educational movement show different practices, such as use, production, dissemination and mobilization. Among the most frequent practices are open educational resources, both in the creation (Anushalalitha, 2019), also in the analysis of infrastructure to support teaching (Risque et al., 2020) and the organization and implementation necessary for this program to develop effectively (Tolsteneva et al., 2020). Other practices describe the implementations of the programs (López Meneses et al., 2020), as well as techniques for open learning spaces (Ochoa et al. 2020), or practices that integrate educational innovations such as gamification in massive open sustainability courses (Rincón et al. 2020). In the last years, there has been an increase in knowledge dissemination studies through repositories (González-Pérez & Ramírez-Montoya, 2019) and mobilization through open mass courses on multidisciplinary (Romero-Rodríguez et al., 2020) and social inclusion issues (Robertshaw & Babicova, 2020).

The practices of open education present purposes and strategies that help to differentiate them through dimensions, focused or transversal, where challenges and opportunities emerge. In Europe, (Inamorato dos Santos et al, 2016) ten dimensions are presented where the core domains provide the "what" of open education: access, content, pedagogy, recognition, collaboration and research and in the transversal dimensions they address the "how" of open educational practices: leadership, strategy, quality and technology. Among the challenges of open education are those related to access through linguistic and cultural contexts (Brahim et al., 2017) the challenge for teachers to change practices (Kaatrakoski et al., 2017), and technologies and instructional design methods in the digitization of education (Köhler & Drummer,

2018). Similarly, the opportunities are crystallized in the possibility of visibility (LeCounte & Johnson, 2016), the integration of inclusive practices (Rodríguez & González, 2020), the reduction of temporary and economic costs (de Jong et al., 2019) the expansion of multidisciplinary collaboration (Govindarajan & Dhanavandan, 2019) and the increase of training and extension practices, as well as opportunities for the transition in educational innovation (Rabin et al., 2020), with three factors to be considered: disruptive innovation, zero marginal costs and disaggregation.

Notable efforts to contribute to the quality of open education have been of great value to collaborative design. For example, OERTrust is a proposed support framework for the process of validation and testing of open educational resources that is based on validation and testing principles from the area of software engineering and relies on fuzzy logic to define the importance of different tests for each type of OER. González-Pérez et al. (2022) provide their own classification scheme of technological enablers 4.0 for open education with great value for educational communities, ministries of education and science, researchers and trainers interested in educational innovation. Fidalgo-Blanco et al. (2022) also provided a structural model of education 4.0 with four components: Cloud Computing infrastructures (applied in COVID-19 confinement period), hybrid active methodologies (applicable in face-to-face, online and blended learning modes), technologies (through a technological ecosystem) and horizontal 4.0 competences.

Systematic literature reviews (SLRs) on open education open a way to deepen knowledge and its applications. Important contributions have been made with SLRs that have allowed knowledge of open education practices in China (Tlili et al., 2019), as well as studies of open access online courses (Buyut et al., 2019), of MOOC (Lambert, 2020), MOOC courses of professional medical education (Rowe et al., 2019), open innovation (Ramírez-Montoya & García-Peñalvo, 2018) and open education (Ramírez-Montoya, 2020), among others. Increasing awareness of open education is imperative, as identified by UNESCO (2019), which issued global recommendations approved by the General Conference, encouraging actions towards capacity building, policy development, inclusive and equitable access, sustainability models and promotion of international cooperation. In this sense, the objective of this article is to analyze publications on open education in the Latin American region, en el año que salieron las recomendaciones UNESCO, como una línea base de la región, with a view to providing new knowledge that can support actions for these international recommendations and to shed light on them in times of crisis, such as that of Covid19. Although this article focuses on the Latin American region, this document seeks to bring value to training environments in all regions, linking the new UNESCO recommendations with the effects of the pandemic, looking towards educational innovations, and driving education and future research.

Method

The method for conducting the study was the systematic literature review (SLR). This method postulates a process that goes from asking questions, searching for

literature, delimiting criteria and establishing a protocol for analysis (Kitchenham & Charters, 2007; Verner et al., 2012; University of York, 2009). The method made it possible to identify, analyze and interpret the research available in a specific period, related to the thematic area of interest of open education in Latin America. Five phases were followed in the study: 1) research questions, 2) search process, 3) inclusion and exclusion criteria, 4) data selection and extraction process and 5) data synthesis.

Phase 1: Research questions.

Based on the objective of analyzing evidence published by Latin American authors from 2014 to 2019, within the framework of open education, to locate challenges and opportunities linked to UNESCO recommendations. A global study was conducted (Ramírez-Montoya, 2020), and, in particular, this article focuses its study on the Latin American region, with six research questions were posed and are listed in Table 1.

Table 1

Topics and research questions

Research questions (RQ)	Possible answers
RQ1. Where are the authors of the studies in Latin America located?	Location of the first author of the articles
RQ2. What are the methodological trends, strategies and instruments used in the studies of open education worked by authors from Latin America?	<i>Classification of studies (Castillo-Martínez & Ramírez-Montoya, 2021):</i> Quantitative Qualitative Mixed
RQ3. What are the practices of the open education movement that were studied in Latin America?	<i>Open educational movement (Ramírez-Montoya, 2020):</i> Production Use Dissemination Mobilization
RQ4. What core dimensions are identified in the Latin American practices of open education?	<i>Opening up education framework for higher education institutions (Inamorato dos Santos et al, 2016):</i> Content Pedagogy Recognition Colaboration Research Access

RQ5. What are the cross-cutting dimensions identified in the articles of Latin American authors?	<i>Opening up education framework for higher education institutions (Inamorato dos Santos et al, 2016):</i> Strategy Leadership Technology Quality
RQ6. What are the challenges and opportunities found in the publications consulted in relation to UNESCO's recommendations?	<i>New recommendation UNESCO (UNESCO, 2019):</i> Capacity building Developing supportive policy Effective, inclusive and equitable access Nurturing the creation of sustainability Fostering and facilitating international cooperation

Phase 2: Search process

The protocol for the search of articles integrated automatic and manual processes in the Scopus and Web of Science (WoS) indexing systems, delimiting the key words (open education), time window (2014-2019), type of document (article), type of access (open) and language (Spanish and English).

Phase 3: Inclusion and exclusion criteria

Articles were included if: they were articles that integrated in their title, abstract or keywords the topics of open education, published between 2014 and 2019, in Spanish and English languages and open access.

Articles were excluded if: they were papers, book chapters, SLR related to the topics of the search (open education), published in languages other than Spanish and English, that were not open access and that were published before 2014 or after 2019.

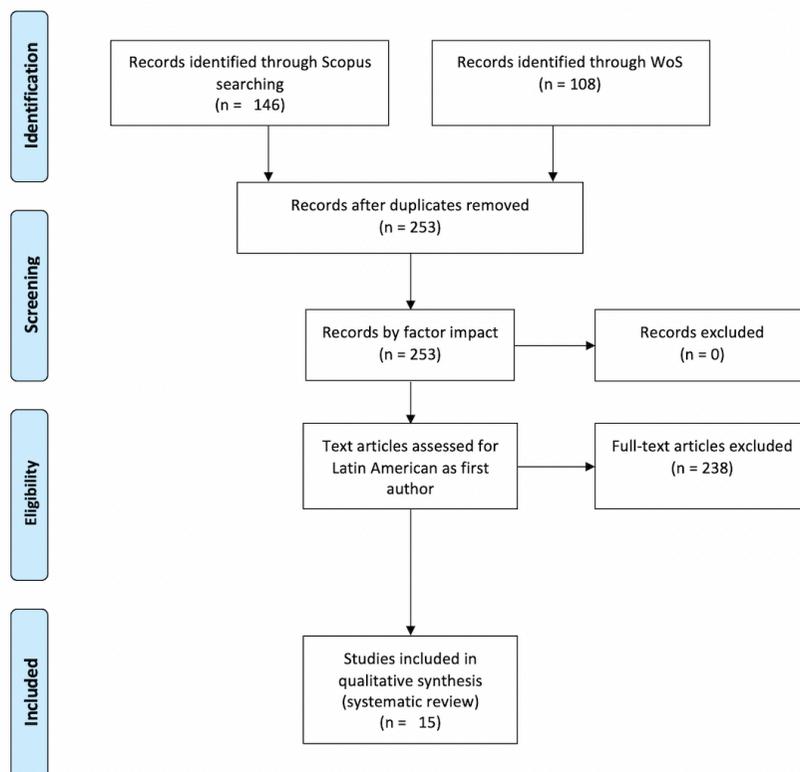
Phase 4: Selection process and data extraction

En el periodo de enero de 2014 a junio de 2019 se realizó la colección de datos. The search resulted in the identification of 146 articles in Scopus and 108 in WoS. The articles were reviewed and duplicates were identified in both databases, so the duplicates were eliminated (leaving them with the Scopus record). The articles were reviewed to verify that they contained the integration of open education in the studies and that they were related to the social and educational areas. Finally, 253 articles were selected and from there the 15 articles that had a Latin American as first author were placed (Appendix 1). La educación abierta tiene la gran ventaja de que el contexto se ve superado a través de las implementaciones, es decir, no se circunscribe al lugar donde se realiza una práctica, de ahí que en este estudio se tomó la decisión de

seleccionar artículos donde la afiliación del primer autor se ubicara en el contexto latinoamericano, solo como una decisión desde la investigación para tratar de ubicar prácticas de origen desde el ámbito latinoamericano. En la Figura 1 se presenta el proceso de la colección de datos a través del método PRISMA (Moher et al., 2019).

Figure 1

Prisma flow diagram for SLR



The following data had been previously extracted from the studies identified: Authors, Title, DOI, Abstract and Country. The researchers used a data extraction form specifically related to the nine questions under study in the SLR. Validation was done with peer review to check the identification of the answers, in cases of discrepancies agreements were reached for the selection of answers and to approach 100% data verification.

Phase 5: Data synthesis

In order to synthesize the answers, a previous classification of the possible graphic representations was made, an analysis was carried out to locate the intersection that

could be interesting to relate terms, clusters and concatenation of categories and subcategories. The data synthesis in the integrated Excel (Link: tiny.cc/SLR-Latam).

Results

In this section, which is organized by the themes and sub-themes identified in the research, we report the results related to the research questions. The graphing tools were Vosviewer and Tableau.

RQ1. Where are the authors of the studies in Latin America located?

The articles analysed the first author to consider the geographical location. Figure 2 indicates that it is in the contexts of Brazil and Colombia that the subject of open education has been most published in the period considered for this study. It also denotes an absence of publications in large countries such as Argentina, Peru, and Venezuela.

Figure 2

Geographical location in Latin America of the first author

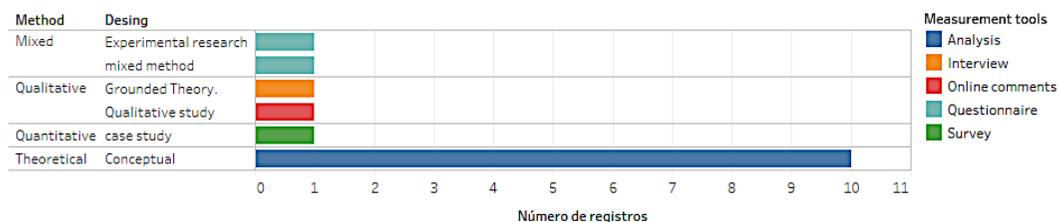


RQ2. What are the methodological trends, strategies and instruments used in the studies of open education worked by authors from Latin America?

Of particular importance is the analysis of the types of methodologies and strategies that are being used to investigate open education practices. Figure 3 shows how publications of a theoretical-conceptual nature stand out, with analysis as a content strategy, and thus emerges to promote studies of an empirical nature in order to learn about the findings of open education.

Figure 3

Methodological trends



RQ3. What are the practices of the open education movement that were studied in Latin America?

The studies analyzed show that the dissemination practices are those that have been analyzed in the articles, with diverse themes (conceptual aspects, open educational resources, Mooc, open teaching, technological innovations and intellectual transformations) and highlight the absence of practices focused on the mobilization of knowledge (Figure 4).

Figure 4

Practices of the open education movement

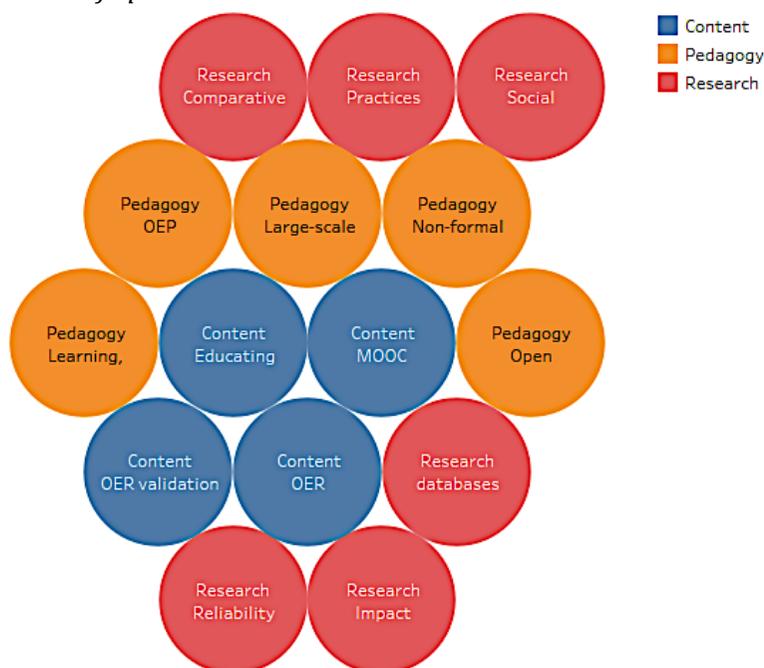


RQ4. What core dimensions are identified in the Latin American practices of open education?

The analysis of the purposes of the practices (what) identifies aspects of pedagogy, which refers to the opening up and use of technologies to broaden pedagogical approaches and make the range of teaching and learning practices more transparent, comparable and visible (Inamorato dos Santos et al, 2016). The results in Figure 5 highlight open, non-formal, large-scale practices and open learning as dominant in the articles analysed. Similarly, practices of Recognition, Collaboration and Access are highlighted in the absence of these.

Figure 5

Core dimensions of open education

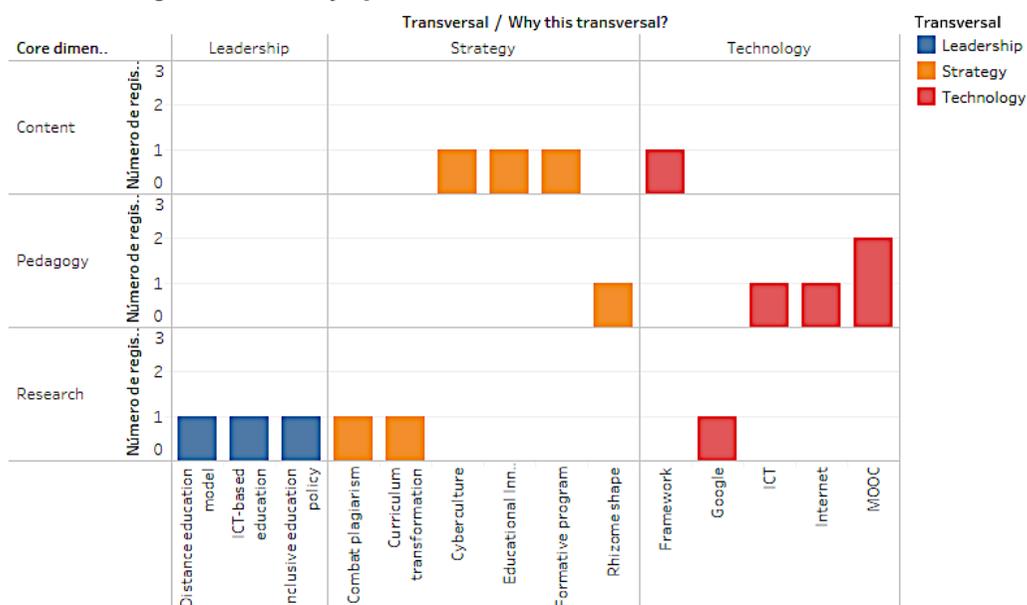


RQ5. What are the cross-cutting dimensions identified in the articles of Latin American authors?

The cross-cutting dimensions (the how) identified in the studies represented a greater impact on open strategy practices, which involve different sets of activities linked to content, pedagogy and research (Inamorato dos Santos et al, 2016). Quality aspects in open education are absent in the papers analysed and with this, challenges arise for the convergence of the five concepts of quality (effectiveness, impact, availability, accuracy and excellence) with the offer and opportunities of open education in training environments (Figure 6).

Figure 6

Cross-cutting dimensions of open education



RQ6. What are the challenges and opportunities found in the publications consulted in relation to UNESCO's recommendations?

In order to identify the challenges and opportunities offered by Latin American authors, an analysis of texts was carried out in light of UNESCO's recommendations (UNESCO, 2019). This analysis allowed for the categorization and graphing of incidents that occur after the analyses (Appendix 1) [SLR articles are marked with an *].

[*1] It analyzes how, in spite of the fact that the Chilean government has tried to develop inclusive education policies, they only remain in the attempt since they are not with deep intentions of transformation, added to this the people who are part of the school community (parents) resist this instance of educational equality/democracy. It is necessary to analyze the historical processes that constructed social representations in order to make a school inclusive.

[*2] One of the biggest challenges in modern engineering education is to create awareness about the basic principles of process safety. Although several organizations are trying to find adequate learning environments, there is still a lack of courses or programs aimed at making students aware of the causes of accidents and their prevention.

[*3] This article presents a study on teaching that combines meta-synthesis and content analysis. They raise the need not to "directly relate" Open education to distance education. Deepening Open Education will favour openness to multidisciplinary and collaborative work.

[*4] This document presents the situation of mass open courses online in Ecuadorian institutions. The study shows the impact that MOOCs have had as training instances and invites to increase their development for the future possible impact and benefits of their implementation.

[*5] Learning Objects have become popular in recent years. This increase in their generation has not always had a control on their quality. There is a need for evaluation and models that allow the production of valuable materials for educational environments.

[*6] Open Learning Assessment is an emerging educational concept derived from the incorporation of ICT in education and is related to the Open Education Movement. It is necessary to accept new forms of assessment but paying attention to the characteristics of the new ways of learning. The possible resistance to change could slow down the implementation of new evaluation instances.

[*7] Despite the growth of the Open Education movement and the efforts for the adoption of Open Educational Resources (OER), their integration in institutional instructional designs is still not evident and they are only visualized in individual efforts of teachers who seek to implement them in their educational practices.

[*8] Traditional education with its available educational resources are not fully exploited to help meet current educational demand. The use of technological innovations for large-scale education could be part of the solution. To this end, the integration of new technologies into curricula and multidisciplinary collaboration would increase the dissemination and educational outreach to meet global demands.

[*9] The integration of ICTs into traditional training processes would make it possible to enrich educational environments, facilitating new spaces for discussion and reflection through the creation of connections and specialized information nodes aimed at building knowledge collectively.

[*10] There has been an endless amount of research on distance education, but it has been satisfied with being explanatory or descriptive of its functioning. It is necessary to build inter-institutional study networks in which researchers prioritize the explanatory study of the impact of this form of education.

[*11] Open education should be useful not only in formal spaces. For example, MOOCs can be transformed into training spaces where self-management and collaborative practices among students help to generate a space of freedom to acquire competencies.

[*12] The creation of spaces for reflection and constant interaction among teachers promotes new learning and collaborations that impact and enrich the daily practices of the participants. As a result, solidarity and collaboration groups are created, which help to contain educational doubts and new practices that are carried out in the classroom.

[*13] Although language teaching has a long tradition of using ICTs, today Open Educational Resources are becoming a new way of innovating the process of teaching and learning foreign languages.

[*14] The teacher, as a "transforming intellectual", assumes the leading role in bringing about the change from traditional "banking" education to an education

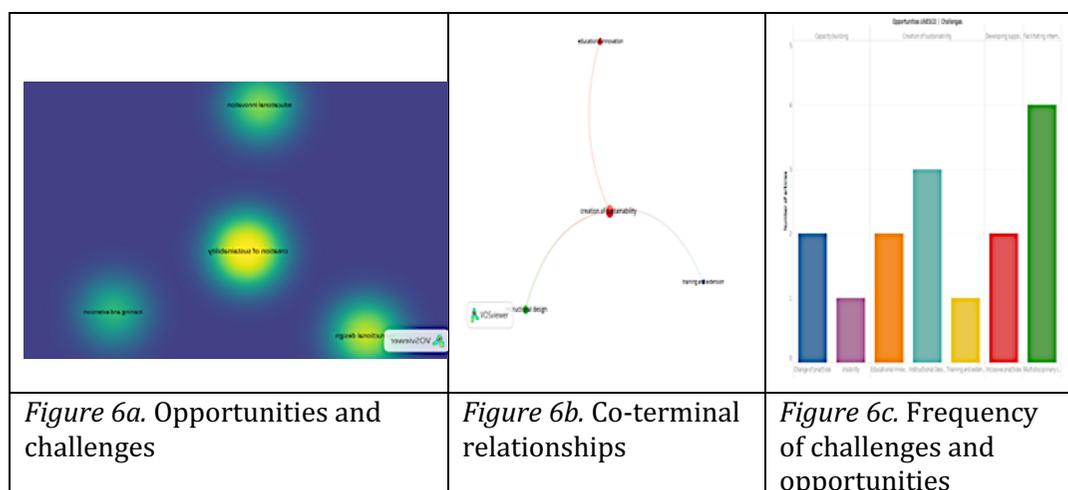
without limits of space and time, acquiring digital strategies in the classroom as fundamental.

[*15] MOOC facilitators must face the challenge of using these tools, from a new form of instructional design to motivational teaching strategies for learners who are used to other forms of knowledge acquisition.

The content assertions of the articles were graphed and links were made with respect to emerging opportunities linked to UNESCO recommendations (Figure 7). Creating options for sustainability in open education is presented as a great opportunity. These options are linked to the terms that emerge from the studies (educational innovation, instructional design, and training and outreach).

Figure 7

Opportunities and challenges found in the publications consulted in relation to UNESCO's recommendations



Discussion

It becomes complex to imagine the future when this present is difficult to analyze and understand in all its aspects. With an assertion such as this one, the need for and importance of research and solidarity, indispensable for obtaining more effective results that bring us closer to understanding our present, becomes more relevant.

Open education is presented to us as an option for establishing and configuring strategies to bring training instances closer to more people. Figure 1 shows the lack of publication of its practices in various Latin American countries. Figure 2 also shows that publications have focused more on methodologies for theoretical and conceptual contributions. It is precisely here that UNESCO's recommendation (UNESCO, 2019) calls for the promotion of international collaborative networks that lead to agreements to increase knowledge on open education, above all in regions where it is most needed, as is the case in Latin America.

Open education practices are presented in times of crisis as an opportunity to promote training environments, where educational innovation plays an important role. Figures 4, 5 and 6 denote the practices identified in the articles analyzed and the absences emanate as challenges to strengthen infrastructure for access, strategies for collaboration and practices that allow the transition from non-formal to formal education, to complete training programs that promote lifelong learning, in a more flexible and quality. Similarly, the creation of models for sustainability in open education is a great opportunity for Latin American educational spaces. In this sense, educational innovation seen as the possibility of multidisciplinary collaboration (Govindarajan & Dhanavandan, 2019), will undoubtedly support the creation of new opportunities to produce improvements (Rabin et al., 2020) in educational environments.

Researching in solidarity to discover solutions to our reality will allow us to find options to the new questions that a society, at times asphyxiated, cries out for. Sharing data, knowledge and results between researchers from different disciplines, institutions and countries will increase the speed of production and will allow for more effective and precise results that will help to solve current and future problems for a world that demands greater responsible, committed and collaborative participation.

Conclusion

Capacity building. Developing supportive policy. Effective, inclusive and equitable access. Nurturing the creation of sustainability. Fostering and facilitating international. Cooperation. These are UNESCO's invitations to continue contributing to open education.

Economic crisis. Financial crisis. Political crisis. Health crisis. Social crisis. Social collapse. Emotional crisis. War crisis. Food crisis. Environmental crises (earthquakes, hurricanes, fires, global warming, loss of biodiversity, pollution). These are some of the challenges we face as a society.

The framework of UNESCO recommendations and the COVID 19 crisis have highlighted the need to converge educational efforts towards a new reality. In a present that has gone, in a few months, from an analogical dynamic to a digital one, in all aspects of people's lives, forces all social actors who are part of educational communities, to join views from a supportive and proactive perspective, to seek ways to generate and distribute knowledge and skills for a future, which rather than certainties present uncertainty.

Educational innovation, instructional design, and training and outreach are the most emergent data that emerged from the analysis of publication practices in Latin America. Although this study is limited because it focuses on publications in specific indexing systems and a range of years, it can be said that these emerging data can be extrapolated to new areas. Training environments, the location of educational innovations, and the impetus for future education and research, are essential to work with a multidisciplinary vision, to strengthen theoretical and practical knowledge with innovative didactic strategies, the use of technologies, and to foster links with the

various sectors of society. With this paper we invite you to follow UNESCO's new recommendations with a solidary and committed view, for the common good.

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Conflict of interest

The author declares no conflict of interest. The funders had no role in the design of the study; in the collection, analysis or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

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APPENDIX 1:

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