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Artículos científicos

Recursos educativos abiertos y políticas institucionales en universidades públicas mexicanas: estudio de caso

Open Educational Resources and Institutional Policies in Mexican Public Universities: Case Study

Recursos educacionais abertos e políticas institucionais em universidades públicas mexicanas: um estudo de caso

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COVID-19 ha resultado en una crisis de aprendizaje que necesita nuestro apoyo colectivo. Los principios de apertura, intercambio y colaboración que caracterizan el movimiento recursos educativos abiertos (REA) nos guiarán en nuestra respuesta colectiva a esta crisis.

ASHA KANWAR

Resumen

El movimiento de recursos educativos abiertos (REA) se circunscribe en la tendencia de ciencia abierta e impacta en el ámbito de la educación superior. La investigación tuvo como objetivo identificar el estado actual de las políticas educativas institucionales de las universidades públicas estatales en relación con los REA y la percepción de los docentes e investigadores de la Universidad Autónoma del Estado de Morelos (UAEM), México. Se utilizó una metodología con perspectiva cualitativa y enfoque exploratorio descriptivo. Al claustro de profesores se envió, en febrero del 2020, una guía de consulta con posibilidad de respuestas libres y abiertas, con el propósito de conocer las percepciones que tienen respecto



a las políticas educativas existentes en su institución para el diseño y elaboración de REA. Se obtuvo un total de 25 contribuciones que integraron el corpus de análisis. Con base en el estudio exploratorio de las 35 universidades públicas estatales que registró la Secretaría de Educación Pública (SEP) se obtuvieron los siguientes hallazgos: dichas universidades carecen de políticas institucionales que les permita integrar los REA a los programas institucionales de desarrollo educativo que se han implementado en cada una de ellas. Igualmente, no disponen de repositorios de materiales educativos abiertos, a excepción de la UAEM, que es la única que publica una metabase de recursos educativos, a cargo del Programa de Formación Multimodal. Extraña que en los resultados de la consulta la mayoría ignora la existencia de políticas institucionales *ad hoc* y del mencionado repositorio. Se sugiere que las universidades públicas, frente a la grave crisis causada por el coronavirus 19, apliquen las políticas y estrategias relevantes que la Coalición Mundial para la Educación 2020, liderada por la Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (Unesco), ha propuesto en función del desarrollo de sistemas de educación abierta y flexible en beneficio de estudiantes y jóvenes que enfrentan, fuera de sus aulas, la continuidad de sus estudios.

Palabras clave: docentes, políticas y programas educativos, recursos educativos abiertos, universidades públicas.

Abstract

The open educational resources (OER) movement is circumscribed in the open science trend and impacts in the field of university. The objective of the research was to identify the current state of the institutional educational policies of the public universities in relation to the OER and the perception of the teachers and researchers of the Universidad Autónoma del Estado de Morelos (UAEM), Mexico. A methodology with a qualitative perspective and a descriptive exploratory approach was used. In February 2020, a consultation guide was sent to the university's teachers with the possibility of free and open-ended answers, with the purpose of knowing the perceptions they have regarding the educational policies existing in their institution to the design and production of open educational materials. A total of 25 contributions were obtained that made up the corpus of analysis. Based on the exploratory study of the 35 public university that the Secretaría de Educación Pública (SEP) registered, the following findings were obtained: these universities lack institutional policies that allow

them to integrate OER into the institutional programs of educational development that have been implemented in each one of them. Likewise, they do not have open educational material repositories, with the exception of the UAEM, which is the only one that publishes a metabase of educational resources, in charge of the Multimodal Training Program. It is strange that in the results of the consultation with teachers and researchers, most ignore the existence of *ad hoc* institutional policies and the aforementioned repository. It is suggested that the public universities, in the face of the serious crisis caused by Coronavirus 19, apply the relevant policies and strategies that the World Coalition for Education 2020, led by the United Nations Organization for Education, Science and Culture, has proposed based on the development of open and flexible education systems for the benefit of students and young people who face, outside their classrooms, the continuity of their studies.

Keywords: teachers, educational policies and programs, open educational resources, public universities.

Resumo

O movimento de recursos educacionais abertos (REA) está circunscrito à tendência da ciência aberta e aos impactos no campo da educação superior. A pesquisa teve como objetivo identificar o estado atual das políticas educacionais institucionais das universidades públicas estaduais em relação aos REA e a percepção de professores e pesquisadores da Universidade Autônoma do Estado de Morelos (UAEM), México. Utilizou-se uma metodologia com perspectiva qualitativa e abordagem exploratória descritiva. Um guia de consulta com a possibilidade de respostas livres e abertas foi enviado ao corpo docente em fevereiro de 2020, com o objetivo de conhecer a percepção que eles têm sobre as políticas educacionais existentes em sua instituição para a concepção e elaboração de REA. Obteve-se um total de 25 contribuições que compuseram o corpus de análise. Com base no estudo exploratório das 35 universidades públicas estaduais cadastradas no Ministério da Educação Pública (SEP), foram obtidos os seguintes achados: essas universidades carecem de políticas institucionais que lhes permitam integrar os REA aos programas de desenvolvimento educacional institucional implantados em cada um deles. Da mesma forma, não possuem repositórios de materiais educacionais abertos, com exceção da UAEM, que é a única que publica uma metabase de recursos educacionais, a cargo do Programa de Capacitação Multimodal. É estranho que nos resultados da consulta, a maioria ignore a existência de políticas

institucionais ad hoc e do referido repositório. Sugere-se que as universidades públicas, diante da grave crise provocada pelo coronavírus 19, apliquem as políticas e estratégias relevantes que a Coalizão Mundial pela Educação 2020, liderada pela Organização das Nações Unidas para a Educação, a Ciência e a Cultura (Unesco), propõe assente no desenvolvimento de sistemas de ensino abertos e flexíveis em benefício dos alunos e jovens que enfrentam, fora das salas de aula, a continuidade dos estudos.

Palavras-chave: professores, políticas e programas educacionais, recursos educacionais abertos, universidades públicas.

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Introduction

The spread of the COVID-19 pandemic globally forced governments to close down educational institutions around the world. According to the United Nations Educational, Scientific and Cultural Organization [Unesco] (2020a), more than 1.4 billion students and young people were left out of the classroom due to the presence of this new virus. Faced with this, Esther Kuisch Laroche, director of UNESCO in San José (November 5, 2020), declared: “Investment in distance education should serve to mitigate the immediate interruption caused by COVID-19 as well as to establish new approaches to developing more open and flexible education systems for the future”(para. 7).

Likewise, this international body made reference to a policy for the selection of digital learning resources, which governments, schools, teachers and parents can use to open opportunities for those students who cannot attend school, as well as respond to the need for repositories of national learning platforms designed to support the continuity of study based on the Unesco curriculum (2020a). Such a policy should particularly benefit the most vulnerable students in developing countries who cannot follow the online lessons that are being provided in many developed countries and especially in urban contexts (Unesco, 2020a).

In this scenario, the need to carry out an exploratory study at the Autonomous University of the State of Morelos (UAEM) was responded to as a sabbatical year research project, endorsed by the relevant academic bodies. Based on the foregoing, this paper presents a first preview of the results obtained from a broader research on open educational resources (OER) and institutional policies in public universities. This inquiry constitutes a first approach to the following Unesco approach (2013): “In the education and research

ecosystem, OER and open access are two important sets of actions that work in an integrated way to promote the quality of learning and generate new knowledge" (p. 9).

The exploratory study was structured around a double question: what are the institutional policies that exist in the institutional educational development plans of public universities for the creation and design of OER and how do teachers and researchers from the UAEM? Thus, the research aimed to identify the current state of institutional educational policies of state public universities in relation to OER and the perception of UAEM teachers and researchers.

Path of open educational resources

The study of OER is directly linked to the spirit of the universality of knowledge. These are digital materials created with the educational purpose of encouraging, free and open, teachers, students and the general public in support of the processes of construction of new knowledge (Merino, 2013).

The development of the OER movement was influenced by a contextual factor that expanded the possibilities and potential of these. At the initiative of the Massachusetts Institute of Technology (MIT), the institutional OpenCourseWare (OCW) project was created, which led many universities around the world to get involved by creating specialized repositories.

The concept open educational resources (OER), whose translation into Spanish is precisely REA, was coined by UNESCO (2002) during the Forum on the Impact of Open Courses for Higher Education in Developing Countries. According to the forum's statement, the term was created to describe "the provision of open license resources, made possible by information and communication technologies, for consultation, use and adaptation by a community of non-commercial users" (p. 4).

After a decade of the initial declaration, OERs are part of a movement that has advanced with the support of international organizations, educational institutions and individuals from many countries around the world. Academic communities have recognized, among others, the following benefits of offering and using OER:

The open and continuous professional training of teachers, the innovation of the pedagogical practices of higher education, the stimulus for learning throughout the life of students and citizens, as well as the increased visibility

of those institutions participating in this movement (Inamorato, Cobo y Costa, 2012, p. 14).

More recently, the Unesco General Conference, meeting in Paris in October 2019, approved the Draft Recommendation on OER. Said normative instrument is characterized as an essential tool to strengthen international cooperation in OER and in support of the application of the 2030 Agenda for Sustainable Development. (Unesco, 2019).

By building inclusive knowledge societies, (...) OER can promote equitable, inclusive, open and participatory quality education, further strengthening academic freedom and professional autonomy of teachers by expanding the scope of materials available for teaching and The learning (Unesco, 2019, p. 2).

Although over the last two decades the OER movement has taken important steps, multiple resistance is still perceived by higher education organizations and institutions in many countries, including Mexico, as recorded below.

Conceptualization of open educational resources

To date, there have been multiple definitions of OER that international organizations and educational institutions have included in official statements, specialized publications, and academic events. As an example, some conceptualizations that were elaborated by international organizations, non-governmental consortiums and educational institutions linked to higher education are presented.

We cannot begin this brief tour of definitions about OER with another document than the one in which this term was first coined:

OERs are resources for teaching, learning and research, which reside in the public domain or have been published under an intellectual property license that allows their use is free for others. They include: full courses, course materials, modules, textbooks, videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. (OPS, 2019, p. 1).

After a decade of the first conceptualization of OER, the same body, in the preamble to the World Congress on OER, held in Paris from June 20 to 22, 2012, in its declaration designates them as follows:

Teaching, learning and research materials in any medium, digital or otherwise, that are in the public domain or that have been published with an open license that allows free access to those materials, as well as their use, adaptation and redistribution by others without any restrictions or with limited restrictions. Open licenses are based on the existing framework of intellectual property rights, as defined in the corresponding international agreements, and respect the authorship of the work (Unesco, 2012, p. 1).

It is pertinent to specify that in this definition some basic particularities are made explicit for its understanding. First, a dimension that transcends learning is enunciated: these resources also support research. Second, the types of media in which OER can be offered are expanded: information and communication technologies (ICT) acquire greater preponderance. Finally, the use of open licenses is made official.

In the Unesco General Assembly (2019) the conceptual use is similar to that cited in the 2012 declaration with the exception that the reuse, conversion, adaptation and redistribution at no cost by third parties of the OER (Unesco, 2019).

As a compendium, three dimensions are extracted from the definitions presented, as proposed by López (1 de noviembre de 2007):

- Educational content: complete courses (educational programs), various types of informative and didactic materials in text, audio and video.
- Tools: mainly software to support the creation, delivery (access), use and improvement of open educational content.
- Implementation resources: IP licenses that promote open publication of materials (párrs. 5-7).

Beyond a series of concepts around OER, higher education institutions are committed to guaranteeing an open and quality education that promotes lifelong learning opportunities for all, supported by educational policies that are inclusive of OER.

Development of institutional policies on open educational resources

The trend towards open access is gaining ground in the educational field and, specifically, in the context of higher education, there is a need to formalize policies aimed at establishing a regulatory framework that help to take a further step in the development and sharing of content (Inamorato et al., 2012).



In the processes of preparing educational policies on OER, the fundamental principle of collaboration for the design of regulatory standards must prevail. Collaboration has become the most important tool for the design, execution and development of open access policies in which teachers and students themselves can collaborate with the purpose of democratizing educational content (García, 2019).

In the specific field of education policies, in the 2012 Paris Declaration on OER, Unesco explained to the member states the need for a normative instrument in the field that promotes the development of effective policies and practices in relation to with these resources.

In this vein, it ordered the member states to use, according to their possibilities and powers, the following regulatory instruments:

- Create conducive environments for the use of ICT.
- Strengthen the formulation of strategies and policies on OER.
- Support capacity building for the sustainable development of quality learning materials.
- Promote the development and adaptation of OER in a variety of languages and cultural contexts.
- Encourage research on OER.
- Promote the use of open licenses for publicly funded educational materials (Unesco, 2012).

This document constitutes a great step towards universal access to education, at all educational levels, through measures that reinforce the strategies and policies on OER, which promote its creation, use and management with the intention of improving innovation in higher education , mainly (Ramírez, 2013).

However, following Coolidge and DeMarte (2016), not all higher education institutions or universities have recognized the high potential of OER in teaching and learning. In order to be successful, these institutions must incorporate complete OER-based programs into their curricula and to do so implement educational policies that strengthen such initiatives (Coolidge and DeMarte, 2016).

These experts in educational policy on OER have contributed to closing this gap by designing the proposed Policy Development Tools for Open Educational Resources (OER), whose content is intended to be adopted and adapted for use within the culture of the

respective institutions that are willing to assume it, taking into account three areas: the assumptions, components and policy resources of OER (Coolidge and DeMarte, 2016).

The policy assumptions focus on a set of indicators that help provide the basis for the formulation of a sound OER policy. Among others, the following can be considered:

- Having an OER policy at the institutional level means support from management, and creating a safe environment for faculty to explore the potential of OER.
- To realize the full potential of OER in teaching and learning, higher education institutions must develop and offer comprehensive programs based on OER.
- An OER policy at the institutional level is best executed when it is written in collaboration with all stakeholders - teachers, governing councils, students, faculty, staff, and leaders of student organizations - within a vision of culture that embraces the premise of the opening in the production of OER (Coolidge y DeMarte, 2016).

The policy components start from the fact that educational communities need to know the purposes of policies, why OER is important and how they align with the institutional vision and mission. There are multiple components that should be considered when developing an OER policy, depending on Coolidge and DeMarte (2016):

- Not to supplant in the use and creation of OER the intellectual property and copyright policy of an institution, but to complement it with Creative Commons licenses, among others.
- Include training and professional development guidelines with OER, contemplating basic aspects such as offering academic staff opportunities for professional development, spaces to exchange ideas and deepen their understanding and commitment, as well as opportunities to build new networks.
- Ensure the quality of OER: this must be reflected in the courses and programs of the curriculum, so that it is equal to or superior to the editorial content distributed commercially (Coolidge y DeMarte, 2016).

Undoubtedly, a REA policy agrees to comply with local laws and regulations of a national and international nature through the participation of teaching bodies and students in the development and practice of said standards.

Finally, policy resources seek to regulate everything related to economic resources, human resources and technical resources through flexible formats that promote the retention, reuse, review, remix or redistribution of content (Coolidge and DeMarte, 2016). Likewise, the dimensions that constitute the essence of the OER concept must be considered:



educational content, technical tools and legal resources for implementation, mentioned above.

By way of closing this section, it is worth resuming Unesco's (2019) call for attention to all its member countries and national higher education institutions to address the inclusion of OER in educational transformation or reforms that include the possibilities, potentialities and opportunities offered by this educational movement, updating its normative and operational frameworks in order to obtain final results of greater equity and quality (p. 9).

Method

The methodology used was qualitative and the case study was used as a research strategy. This was cross-sectional and exploratory. The probabilistic sample was not used, but the mixed sample was used. The case study was chosen because it contributes to a comprehensive understanding of a specific topic, for example, a program, a policy or an institution, in order to produce knowledge about these or other social phenomena (Colina, 2014.).

Sample design

The mixed sample bifurcated into two strategies. On the one hand, a documentary exploration in state higher education institutions to detect the situation of institutional educational development plans in relation to the insertion of specific educational policies linked to the creation and design of OER. On the other hand, an academic consultation guide aimed at UAEM professors and researchers (case study) was designed and uploaded to the Internet to learn about their perception of institutional policies regarding OER.

Information gathering

The collection of information was accomplished in the first strategy by exploring the content of each of the institutional educational development plans of the 35 state public universities registered by the Ministry of Public Education (SEP) in order to verify if they are They mention institutional programs or activities to be developed in relation to OER during the period of validity of said plans (General Directorate of Higher University Education [Dgesu], 2020).

For the second strategy proposed, the collection of information was carried out through the application of the online consultation technique (interview), with open-ended questions, to know the meaning and opinion of the teachers and researchers of the UAEM in relation to the educational policy of your institution regarding the appropriation and use of OER.

The Consultation on Open Educational Resources was available from January 20 to February 28, 2020. To invite UAEM faculty to participate, it was disseminated online, through the UAEM's intranet notification service. The query was uploaded to the institutional message service through a digital poster in which the objectives, the privacy consent and the anonymity of the responses were made known. It should be noted that the first part of the consultation consisted of a set of closed questions related to the socio-educational profile of the participants.

The open questions were organized around three thematic axes linked to basic characteristics of OER: 1) knowledge and experiences that university teachers have about the educational policies of said house of studies with respect to OER; 2) the use and dissemination that the institution of membership of the teaching staff confers on the OER, and 3) attitudes assumed by the teachers towards the educational movement OER.

Due to the date of the first submission of the query, every weekend a reminder was sent to those who had not yet submitted their responses to do so. In the end, 23 responses were received in the ad hoc database from different academic staff of the institution under study. This result was valued sufficient and significant within the perspectives of the qualitative research methodology.

Information processing

The analysis of the data of the corpus configured with the answers to the query was made with the contributions of the grounded theory of Straus and Corbin (2002), whose postulates have been positioned as fundamental in qualitative educational research and that, together with the possibilities offered by the ATLAS.ti software (auxiliary in the systematization processes), constitute support tools for the qualitative interpretation of textual data. According to Coffey and Atkinson (2003), research must "transform and interpret qualitative data — in an academic and rigorous way — in order to capture the complexities of the social worlds that we seek to understand" (p. 4).

Results

The results are presented based on the two methodological strategies used in the investigation:

First strategy: document search results

In the documentary exploration in the databases of the SEP (Dgesu, 2020) it was found that higher education institutions are cataloged into two groups. In the first, he places the so-called federal universities, such as the National Autonomous University of Mexico (UNAM), the Metropolitan Autonomous University (UAM) and the National Polytechnic Institute (IPN). In the second group the 35 state public universities are classified, including the state, the name of the institution and the respective league of the website. The following results are based only on the study of the study houses of the latter group:

- 1) 100% (35) have open access virtual or digital libraries.
- 2) 41.17% (14) accepted the call of the National Council of Science and Technology (Conacyt) (2018) for the creation of an open academic institutional repository (RIAA), connected to the national repository of said council, but they lack, except for a university, from OER repositories.
- 3) 100% of the universities in this area have an institutional educational development plan. However, the lack of inclusion within these plans of aspects related to OER can be observed, since they focus more on the advancement of open academic institutional repositories.

Consequently, in most of these educational organizations, no evidence was found of the intervention of institutional educational policies that promote and contribute to the innovation of the contents of the teaching-learning programs through the creation of OER repositories. This does not mean that they lack other types of support for university school activities, as may be the case with the use of learning objects or mass free online courses (MOOCs).

Regarding the case of UAEM, it is pertinent to mention the existence of a RIAA and an REA repository called Metabase of Educational Resources (MRE), whose objective is the following:

To offer the university community and users in general two collections of online educational resources: an educational link library of classified links to online resources of educational interest for upper secondary education and higher education, and a repository of learning objects produced by e-UAEM for online courses (UAEM, s.f., párr. 1).

This innovative proposal, created and managed by e-UAEM, offers in free access format these two tools that were created in 2015 with the support of the National Distance Education System (Sined).

Second strategy: query results

The results of the second inquiry strategy corresponded only to the data obtained from the analysis of the responses to one of the questions in the consultation guide provided to the UAEM teachers, which was formulated as follows: “What policies Are there in your institution for the design and preparation of open educational materials by teachers? ”. In this case, 23 valid responses were obtained, since of the 25 provided by the informants, two were discarded, one for being a test and the other for being a duplication of the record. It is pertinent to mention that the guide was made up of two modules, one linked to the socio-educational profile of the informants and the other related to open-ended questions. The achievements are presented in this order.

Participants profile

With this module, socio-educational information was collected from the UAEM informants regarding the following items, based on a total of 23 questions:

- 1) *Type of hiring*: 47.82% declared to be for hours; 43.48% full time; the rest, 8.70%, were described with categories that are not recognizable in the types of hiring.
- 2) *Teaching experience*: 21.74% have more than 20 years of experience; 21.74% are six to nine years old; 21.74% are between 10 and 15 years old; 17.40% are one to three years old; 13.04% from 16 to 20 years, and 4.34% from four to five years.
- 3) *Maximum degree of studies*: 39.12% have a doctorate; 34.8% with mastery; 21.74% with a bachelor's degree, and 4.34% with a degree without a degree.

- 4) *Location in the academic structure:* 21.74% come from the area of education and humanities; another 21.74% of exact sciences and engineering; 17.40% from natural sciences; 17.40% from social and administrative sciences; finally, 21.72% expressed areas not included in the questionnaire.

In summary, the description of the group of people who responded to the query is very varied and allowed: a) to capture a look at OER in the UAEM from different areas of knowledge; b) know the variety of location of the informants in academic units, not only from the central campus, but also from other places in the state of Morelos, and c) represent the diversity in ages and even in years of experience of the teachers. This profile of the informants produced a general overview of the type of teacher who collaborated in answering the consultation guide.

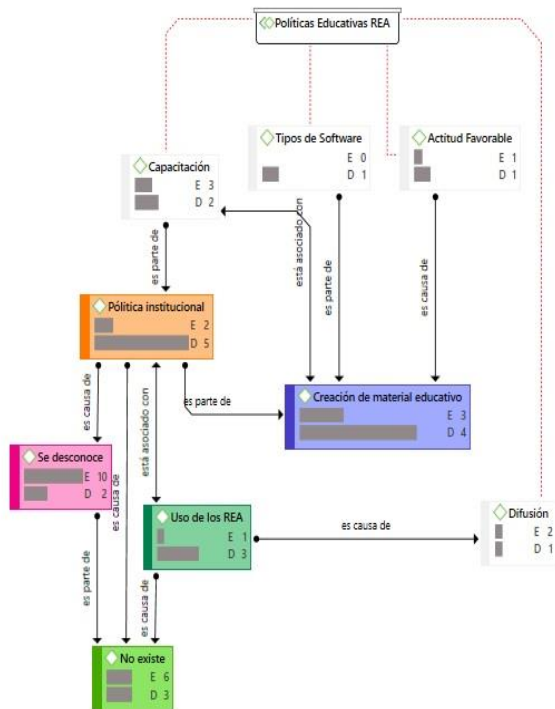
Teachers' perception of institutional policies on OER

Regarding the analysis of the informants' responses to the consultation, methodological resources of grounded theory were used, mainly through the constant comparative method (CCM), which, according to San Martín (2014), is one of the most experienced procedures for the analysis and qualitative interpretation of textual data, from which basic concepts emerge and their constant comparative relationship with other related concepts (p. 6).

To make possible the investigation of concepts, ideas and meanings of the discourse recovered by consulting the UAEM teachers, a database was built in a word processor and, later, they were analyzed using the ATLAS.ti software. From this process arose a multiple-open, axial and selective coding.

With the data obtained, the net-word was built, the results of which can be viewed in Figure 1.

Figura 1. *Netword* del resultado del análisis del corpus sobre políticas educativas REA y elaboración de materiales educativos en la UAEM



Nota: La letra *E* (enraizamiento) señala la frecuencia con que un código aparece.

La letra *D* (densidad) establece la cantidad de códigos con los cuales un código está relacionado de manera semántica con otros.

Fuente: Elaboración propia

The figure that emerges as a central or macro-category is “OER educational policies”, to which the category “OER institutional policy” is subordinated, which is indicated by informants as “Unknown” and “Does not exist”. Likewise, two more categories emerged, “Creation of educational materials” and “Use of OER”, and four subcategories, “Favorable attitude”, “Training”, “Type of software” and “Dissemination”, which basically express opinions favorable from a part of the participants in the consultation.

The result of the categories related to the ignorance or non-existence of an institutional policy on OER reflects misinformation of a high fraction of the UAEM faculty about the existence of an innovative proposal that e-UAEM has built through the MRE system, which is at the service of the university community for consultation.

Some teachers perceived as very important a possible participation in the “Creation of educational materials”, however, they expressed that there is no program in this regard within the institutional plan of educational development of UAEM.

Similarly, a minority portion of the informants mentioned that a “favorable attitude” prevails to receive “Training on OER” and to use various types of “Educational Software”, as long as it is freely accessible. They also express that they would like to make "Use of OER", but that there is not enough "Diffusion" within said house of studies. It is pertinent to note that for reasons of economy of space it was impossible to insert the respective fragments or testimonies of the ad hoc discourse of the participants in the consultation.

Discussion

Exploratory studies "serve to familiarize us with relatively unknown phenomena, obtain information on the possibility of carrying out a more complete investigation regarding a particular context, investigate new problems" (Hernández, Fernández and Baptista, 2006, p. 101). Within this exploratory research design approach, the search and analysis of information about scenarios in Mexico regarding institutional policies in state public universities regarding the presence or absence of OER was established.

The findings regarding the lack of knowledge of OER by the UAEM professors and researchers who participated in the consultation are significant; results related to the omission of specific programs on OER within the institutional educational development programs consulted on the web pages of state public universities and the willingness of the faculty of said house of studies to recognize and implement OER in their various areas of knowledge .

In relation to the research question on the existence of institutional policies related to OER, including specific programs for the participation of teachers in the design and preparation of educational materials, a high lack of knowledge of said educational resources and a lack of information in most of the universities explored. This situation reflected misinformation regarding Unesco's requirements for the higher education institutions of its member countries to incorporate specific policies in this regard in their study plans and programs. In addition, it was identified that all 35 universities have RIAAs, with the exception of one university that has an OER repository.

In this descriptive study, no arguments were found in the educational development institutions programs to justify the absence of programs related to OER, which could be interpreted as a possible limitation of the investigation. Such result constitutes a wake-up call to the directors and heads of academic areas to collectively reflect on the need to include OER in the planning of future educational programs.

Although the similar studies carried out previously are limited, thanks to the exhaustive search in Academic Google, in databases of indexed journals, in bibliographic and documentary collections of the universities under study, important references were discovered.

It was mentioned that not all higher education institutions or universities have been concerned with the recognition of the high potential of OER in teaching and learning. Coolidge and DeMarte (2016) expressed that the success of these institutions lies in incorporating complete OER-based programs into their curricula and for this they must implement educational policies that strengthen such initiatives. Although in the United States there is greater interest in its universities to include educational policies around OER, most of them do not have complete programs supported by this type of resources, but have only been implemented in some curricular areas or subjects.

In Mexico, for its part, it is questionable why its universities, specifically state public ones, have not associated academic programs based on OER policies with institutional programs, that is, they have ignored the postulate that as an associated member state of Unesco supports: “To promote the knowledge and use of open educational resources and to reinforce the formulation of strategies and policies on these resources (Unesco, 2012, p. 2). Likewise, Torres (2019), in a similar study, came to the conclusion that “there is an intense and uneven contrast in the progress of development programs of OER and RIAA. Therefore, the public and private universities that have OER Repositories are minimal”(p.7).

Throughout this research, it has been argued that academic communities (teachers and researchers) value the benefits of using and offering OER. For Miranda (2011):

Beyond the ethical postulates, the use of these resources is convenient for educational institutions because it gives them visibility, allows the development of ideas, even when the institution stops supporting it and it will be very likely that in the long term the invested will return with dividends (p. 3).

Mortera (2010), for his part, he concludes in one of his investigations:

The device (...) REA refers to free educational media and materials freely available on the Internet and the world wide web, but in the databases of public universities in Mexico it is not possible to appreciate this type of resources since they only have with conventional libraries where the student can consult books, theses, theses, databases, patents, etc. (p. 11).

On the other hand, for Tovar, López and Ramírez (2014): “In Latin America, this current began to be worked recently in educational institutions, even with few institutional and national policies that support open access” (p. 68) .

In summary, this study has made visible the shortcomings and gaps that are still present in Mexican higher education scenarios: the absence of institutional educational policies that promote the global development of OER programs and the omission of greater motivation of university teachers to require from managers, from their academic units of affiliation, greater inclusion in the planning of institutional plans for educational development of new policies and teaching strategies. This type of situation demands that the central and local educational authorities create new open access pedagogical devices for both the teaching staff and the university students.

Conclusions

Since 2002, Unesco has brought the concept of OER to the debate in education; To date, a wealth of statements and successful experiences in this regard have flourished in most of the member countries of this international organization. However, in the recent Draft Recommendation on OER (2019) it was assumed that there has not been a sufficient response regarding the creation, access, reuse, reconversion, adaptation, redistribution and evaluation of these resources.

In the specific case of Mexico, OERs have not had the desired expansion; there is a lack of national educational policies with economic and sustainable support. Consequently, in the case of state public universities, the vast majority have not included in their plans educational development institutions institutional educational policies for the implementation, creation and research of OER.

In their institutional planning, the state public universities have left teachers aside in the design and preparation of open educational materials and free consultation; likewise, they do not report the existence of ad hoc repositories. In contrast, the technical and financial management of Conacyt has urged more than a hundred higher education institutions (among them the UAEM) and national research organizations to have and create the RIAA and that these link to the Repository network National Digital Science, Technology and Innovation of said council.

In relation to the specific experience of the UAEM, as a case study, regarding the implementation of an OER educational policy, evidence was obtained that as a state public university it has the MRE, in charge of the e-UAEM. It is surprising that in the results of the consultation on OER to the professors of this university, the majority mention that they do not know its existence.

However, based on the responses obtained, a minority of the informants mentioned that a "favorable attitude" prevails to receive "Training on OER" and use various types of "Educational Software", as long as it is freely accessible and contributes to the knowledge of these resources by teachers and students. In the same way, they express that they would like to make "Use of OER", but that there is not enough "Diffusion" within said house of studies.

Finally, in the face of the great education crisis generated by COVID-19, the OER movement promoted by Unesco is betting on new designs of educational policy linked to the innovation of open access educational content and guided by the principles of openness, exchange and local and global collaboration.

Future Research Lines

Based on the results of this research carried out in the State Public Universities on OER, the need to deepen, through a broader and deeper analysis and based on a global consultation, appears as a future line of research. of factors that affect educational policies around open educational resources. It is to be hoped that this future investigation will contribute to the enrichment of knowledge about OER by teachers and students of higher education in our country.

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