ABSTRACT

A conceptual model on OER adoption is presented, as the substantive theoretical synthesis of a Grounded Theory study, whose purpose was to identify which factors influence the adoption of OER among teachers in Latin American universities. Main theoretical-methodological bases are rooted and analysed, in comparison with the traditional approach identified in the most recent literature. From a double “emic” perspective on agency and structure, the faculty and the university institution, the resultant conceptual model includes four categories influencing the adoption of OER among professors in Latin American universities: 1) Construction of Teacher Professional Identity; 2) Practices and Transformations in the Curriculum; 3) Creation, Use and Opening of Digital Educational Resources; and 4) Social Representations about Repositories of OER. Properties and dimensions of each category are presented and described. The critical conceptual model may be adopted by researchers from all regions who seek to unveil and decolonise the hidden curriculum of OER.
1. INTRODUCTION

The Open Education movement has exceeded 20 years building initiatives for the adoption of Open Educational Resources (OER). However, it has not been possible to achieve their integration into teachers’ practices and educational institutions. In addition, there is a global divide in which the initiatives in Global South countries are little studied, hindering identifying their particularities and the opportunity to provide their own perspective in the global concert of OER.

The conception of OER as an instrument for equity and educational inclusion arises from the geopolitically central countries as a solution to their needs in the context of neoliberal reforms of Higher Education Institutions (HEI). This situation has imbued the open movement with rhetoric and frameworks from the Global North. The research is developed mainly in these contexts (de los Arcos and Weller, 2018), building a circular and closed perspective, oriented to recurring topics and impact analysis. In addition, numerous studies carried out in other regions are approached by taking these central perspectives and models as parameters to categorize practices and levels of adoption, giving rise to the visualization of a single way of conceiving OER. Recent studies from the Global South (Cox & Trotter 2016; Hodgkinson-Williams & Arinto, 2017) and other critical studies in the North (Cronin, 2018; de los Arcos & Weller, 2018) have favored the emergence of new questions and critical approaches. We highlight here the synchronicity of these studies, with that developed by the first author in her doctoral thesis (Rodés-Paragarino et al., 2016; Rodés, 2019b, 2019a; Rodés, Gewerc-Barujel & Llamas-Nistal, 2019; Rodés-Paragarino, 2020), which, we believe, accounts for greater integration of researchers from peripheral countries and a critical perspective on OER.

We, as Latin American women researchers in education, with institutional backgrounds in Spain and Uruguay, reflect our positionalities in this study with a strong critical imprint, which is nourished by the academic traditions, university models and epistemologies of the South. The study sheds light on Southern traditions linking social transformation and social justice with the practice of education.

The resultant conceptual model that will be presented in this article, is the substantive theoretical synthesis of the aforementioned doctoral study, whose purpose was to identify which factors influence the adoption of OER among teachers in Latin American universities. The following sections present the theoretical foundations and the background that guided the approach. This critical approach is described in contrast to the traditional ones on OER adoption studies. Then, the conceptual model, its main categories, properties and dimensions are presented and described. The conceptual model may be a roadmap to decolonise research on OER.

2. THEORETICAL BACKGROUND

From an interpretative paradigm and a perspective of social construction of technological systems, our critical approach examined the constraints that marginalise OER, preventing their full potential from being realised, from a double ‘emic’ perspective on agency and structure. The approach delves into the professional identities of the subjects, their teaching practices and the creation, open publication and reuse of OER, within the university institution in the Latin American context. The review of the state of the art had several stages, consistent with the modality of the chosen methodological approach, the Grounded Theory. As stated by Corbin and Strauss (2015) in Grounded Theory, literature is considered a source of data. When the categories have been identified, the literature is searched in order to confirm or refute the coined categories. The aim of this review is to find out what other researchers have found and what are the links with existing theories.

The main theoretical foundations and background that guided the construction of the conceptual model are presented below.

2.1 TEACHER’S PROFESSIONAL IDENTITY AND OER

Identity is a key influencing factor in teachers’ sense of purpose, their motivation, commitment, satisfaction with their work, and efficiency, so the investigation of the factors that influence positively or negatively, the contexts in which they occur and the consequences for teaching practice are essential.
Table 1 below presents the main theoretical foundations of this approach.

| CONCEPTS                                                                 | AUTHORS                                                                 |
|------------------------------------------------------------------------|------------------------------------------------------------------------|
| “the singer, not the song”                                             | Goodson, 1991:39                                                       |
| Constitutive dimensions of academics as a differentiated group: labor,  | Garcia Salord, Grediaga Kuri & Landesmann Segall (2003)                |
|     disciplinary, social, political and symbolic                        |                                                                        |
| Identity as the result at once stable and provisional, individual and  | Dubar (2014)                                                           |
|     collective, subjective and objective, biographical and structural,  |                                                                        |
|     of various socialization processes that jointly construct individuals |                                                                        |
|     and define institutions.                                            |                                                                        |
| Professional – personal identification                                 | Ricoeur (1996)                                                         |
| Academic habitus: social capital                                        | Bourdieu (1984, 2000)                                                  |
| Academic professional identity is highly fragmented with a loose mix    | Clark (1983)                                                           |
|     of multiple professional types, fundamentally different from any    |                                                                        |
|     other profession                                                    |                                                                        |
| Teaching identity between four cultures: of national academic systems,  | Almarcha (1982)                                                        |
|     of the academic profession, of the institution and of the discipline.|                                                                        |
| The social conditions in which teachers live and work, the personal    | Day (2006)                                                            |
|     and professional elements of their lives, and the experiences, beliefs |                                                                        |
|     and practices of teachers are integral to each other, often evidencing |                                                                        |
|     tensions between these dimensions, which impact to a greater or     |                                                                        |
|     lesser extent on the identity and self-perception of teachers, and  |                                                                        |
|     consequently, in the way and degree of autonomy with which they     |                                                                        |
|     develop their practice                                              |                                                                        |

Construction of the Professional Teaching Identity has allowed us to identify the particular connections between the academic field and the identity of the academics with the adoption of the OER, an unprecedented perspective in the field. In this regards, agency of academics, and their development context, emerged as fundamental dimensions in relation to the adoption of OER in the context of Higher Education.

The most important conceptualizations can be found below in Table 2.

| CONCEPTS                                                                 | AUTHORS                                                                 |
|------------------------------------------------------------------------|------------------------------------------------------------------------|
| Academic perceptions and attitudes influence OER adoption             | Allen & Seaman (2014); Annand, (2015); Annand & Jensen (2017);         |
|                                                                       | Arinto, Hodgkinson-Williams & Trotter (2017); Belikov (2016);          |
|                                                                       | Bossu & Fountain (2015); Cox & Trotter (2016, 2017); Hanley           |
|                                                                       | & Bonilla (2016); Harley et al. (2009); Hassall & Lewis (2017);        |
|                                                                       | Hernández (2014); Hodgkinson-Williams & Arinto (2017); Jung,          |
|                                                                       | Bauer, & Heaps (2017); Kastrakoski, Littlejohn, & Hood (2016);          |
|                                                                       | McGreel, Anderson & Conrad (2015); McGreel, Kinuthia & Marshall        |
|                                                                       | (2013); Mckerlich, Ives & McGreel (2013); Mishra (2017); Mitros &      |
|                                                                       | Sun (2014); Mtebe & Raisamo (2014); Shigeta et al (2017); Stacey (2013); |
|                                                                       | Stagg (2014); Toledo (2017); Woodward (2017).                         |
| Most university professors are not yet familiar with OER.             | Allen & Seaman (2014); Cox & Trotter (2017); D’Antoni (2008); Rolfe    |
|                                                                       | (2012)                                                                 |
| OER are not considered in the decision-making process regarding what   | Kastrakoski, Littlejohn, & Hood (2016)                                  |
|     educational materials to use in college education.                |                                                                        |
| University teaching staff as main agent in the decision-making process | Allen & Seaman (2014); Cox & Trotter (2017); D’Antoni (2008); Rolfe    |
|     in the adoption of OER.                                           | (2012)                                                                 |
| professional development and social factors in the educational field  | Kastrakoski, Littlejohn, & Hood (2016)                                  |
|     in the OER adoption processes.                                     |                                                                        |

2.2 CURRICULUM AND OER

Educational resources, far from being a lateral component of the curriculum, are a pillar on which all processes are supported. Content and resources are always about the teaching practices in which they are integrated. It is therefore, about curriculum.

Following, in Table 3, main foundations of the theoretical framework on curriculum are presented.
A preponderance of the “content centric” perspective is observed when analysing the OER adoption studies, and the way in which the concept of curriculum is expressed, focused on the contents and resources associated with the syllabus. This is what “opening the curriculum” means in the literature associated with OER. Most adoption studies focus on the replacement of traditional resources with OER. Some examples of slightly broader perspectives can be seen in some studies in which the curriculum is mentioned. In these, it is important to visualize the way in which they mention the integration of OER in the curriculum, and what is the underlying conception, as can be seen in Table 4 below.

Behind any curriculum are organizing principles of selection, organization, and methods, which come from political and social options, from epistemological conceptions, from psychological, pedagogical and organizational principles.

It is necessary to take a more comprehensive look that allows understanding of the processes of adoption of OER within the framework of the curriculum understood as processes and contexts that exert influence and power. This transcends the perspective based on global frameworks for the adoption that do not consider the situated dimension of the curriculum.

In this framework, OER adoption must necessarily be approached from a situated perspective, which means that it must be studied from the analysis of the curriculum, insofar as OER come to put in question the curriculum as an external power that selects the contents to be taught and the mode of its representation in the textbook artifact.

This implies that not only is it not enough to analyze the practices that fit within the analytical categories of the open movement, OER and OEP, but it is also essential to address the complexity of teaching, even those practices that are not open, to understand the context that co-determines the adoption of the open paradigm.

Opening the curriculum, from this perspective, transcends the contents of teaching, and is located in the sphere of processes and practices, understanding the didactic context, the organization of teaching, the psychosocial environment and the external context, including the educational system, culture, economy, history, territory, the social, among other codetermining dimensions (Gimeno Sacristán, 1992).
From this approach, transforming the practices of creation and use of educational resources, adopting the open paradigm, implies a change in institutional culture, pedagogical practices and circulation of knowledge. A structural change where OER drive the emergence of new external agents, which leads to the need to develop a permeable curricular system, with the challenges that this implies for institutions and educational systems.

The determinations of the curriculum are not universal, but are historical products (Gewerc Barujel, 2014), so the uncritical extrapolation of models of curriculum transformation, as is the case of OER, conspires against the development of appropriate models that take into account the particular conditions of educational systems and institutions. The Latin American university, in particular, has a history, a tradition and therefore a mission that make it different, in particularly critical and supportive components (Arocena & Sutz, 2017), with regard to the open education movement.

Next, Table 5 presents its main theoretical-methodological bases, which can guide future OER adoption studies from this proposed perspective, in comparison with the traditional approach identified in the most recent literature.

| APPROACH | TRADITIONAL | CRITICAL |
|----------|-------------|----------|
| Paradigm | Experimental | Interpretive |
| Methodology | Metrics, Description, Characterization, Profiles | Dense description |
| Object | Frameworks | Practices, subjects, contexts |
| Categories of analysis | Analyzes practices that fit within the predetermined analytical categories OER or Open Educational Practices (OEP) as isolated object | Analyzes the global panorama of teaching practices, even those that are not open, to understand the complexity of each context that intervenes in the adoption of the open paradigm |
| Context | Universal, homogeneous, post-colonial | Contextualized, socio-historical, situated, heterogeneous, decolonial |
| OER/OEP | Dualistic Perspective: a) OEP understood as practices and policies that support the creation, use and reuse of OER; b) OEP separately from OER; c) OEP that precedes the use of OER. | Integrated perspective: content (OER) and practice (OEP) are part of the same phenomenon, the curriculum, which also includes processes, agents and contexts |
| Subject | Normative Subject | Biographical Subject |
| Curriculum | Understood as teaching content. The relationship of OER with the curriculum is conceived as the replacement of traditional curricular materials by OER. General education. | Understood as practice, manifest and hidden. The relationship of OER with the curriculum is conceived from a situated perspective, aware of the forces that operate on the processes of curriculum design, ordering principles of selection, organization and methods, which come from political and social options, epistemological conceptions, psychological, pedagogical and organizational principles. Specific didactics. |
| Educational and technological innovation | Neutral: Standards, propositional or instrumental rationality | Political and biographical: Ideology of sociocultural values. Subjectivity, perceptions, attitudes |
| Repositories | Technological determinism i) technological change is the cause of social change; ii) technology is autonomous and independent of social influences. Technology and society relationship, based on autonomist conceptions of technology, independent of its contextual conditions of production and appropriation. | Social co-construction of technology: social participation (or “domestication”) in the contexts of design and use of OER and ROER, including their own conceptualization. |
| University | The Research University and Performative University models are perceived as a universal model, their OER adoption models are transferred as a frame of reference (policy borrowing). | Discerning the adoption of OER considering the political dimension of higher education that is expressed in the diversity of its aims and university models, and it is developed within the framework of a complex scenario of neoliberal transformation. |

Table 5 Adoptions of OER: Traditional Approach vs. Critical Approach.
3. CONCEPTUAL MODEL

The resultant conceptual model includes four categories influencing the adoption of OER among professors in Latin American universities: 1) Construction of Teacher’s Professional Identity; 2) Practices and Transformations in the Curriculum; 3) Creation, Use and Opening of Digital Educational Resources; and 4) Social Representations about Repositories of OER Properties and dimensions of each category are presented and described below, which converge towards the construction of a Grounded Theory on the adoption of OER in Latin American universities.

3.1 CONSTRUCTION OF THE TEACHER’S PROFESSIONAL IDENTITY

The following section presents the emerging Category Construction of the Professional Teaching Identity.

From the biographical perspective, the question that guides the analysis regarding teachers who adopt OER (or not), would not be the typical one that leads to the characterization “how are these teachers?”, Which would favor the construction of profiles or models, but the most comprehensive “who are these teachers?” in reference to the processes of construction of their professional teaching identity. Situating the biographies of academics makes it possible to delve into the subjective factors of the adoption of these technologies and open practices, delving into the lives of these professionals, and shedding light on the foundations and trajectories that structure their actions and decisions within their academic profession.

The category include two properties: Teaching Career and Teaching Subject.

In the Teaching Career Property, dimensions such as Origin of the Teaching Profession are identified, where the subjects give an account of the origin and particularities of the process of arrival at teaching and the influences and significant people.

Another dimension identified is Teacher Professional Development, shedding light on key aspects such as the experiences of subjects related to teacher training and peer training, teacher evaluation processes, the possibilities of professional development through mobility opportunities, existence of support and incentives, access to postgraduate training and professional updating, as well as the conditions of access to sources of scientific information.

The Teaching Career Trajectory dimension, for its part, is expressed in narratives about the trajectory in the university, the particularities of their own careers as teachers, promotions seniority, salary, disciplines, subjects and teaching activities to which they are dedicated, and, in addition, the discontinuities and ruptures that they have experienced in these trajectories.

In the Teaching Subject Property, two emerging dimensions are identified, the Meaning of Teaching and Professional Satisfaction.

In the Meaning of Teaching dimension, we address the Professionalization process, the relationship with the profession, and personal and social appreciation. Notions such as the influence on the lives of the students, professional training, ethics and teaching how to give and receive nourish the teaching experience with meaning.

The perception of oneself as a teacher, a retrospective look towards the past and a projective look towards the future, account for the dimension of Personal Satisfaction in relation to Teacher Professional Identity.

The representation of the conceptual ordering of the category is shown below in Table 6.

| CATEGORY | PROPERTIES          | DIMENSIONS                      |
|----------|---------------------|---------------------------------|
| 1) CONSTRUCTION OF THE TEACHER’S PROFESSIONAL IDENTITY | Teaching career | Origin of the teaching profession |
|          |                     | Teacher professional development |
|          |                     | Teaching career trajectory      |
|          | Teaching subject    | Meaning of teaching             |
|          |                     | Professional satisfaction       |

Table 6 Properties and Dimensions of Category 1: Construction of the Professional Teaching Identity.
3.2 PRACTICES AND TRANSFORMATIONS IN THE CURRICULUM

The adoption of OER needs to be approached from a situated perspective, which means that it must be studied from the analysis of the curriculum. This statement has implications and complexities for the area of OER adoption studies. The field of the curriculum has been traversed by the tension between content and practice, a product of its diverse origins and research traditions. The discussion of the incidence of a curricular perspective, one centred on the content on the rhetoric, discursiveness, theory, and practice around OER must be placed. A broader understanding of the incidence of the curricular phenomenon is needed, not only as regards the content of the teaching, but also as an analysis of the practice, and of the hidden and the manifest curriculum.

According to the understanding that we have reached from the analysis of this emerging category, the OER movement has remained in a certain way absent from, and even denies, the links with the experience of creation use (and non-creation and non-use) of teaching resources and their open publication in a broader framework of a situated teaching context. This understanding has been revealed in the teachers’ narratives that have guided us to an interpretation in a journey that we started from the adoption of a technology (repository) to the content (OER), from the content (OER) to open educational practices (OEP), and from practices to the curriculum, understood in its broadest sense as an educational phenomenon.

Following the line of Category 1, which sought to understand the professional identities of teachers – because users, and non-users, matter (Pinch & Oudshoorn, 2005) we add that it is not possible to understand open practices, without understanding the teaching practices.

This implies that not only is it not enough to analyze those practices that fit within the analytical categories of the open movement, OER and OEP, but it is also essential to analyze the global panorama of teaching practices, even those that are not open, to understand the complexity of each scenario that implies a situated context that overdetermines the adoption of the open paradigm. This approach fosters an understanding of pedagogical practice not reduced to technical problems but rather the way in which, dialectically, the various spheres of reality codetermine these practices.

Thus, the curriculum transcends the content of teaching, and is located in the sphere of practices, thus encompassing the didactic context, the organization of teaching, the psychosocial environment and the external context defined by both the educational system to which it belongs and by culture, economy, history, territory, social, among other codetermining dimensions (Gimeno Sacristán (1992).

Faced with this, how is it possible to transform the practices related to the creation and use of educational resources, to open them up to a change in institutional culture, pedagogical practices and the way of circulation of knowledge? How to integrate here the structural change that OER mean in relation to the circulation of information, the opening of content, the emergence of new agents external to the educational institution, which leads to the need to develop a more permeable curricular system?

In the analysis of Category 2, Practices and Transformations in the Curriculum, three Properties are identified: Didactic Context, Organizational Context and External Context.

The Didactic Context Property is expressed in three dimensions. The Teaching Conceptions and Practices dimension integrates the analysis of Teaching Practices, Teaching Models, also the conceptions about Education as a discipline and about Teaching. The Reflection on Practices dimension opens the understanding of the role that reflective practices have in guiding the improvement and transformation of practices. Finally, the Innovation dimension allows us to analyze the mobilizing factors of the innovation process, while addressing the relationship they establish with research, the relationship with technology and characteristics of the adoption processes.

In the Organizational Context Property, three dimensions are identified: Environment of the Center, Forms of Organization of the teaching staff and Internal Relations.

The situation of teachers and their main problems and challenges are interpreted within the framework of the Environment dimension of the center. The Forms of organization of teachers account for the Organization of Teaching, Planning, and the way in which space and time are
structured in educational institutions. The dimension of Internal Relations is manifested in the analysis of social relations between the various agents, authorities and governance.

Finally, in the External Context Property, the Influences and University-Society Relationship dimensions are identified. Within the first one, the incidence perceived by teachers of Cultural, Territorial, Historical, Political and Economic factors in their practices is analysed. The University-Society Relationship addresses the view of society on the university, the relationship with society and companies, the influences and impacts of these on the university, and the way in which the teaching staff understand how their work is perceived from outside the university.

Next, in Table 7 the conceptual ordering in properties and dimensions of Category 2 Practices and Transformations in the curriculum is presented.

| CATEGORY | PROPERTIES | DIMENSIONS |
|----------|------------|------------|
| 2) PRACTICES AND TRANSFORMATIONS IN THE CURRICULUM | Didactic context | Conceptions and teaching practices |
| | | Reflection on practices |
| | | Educational innovation |
| Organizational context | Environment of the centre |
| | Forms of organization of the teachers |
| | Internal relationships |
| External context | University-Society Relationship |
| | Co-determining influences |

### 3.3 CREATE, USE AND OPEN DIGITAL EDUCATIONAL RESOURCES

This Category 3, “Creation, use and opening of digital educational resources”, integrates the practices and modalities of creation, publication, sharing and reuse of digital educational resources by university teachers, as well as the organizational and institutional components around these practices.

Teacher professional development and curriculum are closely tied to creative unfolding around the development of teaching resources. The empowerment of teachers as agents for the creation of educational resources offers opportunities for them to position themselves as agents of innovation, reflection and development of the curriculum (Rodríguez, 2007).

This perspective, which places the teaching professional as a fundamental agent in the generation of teaching resources located, contextualized and mobilizing transformations from reflective practice, goes beyond the approach expressed in the technical aspects of the design and planning of content as resources for teaching.

Educational resources, and their paradigm, the textbook, pedagogically structure the culture selected in the curriculum (Martínez Bonafé, 1999). The power of this structuring is as important as the little that has been modified over the course of more than two decades of the emergence of digital technology in education (Area Moreira, 2017).

Here we focus on identifying the way in which the OER paradigm can potentially be integrated into this new conception, which places teachers as agents of curriculum development. This integration, implies a very intense break in two major fields of educational culture: i) the culture of the book, as a resource defined externally to the educational organization and dominated by agents that determine what is taught and how, based on the pedagogical presentation of the culture selected in the curriculum; ii) the culture centered on the classroom as a closed space, and teaching work as a task carried out in solitude.

Therefore, the analysis of the adoption of OER should be placed in the context of the practices of creation of digital educational resources on the part of university professors. This allows to identify the micro-innovations that lead, or could potentially lead, to adoption of the OER model for the open publication of these productions. This, we understand, allows to observe the production of educational resources from a perspective situated on the teachers and their creation and sharing practices.
Properties of this category are the organizational components (and their dimensions referred to the work teams for the elaboration of educational resources, the existence of institutional policies that frame, support and incentivize these creative processes, as well as the quality assurance processes for educational materials); the preferences and formats of the digital educational resources used (in their technical dimensions and didactic functionality); the processes for creating educational resources (and the dimensions within these processes such as the creation, validation, publication, application, reuse and review of materials); as well as the conceptions, attitudes and practices around OER, the favorable or hindering aspects, the types and formats of open resources as well as the political components (institutional and national policies, financing, incentives); in short, the adoption of models of creation and open publication (tensions, resistance, motivations).

Table 8 presents the conceptual ordering in properties and dimensions of Category 3: Creation, use and publication of educational resources.

| CATEGORY | PROPERTIES                  | DIMENSIONS                                 |
|----------|-----------------------------|--------------------------------------------|
| 3) CREATE, USE AND OPEN DIGITAL EDUCATIONAL RESOURCES | Organization | Work Teams  |
|          |                             | Institutional Policies  |
|          |                             | Quality  |
|          | Design and production of educational resources | Creation  |
|          |                             | Educational Resources  |
|          |                             | Validation and Review  |
|          |                             | Reuse  |
|          | Open Educational Resources (OER) | Requirements and limitations to open educational resources  |
|          |                             | Motivations to open educational resources  |
|          |                             | Resistance to opening resources  |
|          |                             | Authorship Models  |
|          |                             | Policies and incentives  |

3.4 REPRESENTATIONS ABOUT REPOSITORIES OF OPEN EDUCATIONAL RESOURCES

In this category, the dimensions of the adoption of repositories of open educational resources by university professors are identified, deepening the understanding of the social representations of the teaching staff regarding the use of these for the storage, sharing and opening of educational resources.

It comprises a perspective focused on the analysis of knowledge, beliefs, attitudes and practices that are organized around the (potential) adoption of repositories within the framework of the processes for the creation of educational resources that is addressed in the previous Category 3.

It is a way of accessing the constructions and images around the repositories from the perspective of the subjects in their contexts. The content of social representations refers to a particular form of knowledge, made up of beliefs, in which three dimensions are identified: attitude, information and the field of representation (Moscovici, 1988).

In this regard, it is important to identify the field of representations around these technological artifacts, both by those actors who possess specific knowledge and practices of use, and by those whose representations are more based on beliefs or attitudes. In any case, the various dimensions of the field of representations appear both in those who have experiences of using the technology of digital repositories, and those who do not. As Pinch and Oudshoorn (2005) suggest, it is important to highlight the role of users and non-users in the development of technology: how users consume, modify, domesticate, design, reconfigure and resist technologies, in short, what users do with technology.

Another relevant aspect of this analytical perspective is that there is no correct use for a technology. There may be a dominant use of a technology, or a prescribed use, but there is no essential use that can be inferred from the device itself. This is an axiomatic assumption
for the study of technologies in their context of use, focused on how technologies are used (or not used) in practice and what the technologies produce in users. Users and technology are seen as two sides of the same problem since they are co-built together. The approach aims to overcome deterministic views on technology.

Category 4, Social Representations regarding the Repositories of OER, integrates the analysis on the Knowledge of the Repositories, the Practices of Storage and Search of Digital Educational Resources (where they search for educational resources and the storage of these once elaborated, if they use repositories for it and what type are said repositories); as well as the conceptions and attitudes about the Digital Repositories, expressed in the Barriers and Motivations that the actors identify for their adoption.

It also integrates the aspects of improving the usability of the Repositories of OER, a property called the Ideal Repository, in relation to the types and scope of the repositories, the functionalities and requirements that teachers understand as necessary to improve the usability of those repositories. Likewise, a last property is integrated, Adoption Strategies, which articulates the strategies and recommendations to favor their adoption within the framework of Higher Education institutions, from the teachers’ perspectives.

The conceptual ordering of Category 4 properties and dimensions is presented below in Table 9.

| CATEGORY | PROPERTIES | DIMENSIONS |
|----------|------------|------------|
| 4) REPOSITORIES OF OPEN EDUCATIONAL RESOURCES | Practices and knowledges | Storage of Digital Educational Resources |
| | | Search of Digital Educational Resources |
| | | Knowledge about Digital Repositories |
| | | Adoption of Digital Repositories |
| | | Types of Digital Repositories used |
| Beliefs, opinions and attitudes | Barriers to adoption |
| | Motivations for contributing to a repository |
| Ideal repository | Preferred types of repositories |
| | Quality of resources and repositories |
| | Features and requirements |
| | Copyright |
| | Types of Access |
| Strategies for the adoption | Training, promotion and awareness |
| | Organization and infrastructure |
| | Policies and incentives |

### 3.5 DYNAMIC REPRESENTATION OF THE CONCEPTUAL MODEL OF OER ADOPTION

Theoretical conceptualization means that the interest is in the patterns of action and interaction between various types of social units, not in creating a theory about individual actors as such. It seeks to discover reciprocal changes in action patterns and in relation to changes in internal or external conditions to the process (Strauss & Corbin, 1990).

This means a conceptualization of what happens under certain conditions. Grounded Theory is always traceable in the data that gave it origin, it is also fluid because it encompasses the interaction of multiple actors and because it emphasizes temporality and process, it requires the exploration of new situations to see if they fit. It also requires an openness from the researcher, based on the always provisional nature of the theory.

In our study, this process has led us to the construction of a conceptual model on the adoption of OER from a critical Latin American perspective, this being its main contribution.

Its components and the relationships established between them have been described and discussed previously in this section. Its graphical representation can be seen below in Figure 1. This graphical representation is dynamic and can be displayed. Descriptions of each component can be viewed by sliding the mouse over each section.
4. THE LATIN AMERICAN CONCEPTUAL MODEL AS AN INSTRUMENT FOR DECOLONISING OER

Grounded Theory led us to the construction of a theoretically based conceptual model on the adoption of OER from a critical Latin American perspective. Its components and the relationships established between categories, their properties, and dimensions, have been described in the previous sections.

The OER adoption model from a critical Latin American perspective can be expressed in ten postulates:

1. Teachers are central agents in the adoption of OER and Repositories in the university context.

2. The articulation between the personal and professional identities of teachers is a factor in the will to adopt OER.

3. The adoption of OER must be approached within the framework of the curriculum, understood not only as the content of teaching, but also as processes and practices located in diverse contexts that exert influence and power, both at the level of the hidden curriculum and of the established curriculum. Content and practice are both components of the curriculum; consequently, OER and OEP are conceived from an integral perspective as a continuum of the same phenomenon.

4. The creation of OER is a curricular development activity, conducted by subjects with professional identities, mobilizing transformative processes based on reflective practice.

5. The post-colonial perspective on OER adoption as if they were universal, must be overcome, facing the challenges for the critical appropriation of OER in diverse curricular contexts and the decolonisation of the hidden curriculum of OER.
6. There are profound differences in the models of emergence and development of universities in different regions of the world, and their impact on the adoption of OER is significant. For example, the Latin American university, in particular, has a history, a tradition and therefore a mission that make it different, with ideological and political components that are particularly favourable to the open education movement.

7. The analysis of the adoption of OER should include the set of teaching resource creation practices, regardless of the scope and modality of publication, observing hidden dynamics of the processes of individual and collective creation and authorship, and of sharing practices, and reuse, as well as their integration into teaching, which constitute a contribution to the design of broader and more situated frames of reference.

8. Educational resources have a relevant role in the general context of teaching and must be understood as a paradigmatic expression of teaching as cultural reproduction; education has been developed around the textbook as an expression of the literate culture and the selection made from power of the content to be taught and highlighted in the book artifact; OER adoption is permeated by this strong component of the pedagogical culture and is perceived as a threat. The design of policies and frameworks for the adoption of OER should consider this central character of educational resources which, far from being an additive, are a central component of the curriculum and the educational institution.

9. The collaborative components provided by diverse groups and communities are an interface between the teaching staff and the institution, making it possible to overcome the absence of institutional policies; peer groups can exert influence at the micro level of each group and creative community, as spaces for learning, negotiation of meanings and construction of identity from practice, favouring the adoption of OER.

10. Working from a perspective of listening to users allows gathering of recommendations that bring the context of design closer to the context of use of OER and Repositories, favouring their adoption in educational contexts and their domestication as an engaging technology, in a process of socio-technique alliance.

We believe that the contributions of this work would be useful for the communities of researchers, managers, and educators linked to the Open Education movement.

The knowledge about the adoption of OER in the Latin American region contributes to the construction of a specific local perspective on the subject, which can lead to the development of empirically informed and situated adoption strategies.

It is thus an instrument both for decision makers, educational policy makers, and for teaching groups. It empowers teachers in their capacities to develop open practices as transformations in the curriculum through the use of their creative capacities within the framework of their local educational communities. For example, in the case of the public education system in Uruguay, we are already working on collaborative guidelines for creating Open Education policy in public education in the country. Part of its conception is supported by the conceptual model.

Likewise, it contributes to the construction of coordinated initiatives for the region, based on a contribution to the knowledge of the singularities and identities of teachers and higher education institutions and the way in which they relate to the adoption of OER. Some regional initiatives for teacher professional development on open education, currently promoted by both the UNESCO Chair in Distance Education in Brasil and the UNESCO Chair of Open Education in Uruguay, are already drawing on these contributions. This work can be extended to other regions of the Global South, in order to respond to the particularities of their development contexts.

It can also contribute from a theoretical and methodologically founded, critical, diverse and inclusive perspective, to the actions of the current UNESCO OER Dynamic Coalition, facing the challenges of education in post-pandemic times.

Finally, we believe that it contributes to consolidating new critical approaches to the field of Open Education, and particularly, OER. In this sense, the critical methodological theoretical model may be adopted by researchers from all regions who seek to reveal the hidden curriculum of OER.
COMPETING INTERESTS

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REFERENCES

Allen, IE and Seaman, J. 2014. Opening the curriculum: Open educational resources in US higher education. Babson Park, MA: Babson Survey Research Group.

Almarcha Barbado, MA. 1982. Autoridad y privilegio en la universidad española: estudio sociológico del profesorado universitario. Madrid: Centro de Investigaciones Sociológicas (Colección ‘Monografías’, no. 57).

Annard, D. 2015. ‘Developing a Sustainable Financial Model in Higher Education for Open Educational Resources’. International Review of Research in Open and Distributed Learning, 16(5): 1–15. DOI: https://doi.org/10.19173/irrodl.v16i5.2133

Annard, D and Jensen, T. 2017. ‘Incentivizing the Production and Use of Open Educational Resources in Higher Education Institutions’. The International Review of Research in Open and Distributed Learning, 18(4). DOI: https://doi.org/10.19173/irrodl.v18i4.3009

Area Moreira, MA. 2017. ‘La metamorfosis digital del material didáctico tras el paréntesis Gutenberg / The digital metamorphosis of didactic material after the parenthesis Gutenberg’. Revista Latinoamericana de Tecnología Educativa – RELATEC, 16(2): 13–28. DOI: https://doi.org/10.17398/1695-288X.16.2.13

Arénta, P, Hodgkinson-Williams, C and Trotter, H. 2017. ‘OER and OEP in the Global South: Implications and recommendations for social inclusion’. Available at: https://open.uct.ac.za/handle/11427/26438 (Accessed: 3 June 2018).

Armellini, A and Nie, M. 2013. ‘Open educational practices for curriculum enhancement’. Open Learning: The Journal of Open, Distance and e-Learning, 28(1): 7–20. DOI: https://doi.org/10.1080/02680513.2013.796286

Arocena, R and Sutz, J. 2017. ‘La Universidad Latinoamericana del Futuro: tendencias, escenarios, alternativas’. Available at: http://beu.extension.unicen.edu.ar/xmlui/handle/123456789/197 (Accessed: 13 February 2018).

Belikov, O. 2016. ‘Incentives and barriers to OER adoption: A qualitative analysis of faculty perceptions’. Open Praxis, 8(3): 235–246. DOI: https://doi.org/10.5944/openpraxis.8.3.308

Bossu, C and Fountain, W. 2015. ‘Capacity-building in open education: an Australian approach’. Open Praxis, 7(2): 123–132. DOI: https://doi.org/10.5944/openpraxis.7.2.197

Bourdieu, P. 1984. Homo academicus. Paris: Editions de Minuit (Collection ‘Le Sens commun!’).

Bourdieu, P. 2000. Poder, derecho y clases sociales. Bilbao: Desclée de Brouwer. Available at https://dialnet.unirioja.es/servlet/articulo?codigo=616496 (Last accessed 24 July 2018).

Clark, BR. 1983. The higher education system: Academic organization in cross-national perspective. Berkeley, CA: University of California Press. DOI: https://doi.org/10.1525/9780520340725

Corbin, JM and Strauss, AL. 2015. Basics of qualitative research: Techniques and procedures for developing grounded theory. 4th ed. Los Angeles, CA: SAGE.

Cox, G and Trotter, H. 2017. Factors shaping lecturers’ adoption of OER at three South African universities, In: Towards understanding the adoption and impact of Open Educational Resources in South Africa: 2013–2017 Collection. Research on Open Educational Resources for Development (ROER4D) Project. Available at https://www.oerknowledgecloud.org/archive/Cox&Trotter-chapter-draft-review.pdf.

Cox, G and Trotter, H. 2016. ‘Institutional Culture and OER Policy: How Structure, Culture, and Agency Mediate OER Policy Potential in South African Universities’. The International Review of Research in Open and Distributed Learning, 17(5). DOI: https://doi.org/10.19173/irrodl.v17i5.2523

Cronin, C. 2018. Openness and praxis: A situated study of academic staff meaning-making and decision-making with respect to openness and use of open educational practices in higher education. Thesis. NUIGalway. Available at https://aran.library.nuigalway.ie/handle/10379/7276.
D’Antoni, S. 2008. Open educational resources: The way forward. Universitat Oberta de Catalunya. Available at http://openaccess.uoc.edu/webapps/o2/handle/10609/7163 (Last accessed 22 May 2017).

Day, C. 2006. Pasión por enseñar: La identidad personal y profesional del docente y sus valores. Madrid: Narcea Ediciones.

de los Arcos, B, et al. 2016. ‘Adapting the Curriculum: How K-12 Teachers Perceive the Role of Open Educational Resources’. Journal of Online Learning Research, 2(1): 23–40.

de los Arcos, B and Weller, M. 2018. A tale of two globes: Exploring the north/south divide in engagement with open educational resources. In: Schöpfel, J and Herb, U (eds.), Open divide: Critical studies on open access. Sacramento, CA: Litwin Books. pp. 147–155. Available at http://litwinbooks.com/open-divide.php.

Díaz Barriga, Á. 2003. ‘Curriculum: Tensiones conceptuales y prácticas’. Revista electrónica de investigación educativa, 5(2): 1–13.

Dubar, C. 2014. La socialisation: construction des identités sociales et professionnelles. Paris: Armand Colin.

Ehlers, U-D and Conole, GC. 2010. Open educational practices: Unleashing the power of OER. Paper presented to the UNESCO Workshop, Taking OER Beyond the OER Community: Towards Quality in Higher Education, Windhoek, Namibia, 3 May 2010. https://www.oerknowledgecloud.org/archive/OEP_Unleashing-the-power-of-OER.pdf.

García Salord, S, Grediaga Kuri, R and Landesmann Segall, M. 2003. ‘Los académicos en México: hacia la constitución de un campo de conocimiento 1993/2002’. In Ducoing Watty, P (ed.), Sujetos, actores y procesos de formación. México, DF: Grupo Ideograma: SEP, Centro de Estudios sobre la Universidad.

Gewerc Barujel, A. 2014. Las determinaciones curriculares en universidades iberoamericanas en la primera década del siglo XXI. In: Gewerc, A (ed.), Universidad y sociedad del conocimiento. Santiago de Compostela: Universidad de Santiago de Compostela, Servizo de Publicacións e Intercambio Científico, pp. 179–220. Available at https://dialnet.unirioja.es/servlet/articulo?codigo=5170249 (Last accessed 2 September 2018).

Gimeno Sacristán, J. 1992. ‘El currículum: ¿los contenidos de la enseñanza o un análisis de la práctica?’. In Pérez Gómez, AI and Gimeno Sacristán, J (eds.), Comprender y transformar la enseñanza. Madrid: Morata (Colección Pedagogía. Manuales).

Gimeno Sacristán, J. 2010. ¿Qué significa el currículum? Sinéctica, 34, 11–43.

Goodson, IF. 1991. ‘Sponsoring the Teacher’s Voice: teachers’ lives and teacher development’. Cambridge Journal of Education, 21(1): 35–45. DOI: https://doi.org/10.1080/0305764910210104

Hanley, LF and Bonilla, D. 2016. ‘Atolls, Islands, and Archipelagos: The California OER Council and the New Landscape for Open Education in California’. Open Praxis, 8(2): 131–142. DOI: https://doi.org/10.5944/openpraxis.8.2.286

Harley, D, Shannon, L, Acord, SK and Dixson, J. 2009. Affordable and open textbooks: An exploratory study of faculty attitudes. UC Berkeley: Center for Studies in Higher Education. Available at http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED507058&lang=es&site=ehost-live.

Hassall, C and Lewis, DI. 2017. ‘Institutional and technological barriers to the use of open educational resources (OERs) in physiology and medical education’. Advances in Physiology Education, 41(1): 77–81. DOI: https://doi.org/10.1152/advan.00173.2016

Hawkinson, Williams, C and Arinto, PB, (eds.) 2017. Adoption and impact of OER in the global South. Cape Town: African Minds, University of Cape Town. DOI: https://doi.org/10.47622/9781928331483

Jung, E, Bauer, C and Heaps, A. 2017. ‘Higher Education Faculty Perceptions of Open Textbook Adoption’. International Review of Research in Open and Distributed Learning, 18(4): 123–141. DOI: https://doi.org/10.19173/irrodl.v18i4.3120

Kaarakoski, H, Littiejohn, A and Hood, N. 2016. Learning challenges in higher education: An analysis of contradictions within Open Educational Practice. Higher Education, 74, 599–615. DOI: https://doi.org/10.1007/s10734-016-0067-z

Kemmis, S. 1996. Curriculum theorising: Beyond reproduction theory. Victoria, Australia: Deakin University.

Lane, A and McAndrew, P. 2010. Are open educational resources systematic or systemic change agents for teaching practice? British Journal of Educational Technology, 41(6), 952–962. DOI: https://doi.org/10.1111/j.1467-8535.2010.01119.x

Martínez Bonafé, J and Rodríguez Rodríguez, J. 2010. ‘El currículum y el libro de texto. Una dialéctica siempre abierta’. In Fernández Enguita, M and Gimeno Sacristán, J (eds.), Saberes e incertidumbres sobre el currículum. Madrid: Morata.
Martínez Bonafé, J. 1999. Materiales curriculares y cambio educativo. Siete cuestiones abiertas y una propuesta de urgencia. In: Martínez Bonafé, J (ed.), Trabajar en la escuela: Profesorado y reformas en el umbral del siglo XXI. Buenos Aires; Madrid: Miño y Dávila.

McGreal, R, Kinuthia, W and Marshall S. (eds.) 2013. Open educational resources: Innovation, research and practice. Vancouver, BC: Commonwealth of Learning and Athabasca University.

McGreal, R, Anderson, T and Conrad, D. 2015. ‘Open Educational Resources in Canada 2015’. International Review of Research in Open and Distributed Learning, 16(5): 161–175. DOI: https://doi.org/10.19173/irrodl.v16i5.2404

Mckerlich, R, Ives, C and McGreal, R. 2013. ‘Measuring Use and Creation of Open Educational Resources in Higher Education’. International Review of Research in Open and Distance Learning, 14(4): 90–103. DOI: https://doi.org/10.19173/irrodl.v14i4.1573

Mishra, S. 2017. ‘Open educational resources: removing barriers from within’. Distance Education, 38(3): 369–380. DOI: https://doi.org/10.1080/01587919.2017.1369350

Mitros, P and Sun, F. 2014. Creating educational resources at scale. In: Proceedings of the 14th International Conference on Advanced Learning Technologies (ICALT 2014) 7–10 July 2014 Athens. IEEE, 16–18. DOI: https://doi.org/10.1109/ICALT.2014.15

Moscovici, S. 1988. ‘Notes towards a description of Social Representations’. European Journal of Social Psychology, 18(3): 211–250. DOI: https://doi.org/10.1002/ejsp.2420180303

Mtebe, JS and Raisamo, R. 2014. ‘Investigating perceived barriers to the use of open educational resources in higher education in Tanzania’. The International Review of Research in Open and Distributed Learning, 15(2). DOI: https://doi.org/10.19173/irrodl.v15i2.1803

Neely, P, Tucker, JP and Au, A. 2016. ‘Open Educational Resources: A Review of Attributes for Adoption in an Online Bachelor’s Degree Program’. Journal of Instructional Research, 5: 61–69. DOI: https://doi.org/10.9743/JIR.2016.6

Pinch, T and Oudshoorn, N. 2005. How users matter: The co-construction of users and technology. Cambridge, MA: The MIT Press (Inside Technology). Available at http://mitpress.mit.edu/books/how-users-matter (Last accessed 22 February 2014).

Ricoeur, P. 1996. Sí mismo como otro. Madrid: Siglo Veintiuno.

Rodés-Paragarino, V. 2020. ‘Ownership and Agency in the adoption of Open Educational Resources’. Interaction Design and Architecture(s) Journal – iD&A, 45: 69–86.

Rodés-Paragarino, V, Francozin, F, Barujel, A and Llamas Nistal, M. 2016. A characterization of users of digital educational resources repositories the case of the Latin American Community of Learning Objects – LACLO. In: Proceedings of the 2016 XI Latin American Conference on Learning Objects and Technology (LACLO 2016) 3–7 October 2016 San Carlos, Alajuela, Costa Rica. IEEE, 1–8. DOI: https://doi.org/10.1109/LACLO.2016.7751793

Rodés, V. 2019a. Bringing OER in from the periphery: A grounded theory on OER adoption in Latin American universities. In: Proceedings of Recentering Open: Critical and Global Perspectives (OER19 Recentering Open), 10–11 April 2019, Galway, Ireland. Available at https://oer19.oerconf.org/sessions/bringing-oer-in-from-the-periphery—a-grounded-theory-on-oer-adoptoin-in-latin-american-universities—a/V (Last accessed 10 February 2021).

Rodés, V. 2019b. Una teoría fundamentada sobre la adopción de repositorios y recursos educativos abiertos en universidades latinoamericanas. Universidad de Santiago de Compostela. Available at https://minerva.usc.es/xmlui/handle/10347/18238 (Last accessed 8 December 2019).

Rodés, V, Gewerc-Barujel, A and Llamas-Nistal, M. 2019. ‘University Teachers and Open Educational Resources: Case Studies from Latin America’. The International Review of Research in Open and Distributed Learning, 20(1). DOI: https://doi.org/10.19173/irrodl.v20i1.3853

Rodríguez, J. 2007. La elaboración de los materiales curriculares por los propios profesores. Una oportunidad para el desarrollo profesional. In: Ministerio de Educación, SITE 2006: Primer Seminario Internacional de Textos Escolares. 1ª ed. Santiago de Chile: Gobierno de Chile, Ministerio de Educación. pp. 128–133.

Rolfe, V. 2012. ‘Open Educational Resources: Staff Attitudes and Awareness’. Research in Learning Technology, 2011. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ973804&site=ehost-live. DOI: https://doi.org/10.3402/rlt.v2010i14395

Shigeta, K, et al. 2017. ‘A Survey of the Awareness, Offering, and Adoption of OERs and MOOCs in Japan’.

Open Praxis, 9(2): 195–206. DOI: https://doi.org/10.5944/openpraxis.9.2.568

Stacey, P. 2013. ‘Government Support for Open Educational Resources: Policy, Funding, and Strategies’. International Review of Research in Open and Distance Learning, 14(2): 67–80. DOI: https://doi.org/10.19173/irrodl.v14i2.1537

Stagg, A. 2014. ‘La adopción de los recursos educativos abiertos: un continuo de práctica abierta’. RUSC. Universities and Knowledge Society Journal, 11(3): 161–176.

Strauss, AL and Corbin, JM. 1990. Basics of qualitative research: Grounded theory procedures and techniques. Newbury Park, Calif.: Sage Publications.
Toledo, A. 2017. Open access and OER in Latin America: A survey of the policy landscape in Chile, Colombia and Uruguay. In: Hodgkinson-Williams, C and Arinto, PB (eds.), Adoption and impact of OER in the global South. Cape Town: African Minds, University of Cape Town.

Woodward, KM. 2017. ‘Building a Path to College Success: Advocacy, Discovery and OER Adoption in Emerging Educational Models’. Journal of Library and Information Services in Distance Learning, 11(1–2): 206–212. DOI: https://doi.org/10.1080/1533290X.2016.1232053