Open Teaching: a New Way on E-learning?

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Abstract: Open Teaching is currently considered an ambiguous and polysemic concept but has nevertheless become a growing global trend in ICT-based education. To identify key issues on the subject, this article presents a study on Open teaching that combines meta-synthesis and content analysis of research published over the last twenty years in major peer-reviewed databases. Six main analytical categories emerge from data, conforming six groups of findings. Those findings show that Open Teaching has been associated with various concepts over the years and that there is no consensus on its meaning in the academic community. The current understanding of Open Teaching, that it is merely related to distance education, thwarts important practical and conceptual possibilities by prioritizing access as its main feature and ignoring important "openness" attributes, such as adaptation, sharing, remixing or collaboration. Moreover, the findings note that the most common means to implement Open Teaching as an ICT-based practice are derived from the use of Open Educational Resources (OER) and via Massive Open Online Courses (MOOCs) which represents not only a major challenge for active educational practitioners but a new way of conceiving and implementing e-learning in higher education.

Keywords: Open Teaching; Open Educational Practices; Open Educational Resources; MOOC; Information and Communication Technologies; Open Education; E-learning.

1. Introduction

Today's education occurs in the presence of a diverse range of challenges, which are framed in complex social, economic, scientific and cultural dimensions. One of the current and foremost educational challenges has to do with balancing equality in access and quality in educational services (Dobele, 2015). Regarding the above, the use of Information and Communication Technologies (ICT) emerges as a high potential alternative to overcome such a challenge (Unesco, 2009).

In that sense, educational staff must face complex pressures related to their daily work. They must sustain the continuous creation of pedagogical strategies that are aimed at widening and improving their educational potential (Robinson, 2008) while addressing a growing and complex mediascape and a technological avalanche of tools and content that they are not trained to manage (Cook, 2001; Houghton, Miller and Foth, 2014; Schibeci et al., 2008).

Immersed in such a globalized and ICT-intensive environment, today's teachers encounter an ever-changing professional territory with a persistently fast-paced evolution, which rapidly make their knowledge and skills obsolete and transform the entire educational context inadvertently (Fullan, 2007). An example of this is e-learning, which has become an educational alternative that responds to the current needs of flexibility and use of ICT but at the same time it defies the capacities of teaching staff and their role in the educational process.

In an ICT-based educational context like this, Open Teaching (OT) emerges as a topic in rapid development and associated with other topics of growing interest such as the use of Open Educational Resources (OER) and Massive Open Online Courses (MOOC). Being an emergent subject in education, the understanding of its potential and implications is still very superficial. What is known about OT at the moment is that, although it has been known for over half a century, its current meaning lies far from its mid-twentieth-century use (Holt and Thompson, 1995); also, that is an educational practice characterized by the application of some attributes of "openness" such as adaptation, sharing and collaboration and that is defined as:

[...] a process of knowledge sharing among educational stakeholders (teacher-student and student-student) that can be carried out anytime, anywhere, using freely available tools, either asynchronously or synchronously. Being open, it welcomes a third actor in educational activity: the community, the world. Open Teaching extends formal towards informal education in a context of collaboration and interaction where learners work as peer-partners (Chiappe, 2012).

Reference this paper as: Chiappe A and Lee LL, "Open Teaching: a new way on E-learning?" *The Electronic Journal of e-Learning Volume 15 Issue 5 2017*, (pp370-384) available online at www.ejel.org

Regarding this definition, OT can be considered as a concept that requires validation both in conceptual and practical ways. Part of this validation was conducted as a literature review, whose purpose was to broaden the OT´s level of understanding. The method used, beyond a systematic literature review, was conducted as a meta-synthesis of the written production of studies related to OT. The focus of this study was to identify the transformation of its meaning over the years and the key ideas associated with that meaning. In this process, it was also necessary to extend OT´s scope for higher education and specifically for e-learning, so, reviewing the current research on this topic became an effective and comprehensive means to achieve this.

Because e-learning in higher education is the field in which more educational institutions are moving from traditional to more challenging ICT-based ways of teaching and learning (Bates and Sangra, 2011; Keengwe and Kidd, 2010; Simkins and Maier, 2010), fostering "openness" is considered as a pertinent educational strategy that could transform faculty practices (Ehlers, 2011) into something new, something that is able to provide formative experiences pursuant to the needs of 21st century learners. It is noteworthy that this particular kind of learners not only have high IT skills but "have continuing technology-enhanced opportunities to create and share new, original, and valuable information with others" (Lambert and Cuper, 2008, p.2) which is actually an open-oriented feature.

Given the aforementioned, due to the pertinence of e-learning as an educational modality especially relevant for higher education, our research problem included an exploration of the possibilities of OT as a way of making e-learning an educational practice with more suitable features to our changing and uncertain times. As we will see across this paper, studies on OT show it has what it takes to respond to this challenge.

2. Review of the literature

The review of literature in a study plays an essential role in allowing conceptually delimiting the research problem and recognizing the research landscape within which it is situated (Walsh and Downe, 2005). However, when the research is a literature review itself, as in the case of a meta synthesis, its role changes significantly so that neither its utility nor its level of detail are the same and its purpose is focused on contextualizing the reader about the review process that will be to perform.

The literature shows that few texts explicitly explain or describe in detail the particularities and complexities of Open Teaching. Under a communitarian approach, Dalziel (2005) and Laurillard (2008) understand OT as a work environment that allows educators to freely share their best teaching practices. A slightly similar approach was proposed by Sharifi et al. (2014) when focus the attention on open knowledge transfer.

In a different way, Couros (2010) presents OT as a challenge to move beyond the limits of traditional distance education to foster learning in a collaborative environment. Moreover, Rodríguez (2016) supports this approach based on the use of open educational resources and Harland (2012) proposes something similar but focused on open access.

In contrast, Marland (1997) and Thorpe (1988) asserts that the very act of teaching via distance education is equal to Open Teaching. In this same direction, Hencke (1976) and McCowan (2012) situates OT as an alternative solution to much people to enter to higher education from an institutional perspective. Otherwise, Li et al. (2014) also analyze OT in higher education context but from an equality and social concern. As those approaches strongly diverge, no coherent conceptual framework can be derive from them, which makes OT a polysemic concept.

Regarding the definition of OT postulated in the previous section of this paper, it is noteworthy that there is currently growing interest in "openness" in the context of higher education (Peter and Deimann, 2013; Wiley, 2010). Moreover, there is much talk regarding the present and potential importance of open education practices (Hilton III, Wiley, Stein and Johnson, 2010; Yuan, Powell and CETIS, 2013) as disruptive modalities (Acemoglu, Akcigit and Celik, 2014; Conole, 2013) or as being complementary to traditional education (De Waard et al., 2011; Li, 2010).

Whatever perspective was considered, it is clear that there is insufficient understanding regarding how this type of teaching should be conducted in higher education. Certain authors refer to this phenomenon as a transition period in which both teaching and learning appear to have entered into a process of transformation

from “e” to “o”, from e-learning (referred to electronic or digital) to o-learning (referred to open) (Garrison, 2011; Mott, 2010; Peter and Deimann, 2013). This implies a process of evolution that is still very unexplored and is understood in terms of its potential and limitations, which justifies prudence (perhaps in excessive quantity) for higher education institutions regarding their implementation on a large scale (Martin, 2012).

The literature review shows that Open Teaching is an emergent concept within the context of Higher Education and that there is no academic consensus to what “openness” currently means (Dos Santos, 2013). Hence, a study like the one described in this article proposes itself useful to clarify OT theoretical aspects and practical issues in the field of higher education and e-learning. In the results section of this paper, we describe some OT conceptions found in literature that provide clues about the complexity of implementing Open Teaching in higher education and e-learning.

3. Method

Meta-synthesis is a well-established technique for examining qualitative research to find new or fresh insights from a group of research-derived texts (Walsh and Downe, 2005). According to Peterson et al. (2001), meta-synthesis, also called qualitative meta-analysis, differs from other types of literature reviews because of its qualitative approach, which differentiates it from meta-analysis, by overcoming the mere data combination and description, which differentiates it from a simple or critical review and by the nature of its sources of information (research results), which makes it particularly different from a systematic literature review, in which different types of documents can be reviewed.

For this study, the meta-synthesis was conducted in three stages: data collection, arranging-coding and interpretation.

The purpose of the review, declared by its scope and aims was determined through the formulation of guiding questions to literature (Green and Bowser, 2003), so that it may be possible to make appropriate decisions in subsequent processes and generate pertinent and interesting results. For this study, guiding questions were formulated seeking to identify relevant key ideas in literature related to Open Teaching, the main issues that have been linked to this subject over time and the most important concerns facing its implementation on higher education and e-learning.

Methodological framework for this review is shown in Figure 1 and indicates the steps and sequence of the meta-synthesis.

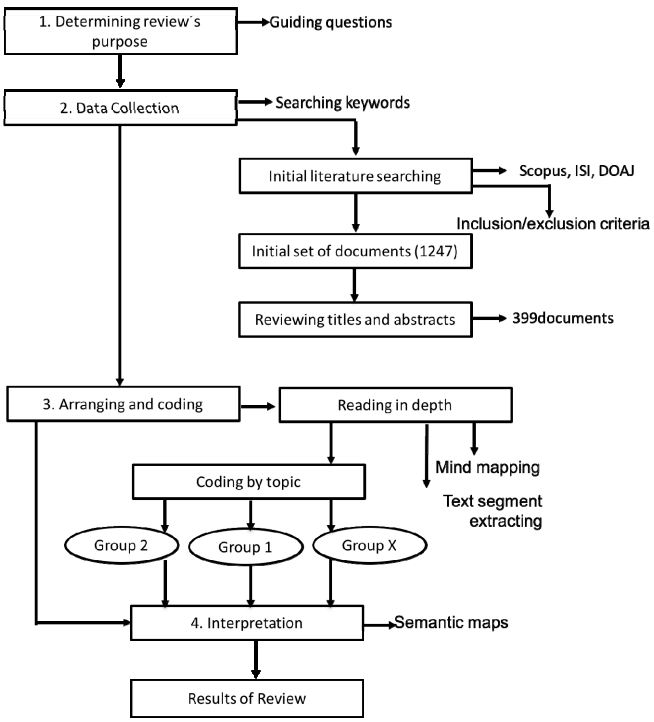

Figure 1: Methodological framework for meta-synthesis

3.1 Data collection

The purpose of the first stage was to identify and collect the texts on which to generate a further process of analysis and interpretation.

As mentioned by Boell and Cezec-Kecmanovic (2011) and Cué Brugueras et al. (2008) once the purpose of the literature review was determined, the next step was to choose appropriate searching descriptors, which for this study were built as a combination of "open teaching", "open education" and "open and distance education".

Regarding the above, in addition to proper selection of search descriptors, a good selection of reference sources determines initially the quality of the literature review (Guirao-Goris, Olmedo Salas and Ferrer Ferrandis, 2008). Thus, a non-automated online searching process was conducted in three well-established peer reviewed databases: Scopus, ISI (including, SciELO Citation index) and DOAJ, within which proceedings and major journals on education and educational technology were chosen.

Because of the database searching showed numerous and potentially duplicated records and some of them does not belong to an appropriate context for this study, the next step of data collection stage was defining the criteria of inclusion and exclusion of texts. This process is recommended by Meca (2010) not only to limit the number of items to consider in a literature review but also with regard to their relevance and closeness to the review topic.

For an initial searching, papers with research findings that include "Open Teaching" either in the title, abstract or keywords, were primarily considered. Thus, for a later reading-in-depth process, only those papers performed in a higher education or e-learning context were selected. Also, for preventing duplicate records the whole data set was processing using a text mining software called VantagePoint.

The preliminary dataset covers a twenty-one year period from 1994 to 2014 (the massive use of internet began about mid-nineties and is considered highly relevant for Open Teaching) and was composed by 1247 peer-reviewed papers that fulfill the criteria mentioned before. Then, the results were ordered by source according to the number of items by journal, and the top 50 sources were selected for conducting a further process of abstracting and later reading in-depth. The final filtering process by source provided 399 texts, which are arranged in table 1. It should be noted that this list is composed by proceedings and journals and, of the 35 journals included in this list, 17% of them are part of the top 20 List of journals with the highest H5 Index provided by Google Scholar and, 46% correspond to quartile Q1 and 31% to Q2 in SJR.

Table 1: Top 50 sources selected containing 399 texts (items in Google Scholar H5 index –with an *).

#Items/texts	SJR Quartile	ISSN /ISBN Source
46	Q3	2039-2117
17	-	978-1-4799-8454-1
15	Q1	0360-1315*
15	-	978-3-319-25767-9
15	Q1	1492-3831*
15	-	978-1-4799-4038-7
15	Q4	1302-6488
14	Q1	1467-8535*
13	Q1	0747-5632
11	-	978-1-910309-68-1
10	Q1	1475-0198*
10	-	978-1-479931-92-7
9	Q3	1300-1337
9	Q1	1573-1839
8	Q1	1939-1382*
8	Q4	1863-0383

#Items/texts	SJR Quartile	ISSN /ISBN Source
8	Q2	1469-9958
8	-	978-1-4799-6876-3
8	Q3	1698-580X
7	Q2	1916-4750
7	Q1	0018-9359
7	-	978-1-479968-77-0
7	Q2	0949-149X
7	Q1	1052-3928
7	Q1	14701278
6	Q2	09486968
6	-	978-1-629931-39-5
6	Q2	1303-6521*
6	-	978-1-479912-90-2
5	-	978-989-8565-53-2
5	Q1	1469-8366
5	Q3	1913-9020
5	-	978-1-4799-0598-0
5	-	978-1-479947-41-6
5	-	978-989-8704-08-5
4	Q1	1470-3297
4	Q2	1573-1804
4	Q2	0950-0782
4	-	978-1-4799-4437-8
4	-	978-972-8939-88-5
4	Q2	2156-7077
4	Q2	0263-5143
3	Q2	0313-5373
3	Q1	1744-3210
3	Q2	1360-2357
3	Q3	1479-4403
3	Q2	1470-1294
2	Q1	1469-7874
2	Q1	19883293
2	Q1	0018-1560
399		Total items selected

3.2 Arranging and coding

Once the first stage was finished, the selected papers were read in depth, searching for evidence of Open Teaching key ideas. The evidence (units of analysis) correspond to meaningful text segments that were selected and extracted directly from the papers and then coded and arranged into a mind map to allow a subsequent interpretation process. These segments were coded according to the central topic of each segment with the following information: year of publication, reference, central idea and quoted segment of the text.

It is noteworthy that two researchers made the mind map independently and both revised the entire map to verify its consistency. To strengthen this process and reduce personal bias, a Cohen's Kappa coefficient was then calculated K= 0.821, which guarantees a reliable review, as stated by Sim & Wright (2005) and Vieira, Kaymak & Sousa (2010).

The last process of this stage consisted of an array of diverse sets of records that share certain important features or codes. The set of evidence were organized in the same mind map; those based on the year of publication are shown in table 2, and those based on emerging categories are shown in table 3. The emerging categories were not previously defined but emerged as part of the main trends of the literature, ie, the data allowed to group them according to similarities, coincidences or direct relationships.

Table 2: Evidence per year

Year	#Items/evidence	%
1998	8	2.0%
1999	12	3.0%
2000	10	2.5%
2001	16	4.0%
2002	18	4.5%
2003	18	4.5%
2004	22	5.5%
2005	20	5.0%
2006	24	6.0%
2007	28	7.0%
2008	25	6.3%
2009	30	7.5%
2010	32	8.0%
2011	35	8.8%
2012	29	7.3%
2013	34	8.5%
2014	38	9.5%

Table 3: Evidence per emerging categories

Categories	#Items/evidence	%
Flexibility and Access	188	47.2%
ICT	249	62.3%
Autonomy	155	38.9%
OER	229	57.5%
MOOC	302	75.6%

It should be noted that in certain papers, text segments alluded to more than one group of emerging categories. For example, of the 57.5% analyzed papers, 28% contained evidence of conceptions related both to MOOC and the use of ICT. To a lesser extent, 5% of the analyzed papers present evidence of conceptions related both to flexibility and access.

3.3 Interpretation

The final stage of the meta-synthesis was structured as a qualitative content analysis.

It is recognized that content analysis, besides being a usually quantitative approach, it is also a proper qualitative method to interpret meaning derived from text data (Hsieh and Shannon, 2005), which was an essential component of this study. In fact, certain processes of an inductive qualitative content analysis were conducted in the previous stage of the meta-synthesis, such as coding and arranging. However, other processes were conducted later, such as the interpretation of the information documented in the mind map.

To perform this process, conceptual networks were developed for the purposes of identify patterns and relations between data. This operation is useful in this stage because it is possible to detect or develop

semantic constructs from the data patterns (Muhr, 1991). The conceptual networking was performed using online tools to create semantic maps, word clouds, such as tagxedo and wordle and graph platforms like Gephi. The segments of the texts of each category were processed through the word cloud tools, and the main words of each cloud were then inserted into a conceptual map to find their main relations. As noted by Elo and Kyngäs (2008), the final step in this phase enables the reporting of data analysis results in the form of a conceptual map of categories. Such categories were subsequently converted into six (6) groups of findings described in the results section of this article.

4. Results: key issues on Open Teaching

The meta-synthesis show a wide and diverse range of key issues related to Open Teaching. Albeit different but not exclusive, each one of this issues provide new elements to support a comprehensive and better understanding on the subject of this study.

Approaching the conceptual complexity of Open Teaching will allow for advancement in the construction of practical knowledge on this subject, which enables the design of more flexible and personalized teaching/learning experiences in higher education. The key issues presented below may be used as a documented reference for higher education literature and specifically on that related to e-learning to provide active practitioners in higher education some elements of reflection that motivates them to move their practices to a more open way of approaching teaching.

Six categories emerged from the meta-synthesis as follows:

4.1 Open Teaching: a diverse and increasingly relevant topic.

This study shows that 'Open Teaching' has represented different concepts over time. Certain of those concepts have endured and added to the current meaning of the term. First and foremost, Open Teaching (OT) has long been conceived as a *modality of education*, a means of teaching not to be confused with a learning modality. Learning modalities or learning styles are elements of a model that classifies students by their preferred means to receive and process information (Felder and Silverman, 1988), whereas Open Teaching is a social approach that may help teachers "to learn how to adapt to the new challenges for education and to exploit technology in the process" (Laurillard, 2008, p.14).

Originally, OT's features were solely related to Distance Learning (Bermeo and Sempertegui, 2004; Cookson, 2012; Feijoo, 2004; Reyes Escamilla, 2002) but overtime those features are increasingly linked to complementary elements (included ICT) in education.

Conceptualizations of Open Teaching that involves complementary elements to distance learning were found in: (Arias and Vanegas, 2013; Castillo, 2005; Conde, 2003; Duart, Salomón and Lara, 2006; Hernández, 2006; López de la Madrid, Flores, Rodriguez and De la Torre, 2012; Marquina, 2007; Montoya, Solano and Araya, 2013; Oliva and Banno, 2006; Rodríguez-Ardura and Ryan, 2001).

In addition, Figure 2 show that the academic interest in Open Teaching has grown substantially over the years. We found that 42% of papers that addressed OT have been published in the last five years, and 5% were published from before the end of the century with an increasingly growing curve that points research work on this topic strongly began after 2000.

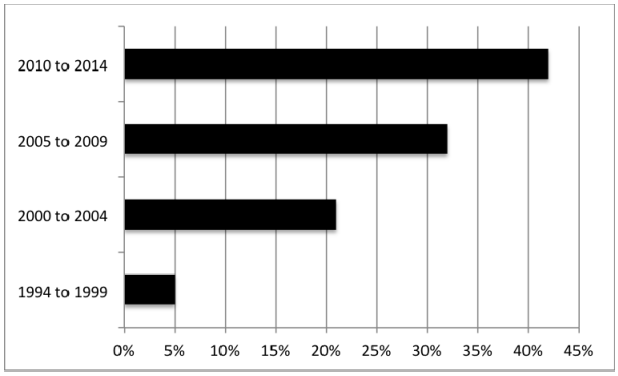

Figure 2: Published papers on Open Teaching over time

It is interesting to note that, as shown in Figure 3, the production of research on e-learning although it is still large is presenting now a decreasing curve. Moreover, if we consider the OT as a new way of e-learning and on the other hand, some of the issues relating to OT as the use of OER or MOOC are high growth educational issues, we could infer that Open Teaching could become a factor of revitalization of e-learning into the near future.

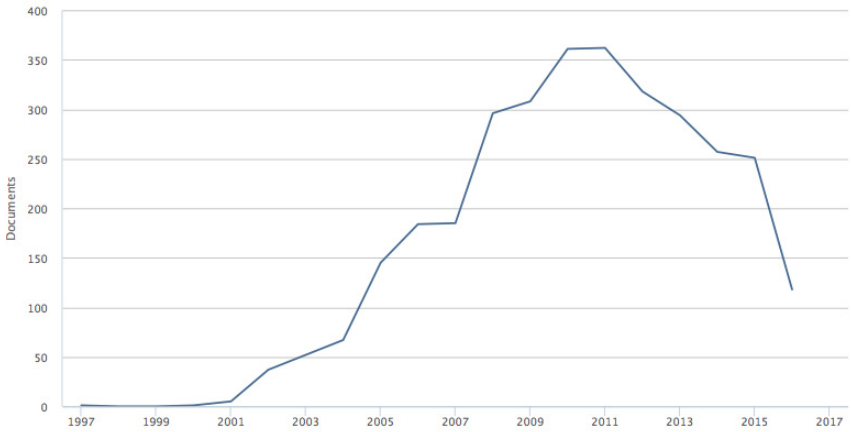

Figure 3: Published papers on e-learning in Scopus

4.2 Open Teaching: between flexibility and access.

As we noted earlier, the meaning of Open Teaching has evolved over the years. Determining the different meanings that Open Teaching has had would lead us to its better understanding as a theoretical construct and as an educational practice.

Literature shows us that an initial characterization of OT is related with access and flexibility. When teaching becomes 'open', it creates the possibility of broadening access opportunities to formal learning spaces by managing time and location in a flexible manner (Unesco, 2009).

In the domain of higher education, *flexibility* means that options are provided to a more mature learner regarding how to learn (Rodríguez-Ardura and Ryan, 2001); based on the learner's needs, he or she may select from a set of choices and arrange a specific configuration of the different intervening factors to the learner's own training process, i.e., pick the topics, place, pace and/or method (Castaño, Redecker, Vourakari and Punie, 2013). Other elements can be added to enhance flexibility, such as time management tools and different teaching resources. From that perspective, Open Teaching can be partially understood to be a process that is aimed at *providing* flexibility to students.

Moreover, *access* implies that all interested learners received educational services equally, and those lacking certain economic conditions (Dos Santos, 2013) or who have a significant social or spatial impairment (Cookson, 2012) will find no hindrance in entering, completing and verifying their learning process.

We found samples of the foregoing in: (Castillo, 2005; Cookson, 2012; López de la Madrid et al., 2012; Marquina, 2007; Reyes Escamilla, 2002; Rodríguez-Ardura and Ryan, 2001).

4.3 Open Teaching: an ICT affair

An interesting outcome of the meta-synthesis lies in the recent literature that shows a direct linkage between Open Teaching and ICT. In fact, 76% of the papers published in the last 5 years describe the digital environments as the appropriate ecology for Open Teaching.

It is noteworthy that the attributes of "openness" become in a change factor for active practitioners in Higher Education. Apply some of this attributes like adaptation, re-mixing, free access or redistribution to a way of teaching means that learning activities must be quite different than attend a lecture or simply collaborate in classroom. In that sense, teacher must provide diversity in instructional design that conducts to an open way of doing things in class. Notwithstanding is possible to address Open Teaching without ICT, it is not a good idea at all. For example, if a teacher wants students to adapt another student´s work, and then share it with the

rest of the class with the purpose of debating in an open forum, it is easier, faster and more practical to do this using ICT tools, overall those who are based on the use of Internet.

Certain Internet-based tools that underpin the development of Open Teaching as an educational practice include virtual classrooms, virtual learning environments, learning and content management systems, chat rooms, forums, mobile apps, learning communities/networks as well as social networks and collaboration and content sharing platforms like Google Drive or Dropbox.

Papers that relate OT with this kind of tools were found in: (Aguirre Gamboa, Casco Lopéz and Laurencio Meza, 2011; Arias and Vanegas, 2013; Belmonte and Camón, 1999; Bermeo and Sempertegui, 2004; Bidarra and Mason, 1998; Feijoo, 2004; Kuklinski and Balestrini, 2010; Pérez, 2013; Spoelstra, Van Rosmalen and Sloep, 2014).

According to Berrocoso (2010), the ultimate purpose of Open Teaching is to "get anybody in the world with an Internet connection to freely and unrestrictedly access all of the scientific, academic and cultural information comprising the human knowledge with no economic, technical or legal hindrance." This renders all technological tools extremely important, particularly those granting free and open access.

4.4 Open Teaching as a driving strategy in autonomous learning

E-learning students are quite more autonomous than they used to be in face to face education (Leese, 2010) and this is one of the reasons why *Autonomy* is one feature that sets it apart from another educational scenarios (Blaschke, 2012; Stephenson and Yorke, 2013).

In addition of what´s been said so far in this study, some of its results show another way to understand Open Teaching as a strategy aimed to create autonomous learning. Such strategy is based in concepts like "anytime-anywhere" as well as considering different paces in learning rhythms, communication and student´s interaction constraints or as educational processes based upon self-management (Mejías Rodríguez, 2013).

This self-driven conception of Open Teaching leads to changes not only in the teaching process but also focus the attention in the availability of resources, communication systems, methodologies and management of educational institutions (Esparragoza, Betancur and Rodríguez, 2012). Viewed from this perspective, Open Teaching provides the students with personalized attention (Anaya-Rivera, 2004), adapts to individual workflow and gives importance to the design of quality educational materials (Campos, 2003).

Indeed, Open Teaching's definition deems students capable of self-steering their learning paths by making their own decisions (Hashemi, 2007) and being independent to find a pace of their own (Castelán, 2011; García and Ruiz, 2009).

Other authors relate Open Teaching to another modalities of teaching, such as tutored self-learning, synchronized virtual classrooms, and networked collaborative modalities (Ciurea and Pocatilu, 2012; De la Iglesia, 2009; Esparragoza, Betancur and Rodríguez, 2012; Pun, 2012), and some of them applied basic principles from active school (Guanina and Francisco, 2013). Also, other researchers remark the relation between teaching in open environments and the student-centric constructivist paradigm (Geser, 2007) as well as the Didactic and Collaborative Learning model (Ciurea and Pocatilu, 2012; Gonzalez, García, Sonsoles and Alvarez, 2013).

4.5 Does Open Teaching mean teaching with Open Educational Resources?

One of the most common and recent ways to understand Open Teaching is concerned with the use of Open Educational Resources (OER). Over half of the research papers reviewed, covering the last decade, reveal a close relationship between OER and OT. Thus, the research review has shown that incorporating OER into an educational practice appears to be a sufficient reason to confer it the status of "open". Although that is a questionable assertion because the "open element" in this idea is just the content but not the teaching practices, the literature shows that it is a widely accepted concept among the academic community.

Although OER is indeed a closely related tool used in Open Teaching, this is conceptually broader than its deployment instruments and should not be conceived in a merely instrumental manner. Instead, OER should at least be understood as part of "extensive collaborative exercises involving reuse, remix, redistribution,

inclusion, adaptation, free access and many other concepts and processes related to the current notion of what "open" means for education" (Chiappe, 2012).

Examples of Open Teaching that are considered to be "use of OER" can be found in: (Fini, 2009; Glasserman Morales, 2012; Montoya, 2011; Montoya and Burgos, 2012; Montoya and Aguilar, 2012; Ponti, 2014; Schmidt, Geith, Håklev and Thierstein, 2009).

4.6 MOOCs as a trace of Open Teaching

One final group of results shows an interesting and consistent presence of the term "MOOC" when researchers refer to OT. The MOOC (Massive Open Online Courses) currently have a high impact on higher education and surely deserve a detailed and sensible reflection because of their relevance (Mackness, Waite, Roberts and Lovegrove, 2013; Sandeen, 2013).

We found that 75% of the reviewed studies published in the last 5 years report a direct relation between Open Teaching and MOOC. Regarding the above, it is noteworthy that a direct relation with OT depends on the MOOC design. When the learning activities in the MOOC include "open attributes" far beyond free access, e.g., adaptation, sharing, collaboration, remix or reusing, the underlying pedagogical framework can be clearly related to Open Teaching.

The above tenet is consistent with the perspective of Mackness, Waite, Roberts, and Lovegrove (2013), when they consider that the stated relation between MOOCs and OT is based upon the defining features previously noted. Adding to this, Mancera and Saldaña (2014), assert that this relation is based on their common pedagogical foundation of *social learning* through community interaction which can be understood under a connectivist approach (Gea, Montes, Rojas and Bergaz, 2014).

Regarding the close relationship between OT and MOOC, active practitioners in higher education should be starting to face some issues that affect their way of teaching. It is a different practice when you have to interact, assess and give feedback to a group of hundreds or thousands of students that move fluidly over Internet, with divers interests and backgrounds.

Examples of such understanding of Open Teaching's linkage to MOOCs can also be found in: (Aguaded, 2013; Al-Atabi and DeBoer, 2014; Bragg, 2014; Conole, 2013; Kellogg, 2013; McAuley, Stewart, Siemens and Cormier, 2010; Pappano, 2012).

5. Discussion

As we observed in the previous section of this article, there are a wide variety of studies addressing Open Teaching. The review process produced diverse analytical categories as key issues within OT`s incipient framework. Each category approaches OT from a different angle and provides to educational researchers and practitioners elements of reflection and practical issues to deal with.

Although lack of consensus within the academic community is something expected and, to a certain degree, encouraged, ambiguities both empirical and conceptual around Open Teaching are now a critical issue. The crucial point in this matter is avoiding the trend that equates Open Teaching to free access to educational content. Regarding the above, the transformative power of *content* is not as strong as the power of *practices (Ball, 2000; Smith, Sheppard, Johnson and Johnson, 2005)*, so, "openness" should engage in teaching as a process that fosters self-awareness, reflection, self-development and a healthier individuation within a social context (Dirkx, 1998; Pea, 1993).

However ICT is a structural feature of Open Teaching, at the same time entails a significant risk concerning its integrality as an open educational practice, by overweighting technological aspects over educational ones. Most of the documented Open Teaching experiences were focus on the implementation of technological tools but just a few of them report adjustments in teaching practices or strategies.

Although Open Teaching can be said to be ICT-based and subject to the convergence of online tools and educational needs, (Baranuik, 2008), it should not necessarily be confined to a digital-only environment. Open Teaching is also possible within the framework of blended learning in which technological devices could be used as support tools for accessing distributed resources (Egbert, 2000). Although it is inconvenient to

eliminate digital interaction because it is a fundamental part of the OT ecology, the social and communitarian dimensions (Laurillard, 2008) should remain as central foundations for Open Teaching.

In formal education, teaching and learning are two separate processes that are inextricably linked, similar to two sides of a coin; their interdependence implies that changing one side modifies the other. Moreover, current education needs lifelong learners who can be in control of their education (Lowe and Gayle, 2016), which means they should have the capacity to change and adapt and thus the ability to nimbly navigate an ever-changing networked environment. Therefore, to achieve that, teaching as an open educational practice, should provide the way to transform itself in an open manner and thus transform its learning counterpart, with the objective of providing the proper conditions for empowered learners to thrive.

Regarding the above, Open Teaching is an increasingly relevant topic that is viewed as an opportunity to offer flexibility and access as a driver of more autonomous and social e-learning. Teaching by means of ICT-based strategies, using OERs, MOOCs, or any other pedagogical instance, is a means of enhancing existing structures through innovative educational processes. Improvement in e-learning via OT should be oriented towards creating better spaces, resources and opportunities to learn, which are equally accessible and fruitful, while remembering the social function and grounds of education.

Some recommendations that are derived as reflection on the results of this meta synthesis would focus on the application of the attributes of "openness" as the fundamental factor for the achievement of e-learning experiences with open characteristics. This is possible, for example, when designing learning activities or content for e-learning. Instructional designers or curators of educational content have such attributes as adaptability, sharing, collaboration or free access as ingredients to make these learning experiences something more similar to what is expected for 21st century education.

Fostering Open Teaching is not an easy task. Doing so requires activating processes of change in the way to conceive both teaching and learning to gain more personalized and flexible processes that take advantage of not only the potential to learn from others and with others but also to enable the creation of personal and individual learning paths.

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