






# From sMOOC to tMOOC, learning towards professional transference: ECO European Project

De sMOOC a tMOOC, el aprendizaje hacia la transferencia profesional: El proyecto europeo ECO

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## ABSTRACT

The evolution of MOOCs in the last decade has been constant and dynamic. The first cMOOC and xMOOC models eventually evolved into different postMOOC modalities, such as sMOOC, which conjugates interaction among students with a participation model based on social networks. This work is focused on carrying out a systematic review of the state-of-the-art scientific literature referred to the concept of MOOC and its diverse types. Moreover, in this article, a new generation associated to sMOOC is unveiled: the tMOOC (Transfer Massive Open Online Courses). The methodology of study is based on the content analysis of those categories resulting after compiling 707 entries from Web of Science, plus an in-depth study of the 70 articles which were quoted at least 10 times. In addition, a case study has been carried out from European ECO Project's "sMOOC step by step", as an example of innovative pedagogical model based on collaborative learning to train future e-teachers. The results of the analysis show the very recent –and still scarce– research on the different types of MOOCs, as well as the finding of a new modality based on pedagogical transformation, learning transference and intercreative talent. As a conclusion, the analysis of all key factors in the configuration of tMOOC suggests a new taxonomy based on the 10 T's.

## RESUMEN

La evolución de los MOOC en la última década ha sido constante y dinámica. Como antecedentes, los primeros modelos de cMOOC y xMOOC se transforman en otras modalidades postMOOC, como los sMOOC, que conjugan la interacción entre los estudiantes con el modelo de participación implantado en las redes sociales. Este trabajo tiene como objetivo realizar una revisión sistemática del estado de la literatura científica sobre el concepto MOOC y sus distintas tipologías. En este artículo, se descubre una nueva generación asociada a los sMOOC, los tMOOC (Transfer Massive Open Online Courses). La metodología de estudio se basa en el análisis de contenido de las categorías resultantes en los 707 registros recogidos de Web of Science, profundizando en los 70 artículos que obtuvieron al menos diez citas. Además, se ha realizado el estudio de caso del sMOOC «Paso a paso» del Proyecto Europeo ECO, como modelo pedagógico innovador, centrado en el aprendizaje colaborativo para la formación de futuros e-teachers. Los resultados del análisis muestran la reciente y escasa investigación sobre los diferentes tipos de MOOC, así como el hallazgo de una nueva modalidad basada en la transformación pedagógica, la transferencia del aprendizaje y el talento intercreativo. Como conclusión, el análisis de todas las claves de la configuración del tMOOC lleva a proponer una nueva taxonomía basada en las 10 T's.

## KEYWORDS | PALABRAS CLAVE

sMOOC, tMOOC, learning transfer, pedagogical transformation, interaction, transmediality, intercreative talent, collaborative work. sMOOC, tMOOC, transferencia de aprendizaje, transformación pedagógica, interacción, transmedialidad, talento intercreativo, trabajo colaborativo.



## 1. Introduction and state of the art

The scientific community is nowadays highly concerned about the search of a model able to provide a response to the current social demands on lifelong learning. MOOCs (Massive Online Open Courses) have emerged as an answer to such a call, with ever innovative and diverse modalities. Nevertheless, the two initial goals pursued by Siemens and Downes' first MOOC launched in 2008, based on the construction of participative and "connectivist" learning as the driving force for motivation, have not been actually accomplished. From traditional models based on connectivity –cMOOCs (Yeager, Hurley-Dasgupta, & Bliss, 2013; Wenqiang, 2012)– or those based on behaviourism and cognitivism –xMOOCs (Daniel, 2012; Yousef & al., 2015)– multiple and different modalities have developed, progressively integrating new features to their composition. We are in the post-MOOC era and a controversial criticism to these courses has arisen, in two ways. On the one hand, traditional measures for success show that completion rates are lower (5-8%) than those in classical e-learning courses (20-30%) and, on the other hand, its massiveness has turned them into methods of "transmissive" learning (Capuano & Caballé, 2015; Daradoumis, Bassi, Xhafa, & Caballé, 2013).

The sMOOC (Social Massive Open Online Course) is among the latest proposals. The initial "s" stands for two terms: social and seamless (Camarero-Cano & Cantillo-Valero, 2016). These sMOOCs are "social" because they encourage interaction in learning, thus following the track of Collaborative MOOCs; and "seamless" because they are constantly accessible. The latter implies yet another important feature, the courses' ubiquity, which makes access possible anywhere, anytime and through any device.

Between 2014 and 2017, ECO (Elearning, Communication and Open-Data) European project was developed from that initial sMOOC concept. The main differentiating characteristic in this macro-project, which has involved over 55.000 students and trained more than 200 e-teachers, is the training received toward the creation of their own massive courses. This way, we have reached the yet innovative tMOOC or transferMOOC model, aimed at providing participants, through collaborative work in a pro-common dimension, with the competences needed to implement every tool, learning method, peer-to-peer assessment system, etc., in their own courses, focused on their topic of choice.

This new generation of tMOOC focuses on the transfer of learning and pedagogical transformation by generating interest towards action and professional interaction. Regarding this two-fold dimension, progress might be perceived as directed towards a modality which has been already proposed by some researchers (Cabero, Llorente-Cejudo, & Vázquez-Martínez, 2014; Vázquez, López, & Sarasola, 2013) and known as tMOOC. Our proposal, however, goes beyond the simple resolution of tasks and activities by students that those researchers refer to.

In this study, we account for a new proposal in which traditional characteristics based on "authentic tasks" merge with some other features until the 10T's representing this new tMOOC model are achieved: authentic tasks, transfer of learning towards profession, pedagogical transformation, ICRT, transmediality, open temporality, transnationalism, intercreative talent, collaborative teamwork and tolerance.

The initial dichotomous typology (cMOOC and xMOOC) has progressively multiplied into several MOOC modalities, often determined by the context. Such is the case of bMOOC (Yousef, Chatti, Wosnitza, & Schroeder, 2015) or mMOOC (Dubosson & Emad, 2015), which combine different characteristics by showing mixed traits from previous models.

Clark (2013) adds corresponding prefixes in order to establish eight modalities: transferMOOC (e-learning courses converted to MOOC format); madeMOOCs (including videos and interactive resources, promoting interaction and peer-to-peer-assessment); synchMOOCs (with starting and ending dates previously arranged); asynchMOOCs (with flexible deadlines and no previously fixed dates); adaptiveMOOCs (a personalised learning method based on dynamic assessment through adaptive algorithms); groupMOOCs (collaborative learning for specific groups); connectivistMOOCs (promoting relationship among participants); miniMOOCs (short in duration and contents).

Additionally, Sánchez-Gordon & Luján-Mora (2015) include further modalities to MOOC taxonomy, by modifying its initial or final letters as a sign of identity for each, such as the SPOC (Small Private Online Course), in which access is restricted to a certain amount (dozens or hundreds) of students in order to prevent high drop-out rates. This modality was coined by Armando Fox at Berkeley University in 2013 and it is based on the "flipped classroom" model (Johnson, Adams, Estrada, & Freeman, 2015).

Likewise, Conole (2016: 10) carries out a classification based on twelve dimensions: degree of openness, scale

of participation (massification), amount of multimedia used, amount of communication, degree of collaboration, type of learning pathways (from a teacher-centred and highly structured student), level of quality guaranty, how much is reflection promoted, how formal or informal the course is, autonomy and diversity.

Finally, Altinpulluk y Kesim (2016) have recently proposed yet another typology in the following terms: COOC (Classically Offered Online Classes), a model according to which courses are 100% online and increase quality by focusing on cutting educational costs; DOCS (Digital Open Courses at Scale), where the term online has been replaced by digital, and massive by scale; gMOOC (Game-based Massive Open Online Course), which use virtual games and resolve problems through gamification, among others. These authors include in a taxonomy, for the first time, ECO sMOOC (Social Massive Open Online Course) as a model in its own right, referring to its higher degree of interaction and social participation as a distinguishing feature, in addition to its ubiquity and its accessibility from different platforms and support systems, which enables it to become integrated in real-life experiences.

All the aforementioned formats and modalities showing scientific literature about MOOCs have been increasingly abundant in recent years, as

proved by bibliometric research (Aguaded, Vázquez-Cano, & López Meneses, 2016; Mengual-Andrés, Vázquez-Cano, & López Meneses, 2017; Sangrà, González-Sanmamed, & Anderson, 2015; Zancarano & Cavalho-de-Souza, 2017).

## 2. Materials and methods

Through a systematized review of scientific literature, this work aims to analyse the state of the main research trends about MOOCs and their modalities, in order to analyse the pedagogical innovation model used in sMOOC “Step by step”.

Purposefully, an updated documental descriptive analysis has been carried out among studies compiled from major Scientific Literature databases. As a result of the qualitative research proposed, together with the sMOOC “Step by step” (2015) case study, tMOOCs are presented and established as constructs derived from sMOOCs, which must comply with the 10T’s taxonomy.

For the documental analysis, a search for the terms “MOOC”, “MOOCs”, “cMOOC”, “xMOOCs”, “sMOOC” and “tMOOCs” was carried out among academic works published in the main reference on scientific literature: the compilation on Web of Science (WoS) at Clarivate Analytics. Moreover, the search was restricted to the Social Sciences Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI) and the Emerging Sources Citation Index (ESCI). Under these searching criteria, 707 matches were obtained and, bearing in mind that the MOOC concept was coined in 2008, no scientific literature was to be found until some years later. All the references found corresponded to the subject of study so that there was no need to discard any of them.

The studied concepts first appear in 2013. An interest can be noticed in the publication of material referred to the MOOC concept and the cMOOC modality. Overall publications on MOOCs increased until 2017 while xMOOCs have gained prominence in scientific literature from 2014 onwards. Remarkably, the term sMOOC appears abundantly in 2016 and is widely present in 2017 documents. Additionally, the terms “tMOOC” and “iMOOCs” were also searched, but no results were obtained in WoS.

As the following step, a qualitative content analysis was carried out through Atlas.TI software in order to codify the most significant content categories, which had been highlighted by the authors in their publications. Finally, as criteria to narrow down the sample, only those documents which had been previously quoted at least ten times in further scientific materials were used, resulting in a final sample of 70 records (Figure 1).

The actions carried out in WoS were complemented with ECO’s sMOOC “Step by step” case study, which

**sMOOC (Social Massive Open Online Course) are courses based on two terms: “social”, because they enhance interaction in learning, and “seamless”, because they are constantly accessible. Their distinguishing characteristics for teachers training model are: a higher degree of interaction and social participation is implemented, they are ubiquitous and accessible from a wide range of platforms and support systems and can be integrated in real-life experiences.**

played the role of MOOC research laboratory for three years. It is a model case due to its design (Coller, 2005) within the European research work. The case is also relevant, both theoretically and experimentally, to reboot the connection between teachers training and the subsequent professional transference. That is exactly what the tMOOC construct claims. The strategies followed in the case study are the participating observation from the teaching team's point of view, a satisfaction questionnaire filled by participants and the non-participating observation of e-teachers work in their own tMOOCs. In order to ensure its reliability, four iterations of the sMOOC "Step by step" have been run and no significant deviations in results have been observed after each edition. The internal validation has been guaranteed through the assessment of ECO experts which have not taken part in the sMOOC "Step by step".

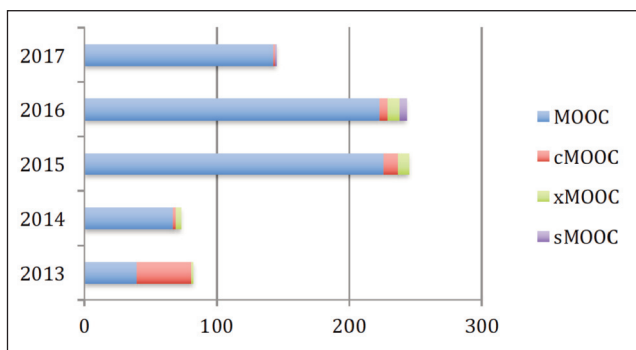


Figure 1. Dates in WoS records and amount of published documents.

### 3. Analysis and results

Firstly, this work carries out an in-depth review of the contents of the documents provided by the databases included in WoS, which consist of articles, communications/papers in relevant lectures, reviews, etc. Results have then been compared with those obtained in the sMOOC "Step by step" case study (Table 1).

Most interestingly, Table 1 shows that all documents concerning the different types of MOOCs are scientific articles; no other formats are used. Moreover, most documents focused on the overall MOOC concept are also

TYPE OF DOCUMENT	MOOC/MOOCs		cMOOC/cMOOCs		xMOOC/xMOOCs		sMOOC/sMOOCs	
	n=705	%	n=22	%	n=22	%	n=6	%
Articles	598	84.83	22	100	22	100	6	100
Communications/papers	10	1.42	-	-	-	-	-	-
Reviews	14	1.98	-	-	-	-	-	-
Others	83	11.77	-	-	-	-	-	-

articles. As a matter of fact, the articles account for 84.83% of the total sample, a clearly higher figure than the one reached by other documents: communications/papers (1.42%), reviews (1.98%) and further documents such as editorial materials, scientific letters, etc. (11.77%).

Table 2 below highlights the categorization of content from the 70 documents recorded in WoS which have been quoted at least 10 times, along with each category's frequency and content code. Frequency sorts in descending order the scientific community's research interests concerning MOOCs and their typologies.

According to the resulting frequencies, the degree of interest raised among the scientific community about MOOCs can be observed. Hence, codes referring to MOOC concept (26.34%), learning (21.75%) and development (21.75%) are the ones drawing most of the researchers' attention. In an intermediate position lays the interest in searching about MOOC's technology (12.98%). Codes referring to MOOCs' commercialisation (12.98%), students (6.12%) and challenges (4.58%) are found at the bottom of the list. As for the frequencies in categories, there are no significant differences among them, although they can be nevertheless used for prioritisation purposes. It is worth noting though, that the category getting most of the attention from the scientific community is the one studying the quality of a MOOC's curricular design. In ECO Project, and especially in sMOOC "Step by step", a series of tools have been developed (checklist, peer to peer evaluation, back-office application, satisfaction questionnaire, etc.) precisely to keep control of the courses' quality (Frau-Meigs & Bossu, 2017).

It should be noted that data obtained in sMOOC "Step by step" are not in line with figures compiled from WoS, most probably because it is based on a MOOC model built on different premises. In this sense, the study's results reflect that the "students" category would be placed among the first positions, since one of the European project's main goals implies empowering students so that they can become e-teachers and encourage their participation in social media. In addition, ECO Project stands for different success-measuring criteria than those used in traditional

e-learning, and agree with Siemens, Downes, & Cormier (2012) at considering the new role of students in MOOCs as essential. Moreover, they advise potential MOOC participants to do as follows: “If it looks too complicated, don’t read it. If it looks boring, move on to the next item [...] The learning in the course results [...] will be different for each person” (Siemens, Downes, & Cormier, 2012).

Finally, the “professional transference” code noticeably falls to the last place in the data compiled from WoS while, at ECO, it provides the foundation on which tMOOCs are rooted. These tMOOCs pursue a learning transference, fed by prospective contributions directed towards the field of professional and social empowerment, which reaches out beyond the course itself. By encouraging participants in the sMOOC “Step by step” to become future e-teachers, a higher level of interaction and commitment is attained from them. Coincidentally, some aspects which enhance innovation in this

type of courses, such as involvement and interactivity, and which are fostered through the constant use of social media, are also to be found in the lower half of the table obtained from WoS analysis.

As for the mentioned sMOOC “Step by step” case study, all data obtained through the three strategies mentioned in the previous epigraph were cross-checked. As it was observed, fulfilled expectations and learning results obtained by students were positively correlated to the transfer to professional life of the contents learnt. Therefore, the higher the level of satisfaction with fulfilled expectations and learning, the larger the professional transfer of what had been learned. In addition, the more collaborative tasks the course had, the greater the students’ satisfaction in the three previously mentioned aspects was.

#### 4. The 10 T’s taxonomy

After studying the records analysed in WoS and classifying them according to new aspects originated in the sMOOC “Step by step”, we propose ten dimensions which support tMOOCs in their different modalities, as a prospective model based on empowerment towards professional practice and social empowerment:

1) **Authentic tasks.** The chosen tasks are “authentic” because they can be applied to real-life situations. We have taken up the contribution by Brown, Collins & Duguid (1989), when they state that these “authentic tasks” are designed to stimulate critical thinking and the self-regulation of cognitive action. They are characterised by the subjects’ involvement in real-learning situations and by the richness in assessment, which attends to the achieved goals (Camarero-Cano & Cantillo-Valero, 2016).

Authentic tasks integrate the Relational Factor in pedagogical processes, which has been defined as “internet-hodology”. This, in turn, is related to a transmedia narrative in which “the interrelation generated between different

**Table 2. Codification and categorization of the most significant content, obtained in documents quoted at least 10 times**

CATEGORY	CODE	FREQUENCY
<b>Concept</b>	<ul style="list-style-type: none"> <li>• Quality of Curricular design (7.26%)</li> <li>• Types of MOOCs (5.73%)</li> <li>• MOOCs and University (3.82%)</li> <li>• Future (3.82%)</li> <li>• Research reviews (3.43%)</li> <li>• Origins (1.14%)</li> <li>• Promises and limitations (1.14%)</li> </ul>	26.34%
<b>Learning</b>	<ul style="list-style-type: none"> <li>• Theories of learning (6.99%)</li> <li>• E-learning (6.99%)</li> <li>• Collaborative learning (2.69%)</li> <li>• Adaptive and self-paced learning (2.69%)</li> <li>• Social learning (1.62%)</li> <li>• Formal and informal learning (0.77%)</li> </ul>	21.75%
<b>Development</b>	<ul style="list-style-type: none"> <li>• Completion rate (4.68%)</li> <li>• Enrolment rate (3.82%)</li> <li>• Assessment, P2P, rubrics (3.43%)</li> <li>• Participation (3.05%)</li> <li>• Flow of information with social media (2.67%)</li> <li>• Active creation and exchange of resources (1.19%)</li> <li>• Communicative model (0.77%)</li> <li>• Critical discourse (0.38%)</li> <li>• Attention to diversity (0.38%)</li> <li>• Workload (0.38%)</li> </ul>	21.75%
<b>Technologies</b>	<ul style="list-style-type: none"> <li>• Emerging technologies (4.19%)</li> <li>• Interactivity (2.68%)</li> <li>• Openness (1.9%)</li> <li>• Connectivity (1.52%)</li> <li>• Mobile technologies (0.77%)</li> <li>• Ubiquity (0.77%)</li> <li>• Accessibility (0.77%)</li> <li>• Usability (0.38%)</li> </ul>	12.98%
<b>Commercialisation</b>	<ul style="list-style-type: none"> <li>• Business Model (2.29%)</li> <li>• Effectiveness (1.9%)</li> <li>• Accreditation and certification (1.15%)</li> <li>• Gratuity (1.14%)</li> </ul>	6.48%
<b>Students</b>	<ul style="list-style-type: none"> <li>• Success in learning (2.3%)</li> <li>• Roles (1.9%)</li> <li>• Autonomy (1.15%)</li> <li>• Level of satisfaction (0.77%)</li> </ul>	6.12%
<b>Challenges</b>	<ul style="list-style-type: none"> <li>• Achievements and innovation (1.9%)</li> <li>• Social transformation for development (1.14%)</li> <li>• Democratisation of education (0.77%)</li> <li>• Professional transference (0.77%)</li> </ul>	4.58%



techniques permits a rich, globalizing practice of diverse activities, which are summative and enlarge the process itself where the analysis-synthesis-reflection-action competence dimensions are brought together” (Marta-Lazo & Gabelas Barroso, 2016: 142).

**2) Transfer of learning towards profession.** Development in tMOOCs is based on potential transfers to the student’s professional practice or to their training in skills related to a corporate approach to work (Sánchez-Gordon & Luján-Mora, 2015). Some research works, focused on those MOOCs specialising on pedagogical/education-related topics, conclude that several platforms have specialised on social empowerment (Calvo, Rodríguez, & Fernández, 2016).

Teaching is among the professions in which these courses offer a higher degree of applicability. Lane and Paciorek (2012) claim that it only makes sense for teachers to experience the Web as a huge classroom, where they can develop their own pedagogy and explore new support tools in an open, structured environment.

**3) Pedagogical transformation.** tMOOCs may generate different forms of e-participation, based on collaboration and joint reflection, to “elicit useful proposals to help shape decision-making processes in corporate areas and public politics. These pioneering forms of participation, with groups of common interest, well-grounded and globally connected, have arrived through MOOCs and are going to revolutionise the way we build our society” (Torres & Gago, 2014: 16).

The pedagogical transformation shall be based on “principles of equity, social inclusion, accessibility, autonomy and openness” (Gil-Quintana, 2015: 299). Furthermore, tMOOCs could be used to build new forms of academic productivity in the context of empowerment.

**4) ICRT.** tMOOCs imply a “relational factor”, integrated in the so-called ICRT (information, communication and relation technologies), whose badge is the establishment of digital humanism, beyond mere technological determinism (Marta-Lazo, Marfil-Carmona & Hergueta-Covacho, 2016). ICTR-based learning pursues a more democratic, inclusive and participative society.

Models based on the Relational Factor promote active learning and encourage participants to “acquire and generate knowledge thanks to active participation, peer-to-peer interaction and conversation” (Hergueta-Covacho, Marta-Lazo, & Gabelas-Barroso, 2016: 51).

tMOOCs are based on a relational, active and interactive participation, settled in the use of social media, which are essential for a critical and social pedagogy. The leading role granted to students through social media provides them with the ability for empowerment.

**5) Transmediality.** Transmission of transmedia content applied to fiction, entertainment and information areas has reached e-learning contexts as well. Currently, several resources are integrated in tMOOCs through varied pathways (platforms, applications, social media...) aiming to turn them into multiformat dialogic processes. As Ossorio-Vega (2014) remarks, transmedia narrative “would foster students’ participation and would stress the need to reinforce their self-sufficiency and their critical ability, by demanding them to select and choose the way to go” (2014: 36).

cMOOCs and sMOOCs endorse the use of social media for interaction among participants. The first experience was “Social media tools and supporting your professional learning (AUSMT)” (Ostashewski & Reid, 2012), with a MOOC in which students determine their own learning and their journey through the networks (Arnold & al., 2014; Yousef & al., 2015).

tMOOCs are pedagogical methods which integrate multiple learning lines. They are not just shaped as an addition of actions, but as a combined transmedia sequence.

**6) Open temporality.** tMOOCs are characterised by open learning in multiple environments and with flexible chronology. As Aguaded (2013: 7) notes, it is a “revolutionary approach as far as the here and now of learning is conceived, since its ubiquity and temporality dissolve to their nearly complete disappearance, while the teacher-learner interactions [...] and those among students are transformed”.

Methods for interaction may be synchronic or a-synchronic, either permitting simultaneous exchange or by allowing participants to respond whenever it suits them better, though the different media available, such as forum posts on the MOOC’s own platform, blogs, social media or any other format within the transmedia sequence.

**7) Collaborative teamwork.** tMOOCs position themselves as a disruptive education alternative and as meeting points for participants, from where access is granted to an accessible, distributed intelligence, thus forming both internal and external relational networks and weaving a construction of knowledge from the resulting “collective intelligence” (Lévy, 2004).

Collaborative learning involves an exchange of knowledge and experiences. Students teach and learn from each other and develop a positive interdependence (Covey, 2008), thus creating CSCL (Computer support for collaborative learning) environments beyond the mere instructional design (Dillenbourg, 2002; Panitz, 1999). Students become active agents in their learning process and contribute to the co-creation of their own knowledge (Soller, 2001).

Collaborative learning is essential in tMOOC contexts because it promotes feedback, motivation and achievement. Some MOOCs are already designed with mechanisms to get the best out of opinion leaders as enhancers of collaborative learning, understanding and sociability through constant interaction (Pei & Shen, 2016).

**8) Intercreative talent.** One of the axis which should guide tMOOCs is the intercreative talent, a term which conjugates interactivity and creativity (Berners-Lee, 1996). Intercreativity has later been recovered and amplified by Osuna-Acedo & al. (2017), defining it as the individual's ability for the collective co-construction of knowledge in virtual environments through collaboration.

Intercreative talent is necessarily associated to a horizontal learning environment and a bidirectional communicative model, as the one carried out on tMOOCs. Furthermore, it requires an inclusive and accessible education

model where there is a place for everyone and where each person feels their participation is important for themselves and for others. As Osuna-Acedo & Camarero-Cano (2016: 123) conclude, the "general results show that sMOOCs in ECO Project were designed and implemented in the light of intercreativity, through both the courses' content and the teaching/learning methodology, which was based on socio-constructivism and connectivism".

**9) Transnationalism.** In their space-time disruptive facet, tMOOCs imply edu-communicational meeting points, open from a territorial point of view, since they overcome boundaries and geographical gaps in the access to higher education.

The transnational component makes participants come together not only according to their spatial location, but also according to their academic and thematic interests. Such interest-based relationships among interacting subjects allow a common ground to be found by people from different countries and cultural backgrounds.

**10) Tolerance.** The pedagogical design is adapted, through a participative distribution, to the different profiles of interacting subjects, including intermediate leaders or "influencers", which act as driving forces for the rest to follow with a higher tolerance to the frustration generated by not achieving the initial goals. The incentive of achieving badges and interacting with their fellow participants, especially at peer-to-peer assessment, enhances the possibilities of being more tolerant.

Tolerance in tMOOCs means respect for difference and acceptance of ambiguity and error. Interculturality is closely related to tolerance because it implies the coexistence of different cultures, ideas, interests, goals, etc.

## 5. Discussion and conclusions

In view of the analysis of results, further work on a research line focused on students as leaders in MOOCs is a priority. Therefore, we advocate a more social and transforming outreach for learning through massive courses.

The "Challenges" category in WoS records is a minority one. However, it is there where prospective aspects as goals and innovation (1.9%), social transformation for development (1.14%), democratization of teaching (0.77%) or professional transfer (0.77%) are contained. All these challenges represent just 4.58% of the most significant publications in the mentioned database, while conceptual aspects (26.34%), those related to learning theories and

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technologies (21.75%), the ones focused on MOOC development (21.75%) or technology-centred instrumental aspects (12.98%) are the most numerous as far as scientific literature of reference related to the subject of study is concerned.

By contrast, the “challenges” are precisely among the central axis at ECO case study, together with all its elements, with a special significance of professional transference and social transformation, towards the completion of the new tMOOC model as a further breakthrough. This involves reformulating their characterising parameters, not only from the tasks standpoint, but also attending to a total of ten traits, which turn them into a new generation based on transforming learning. tMOOCs should be linked to sMOOC as a natural continuity and, in fact, 10% of ECO participants have succeeded in becoming e-teachers through 67 MOOCs, which means that by participating in sMOOC “Step by step” they have been able to carry out their own tMOOCs, conjugating the ten categories established for the model.

tMOOCs work as media and cultural products in the twenty-first century’s social media, which are characterised by a self-selective use, adapted to each participant’s interest and preferences in the intercreative and intercultural process (Osuna-Acedo & al., 2017). These learning dynamics require no quantitative final results, and they are instead focused on quality control, since this pedagogical model is based on the process and not the obtained results.

As clearly observed in the case study, the professional component is the student’s guiding light through the process. From the earliest stages, when students are asked to introduce the group, the identification data they naturally choose are name, surname and profession. On a different note, three driving forces for participation have been detected in the case study: the social importance of generating MOOCs in the future; the need to join forces as e-teachers to design a MOOC in conjunction; and the recognition of MOOCs’ professional training.

Transference of knowledge can be achieved from the construction of joint learning in terms of lifelong learning as explained by Delors (1996). The pedagogical transformation produced in a relational, collaborative environment pursues the transfer towards social empowerment development, in a working context which demands constant reinvention.

Moreover, tMOOCs go a step further by promoting active and collaborative learning, not just from a pedagogical perspective, but also as a bid for civic commitment.

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