An Inter-Institutional Development Experience in a MOOCs for in-service teachers

Una experiencia interinstitucional de desarrollo de un MOOC para docentes en servicio

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ABSTRACT

This article presents some of the conceptual and methodological aspects concerning the design of a MOOC for in-service primary school teachers. Upon receiving the Codaes-Descaes support, researchers and students from three public universities established a development program based on phases, which basically consisted in articulating a design approach, a management model and an organizational structure. The focus centers on the management strategy used to merge intra and inter-institutional work from specialists from different fields of knowledge. We also present the MOOC contents on Initial Literacy, and discuss the importance of summing up efforts to develop digital learning resources and maximizing the Open Educational Resources according to the affordances of the platform that will host the MOOC.

RESUMEN

Este artículo presenta algunas consideraciones conceptuales y metodológicas que guiaron el diseño de un MOOC orientado a la formación continua de docentes de educación básica en materia de alfabetización inicial. El proyecto involucró a académicas y estudiantes de tres universidades públicas y respondió a la convocatoria Codaes-Descaes (SEP, 2016), la cual exigió la participación de integrantes de cuerpos académicos de tres instituciones de educación superior. La metodología que condujo el desarrollo del curso consistió en establecer etapas de trabajo que articularon un enfoque de diseño, un modelo de gestión y una estructura organizativa. El artículo se centra en describir la estrategia de gestión del trabajo intra e interinstitucional de especialistas en diferentes campos del conocimiento. La alfabetización inicial como contenido del MOOC-AI se aborda desde una doble perspectiva: prácticas sociales de lenguaje y psicogénesis de la lengua escrita. Asimismo, se discute la importancia de la colaboración para el desarrollo de recursos educativos dirigidos a usuarios específicos.

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INTRODUCTION: TEACHERS' TRAINING AND MOOCs

Teacher training has ceased to be a peripheral part of the education system to position itself at the center of the debate in public policies and international educational research (Cochran-Smith and Zeichner, 2005). Ingvarson (2013, quoted in Silva-Peña and Salgado-Labra, 2014) proposes that the task of getting good teachers has overridden the idea of developing certification systems based on standards. It does not suffice to have better equipped classrooms, since this is a condition that entails other elements such as the wage situation and the teaching work conditions in general. Teachers' continuous training is a global challenge.

More specifically, in the case of teachers already in service, the design for their training courses is crucial since these courses must take into account the needs of the teachers for any type of offer (Vezub, 2013), according to the contexts in which their teaching practice takes place. Teachers continuous training has been in the heart of the debate since the introduction of curricular reforms in Latin America (OREALC/ UNESCO, 2013) and, more recently in Mexico (Tapia Uribe and Medrado Camacho, 2016), with the implementation of the 2013 educational reform that, among other aspects, governed the entrance, promotion, recognition and permanence of teachers service through the General Law for Professional Development.

Pursuant to this law, Mexican teachers are committed to being evaluated to demonstrate their abilities, aptitudes and knowledge. The authorities believe that the results of the evaluations influences the participation of teachers in programs and actions specific to their training in service; however, the evaluation to which Mexican teachers are submitted to demonstrate their performance in their work, forces the government to provide training spaces based on their results. Cordero Arroyo, Jiménez Moreno, Navarro and Vázquez Cruz (2017), in a recent study on teacher training strategies before the implementation of the General Law for Professional Development, report that the training strategies have been modified over the last five years. One of the options has been to offer online courses. However, the results have been mixed and, in some cases, the experiences the teachers narrate are not significant.

Notwithstanding the foregoing, the change in the official strategy was a novelty, and the favored format in continuous training was the presential courses of an approximate duration of 40 hours each. These courses were organized and given by the State educational agencies. This format reached a considerable number of teachers, mainly because of the cascade training, even though several studies have questioned their effectiveness (Ávalos, 2007; Martínez-Olivé, 2009; Villegas Reimers, 2003). In México, Bazán, Castellanos, Galván and Cruz (2010) showed that most teachers that attended the training courses in the State of Morelos reckoned that these courses did not respond to their training needs and that the contents had scarce applicability in their teaching practice.

While the diversity of training options is necessary, whether face-to-face or online, it is central to attend the basic topics of teaching training, and literacy is one of those. A viable option for teacher training is MOOC, massive open online courses. Thanks to the Massachusetts Institute of Technology that, in 2001, allowed the open and free access to course material, the offer for this modality has been increasing worldwide. The Fundación Telefónica (2015) [The Telephone Foundation] (2015) informed that between 2013 and 2014, courses increased from 409 to 2,230, i.e., the offer grew a little more than 400% in one year only. While it is true that the training offer has multiplied through MOOC, their weakness is the low conclusion indicators. Bartolomé and Steffens (2015) point out that this is probably due to the fact that the development of training proposals has not taken into account the contributions of the studies conducted on learning and self-regulation.

Similarly to the course increase, the creation of platforms supporting MOOC course has spread. Globally, Coursera, EdX and Udacity stand out as well as others in Latin America, such as Miriadax and RedunX, which are now recognized (SCOPEO, 2013). More specifically, in Coursera, MOOC conclusion /certification is of 4% (Bartolomé & Steffens, 2015). In México, Codaes, MexicoX and Aprender.org, platforms are samples of the MOOC momentum at national level.

While at the beginning the open course wave encouraged a broad discussion on the free and unrestricted access to knowledge (SCOPEO, 2013), but currently, the discussion has extended to the conceptual evolution and its pedagogical implications (Chiappe-Laverde, Hine and Martínez-Silva, 2015). Likewise, experts' works on virtual environments and distance education that discuss their scopes and limitations have multiplied (Chiappe-Laverde *et al.*, 2015; García Aretio, 2016, 2017; Ruiz Bolívar, 2015; Ruiz Bolívar and Dávila, 2016), as well as their impact on national systems (Vallaeys, 2014).

From the university social responsibility approach, Vallaeys (2014, p. 108) cautions that the MOOC momentum, in a sense, can be understood as a "knowledge democratization", especially given its free access, but on the other hand, they can also be considered as "a fierce commercialization and uprooting of education", since their access is depersonalized and standardized. In similar terms, but referring more specifically to teacher training, Silva-Peña and Salgado-Labra (2014) point out that MOOCs are designed to be taken massively and that they involve necessarily a "universalization of knowledge" which cautions on its depersonalization.

Notwithstanding the controversies, from our standpoint, the popularity of MOOCs is due to two of their main characteristics which allowed them to emerge; open access and scalability. The first attribute asserts universal and online access while the second refers to the design of the course in platforms that ensures the attention of an indefinite number of users or participants (Gallego Trujillo, 2016; Raposo Rivas, Martínez Figueiras and

Sarmiento, 2015; Vaillant Alcalde, Rodríguez Zidán and Bernasconi Piñeyrúa, 2017). Teixeira *et al.* (2015), on the other hand, emphasize the fact that the MOOC courses can enable social inclusion, knowledge dissemination and pedagogical innovation, a concept we agree with. Nevertheless, these authors underline that their main characteristic – scalability – prevents from considering predefined participants. Without the personalization of an educational service, the central feature of MOOCs, the course design, must preferably take into account the users' heterogeneous profiles, the diversity of learning styles and previous knowledge, as well as the diversity of participation contexts of teachers in service.

The literature on MOOCs shows how different experiences have developed and their results (Enríquez Vázquez, Bucio García, Bras Ruiz and Rodríguez Velázquez, 2017; Monedero, Cebrián and Desenne, 2015; Sánchez-Vera, León and Davis, 2015; Vaillant Alcalde, Rodríguez Zidán and Bernasconi Piñeyrúa, 2017). Benet Gil, Sanahuja Ribés, García Molina and Nieto Garoz (2018, p. 94) describe MOOCs as "powerful tools that foster a valuable channel of exchange of contents and knowledge of students from all parts of the world" and conclude, as of their study, that these courses are a useful resource for continuous training, since they facilitate the exchange of knowledge in an open and flexible manner. On the one hand, Bartolomé and Steffens (2015) claim that "MOOCs can be a good solution if they can be projected globally, and it is possible only for very few and large institutions" (p. 93). In the case of MOOCs at the service of teaching updating, the captive universe is massive and its projection can ensure its access through institutional platforms.

We are interested in highlighting the courses used in teacher continuous training, for example, Benet Gil, *et al.* (2018), evaluated a course on inclusive education addressed to teachers in which 330 participants enrolled of which 110 completed the course satisfactorily. Those who completed the course reported improvements suggested as the time increase to perform the tasks. If one third of the users complete this training experience, it can be considered successful since it is more than 5.1% that completed a course or 4.3% that obtain a certificate, according to the Fundación Telefónica (2015, pp. 65-66)

MOOCs can provide solid training backed by educational institutions specialized in generating knowledge.

> The fact the in-training teachers can link massively with leading research universities that are complex institutions in the forefront of the knowledge generation in several fields, allow accessing knowledge that most teachers do not have and open the possibility of a relation between universities and schools, teaching and research. Bringing universities closer to schools constitutes an opportunity to strengthen a relation that is acknowledged by some countries as a critical point that promotes both scientific dissemination and the generation of pedagogical knowledge (Silva-Peña and Salgado-Labra, 2014, p. 160).

These authors consider that MOOCs offer global connections between different teacher-training institutions, thus opening possibilities to design courses cooperatively from different parts of the planet, as well as for students from different backgrounds to interact. This help, in turn, to generate multicultural awareness.

On the other hand, Cavanagh (2013) points out that one of the advantages of MOOCs is that they have a high level of processed information organized as a course. This systematized information represents an enormous possibility for those who need to strengthen a specific training area or to enter a new one, which promotes the specialized treatment of topics such as continuous training resources. Since the nature of the teaching task requires on-going improvement, and that the topics that feed their work are diverse and in constant development, MOOCs emerge as an option for continuous teacher training.

However, and in light of the need to promote an authentic teacher training, it is essential to focus primarily on quality rather than coverage, hence, didactic strategies should not consider the conference format only, but also the development of didactic resources and strategies that foster the interaction among participants, their mutual assessment and, thus, counteract the old educational processes that only reproduced knowledge. It is very important in this particular case of teacher training to link the theory with practice; hence, MOOCs must foster reflection on actions themselves (Silva-Peña and Salgado-Labra, 2014).

Moreover, Bartolomé and Steffens (2015) propose seeking to ensure that the learning environments, mediated and enhanced by technology, offer these three elements: clarity in the learning purpose sought, resources that support the self-regulation process of every participant and that encourage the construction of learning communities. We believe that the proposal we are developing, initial MOOC-Literacy (hereinafter MOOC-AI), responds to the first two elements.

Our study is descriptive since it describes the work experience of an interdisciplinary and inter-institutional team in designing and developing MOOC-AI. Our intention is to make this experience known and that other institutional efforts support it.

CONTEXT

In 2016, the Department of Public Education, through the Under-secretariat of Higher Education, convened a meeting of communities on Redes [Networks] for higher education learning (Codaes) and Redes [Networks] for the development and evaluation of competences for higher education learning (Descaes). This call aimed at having academicians from different universities propose MOOC with specific contents defined by the participant experts who were to define a specific service audience. Codaes, one of these networks, promotes the development of digital learning

objects to be used in specific educational environments as well as the implementation of online courses with specific topics.

In this context, academicians from three Mexican universities: the Benemérita Universidad Autónoma de Puebla [Meritorious Autonomous University of Puebla], the Universidad Autónoma de Baja California [The Autonomous University of Baja California], and the Universidad Autónoma de Tlaxcala [The Autonomous University of Tlaxcala] responded to the call and we proposed the MOOC-AI project. We, the academicians involved, had teamwork experience as we integrated, since May 2012, the Written Culture and Discursive Communities Network (RECECD) with other public and private universities.

Our proposal considered that "in an environment based on the abundance of information, technologies and practices that promotes open knowledge and enhances network organization, institutions must conceive themselves as network coordination platforms where internal and external actors participate…" (Freire and Schuch Brunet, 2010; pp. 90-91).

The specific requirements of design and construction of an innovative technological proposal demanded adding knowledge, technical knowledge and the infrastructure of the university seat of the project, which encouraged intra-institutional collaboration and made it possible to materialize the training project.

While the development of the work of the academicians participating in the RECECD made it possible the collaborative construction of contents, the university organization that fostered and supported the development of the technological work was the Meritorious Autonomous University of Puebla through the Directorate General of Educational Innovation (DGIE-BUAP), which was joined by academicians and students of different units of the University such as the Faculty of Administration, the Faculty of Architecture, the College of Graphic Design, the Faculty of Philosophy and Letters, and the College of Educational Processes.

The work team that designed the MOOC-AI, defined basic education teachers as the recipients of their open online training proposal. Every participant provided knowledge and technical knowledge cultivated with language in their work. The final product was the development of a MOOC addressing basic education teacher training based on a central theme on student training and teacher practice: the initial literacy.

In order to carry out the MOOC-AI project, it was necessary to agree on basic assumptions and establish a work methodology in three simultaneous stages: a design approach, a management model and an organizational structure. In this paper, we describe these stages and discuss the importance of joining intra and inter-institutional efforts to develop contents addressing specific users as well as the commitment of academicians and students of different fields of studies.

MOOC DESIGN APPROACH

Our decisions in developing MOOC-AI, aimed at establishing the design principles; the most significant was the definition of the service recipients. From there, we determined the information architecture, the accessibility, the usability and the content with pregnancy principles.

The information architecture makes sense since the organization and sequence of contents respond to common and simple memory and thought patterns. Dickson and Wetherber (1985, quoted in Ronda León, 2008, s.p.) define information architecture as "a large map of information requirements of an organization. It is an independent profile of the main information categories, of the personnel, the organization and the technology within an enterprise".

Taking the foregoing as benchmark, our next step was to study the MOOC platforms that were viable for our purposes. Rodríguez-Ortiz, Santana and Gaytán (2016) provided a framework for action, since, in an assessment of the Codaes platform, they determined that said platform provides the user with the necessary freedom to use the system; the similarity of the system with the real world is another strength they assessed. The areas of opportunity identified were the help mechanisms and the feedback to improve usability in case of errors.

First of all, we conducted an analysis referring to the structure and the stream of information of the Codaes platform which hosted the MOOC. Based on that revision, we defined the structure of the course and the type of activities to be included. The definition of this aspect was crucial since it guided the actions of the different coordinations toward a common work scheme that, at the end, became a collaboration starting point as proposed by Sánchez-Vera, León and Davis (2015), for whom the requirements of the platform will condition the design of any MOOC; hence, the pedagogical intent and the assessment may be affected by the restrictions it imposes. Raposo Rivas, Martínez Figueiras and Sarmiento (2015) coincide with this approach by pointing out that the platforms do not contain any pedagogical model that guides the course proposal.

On the one hand, the accessibility principal was determined so resources and materials would be accessible to the participants. Pastor Sánchez (2010) claims that "the accessibility has its application in the development of websites so the users do not find themselves in a position of not being able to access the information due to their work environment, the browsing software or the input/output devices used" (p. 66). In this sense, the file formats of the materials/resources the MOOC-AI users will use will be limited, once more, by the Codeaes support platform. Moreover, we carefully chose the resources with less weight, which supposes also less downloading time.

Usability was what we had in mind to respond to the potential MOOC users, i.e., a person's ability to understand and use something with or without previous knowledge of the situation, without this casing him/her a feeling of frustration. Sánchez-Vera, León and Davis (2015) give the same importance to a design channeled to simple and intuitive browsing in order to reach diverse audiences. For Para Baeza-Yates, Rivera Loaiza and Velasco Martín (2004), in particular, usability "is a concept that comprises a series of metrics and methods that seek making a system easy to use and to learn" (p. 173). To this effect, materials that did not require any efforts for their interaction, resources without added elements were determined to display academic contents and give them priority. Likewise, we decided to limit them in the design of audiovisual elements such as animations and videos, as well as in controls, buttons, pauses and accesses. Finally, according to the instructions of experts in education, we agreed that the designers' instructions were to be concise and legible.

The use of the content with pregnancy principles aimed at establishing a relation of use between the user and the visual resources/materials. Sosa-Tzec and Siegel (2014) mentioned that the users had the tendency to organize their perception in the simplest possible way under the principle of the law of pregnancy they prefer simple and stable forms for their ease of recognition. To define the graphic material, based on these principles, we chose a visual style directed to the tendencies of Material Design [1] and *flat design* (Turner, 2014), that consists in eliminating drop shadows, gradients and textures with the intention of making a representation that would diverge from the three-dimensionality. The above objective is important since with that degree of simplification, the user can decode the images more easily and have a more significant learning experience. On the other hand, the images with these characteristics also support the accessibility principle since the weight of the images is less and they contribute in meeting the technical specifications of the chosen platform. Hence, we create and design characters with these characteristics in simple vectors to be able to use them in animations, infographics and editorial resources.

THE MANAGEMENT MODEL

The management of socio-educational networks was behind the methodology used to develop MOOC-AI. Díaz-Gibson, Cívis and Longás (2013) sustain that over the last decades, different work experiences or socio-educational actions have emerged on the network to attend the needs of local or community environment. The authors consider the emergence of this type of project as a response to the complexity of social demands as well as the need to find "more sustainable and efficient [ways] of organizing resources and improve socio-educational outcomes" (p. 227).

We consider that networking involves a different form of organization based on collaboration and trust. The appeal of networking is that the

network management does not have a hierarchical figure; hence, all parties are supposedly equally committed to and responsible for the work to be performed. On the other hand, in order for the collaboration to be authentic, the functions and processes carried out throughout the project must be balanced. Network management is an act of on-going equilibrium as collaboration cannot be forced resorting to control. Therefore, for work, we revisited Milward and Provan (2006) study, who point out five different tasks that lead to efficient networking management:

- Responsibility in management. The absence of a hierarchical structure implies that the network manager must successfully negotiate the key aspect: who is responsible for what and when should the tasks assigned be turned in.

- Legitimacy management. A central issue is that, within network organizations, efforts must be made to convince all the parties involved that their participation is not only valuable but indispensable for group work.

- Conflict management. Conflict is a risk since it can arise from differences in the objectives pursued or differences in the level of commitment assumed by the organizations that make up the network; these conflicts cannot be resolved unilaterally and hierarchically, on the contrary, it is extremely important that the network managers listen to the voices of their members and provide problem-solving mechanisms.

- Design management. Defining the design for the project development is a key issue. This decision must be taken from the beginning of the project and, preferably, be discussed solely by some members of the project (network management). Should the need to make changes or adjustments to the design during the execution of the project arises, the network management is responsible for negotiation these changes and ensure that all parties are represented.

- Commitment management. In a network in which most of the wages are paid by individual organizations (not by the project), some parties may feel that they do not benefit from their association or that other parties are benefitting more than they do. In this sense, the managers must be aware that this type of situation can destabilize or destroy the network and they must deal rapidly with the unequal distribution of resources and tasks.

From the five management tasks described by Milward and Provan (2006), the design management was central as it highlights the management of responsibilities and that of conflict. In the first case, it was essential to rethink and reorganize contents, which made it necessary to have in-person meetings to respond to the design requirements; and second, for the difficulties that arose in translating the contents and the

purposes into tasks. The delivery dates and the products associated with the production stages as well as the responsibility of the different teams are recurrent issues in a project.

WORK ORGANIZATION

Based on the management model, the team in charge of the MOOC-AI development agreed on the participants' different tasks and activities: those in charge of the general direction and academic coordination; authors of specialized contents, who perform a dual role as content authors and reviewers of their didactic translation; technical coordinators; and instructional designers. Those in charge of the instructional design also had to coordinate small groups according to specific tasks such script writing and Codaes script production (essential given the platform characteristics).

The work also requires personnel in charge of the coordination of graphic design, which involved professional and students in the production of audiovisual scripts; design (edition and production); coordination of production; design; coordination of didactic audiovisual material design; coordination of additional didactic material design; image curatorship; 2D animation; whiteboard, storyboard design; character design; infographics design; additional didactic material design; photo album design; video and animation critics design; audio design and production for animation, video production and animation, as well as their administration and management.

RESULTS: MOOC-AI

The final product was a MOOC organized in four modules presenting introductory and semi-sequenced contents with precise objectives: topic presentation, adoption of a perspective regarding its study and construction of relations between this content and the teaching tasks of the course recipients. The proposals of the first and second part of the heading of each module seek accounting for this. The following lines describe the MOOC-AI characteristics.

Module 1. Know to think. The initial literacy as topic

This module offers elements to introduce the topic based on the following statement: "In this MOOC, the initial literacy is a desired equilibrium between regular writing and reading practices at home or in school, and opportunities for children the exercises as readers and writers" (MOOC-AI, module 1). This first module consists and makes use of four activities and resources: an animation to introduce the topic; a video that emphasizes the challenges of the initial literacy; a whiteboard that synthesizes ten key ideas; and a historical infographics on the initial literacy methods developed in Mexico.

Module 2. Understand to act. Fundamentals for the learning of a language as social practice

The second module establishes the differences between a psychogenetic and a social stance. The first follows Ferreiro's studies (2013) that establish that children invent unconventional ways of reading and writing and they discover conventional ways. The second is in line with the approaches of language social practices that recognize participants, technologies, environments and activities expressed in every social event in which reading and writing take place (Barton and Hamilton, 2004).

The contents of this module were based on the following statement: "Children learn about the conventional functioning of the written language by participating in social situations in which reading and writing are used by the people who participate in every social event. Greater exposure to reading and writing events, greater are the opportunities to enquire and discover how the writing system functions" (MOOC-AI, module 2).

To present the contents of this module, we included: an animation that explains the fundamentals of language learning as a sociocultural practice; an infographics that explains the social and cognitive stances; a photo album to understand MOOC-AI socio-cognitive stance; and an infographics on the elements that intervene in the reading and writing practices; these resources correspond to four activities.

Module 3. Recognize to participate. Participation contexts and discursive practices

The third module addresses discursive genres as relatively stable ways of using language and which vary according to the participation environment – private (home) and public (school) – of every individual; however, it has also varied in time and demand teaching attention. "A discursive genre is a social practice aimed at fulfilling a purpose" (MOOC-AI, module 2). To introduce this module, we used a whiteboard in which we question the reason why we use language differently in different contexts. Afterwards, to explain what discursive genres are, we make an animation for the second activity and, lastly, a photo album that allows reflecting on the reason why literacy also involves teaching how to recognize and produce genres.

Module 4. Integrate to teach. Didactic resources, genres and intervention principles

The fourth module offers some clues on how to support children's learning from school, according to Castedo (2010), the support to train students as readers and writers must be done from the first day of school. It also provides class evidence (video) and progress records toward writing conventionality of the same student. This aims at showing the MOOC-AI participants didactic translations of the principles developed in the first

three modules. Without being an intervention proposal *per se* –which would be impossible to address in one module – it does give an outline of the intervention and didactic assessment.

There are six activities proposed in this module. For the first three we developed photo albums as topic presentation resources: how to support children's learning?, how to know if children are making progress in their learning? For the fourth activity, we chose an infographics that gives evidence of the comparative progress of conventional appropriation of the written language and, to this effect we showed the progress of two children over a six-month period of school work. The following activity includes a video of the testimonial of a pre-school teacher on children written language appropriation process, working with the initial literacy proposal, based on the contributions of psychogenesis and the social approach to language. The module closes on a whiteboard that summarizes our pedagogical intervention proposal.

We took two basic decisions for content development: offer multimedia resources designed to introduce content and ensure that the course participants have access to the written content; every resource contains conceptual information. The training proposal contains a glossary of essential terms. Moreover, every module provides information linked to that provided in the other three but that does not demand consecutive reading; likewise, every module offers a self-assessment resource to self-monitor one's learning.

We should underline that the four modules seek to contribute comprehensively to the teacher's understanding of the literacy challenge, fundamental topic in the framework of educational proposals and tasks of preschool and first cycle of elementary school in Mexico.

DISCUSSION AND CONCLUSIONS

Given the different work contexts of preschool and elementary school teachers who require training in initial literacy, in both rural and urban settings, we propose an open, massive, online course (tutorial), self-administrable and self-evaluable that can be a viable and more effective alternative than an in-class course. Nevertheless, we do know the limitations of our proposal. Recent studies (Chiappe-Laverde *et al.,* 2015) question MOOC pedagogical design which does not always comply with the connectivism principles or highlight interaction processes for small group learning that undoubtedly can generate learning and, above all, communicate with peers. Along these lines, we believe that one of the limitations of MOOC-AI is linked above all to the absence of spaces to receive feedback since it is a tutorial course. We also acknowledge that once MOOC is available on the platform, it is necessary to conduct an analysis to know its efficiency.

MOOC-AI development focused on the support obtained through the 2016 Codaes-Descaes call. Calls for inter-institutional collaboration feed networking. In the MOOC-AI design experience, as pointed out, the content required the collaboration of different fields of knowledge since it demanded integrating theoretical knowledge. Moreover, to develop MOOC, it was necessary to add technical knowledge from different disciplines and areas of experience to produce a new educational product; hence, the development of MOOC-AI was the result of a horizontal work with experts in different areas of knowledge. Our approach coincides with that of Sánchez-Vera, León and Davis (2015), who, while describing the MOOC creation, development and implementation processes – which characteristic was the disciplinary diversity of its authors -, point out that this "situation supposed a very enriching process given the interdisciplinarity of approaches, but at the same time, it [required] major efforts to plan the role and functions of every participant" (p- 42).

From our experience, the collaboration requirement to produce an open online training product that resulted in the learning we constructed as a group, and which can be understood from the contributions of organizational learning scholars. As Watkins and Marsick (1993, 1996, quoted in Mayorca, Ramírez, Villoria and Campos 2017), we understand said learning as "a process that captures, shares and uses knowledge to change the way in which the learning organization responds to changes" (p- 151).

These authors claim that organizations have three level of learning: one, the individual plane; two, the collective; and three, the organizational. In the experience reports, we highlight two level of learning: the individual and the team. Continuous learning, dialogue and collaboration were the essential features in the work development.

From the management model, we claim that knowledge is produced collaboratively on networks when they exceed institutional limits since the streams are distributed and bi-directional, in addition to the emergence of new essential values such as transparency, openness and meritocratic leadership, a facilitator based on the reputation established in the community.

Teachers will be able to take the MOOC-AI course on the Codaes platform autonomously, without the need to be supported by a tutor, and they themselves will validate the contribution of the resource in terms of continuous training.

[1] See https://material.io/design/introduction/#principles.

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