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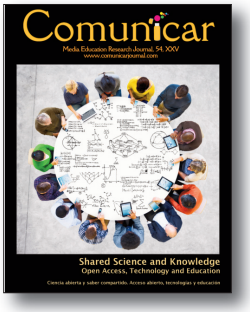

Ubiquitous learning ecologies for a critical cyber-citizenship

Ecologías de aprendizaje ubicuo para la ciberciudadanía crítica

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ABSTRACT

The aim of this research is to identify and analyse the ubiquitous learning acquired though blending education settings devoted to the "lifelong training of trainers" and how these contribute to the development of a conscious, critic and engaged citizenship. Through active exploration of the learning process, the study analyses the "soft skills" acquired which enhance performance in work and daily life, with the purpose of detecting the process of ubiquitous learning often overlooked in formal education. To this end, the study case presented here draws upon a data triangulation of qualitative and quantitative multisource information (questionnaires, interviews, participant observation, discussion groups, individual and collective diaries) which includes the study of the semantic networks consisting of learners' own utterances. The results obtained indicate that the soft skills related to the capacity of self-development, the use of innovative resources, the enhancement of social cooperation, the ability to meet cognitive and social challenges, and the functional learning as produced though expanded learning, have the potential to pave the way for the empowerment of peoples, communities and social movements. But this form of expanded learning, as open, collaborative, democratic and committed learning, must be actively supported if future generations are not only to be consumers but also cooperative producers in a socially shared world.

RESUMEN

El objetivo de este trabajo ha sido detectar y analizar los aprendizajes ubicuos adquiridos en entornos educativos expandidos destinados a la «formación permanente de formadores» y cómo estos influyen en la construcción de una ciudadanía consciente, crítica y comprometida. Se han analizado las «soft skills» adquiridas para el desenvolvimiento efectivo en el trabajo o la vida diaria, mediante la exploración activa del proceso formativo. Se ha tratado así de detectar el aprendizaje ubicuo que suele resultar invisible para la educación formal. Con este propósito, el estudio de caso aquí presentado recurre a una triangulación de análisis cualitativo y cuantitativo de información multifuente (cuestionarios, entrevistas, observación participante, grupos de discusión, diarios individuales y colectivos), que incluye análisis de red semántica de las expresiones de los participantes. Los resultados obtenidos nos indican que las «soft skills» relacionadas con la capacidad de desarrollo autónomo, el uso de medios y recursos transformadores, la potenciación de la cooperación social, la resolución de desafíos cognitivos y sociales, la potenciación del compromiso cívico y del aprendizaje funcional, que genera el aprendizaje expandido, se pueden convertir en un instrumento para el empoderamiento de personas, colectivos y movimientos sociales. Pero este aprendizaje expandido, como aprendizaje abierto y colaborativo, democrático y comprometido, requiere un apoyo consciente si se desea que las futuras generaciones no solo sean consumidoras, sino productoras colaborativas en un mundo socialmente compartido.

KEYWORDS | PALABRAS CLAVE

Lifelong learning, ubiquitous learning, learning ecologies, expanded education, soft skills, semantic network, critic citizenship, social change.

Formación permanente, aprendizaje ubicuo, ecologías de aprendizaje, educación expandida, soft skills, red semántica, ciudadanía crítica, cambio social.

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1. Introduction

The current cybersociety has widened the learning sphere generating "ubiquitous learning ecologies", namely, environments that foster and support the creation of expanded learning networks and communities through the use of digital means in which knowledge is exchanged in both the virtual and face-to-face spaces. By this means the formal curriculum boundaries disappear to a significant extent (Cope & Kalantzis, 2010; Zemos-98, 2012; Gallego-Lema & al., 2016). Thus, new types of ubiquitous educational interaction are generated which are often overlooked in formal education (Buckingham, 2007). Not only these new types accommodate participants' socio-economic and cultural diversity but also a high level of citizen engagement in accessing, producing, and exchanging knowledge (Cobo & Moravec, 2011; Nonaka & Takeuchi, 1995). Accordingly, this offers an opportunity for contributing to the development of a critical and participative cyber citizenship.

The effective deployment of the ubiquitous learning in the educational context, linked to daily life and work, tends to reinforce the acquisition of "soft skills" of instrumental, cognitive-intellectual, socio-communicative, emotional and digital character which might facilitate the establishment of a critical and extended citizenship (Rendueles, 2016). However, we question whether this civic building supported by communities of expanded learning are actually establishing a knowledge dialogue, democratic relations, and social participation (Putnam, 2009; Marí, 2010), fostering integration and cohesion processes as "Europe 2020 Strategy" (EC 2010) expects. On the contrary, it may end up stressing social exclusion, disintegration, the digital divide or decreasing trust in the possibility of achieving a reflexive and critical society (Bernabé, 2017).

The study developed by the authors aims at analysing to what extent this "ubiquitous" and "expanded learning" facilitated by Internet and social networks brings about not only other means to build collective and shared knowledge (anywhere, anytime) but also another way to build engaged citizenship and democratic participation. By this means, the study aims to ascertain whether the "soft skills" emerging from this ubiquitous learning lead to knowledge sharing, collaborative-proposals, initiatives and projects, and even to actions in favour of a higher civic engagement. On the contrary, they just hide a sort of "digital click-activism" that may end up trivialising civic engagement (Díez-Gutiérrez 2012).

Examining the emergence of skills overlooked by formal education implies going –to some extent– beyond the categories that structure our aprioristic knowledge; being attentive to new meaning structures in the observed learning processes. From the Aristotelian organisation of knowledge to the Universal Decimal Classification of our libraries, established knowledge has been arranged in tree-like structures using consolidated categories. Nevertheless, the early structuring of terms –as illustrated by the development of linguistic skills– progresses according to a dense reticular topology (not treelike) in which the dominant categories are constituted by virtue of an emergent connectivity with the rest of the semantic network (Nematzadeh & al., 2014). This property can be applied to the general emergence of knowledge or, as in our case, the learning of skills beyond formal education (Díaz-Nafría, 2017). Hence, the possibility of detecting it requires paying attention to the utterances of the subjects themselves. For this purpose, our study case, contextualised in the face-to-face training of teachers supported by virtual means and social networks, is also focused on the semantic analysis of participants' utterances according to open categories and attentive to the topological features of the corresponding semantic network.

The object of the learning under study, aimed at increasing the teaching skills of teachers engaged in vocational training for employment, in the territorial context of a deep economic and employment crisis, is of particular interest for our research. In this context, the learners are compelled, on the one hand, to civic engagement concerning the creation of innovative and inclusive social processes; on the other, to the reflection of the very leaning processes mediated by digital means in connection with the socio-economic reality. This peculiarity has enabled us to explore the capacity of ubiquitous learning in the generation of a critical cybercitizenship.

2. Materials and methods

2.1. Case study

The present study case is part of the project "Learning ecologies in multiple contexts: analysis of expanded learning and citizenship building projects" (ECOEC), which is framed within the Spanish national research plan and developed by a consortium integrated by six universities and other external collaborators. ECOEC project as a whole has explored the skills developed in the context of social networks and cyberspace through the comparative study of several expanded learning projects.

The study case carried out by a team from the University of León has been developed sequentially through the

observant participation of three training processes, developed in groups with homogeneous socio-cultural and demographic profiles along three consecutive years starting in 2014. The course under study, part of the curriculum of a vocational training center for employment located in León (Spain), is devoted to the lifelong learning of teachers (preferably in unemployment situation) and oriented to the "teaching of vocational training for employment". Regarding the socio-economic situation and the realities of the labour market, the local context represents within Europe one of the most adverse scenarios in urgent need of economic and occupational change, which is particularly relevant for our study.

The population involved in the study case embraces 78 adults including trainees and teacher (52.5% men and 47.5% women); aged between 32 and 56 years old; holding higher education degrees (72%) and either a vocational training qualification or secondary school diplomas (28%). More than the half of them had worked over eight years (59.5%), almost the rest two years at least (35.5%), and only a small rate had worked less than one year (5%).

In order to foster the situation of ubiquitous learning, the following virtual tools were used: virtual classrooms (Moodle, Edmodo and Google-Classroom), shared storage and editing space (Google Drive, Pinterest, Issuu), social networks (Facebook, Twitter, Linkedin, YouTube e Instagram), virtual agenda (Evernote) and Flipped-Classroom. They facilitated the effective linkage between the formal and informal learning environments.

> This endeavour to recover common resources and goods such as water, forests, collective services, etc., should be now extended to the field of knowledge, ideas, and digital assets. We live in an era in which each person is called upon to participate and share her own knowledge in the collective co-creation of lifestyles and spaces of freedom. That is why we must be alert to the tendency to appropriate these commons by the dominant capitalist institutions.

Regarding the design of the study case, it has been framed within a mixed research model (qualitative and quantitative). It has enabled a deeper understanding and closer approach to the subject of study from a comprehensive perspective of open and complex exploration (Denzin & Lincoln, 2011; Flick, 2010; Stake, 2005). For that purpose, we carried out a triangulation strategy (Cook & Reichardt, 2005) that combines the qualitative and quantitative approaches to the gathering and analysis of data (Creswell & Plano, 2007; Hernández, Fernández, & Baptista, 2010). This has offered us better opportunities to move closer to the issues tackled in the study case through the integration of the perception narrated by the participants themselves, which increased in some way the sense of the quantitative results, as well as the higher consistency and intelligibility of the phenomena observed. In addition, this concurrent triangulation strategy made it possible to confirm, correlate and verify the quantitative and qualitative data simultaneously gathered (Pereira, 2011).

The "issues" or exploratory dimensions (Stake, 2009) used in this study case are the following four:

1) Criteria enable the acknowledgment of the ubiquitous formation of informal and incidental learning fostering the development of participative, dialogic, democratic, socio-communicative, digital, cognitive and emotional skills that facilitate the move towards autonomy.

2) Processes and digital tools of social mediation established in the learning development through the usage of transformative means and resources and its consequences regarding learning, development of soft skills and management of tacit knowledge.

3) Patterns of participation and engagement in the processes of shared and collective knowledge building that can be acknowledged in the network spaces analysed, and the mode in which it contributes to the building of a critical subjectivity that shapes engaged citizenship.

4) Modes of interaction of the discourses generated by the subjects in the contexts of citizen participation, in connection with their own experiences, everyday life and the social problems of its environment, which trigger social cooperation and civic commitment.

Table 1. Research instruments used, indicating the acronyms used in the text	
Instrument/Acronym	**Description**
Observation (OB)	It was sequentially carried out by three researchers throughout 20 non-consecutive sessions of five hours each, during 100 hours over the three training courses.
Questionnaire (QU)	It was applied to the 78 participants. Designed through a revision process carried out by evaluators, it was composed of open ended and closed questions using the Osgood scale.
Interviews (IN)	Carried out with eight key informants, using on-site and on-line interviews concerning the issues of the studies case.
Discussion Groups (DG)	Three discussion groups were organised (two with different participants and another with experts) about the issues as triggers for dialogue.
Digital Field Diary: - **Individual (iDFD)** - **Shared (sDFD)**	They were elaborated daily by the participants in digital form with personal contributions. This instrument had two variants: a. Individual Digital Field Diary: elaborated by each participant in digital format. All participants did one. b. Shared Digital Field Diary: space where agreed text is built collaboratively. Three were developed.

The data gathering was conducted from 2015 to 2017 using the research instruments described in Table 1.

2.2. Analytic tools

The following tools were used in the processes of analysis and interpretation of data:

A) Analysis of the semantic network comprised of the expressions used by the participants themselves during the exploration process and accumulated in textual form in the individual and collective field diaries as well as in the open ended questions from the questionnaires. Such analysis is based on the meaning relation established by the subjects in their own texts (Drieger, 2013; Díaz-Nafría, 2017). In so far as the sentence formed by the speaker implies a unit of sense, the mere syntactic co-occurrence of words (grouped in sets of derivative words) in the space of a sentence establishes a semantic linkage that can be explored in terms of the frequency of such links (Jakson & Trochim, 2002). In short, the greater or lesser occurrence of terms and links between terms has facilitated the examination of the relevance of different categories and the links between them concerning the established "issues". At the same time, the formation of semantic networks in the texts analysed with "small-world" or "scale-free" characteristic structures, whose pertinence has been statistically proved (Figure 1), enables the visualisation of both the categories effectively used in the generic articulation of utterances and the grouping of verbal categories circumscribed by the dealing with specific issues (Barabasi, 2002; Díaz-Nafría, 2017). Hence, the semantic network analysis has been structured in the following phases:

• Text refinement, getting rid of those elements not corresponding to (textually) expressed utterances for which a meaningful syntactic-semantic treatment could not be performed.

• Quantitative analysis of the texts by means of the application of computational linguistics "KH Coder" which enables the analysis of the semantic network in terms of the semantic links observed in the texts through the adjacency distance in sentences (Higuchi, 2016; Anzai & Matsuzawa, 2013).

• The iterative process of relevant terms refinement according to its significance for the analysed issues that enables reviewing the aprioristic categorisation.

• Co-occurrence mapping extraction of the semantic networks derived from the open-ended questions of the questionnaires and the individual and collective digital field diaries.

b) Discourse analysis (Ibáñez, 1986; Demazière & Dubar, 2004; Alonso, 1998; Conde, 2009; Gibbs, 2012) applied to the discussion groups and interviews are generating hypotheses about the implicit dimensions and semantic spaces. It is focused on discovering the set of possible associations or groupings of expressions which, at a symbolic level, organise the semantic field and the "threads of discourse" that establish links among expressions and meanings.

c) The process of codification, classification, and discovery of new categories and "issues" not initially envisaged. This enabled the organising of data to produce conclusions and a general understanding of the study case through two stages:

• Open-ended codification: identifying emergent categories from the reading of the data and the statistical relevance observed in the semantic network obtained through the network analysis described above. It makes possible the development of new data approaches and a comparison among them.

• Selective codification: reduction of the set of emergent categories and "issues" from the intensive analysis of the relations between central issues and the rest of the linked categories. It can be identified through the study of conceptual centrality and the determination of conceptual grouping that is proper to the scale-free networks (Jackson & Trochim, 2002; Nematzadeh & al., 2014).

At the same time, the research process had a strong democratic and critical character. It was facilitated by the contrast of the findings with the participants in two research sessions, as well as with international specialists from Santa Elena State University (Ecuador), the Copperbelt University (Zambia) and Autonomous University of Mexico City (Mexico), who took part in the national investigation for comparative purposes. It allowed us to check the validity and reliability of the study as well as to add nuances and fine-tune to the interpretations obtained.

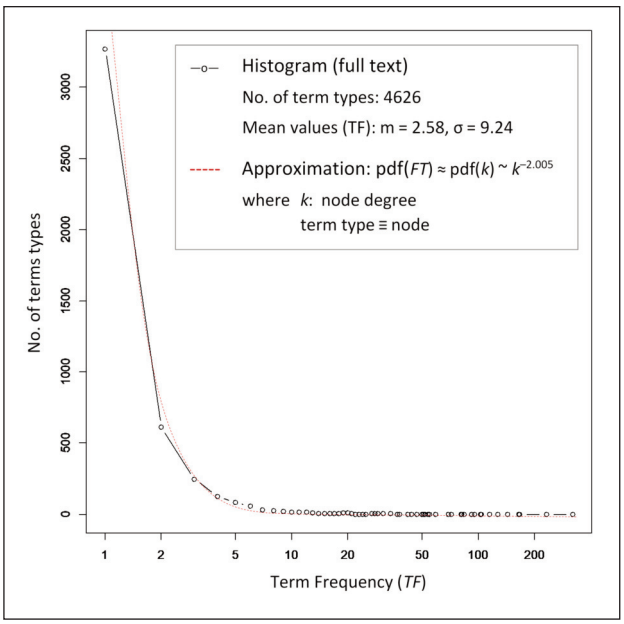

Figure 1. Frequency distribution of terms for a collective field diary.

3. Results

The following is a summary of the evidence that clarifies the results obtained, using the abbreviations given in Table 1 referring to the research instruments used. An excerpt of textual evidence grouped per each research issue is provided in 4 tables (available in figshare at the links given below). This evidence, corresponding to participants' own expressions, has been translated by the authors from the original source in Spanish.

The technological tools employed, mentioned above, facilitated the informal and incidental learning in the on-site spaces as well as in the online spaces beyond the traditional classroom (iDFD: https://goo.gl/r1ZRCa). They generated an ubiquitous process (DG: https://goo.gl/6LP2G2) "anywhere" and at "anytime", in which the participants could increase the development of participative, dialogical, and democratic skills (IN-b: https://goo.gl/ztzf8v), as well as socio-communicative, digital, cognitive and emotional ones (issue-1). It was made possible through the interaction with the learning group and the teacher (IN: https://goo.gl/Kt7ns6), and through the stronger connection with social reality offered by the social media on a continuous and permanent basis (iDFD: https://goo.gl/CBkBoS). It is also worth mentioning that the methodology applied to the training was consistent with the tools employed, mutually reinforcing each other (IN-a: https://goo.gl/uAVxJT).

The digital skills acquired gradually in the use of open access technological tools enabled the development of soft skills and the management of tacit knowledge (IN, iDFD and DG-a: https://goo.gl/hdyms8). But at the same time, these have made it possible to join the process of digital social mediation (issue-2) that facilitate the linkage among communication, life, and society. They generate new practices of citizen participation in other social and vital spheres through experiences of technological appropriation and empowerment that have brought about democratising logics in its contexts (OB: https://goo.gl/hT8ZZt). This has also been recognised in the results of the questionnaires [QU] which mostly state the potential for democratising horizontality in the knowledge collectively built and socially shared. Indeed, the assessment of the fostering of digital skills obtains the highest mean score 3.7/4 [QU] with statistically significant differences concerning other skills explored.

The results indicate that a part of the disaffection with traditional learning is related to its de-contextualisation concerning the problems of everyday life, the disconnection between formal and non-formal contexts, the primacy of a packed and discipline-compartmentalised discourse and the prevalence of reading and writing as learning channel par excellence (iDFD: https://goo.gl/r83GPX).

In Figures 2 and 3, the results of the semantic network analysis applied to the digital field diaries (co-occurrence network as described in the methodological part) can state in both semantic networks how explicit "knowledge", the "book", the "teacher", and even the "subject" occupy peripheral positions. It denotes that the discourses of the

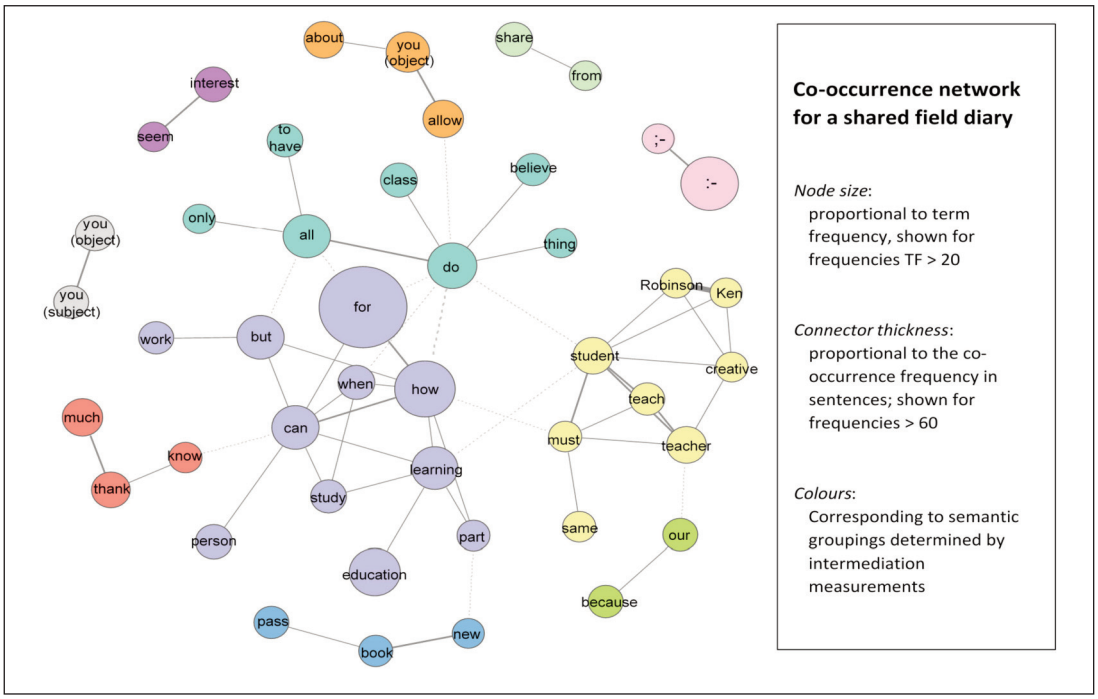

Figure 2. Co-occurrence network for the sDFD. The terms of the network correspond to the original Spanish ones used in the participants' own expressions.

participants themselves mirror a gradual detachment from these more traditional means as central tenets of the teaching/learning process, though not banishing them into oblivion since they are still present.

They give way to a type of learning that is more autonomous, continuous and grounded in reality and the context (as much the vital as the virtual context), in which they cohabit (Marin, Negre, & Pérez 2014). On the other hand, as emergent categories, it is observed that what is contextualised ("for", "how", "when") "activity/doing" is transformed into a semantic field which articulates with maximal centrality the meaning of both the individual and collective expressions.

The use of ubiquitous technologies together with a participative methodology and the teacher's pedagogical approach has facilitated a collaborative and critical learning (OB: https://goo.gl/vEwaFG). For the identification of the collaborative learning, it has been considered that it takes place whenever all participants were committed to the goal of the working group generating a positive, non-competitive interdependence (Barkley, Cross, & Major, 2005).

This form of interaction has enabled learners to experience interdependence, shared relation and collaborative knowledge building as well as a democratic and horizontal framework in the conformation of that expanded socio-educational space (OB: https://goo.gl/DVkR7v). Therefore, participants claim that the ubiquitous learning must boost a critical and emancipating social knowledge for life (issue-3), beyond the classroom, which will undoubtedly contribute to the building of committed citizenship (OB and DG: https://goo.gl/JXHEBn). This has created a good bonding and a strong motivation for participants (https://goo.gl/4ASaMZ). The ubiquitous and expanded learning, experienced from a cooperative approach based on continuous collaboration, supported by multiple technologies, even caused the effect of a critical modification of the curriculum, reconstructing it collaboratively through student participation. At the same time, this learning has promoted a critical perspective on the reality of its environment and the social engagement beyond the classroom, as well as a better atmosphere and more solidarity within the group.

The capacity of projecting these skills to other areas and in the "digital life" has been appreciated in participant's discourses (DG-b and OB: https://goo.gl/KM61sW), acknowledging the necessity of both the online and on-site knowledge dialogue for the multicultural and changing environments in which they are living. This has facilitated the boosting of democratic scenarios and social engagement (iDFD: https://goo.gl/WuUoqt) in the building of enlarged citizenship (issue-4), faced with a society that promotes disintegration, inequality, and growing disenchantment with democratic institutions. The teacher himself expressed his satisfaction with this projection beyond the classroom, of the participative dynamic, of the building of a critical community that is also solidary. Nevertheless, the results

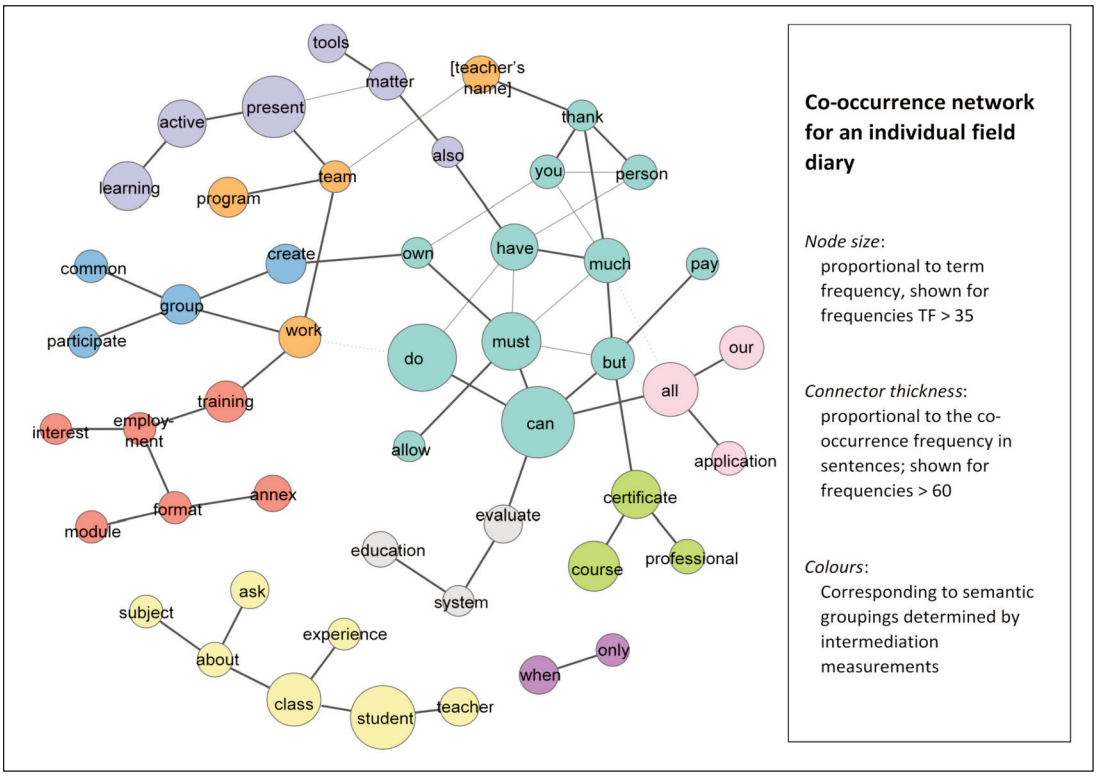

Figure 3. Co-occurrence network for the iDFD. The terms of the network correspond to the original Spanish ones used in the author's own expressions.

of the questionnaires-[QU] show a statistically significant difference (with 90% confidence) assessing more positively the fostering of digital skills than the democratic ones (11% difference).

4. Discussion and conclusions

Ubiquitous learning (issue-1) is constituted by continuous learning of multiple subjects in multiple situations anywhere and at any time, from different foci and perspectives, and invisibility for the process of traditional teaching-learning (Cope & Kalantzis, 2010). It has allowed for the integration of the digital world and social networks in the communicative and vital social environment of the participants.

The digital tools (issue-2) and the social networks have enabled contextualised critical learning experiences that coupled with a committed social projection generate new perspectives about learning to define it as social, distributed, and critical. It is assumed that in these new digital environments learning is much more horizontal since it is built and shared in a collective and to some extent democratic manner (Fueyo, Braga, & Fano, 2015). From the perspective of "distributed cognition", knowledge does not reside exclusively in the person who is teaching but is scattered in the group, in the objects, and in the tools that are handled (Putnam & Borko, 2000; Siemens & Weller, 2011). From this perspective, the ubiquitous technology (which embraces the interaction among people, collectives, and networks, mediated by devices ranging from mobile telephones to alternative social networks of the deep Internet) facilitates the horizontal, interconnected, and collective knowledge (Specht, Tabuenca, & Ternier, 2013). The latter enables the building of a critical cyber citizenship, provided that the process is coupled with a reflection that, despite having a collective nature, is conscious (Fuchs, 2016).

According to the results obtained in the present study case, which is part of a comparative study in 12 diverse educational contexts as mentioned above, we have ascertained that a proper combination of mobile technology, contents, and the trainee's willingness to learn are key factors to create learning ecologies beyond the formal and on-site traditional context that we are used to. These ecologies integrate virtual and interactive multiple spaces (Rubia & Guitert, 2014) and facilitate a continuous learning which is no longer dependent on times, boundaries, and physical space (Burbules, 2014). However, it has been shown that the mediation of the teacher in the user to

the producer of shared and critical meaning transition is required to engage participants.

This ubiquity of the learning processes enables the reframing of the traditional model of academic education. The use made of mobile devices and social networks is rather small. Whenever it is done, it comes from individual initiative, since part of the teaching staff is still reluctant to incorporate social networks into education (Chiecher, 2014; Espuny, Leixa, & Gisbert, 2011; Gutiérrez, Palacios, & Torrego, 2010; Rochefort & Richmond, 2011).

Ubiquitous learning in this study case has gone hand-in-hand with a model of on-site and dialogical teaching/learning; generating thus a type of learning we can call "mixed" (Downes, 2008). This mixed process (designated by Jorrín-Abellán & Stake (2009) as "ubiquitous paradigm) in which formal and informal spaces are connected, have changed –in this study case– the way the participants understand the learning process (as much in the access and dissemination of information as in the teaching methodology, both planned collaboratively and critically). This change has modified the relationship between the teacher and the learner, building a more horizontal and democratic interaction (Burbules, 2014) as has been observed in the study of the semantic network through the displacement of the categories used in the discourse concerning the traditional educational categories. This categorical shift suggests at the same time that, before the classic tree-like organisation, one should be alert to the semantic relation from which new centralities emerge.

We have also noted the educational potential originated by the integration of this approach of ubiquitous learning in the acquisition of "soft skills" related to the capacity for self-development: The use of transformative means and resources, the strengthening of social cooperation, the resolution of cognitive and social challenges, and the enhancement of civic commitment and functional learning generated by expanded learning (issue-3). It was also verified that such a mode of learning could be transformed into an instrument for the empowerment of people, collectives, and social movements.

This has not only enabled the pulling down of the so called "classroom walls" bringing about ecologies of ubiquitous learning (Specht & al., 2013; Cope & Kalantzis, 2010), but it has also caused mutations in the official curriculum (Miller, Shapiro, & Hilding-Hamann, 2008). At the same time, it has boosted a global, interactive, and collaborative educational design with a transversal curriculum more open to the contemporaneous digital culture. It breaks its excessively disciplinary structure (Fueyo, Braga, & Fano, 2015), integrating issues emerging from the real and vital problems of the participants' environments (Dussel, 2014). This tended to reduce student disaffection, as they found a more gratifying source in the learning produced outside the classroom (Buckingham, 2008).

In conclusion, we can state that the ubiquitous and expanded learning implies three shifts: the dilution of space-time boundaries, and also the curricular and methodological ones; the access and production of knowledge in a more horizontal and participative manner; and, the growing capacity for network interaction and shared effort. Moreover, we confirm that the use of Internet and social networks facilitate not only expanded and continuous learning but also social and civic participation and engagement, which constitutes one of the fundamental training goals.

Beyond these ubiquitous and expanded learning ecologies (which contribute to the overcoming of the "training digital divide" characterised by fragmented knowledge and de-contextualisation from real life problems), we need to discuss the social and political role that might be played by this emerging cyber-society, as it has arisen in our research (issue-4). That is, whether it actually facilitates a critical and emancipating social knowledge which contributes to the building of a citizenship committed to a fair and egalitarian social development for all, as posed by Fueyo (2011) or Fueyo, Braga y Fano (2015). On the contrary, it is ultimately bringing about what has been called "voyeurism 2.0" (Caldevilla, 2010; Sánchez & Poveda, 2010; Bringué & Sádaba, 2011): namely, the use of networks mostly for contacting, self-exhibition, and knowledge about other people's lives (Echeburúa & De-Corral, 2010).

The Internet and social networks are not only transforming the process of teaching and learning, as we have observed here, but they are also making a deep impact on the way we connect and communicate. The participants in the research have perceived that they also "have politics" since they also channel particular forms of power and authority. They prioritise and influence ways of thinking, relationships, and life styles (Fuchs, 2016; Díaz-Nafría & al., 2014), which gradually redraw the imaginable, and indeed probable, horizon (Díez-Rodríguez, 2003). They have democratised the access to information, but a large part of the population suffers "digital divide", particularly elderly people, rural populations or those on a low income, etc. They have enabled us to move from being consumers to producers of content, relations or proposals through tools which are increasingly more simple and more accessible (blogs, social networks, etc.). Only a few nodes control the most of the information flow in the

cyberspace (Díaz-Nafría, 2017) which in the current capitalist society meet the economic and ideological interests of those who control them (Fuchs, 2016; Díez-Gutiérrez, 2012).

For that reason, expanded learning, as an open, collaborative, democratic and engaged learning, needs to be boosted and supported consciously, if we really want future generations to be not only consumers but also collaborative and critical producers in a shared social world. It was fostered in our case as much by the teacher as by the demands of the socio-economical context. In less pressing contexts, the teacher's task in the awakening of consciousness will undoubtedly have to be more active but, in some way, the endeavour is restoring the idea of "commons" in the new digital culture claiming. As Garcés (2010) points out, digital goods and knowledge are common heritage. This endeavour to recover common resources and goods such as water, forests, collective services, etc., should be now extended to the field of knowledge, ideas, and digital assets. We live in an era in which each person is called upon to participate and share her own knowledge in the collective co-creation of lifestyles and spaces of freedom. That is why we must be alert to the tendency to appropriate these commons by the dominant capitalist institutions (Hardt & Negri, 2009).

Time will tell whether these "soft skills" which, as we have observed, are brought about by the ubiquitous and expanded learning are fully integrated into a global project that facilitates the empowerment of peoples, collectives, and social movements. It is in our hands moving forward towards the realisation of the utopia of a more egalitarian, solidary, fair and collaborative cyber society. This is the challenge because the future is built with the networks we weave ourselves (Díez-Gutiérrez, 2012).

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