# Self-Development on Campus: A Case Study on MIL Development in Teacher Education in Colombia

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## Abstract

To address the human capital and education challenges of today's societies, Colombia needs to train citizens capable of generating changes in a globalized society where information and media are key. A research project aimed at providing MIL training to teachers was proposed by the Corporación Unificada Nacional de Educación Superior (Unified National Corporation of Higher Education) - CUN, a representative educational actor that provides access to tertiary education at a national level (both online and face-to-face). The objective of the project was to improve actions regarding the Sustainable Development Goals (SDGs) and strengthen knowledge networks among actors involved in training processes in different regions of the country that have been affected by years of violence. This article reports a case study on a first-time experience launched in 2017. The experience aimed to establish—through the application of a mixed approach online survey—the potential and limitations of MIL on the different university campuses and respond to the training needs of teachers through the design of an MIL teacher training course. The results showed that MIL has numerous possibilities in the regions in terms of individuals' self-development and teacher qualification. Although the surveyed teachers were unaware aware of this, their answers demonstrated skills related to MIL. This indicates that increasing MIL teacher training at the university level can result in better organizational culture and better teaching practices among the CUN community. Currently, these first analysis outcomes are being applied in the Bogotá campus to create an MIL training course and formulate an MIL institutional policy.

Keywords: human development; teacher training; citizenship.

The consolidation of lifelong learning highlights the need to design strategies for generating cohesion, coherence, and relevance between educational purposes and particular territorial needs. Thus, reflecting on the different dimensions associated with the teaching–learning processes begins by understanding that education is the primary vehicle for understanding and transforming society (Durán Becerra, 2017). Since the 1960s, technological revolution has fostered the accelerated incorporation of several mediations for teaching–learning processes, which unfold in the broadening of agents involved in the construction of social networks (Salvat & Serrano, 2011). Such is the case of media and information strengthening, which expand their dissemination channels, become protagonists in the construction of citizenship (Gavara de Cara & Pérez Tornero, 2012).

This scenario suppresses classical learning theories as the insertion of new technologies alters spatio-temporal relationships between the agents involved. Currently, "the construction and storage of information - knowledge and, overall, learning - play an essential role, as well as its analysis and application" (Durán Becerra, 2017, p. 140). This is regarding the development of the requirements of an information society that guides us necessarily to think about new literacies, which suppose the input for the inclusion, relevance, and reformulation of training processes that foster autonomy by developing critical thinking in face of media and information panorama (Gavara de Cara & Pérez Tornero, 2012).

In this context, media and information literacy (MIL) is of interest to the academic community and, in general, to all society. Several MIL frameworks (Giraldo et al., 2014; Durán-Becerra & Tejedor Calvo, 2015) recognize the multiple literacies needed in a hyperconnected context (Frau-Meigs, 2012; Durán Becerra & Lau, 2020). The range of this framework is given by the fact that MIL is not accepted worldwide as a "universal concept" for describing literacy on media, information, and use of technology (Woody & Forest, 2007); MIL can even be regarded as a set of components in an ecosystemic interaction (Grizzle & Wilson, 2011), where the different linked conceptualizations are related to the study of literacy in the field of information and media.

Developing MIL competences among citizens is regarded by UNESCO as relevant and necessary to interact in and with cities that are evolving from e-services to actual data-driven decision-making processes and technologies (smart cities) (Provost & Fawcett, 2013). UNESCO defines MIL as "the essential competences (knowledge, skills and attitude) that allow citizens to effectively engage with media and other information providers while developing critical thinking and lifelong learning skills to socialize and become active citizens" (UNESCO, 2011, pp. 185–186). Following this train of thought, MIL emerges as the possibility of strengthening intercultural dialogs and building media and information literate cities (MIL cities). A phenomenon also encouraged by hyperconnectivity that leads to broadening relationships between global agents is an opening to socio-cultural codes that converge in an accelerated manner often without due critical treatment.

Hence, this study investigated strategies for placing these new literacies and their derived competences to best favor their incorporation within the institutional educational cultures, often anchored to traditional practices without innovative educational processes or with inadequate discourse translations, which consequently create technological and technical asymmetries and boundaries. The intentions of institutional policies regarding MIL are favored by the implementation of these competences as well as their breakdown and didactic transposition in training processes in higher education institutions, aligned with SDG 4 ["Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (UNESCO, 2015)].

## Possibilities of MIL for Colombia

ICT has had several unfoldings that have been slowly incorporated into higher education, particularly by teachers into their teaching–learning practices. One unfolding is the phenomenon of hyperconnectivity and its development in a "new space–time dimension" (Salvat & Serrano, 2011, p. 54), which is often absent in the discussion regarding higher education. Following this logic, the approach of MIL policies in Latin America, specifically in Colombia, clearly demonstrates a broad framework of possibilities, given the progress and expansion in the last 20 years of connectivity and governmental services related to digital inclusion and literacy (Durán Becerra, 2016, p. 388).

Colombia is located above the regional average of the Networked Readiness Index NRI (2016), being in the fifth position behind Chile, Costa Rica, Uruguay, and Panama. This assessment conducted by the World Economic Forum (Baller, Dutta, & Lanvin, 2016) shows that the country has a wide competitive opportunity regarding access to technologies and digital contents. The competitive opportunity places the country in a wide global digital space. However, the assessment is based on sub-indicators that describe the use of educational technology, an aspect where the country has a low implementation of these resources in basic and secondary education, mainly because the decentralization processes of the 1980s failed to overcome the technical and technological asymmetries in the different regions of the country. Thus, teacher training, particularly in higher education, exhibited a slow growth in the incorporation of deeper reflections on ICT into the curricula as well as an absence of approaching MIL themes. However, experts from the Autonomous University of Barcelona (Peréz-Tornero et al., 2016, pp. 90–96) demonstrate the rather imperfect incorporation of ICT into Colombian education, indicating the importance of MIL for an adequate incorporation into the teaching–learning processes. The national educational system foresees the entry of methodologies mediated by ICT and an increasingly stronger presence of technologies that drive online consumption didactics (Durán Becerra, 2017). According to the UNESCO Institute for Statistics (UNESCO-UIS, 2012, p. 34), Colombia has initiatives for fostering ICT in education at various levels, indicating the amount of work required for articulating other sectors of society, such as the industry as well as regulatory and control agencies, which partly undermines its effectiveness.

# MIL in Higher Education: The CUN Case

Colombia is currently in a peace-building process after years of armed conflict that hampered the access, permanence, and relevance of higher education in various regions of the country, violating the fundamental right to education. This process, in a human rights-based approach, facilitates the consolidation of the democratic exercise of citizens in participating in the construction of territories and governance networks. It implies opening spaces for all territorial agents to participate critically from the various means available:

"The rights to freedom of expression and press, and access to information - and, of course, its effective use - are indispensable requisites to achieve the personal autonomy of the human being. They contribute to the individual having a thorough understanding of the world that allows and facilitates a conscious and effective performance. Knowing the environment correctly, encourages appropriate actions." (Gavara de Cara & Pérez Tornero, 2012, p.15)

Colombia shows advances that indicate a certain understanding of these factors, evidenced in "a marked tendency toward the observation of new pedagogies and toward the implementation of hybrid pedagogical methods, at least at first, that rely heavily on ICT" (Durán Becerra, 2017, p 155). In this process, institutions of higher education, particularly CUN University, have been protagonists, mainly backed by their extensive experience in the field of teaching using ICT. Given the technical and technological asymmetries in accessing the wide universe of media tools in the different territories of the country, it was suggested that the teacher becomes a central agent, a maker of changes, to strengthen the formation of citizens that

impact their localities. At CUN, this role could then be assigned to more than 500 teachers across the country.

Hence, this research, set as exploratory with a descriptive reach, is the basis for consolidating a proposal for teacher training. The future results seek the formulation of an institutional policy on MIL training as a mechanism to strengthen the institution's educational processes.

Within the specific objectives of this initiative, the following were proposed: 1. Identify the level of MIL competences in collaborating teachers; 2. Design an MIL training course for collaborating teachers; 3. Articulate MIL initiatives from the frameworks proposed by UNESCO. The development occurred through a robust document review that enabled the generation of a broad discussion framework, contrasted with the results of a diagnostic study conducted in 2017 (online survey), and with the generation of participatory activities based on focus groups with teachers from the institution, with a view to consolidating an MIL training course for teachers. Finally, UNESCO's MIL-Clicks initiative (UNESCO, n.d) was articulated as a strategy for raising awareness of the educational community regarding the issue; this included the elaboration of short videos and digital pieces. These actions constitute a first approach in the country for building an MIL policy at an educational institution.

Encouraged by the wide range of opportunities in Colombia to address MIL within higher education, a series of reflections on the knowledge and teaching practices on MIL was established as a key strategy for achieving a multiplier effect in the development of empowerment and critical thinking among citizens (Grizzle & Wilson, 2011, p. 17). This implied training trainers' actions based on the diagnosed training needs.

An initial task raised within this initiative was the detection of the level of MIL competences appropriation within the teaching staff of CUN University. Thus, an instrument was designed that considered the MIL skills and capabilities map integrated by Durán Becerra (2016, pp. 146–148; [Durán Becerra & Lau, 2020]). This diagnosis indicated that the use of MIL competences was at a basic level, based on intuitive usage by the surveyed subjects, which showed a daily relationship with information, media, and digital environments.

Based on these findings, a preliminary draft was developed for an MIL teacher training course, originally aligned with the 2015 Incheon Declaration in the sense of understanding education as a vehicle for a lifetime inclusion and equity in favor of learning (UNESCO, 2015). The course also adopted SDG 4, which promulgates the need to "guarantee an inclusive, equitable and quality education and promote lifelong learning opportunities for all" (UNESCO, 2015, iii). Therefore, we understand that the teacher becomes a multiplier agent and "maker of changes."

Table 1 describes the five initially contemplated MIL competences that were selected for building the MIL course—competences derived from the documentary analysis.

 Table 1. Initial MIL competences for the MIL course (2017)

Competence		
1	Recognize the importance of Media and Information Literacy for education within a globalized context.	
2	For the appropriate and ethical use of resources in training processes, collect, store, and discriminate information by source and supplier, considering the social, economic, and political context in which they are produced.	
3	Use virtual training processes to formulate content and information as tools oriented to the training process in higher education.	
4	Formulate an adequate use of means and information to formulate learning routes adjusted to the needs of the audiences.	
5	Propose and encourage cooperation in training processes using ICTs to construct citizenship and strengthen democratic processes that permeate lifelong education.	

Source: own elaboration

The development of these skills was programmed for a 40-hour virtual course. In this first instance, the evaluation was set as continuous, co-structured, and participatory. Likewise, a rubric was designed for the tutor who, based on five major criteria, would generate the evaluation of the teacher's process regarding the skills acquired and evidenced in their final training proposal. A dialog with experts was immediately set to allow the identification of missing elements in this first proposal. Three key contributions for future initiatives are highlighted. First, it is necessary to consider the entire map of actors and technological resources available within the institution. This is because of two aspects: those who act in the classroom can have important ideas regarding the subject; even with the results of the instrument, within intuitive practices regarding MIL, there may rather be innovative processes in the absence of systematization processes. Meanwhile, in response to this suggestion, a balance on the technological possibilities of the corporation and its experiences yielded important development initiatives as shown in Table 2.

Initiative	Features	
CUN container	Portable spaces that aim to cover regions to provide connec- tivity to the most isolated regions. They work as content down- load sites and synchronic meeting scenarios.	
Telecampus	It is an initiative based on an education model where creativity meets entrepreneurship to encourage an entertaining and in- novative learning in a virtual space; this ensures that through allies, higher education is available to the population that orig- inally lacks the opportunity to access it.	
Platform C	Institutionally-created digital content in simple formats a with lower bandwidth consumption.	
CUN-Mobile	Mobile application that integrates all the academic and infor- mation services of the institution. It includes media space and space for game-based learning.	

 Table 2. ICT-based initiatives at CUN

Source: own elaboration

Secondly, the need to incorporate the necessary knowledge to CUN University was noted. This element is part of the understanding of the intrinsic dynamics incorporated at the institution:

[...] constituted by a set of theories, ideas, principles, norms, guidelines, rituals, inertias, habits and practices (ways of doing and thinking, mentalities and behaviors) sedimented over time in the form of traditions, regularities and unquestionable game rules, and shared by its actors, within the bosom of educational institutions. (Frago, 2002, p.59)

Finally, it was noted that five competences were considered a very broad scope for the time allowed (40 hours). Consequently, the development of a single competence that aligns with the capabilities and skills to be developed was agreed upon, incorporating indicators for each of them.

Collaborative Work with Teachers

For teachers and researchers, the redesign of the course involved the discussion of MIL from dimensions that exceeded the pedagogical, through a curricular, didactic, and even institutional dimensions. The groups were allowed to feed, strengthen, and formulate the final product with the validation evidenced in the methodological record of the experience. Four work sessions were developed with teachers from different schools at the university. Table 3 presents the different emerging core elements related to each objective.

Session	Objective	Emerging core elements
1	Inclusively, present and discuss MIL competences pro- posed for the teach- er training course.	Various understandings about MIL, particularly associated with the use of technologies.
		Relevance of the project as a mechanism to break the resistance of teachers to use information and digital media.
		It is important to elucidate the students' daily practices.
		The proposed competences are accepted as adequate but need to be organized into clearer didactic processes/procedures.
2	Discuss the possible pedagogical and didactic routes for the competences defined for the MIL teacher training course.	The way they have learned and taught were considered, denoting permanence and ruptures in the use of technologies and mediations.
		A need to think more about methodologies for mediations, priori- tizing various technological possibilities without discarding some that may be relevant even today.
		It is necessary to compose processes that incorporate a more criti- cal analysis of the information, given its production speed.
		It is necessary to incorporate the technologies in a conscientious way, that is, understanding what they facilitate. In this sense, MIL will have to rethink the information value, assuming the agent as a <i>pro-sumer</i> , as we produce and reproduce information.
		Study how an MIL course would act on a regional level, considering the different social and technological contexts.
3	Outline and dis- cuss possible me- diations, resources, and contents for the development of the proposed compe- tences.	The participants confirmed the importance of consolidating a general competence for the entire course.
		Owing to the conceptual dimension of some concepts, it is necessary to generate a glossary that aligns the concepts of the educational-pedagogical-didactic area. Noting that the course is aimed at a broad framework of teaching professionals who move in various knowledge areas, a glossary further clarifies the focus of the course.
		Finally, the need for coherence between the themes set for training as well as its didactic breakdown and evaluation are highlighted. This implies a correct disposition of competence indicators for each of the skills and capabilities available.

**Table 3.** Conclusions of the MIL project work sessions

Session	Objective	Emerging core elements
4	Discuss the evalua- tion of MIL compe- tences.	The entrance evaluation process is oriented to a process in which the teacher will develop a didactic unit (syllabus) of the subject he or she masters. This implies indicating a syllabus model.
		<b>Regarding capability 1:</b> Many of the media suggested in the document are likely to be incorporated into the classroom, which opens the possibility of strengthening offline practices. Encourage the use of extracurricular activities: these are valuable spaces for strengthening the teaching–learning process and encouraging participation in an important topic of the teacher's work.
		<b>Regarding capability 2</b> : Highlight the time that the teacher has for developing the course and its evaluative axis (syllabus). The training dynamic is part of a Course-Workshop. It considers two types of teaching profiles: one that is interested in learning and incorporating elements and one that is resistant. The creation of a toolbox is proposed, which allows the trainee to take up resources and learn new ones for the development of the course.
		<b>Regarding capability 3:</b> Work with case studies and adjusted experiences for CUN context training. Work on a participation sequence that starts with a forum and is guided toward the work with a pedagogical case study. The variables "creativity" and "adaptation" in teacher training should be discussed in regard to the particular infrastructure needs.
		<b>Regarding capability 4:</b> Encourage projects that generate groups and roles for co-creation work.

Source: own elaboration

These inputs in Table 3 set the basis for the curricular design of the MIL teacher training course, which, following other considerations upraised during the working sessions, was titled "Teachers of innovative changes" as shown in Table 4.

#### **Table 4.** MIL teacher training syllabus proposal

#### **"TEACHERS OF INNOVATIVE CHANGES"**

Units involved: Vice-rectory of Social Capital; Academic and Research Vice-Rectory; National Research Directorate; Research Group *Innovación Pedagógica* (Pedagogical Innovation).

Short teacher training course (40 h): 5 modules, 5 weeks

#### **Expected learning outcome:**

Recognize the importance of Media and Information Literacy within the training of professionals, from the understanding and application of its information, media, and digital principles in the design of a teaching–learning route.

## Training purpose:

Design a teaching–learning route that incorporates the information, media, and digital principles proposed by Media and Information Literacy.

Competence	Skill/Capability	Competency indicator
Recognize the importance of Media and Information Literacy in the training of professionals, based on the understanding and application of their information, media, and digital principles in the	Collect, store, and discriminate information by source, supplier, and intention, considering the social, economic, political, and legal context in which they are produced, for their appropriate and ethical use in training processes.	<ol> <li>Consolidate a database discriminated by source, supplier, and intention.</li> <li>Identify the socio-cultural and technological access characteristics of the targeted populations.</li> </ol>
design of a teaching– learning route.		<ol> <li>Critically evaluate information, suppliers, and media and cultural intentions.</li> <li>Include the legal and ethical scope of the use, production, and</li> </ol>
	Create training routes in higher education, based on content and information, resulting from teaching practices.	reproduction of information. 1. Apply the apprenticeships in a training proposal.
		<ol> <li>Produce educational content according to space-time needs.</li> <li>Use learning environments for cooperation and collective construction.</li> </ol>
		4. Classify the information according to the training intentions.
	Establish an adequate use of means and information for the formulation of learning routes, adjusted to the needs of the students.	1. Include the legal, political, economic, and cultural framework in the uses of information, media, and content in the proposed training route.
		2. Articulate informational intentions, learning routes, socio-spatial needs, and available mediations.
	Encourage cooperation in training environments by using ICT for the construction of citizenship and the strengthening of democratic processes that permeate lifelong education.	1. Design learning routes that incorporate online-offline time-spaces.
		2. Apply learning routes in the use and ethical production of information.
		3. Articulate the formative route to expanded curricular structures.
		4. Insert reflective, active, and critical mechanisms in the training route.

Source: own elaboration based on Durán Becerra (2016, pp. 146-148)

The adopted methodology places the teacher at the center of the process to encourage meaningful learning. The learning is articulated to the virtual training model of the institution, which includes a didactic sequence in five moments (presentation, surfing

(exploration), diving (advanced training), resources and activities, synchronic meeting) articulated with activities and resources, contemplating the participative construction of dialogs between disciplines and mediated by discussion forums.

The evaluation in place focuses on generating a didactic unit that incorporates MIL, encouraging processes of pedagogical innovation, which are understood in the sense of the paradigmatic rupture (Santos, 2008) of knowledge and teaching-learning practices. Thus, the formulation of an MIL policy within the institution behaves as a pedagogical innovation process because it responds to the need for generating changes and transformations in the field of teaching-learning processes. The response is through the generation of changes in the senses and understandings established in the institutional culture regarding the use of ICT, and in general the entire broad framework of mediations in place. The formulation of MIL policy articulates the need to combine different dimensions based on new educational paradigms (Zuluaga et al., 2003) that are alienated to territorial realities as well as the possibilities of incorporating MIL as a mechanism for global citizenship.

The curriculum as a social construct (Goodson, 2014) implies an understanding that the formulation of training strategies in higher education undergoes the necessary action of establishing dialogs with the territory. Posner (2014) indicates that within the curricular design, issues such as the official and operational curriculum are relevant when faced with the hidden, additional, and null curricula. In other words, the incorporation of MIL into the curriculum implies a complex design of curricular strategies to satisfy its actors. Training the teacher in MIL is an input for generating broader understandings on pedagogical and didactic practices and knowledge. The training also aims to generate understanding on the creation of curricula that include the information, media, and digital dimensions to strengthen citizenship, democracy, and governance rather than simply associate them to the incorporation of technologies in the classroom.

The didactic dimension does not escape forethought, given its complexity in delivering the teaching-learning process. The teacher then requires, from a pedagogical and curricular idea regarding the meanings, intentions and belonging of MIL within the territorial context where their practical exercise is developed. To didactically incorporate MIL requires absolute articulation between the macro, meso, and micro dimensions of the institution's curricular management. Hence, the initiative to formulate an institutional MIL policy, which enables constant feedback of the processes in different dimensions, seeks coherent educational innovative processes with a hyperconnected society that empowers citizens.

Conscious of the need for joint actions, an MIL-Clicks proposal was incorporated in alignment with the UNESCO initiative for the critical use of Social Media and Networks. In this regard, it was proposed to address the five principles proposed by UNESCO regarding the subject. The principles are as follows: 1. Right to information; 2. Knowledge that the information is not neutral; 3. Right to understand the information; 4. Right to a lifelong learning, and 5. Knowledge of the information sources of your environment. This was achieved through a campaign to generate multimedia content based on the competences formulated for the CUN MIL 2018 course as well as other elements proposed in the UNESCO-MIL frameworks.

Within the elements for working with the CUN community, a relationship was established with the competence and capabilities designed for the teacher training course and the adjustments required for the understanding and awareness of the entire institution's academic community. In total, textual and graphic scripts were designed for six communicative pieces:

No.	Type of skill	Торіс	Intent
1	Generic MIL	What is MIL?	Make the general characteristics of MIL and its importance in the context of the university known.
2	Information	A lot of information: some key for its tracking and organization.	Encourage the proper use of information in databases and information media, based on good practices in the identification, recovery, and storage of the same.
3	Information	My responsibility toward the information I share.	Encourage the proper use of information, from the understanding of the limits and responsibilities in content creation.
4	Digital	ICT: What for?	Contribute to the identification of ICT as tools that support educational relationships in the university.
5	Media	Social Networks: What for?	Identify in social networks, and media in general, information and communication tools with great educational potential.
6	Media	How to build an academic community based on MIL?	Understand the relationship between the media and the construction of citizenship, democracy, and institutional cultures.

Table 5. CUN MIL strategy in a summary

Source: own elaboration

# Conclusion: Incorporated Learning

Currently, the MIL course and the associated initiatives (as the entire MIL-Clicks strategy) are in the formal design phase done by the CUN virtualization area. However, we highlight what we consider that this experience provided as a source of learning, which we consider key in related initiatives in the sense of the construction of knowledge networks:

The strategy to create a training policy from the MIL perspective within CUN evidenced that topics such as the curricular inclusion of MIL components, the reinforcement of a comprehensive and understanding concept framework, the consolidation of MIL management spaces, the extension of the MIL training offer, and evaluating these initiatives and consolidating observation spaces on MIL (Durán-Becerra & Tejedor Calvo, 2015, pp. 50–51), are important elements to be incorporated, and where the initiative described herein turned out to be a first step to consolidate it<sup>5</sup>.

We reaffirm the importance of articulating MIL within the scenarios of teacher training and its unfolding in teaching–learning practices within the social fabric: empowering future citizens; generating capabilities to evaluate the performance of media and information providers; promote more free, independent and pluralistic media and information systems (Grizzle and Wilson, 2011, p. 21).

Some elements emerge accordingly, which are the basis for undertaking actions aimed at consolidating an institutional MIL policy:

- Articulating research and administrative management is key for the gestation, design, implementation, and evaluation of MIL initiatives.
- Developing a map of actors, experiences, and resources is a need that allows us to detect, with respect to the MIL frameworks, the gaps to be addressed strategically, as well as to make visible institutional initiatives that are not yet conscious among their agents.
- The process of strengthening tools for monitoring and evaluating MIL skills among the academic community is an exercise that must be constant, resulting in scales of assessment to better focus on training actions.

<sup>5</sup> One of the initiatives planned for the year 2019 was the creation of the Observatory of Pedagogical Innovation, which from its interior aimed to generate tracking, analysis, and knowledge management in various areas of education, including MIL, with the objective of consolidating medium-term a body that consolidates a space for experimentation and incorporation of MIL proposals in the different learning environments of the institution at a national level.

- Promoting knowledge management models that enable dynamically feeding an MIL culture in the institution is a strategy that can be supported by observatories and MIL laboratories, which allow a correct translation between frameworks and actions within the territory.
- A need to make this type of literacy visible within the academic community is the creation of an MIL area/unit for its promotion within the institution, which works in an articulated manner with the various agencies, particularly in regard to curricular management.
- Promoting regional alliances to share good practices around the MIL topic. The endogenous positions contradict what a globalized and hyperconnected society supposes. Sharing knowledge is the basis for constructing citizenship.

Finally, we consider that it is necessary to continue working on promoting spaces that enable an awareness of the social importance acquired by new literacies. This is accompanied by public policies articulated to the initiatives given by private institutions and the territory, which fosters the closing of technological gaps in the access, treatment, and understanding of information.

Consequently, higher education, present in different territories, can generate MIL empowerment processes for teachers. In this regard, curricular coherence is key in the consolidation of territorial changes; MIL must be part of the components of forming citizens, particularly in the construction of governance networks that give a voice to those historically excluded, the latter being the main stakeholders.

## References

- Baller, S., Dutta, S., & Lanvin, B. (eds.) (2016). Global Information Technology Report. Networked Readiness Index. World Economic Forum. Geneva. ISBN: 978-1-944835-03-3
- Carlsson, U., & Hope Culver, S. (2013). MILID Yearbook 2013 Media and Information Literacy and Intercultural Dialogue. The International Clearinghouse on Children, Youth and Media Nordicom University of Gothenburg. Sweden. ISBN 978-91-86523-64-0.
- Durán Becerra, T. (2016). AMI en Latinoamérica Aproximación, análisis y propuesta de medición sobre el contexto de la Alfabetización Mediática e Informacional en América Latina. Universitat Autònoma de Barcelona. Departament de Periodisme i de Ciències de la Comunicació. ISBN: 9788449066962
- Durán Becerra, T. (2017). Transformaciones pedagógica e integración tecnológica. Reflexión a partir de los casos de España, Colombia y México. In: Pérez-Tornero, J.M., & Martire, A. (Coords). (2015). Educación y nuevos entornos mediáticos, el desafío de la innovación. Barcelona. UOC. ISBN: 978-84-9116-692.

- Durán Becerra, T., & Lau, J. (2020). MIL Competency Framework: Mapping Media and Information Competencies. Anagramas: Rumbos y sentidos de la comunicación, 19(37), 49-67.
- Durán Becerra, T., & Tejedor Calvo, S. (2015). Implementación curricular de la Alfabetización Mediática en Europa. Principales resultados del proyecto EMEDUS. In: Pérez-Tornero, J.M., Fuelles Gutiérrez, A., & Rodríguez-Hoyos, C. (Coords). (2015). Los territorios de la educación mediática. Barcelona. UOC. ISBN: 9788490648926.
- Horton, F.W. (2007). Understanding Information Literacy: A Primer. Paris: UNESCO. Vii, 94.
- Frago, A. (2002). Sistemas Educativos, Culturas Escolares, y Reformas: Continuidades y Cambios. Madrid: Morata.
- Frau-Meigs, D. (2012). Transliteracy as the new research horizon for media and information literacy. *Media Studies*, *3*(6).
- Gavara de Cara, J.C., & Pérez Tornero, J.M. (2012). La alfabetización mediática y la ley general de comunicación audiovisual en España. Colección: Media Literacy, 4. Barcelona. UOC. ISBN: 978-84-9029-003-3
- Giraldo Luque, S., Durán Becerra, T., Esteban Abengozar, A., & Villegas Simón, I. M. (2014). MIL competences: from theory to practice. Measuring citizens' competences on media and information literacy. *eLearning papers*, (38), 0018-30.
- Goodson, I. (2014). Currículo: Teoría e historia. 14 Ed. ed. Petrópolis: Vozes.
- Wilson, C., Grizzle, A., Tuazon, R., Akyempong, K., & Cheung, C. K. (2011). *Media and information literacy curriculum for teachers*. UNESCO Publishing.
- Grizzle, A., Torrent, J., & Tornero, J. M. P. (2013). MIL as a Tool to Reinforce Intercultural Dialogue. In: Carlsson, U., & Culver, S. H. (2013). *Media and information literacy and intercultural dialogue*. Gotembourg. Nordicom, 9-18.
- Neiman, G.; & Quaranta, G. (2006). Los estudios de caso en la investigación sociológica. In: Vasilachis de Gialdino, I. Coord. (2006). Estrategias de investigación cualitativa. Biblioteca de Educación. Barcelona. Gedisa.
- Pérez-Tornero, J.M., Fuelles Gutiérrez, A., & Rodríguez-Hoyos, C. (2015). Rastros del presente, desafíos en el horizonte... In: Pérez-Tornero, J.M., Fuelles Gutiérrez, A., & Rodríguez-Hoyos, C. (Coords). (2015). Los territorios de la educación mediática. Barcelona. UOC. ISBN: 9788490648926.
- Posner, G. (2014). Conceptos del currículo y propósitos del estudio del currículo. In: *Análisis del currículo*. Mc Graw Hill. 3rd ed. 3-28
- Provost, F., & Fawcett, T. (2013). Data science and its relationship to big data and data-driven decision making. *Big data*, 1(1), 51-59.
- Salvat, G., & Serrano, V. (2011). La revolución digital y la sociedad de la información. Colección Contextos. Comunicación Social. Spain.
- Santos Souza, B. (2008). El discurso de las ciencias. São Paulo: Cortez. 5th ed.
- UNESCO. (n.d). MIL CLICKS PACT. https://en.unesco.org/sites/default/files/mil\_clicks\_ pact\_english.pdf

- UNESCO. (2015). Incheon Declaration. Education 2030: Towards inclusive and equitable quality education and lifelong learning for all" of the Word Education Forum UNESCO 19–22 May 2015, Incheon, Republic of Korea.
- UNESCO-UIS. (2012). ICT in education in Latin America and the Caribbean: A regional analysis of ICT integration and e-readiness. UNESCO Institute for Statistics. Montreal. ISBN 978-92-9189-119-1 /Ref: UIS/2012/ICT/TD/07/REV.7
- Zuluaga, O.L., Echeverri, A., Martínez, H., Sáenz, J., & Álvarez, A. (eds.). (2003). *Pedagogía y epistemología*. Bogota: Magisterio Grupo Historia de la Práctica Educativa.