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# FUTURE APPROACHES TO LANDSCAPE LEARNING

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## 1. INTRODUCTION

The understanding and acquisition of geographical concepts and skills lead to a profile of the citizen with critical thinking and ability to engage in the territorial decisions of society. Therefore, geographical literacy and Geography teaching make up two links in geographic education. Literacy consists of the learning process, which refers to the acquisition of everyday space skills, related to the development of a path (eg, the usual fieltrip from home to work and the changes made in it due to time or events unexpected), with the reading and interpretation of geographic information published in the media (eg, the evolution of the population and its projection of the future in a population pyramid) and the incorporation of mobile devices in the routines of life (eg, the search for a place of leisure, or the preparation of a trip, using the weather forecast and cartography to choose places of interest).

Over the decades, research lines in geography teaching have tried to consolidate the knowledge of the environment through numerous teaching resources and methodological strategies. Research on the Geography curriculum has shown that the fluctuations in educational legislation and the structure of prescriptive curricular elements lead to an encyclopedic geography and a departure from geographical reality. The educational path of geography moves away from reality and abandons citizenship literacy.

In recent decades, the media have invaded the informational reality. So much so that they have carried out an appropriation of the geographical contents, which has led to blurring the configuration of the geographical heritage. Among these contents are those related to the diversity of world landscapes, climate change, reality and

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urban trends, the sustainability of the territory, the depopulation of rural areas and the main routes of global migration, the use of cartography in mobile devices, the use of natural resources... All this, despite the appearance of some manifests of the Spanish Association of Geography (AGE) dedicated to depopulation and the Amazon, and even on the right to housing... although None has yet appeared on climate change. Also, the International Geographic Union (IGU) drafted the International Declaration on Geographic Education.

All these hot topics in society could be approached from an interdisciplinary perspective, and of course, from a geographical approach. Thus, the management and protection of landscapes, and even their vulnerability, the impact of climate change on territorial transformations, urban planning in relation to the population, territorial design of communication routes, proximity markets, sustainability of the territory linked to natural resources and the distribution of population and migration, the application of technology to geospatial personal routines. These topics belong to the corpus of knowledge of Geography and constitute the "frontier knowledge" of the discipline.

Consequently, the Didactics of Geography (Teaching Geography) should offer an educational response to these issues. The research of Geography and the manifests and declarations of geographical organizations, such as those mentioned above, should be the disciplinary reference for Didactics. Thus, the Didactics could guide the curriculum on geographical research and promote a rigorous adaptation of the contents. In both cases, it is a question of proposing a review of the contents of the curriculum, as in the second, adapting the geographical investigations to the curriculum, a link between the research universities and institutes and the schools and future trends in Geography teaching. In this sense, in Australia, the National Committee for Geographical Sciences has presented a strategic plan, which aims to align geographic research and teaching with the economy in order to strategically address the continental contemporary social, economic and environmental challenges (Australian Academic of Sciences, 2018).

Obviously, memorial skills can be used to apply to real situations. However, "higher education", sentence Unwin (1995, p. 285), "should not be concerned with inculcating accepted facts, but with training students to develop their own critical approaches to the world in which they live." In short, it is about transmitting critical training and the "desire to acquire emancipatory knowledge," as this same author states. Therefore, the orientation of the didactic strategies provides new educational possibilities from the selection of the curricular elements, the reflection on the methodological approach and the choice of the didactic resources.

## 2. REVIEW OF GEOGRAPHICAL CONTENTS LINKED TO THE LANDSCAPE REGULATIONS

In Spain, throughout decades, the Didactics of Geography has consolidated the study of the landscape from different disciplinary and didactic perspectives. In this paper, it is interesting to approach the didactic approaches to the landscape, without losing sight of the contributions made from geography and other disciplines to the landscape. The curriculum remains the normative reference in education, from the didactic perspective that requires adjusting to learning content and standards. However, the landscape provides other types of global and interdisciplinary conceptual and didactic approaches. That is, the curriculum, as an educational document that addresses the landscape and represents formal education, needs to be completed with methodological strategies and teaching resources. For this, we must resort to other documentation, regulations and educational research.

On the one hand, the European Landscape Convention (2000) and the National Cultural Landscape Plan (2012) are the most prominent documents in relation to education and awareness of the landscape. The educational research on the landscape shows diverse didactic orientations, which provide a framework for intervention in the classroom through methodological resources, such as the didactic itinerary, and didactic resources, such as cartography. All this allows progress in knowledge, spatial skills and the valuation of landscapes. In this sense, we must also highlight the sensitivity towards global and local landscapes, where identity and respect are values towards the landscapes of others and their own. This refers to education in identity landscapes and hospital landscapes, or, the landscapes where you live and those where you travel and travel. Foreign landscapes that can be as delicate and fragile as the ones where we all feel identified.

On the other hand, in this last decade a relevant set of state and European regulations has appeared. The European Landscape Convention (EU, 2000) has been established in Europe, other provisions regarding education for its development have emerged from this Agreement. In Spain, two laws have been enacted: Law 42/2007, of December 13, on Natural Heritage and Biodiversity and Law 45/2007, of December 13, on sustainable development of the rural environment. These two laws were enacted the same year 2007, which Spain ratified the European Landscape Convention. However, the regulations hardly contain an explicit educational reference about the landscape.

### 2.1. Landscape education in the European Landscape Convention

In the last decade, two relevant regulations have appeared in relation to the landscape. The European Landscape Convention (European Union, 2000), hereinafter ELC, and

the National Cultural Landscape Plan (2012) provide a framework for cataloging, conservation, dissemination... but there are hardly any references on the role of landscape in the education. Some articles of the second chapter of the ELC are dedicated to specific measures for the member states of the European Union on participation, awareness, training and education.

The ELC intends to establish public participation procedures, where the expert qualification and the values attributed to the landscape by the population come together. Therefore, social perception and popular aspirations are keys to citizen participation in relation to the landscape. In terms of awareness, the ELC aims to address the relationships between activities of daily life and the characteristics of the natural environment, habitat and infrastructure. The formation and education of the citizens on the landscape constitutes a binomial in the ELC, built from the promotion and development of the knowledge of the landscapes for all the public. Said knowledge must reach all administrative technical personnel, applied, theoretical and interdisciplinary research.

The ELC intends to offer an education in landscapes based on the promotion, strengthening and awareness of all those issues that concern landscapes. An educational development of landscapes is proposed aimed at all educational levels and, also, through the family. The landscape was beginning to consolidate a European projection of content dispersed in different disciplines, although there was still a way to go. The publication of new guidance and advisory documents brings valuable dedication to the landscape, from an educational perspective. This is the case of the European recommendation CM / REC (2008) 3 and CM / REC (2014) 8 on the guidelines for the application of the European Landscape Convention (European Union, 2008 and 2014).

In 2008, some guidelines were established from the European Union for the application of the ELC. The section related to ELC education refers to "participation, awareness, training and education" (European Union, CM / REC, 2008, p. 46). There is an explicit reference referred to the complementarity between the empirical knowledge of the population and the scientific knowledge. This duality leads to sensitization by landscapes and to the formation of the population, especially to education. In this sense, the European guidelines on ELC seek training between landscape and sustainable development, natural resources and social equity (European Union, CM / REC, 2008). In the case of the 2014 Recommendations, the document developed provides some specific educational keys for its application in the classroom. In 2009 and 2015, the European Union published two landscape recommendations documents (European Union, 2009 and CM / REC, 2015). The first constitutes a reference document on some educational orientations of the landscape in childhood and was prepared by Castiglioni. The second shows educational strategies on the landscape in primary education and was prepared by Bovet, Pena and Ribas.

Since the appearance of the ELC in 2000, there have been numerous educational projects and educational experiences with repercussions in the literature on the Didactics of Geography. Batllori and Serra (2010) describe the project entitled "*Ciutat, territori, paisatge*" to recognize about twenty Catalan landscapes. To do this, the authors made triptychs with an image of the study landscape, accompanied by cartography, other detailed images and activities. The project was aimed at secondary school students and, in addition, teachers received training to use folders with landscapes in the classroom.

Castiglioni (2010 and 2012) carries out various experiences that lead him to approach the landscape from different perspectives. This author carries out a project on karst landscapes located in the reliefs of the edges of the Padana plain, where she offers some first guidelines on landscape reading (Castiglioni, 2010). These guidelines, in turn, will form a substantial part of the study conducted on the Canale di Brenta to consolidate the Landscape Observatory (Castiglioni and Varotto, 2013). If the landscape, as the author herself points out, would become the educational instrument (Castiglioni, 2012), the Observatory would be the social instrument. In this sense, these experimental proposals lead to an educational approach of the landscape to society, as advocated by the ELC in 2000 and the guidance and recommendations documents, published later. At this time, reflections are carried out on landscape education. Batllori and Serra (2017) are committed to landscape education that leads to the teaching of geography and education for sustainability.

Recommendations dedicated to landscape education, according to the European Union, must begin in the family and continue through the curricula at their different educational levels. The European orientations point towards the learning of a landscape reading, which implies understanding the ecological, social and economic relations with the planning of the territory. The document states that "the landscape constitutes a pedagogical resource because, when interpreted, students face face to face with the visible signs of their framework of life, which relate to land management issues" (European Union, CM / REC, 2008, p. 52).

### 2.2. The landscape diluted in the curriculum

Melcón Beltrán (1995) reflects on the curricular organization, which maintains a Piagetian approach, which proposes a progressive conceptual hierarchy from the simplest to the most complex structures. Or, the disciplinary areas should be more adjusted to the academic disciplines, or if, on the contrary, there should be an organization based on the relevant issues of the present or on the interests of the students. Egan (1978) provides a vision on the curriculum, centered on the conceptual binomials, dedicated to the great ideas of civilization. These great topics, according to the author, could orient a different perspective on the curriculum, closer to the interests of the students.

This curricular orientation has been well established in Mediterranean countries for decades. However, for decades, other curricular approaches have been proposed in Anglo-Saxon countries. Thus, Beane (1995) advocates an integrated approach to the curriculum, based on certain nuclear disciplinary content. Beane (2005) involves the implementation of a sequence of relevant contents from the different subjects. Thus, the complementarity of the specific contents of each discipline is pursued through the elaboration of work projects that assimilate the numerous curricular elements. Therefore, issues related to environmental management, sustainability and landscape conservation should be approached from an integrative perspective. In the same line they can be completed with human interventions derived from their uses and exploitations carried out on the territory, in order to carry out a study on the evolution of the landscape.

De Miguel (2018b) reflects on the British curriculum structure, as it provides a structure on seven major axes of conceptual content: place, space, scale, interdependence, physical and human processes, environment / sustainable development and cultural diversity. In addition to many others dedicated to geographical skills - statistical, graphic and cartographic including GIS - fieldwork, as well as the school geographic research project. This reflection is aimed at rethinking the educational regulations in a determined way, so that the political framework advocates a social consensus in order to develop a long-term curriculum. From there you can select the great contents and disciplinary skills and guide towards possible methodological lines and choice of teaching resources.

Casas and Erneta (2016) conducted a comparative review of the landscape in the Organic Law, May 3, on Education (LOE, 2006) and Organic Law of 8/2013, on December 9 for the Improvement of Educational Quality (LOMCE, 2013). These authors highlight the educational value of the landscape, the inclusion of fieldtrip in the formation of landscapes, in addition to including other technological and cartographic resources for their learning. The authors consider the protection and management of the landscape, in addition to providing cultural, historical and ecological values, as part of the heritage. Martínez and García (2014) complete the curriculum review on the landscape in the most recent regulations for early childhood education in the different Spanish communities.

Sometimes, both the political dispositions and the epistemological evolution of the disciplines generate uncertainty in the geographical discourse embodied in the curriculum. This has happened, for example, with the contents on citizenship and on the landscape, which has generated an academic discourse from the didactics and from various disciplines. The result creates a complex ascription of the curricular elements in the regulations. Fernández Caso's proposal (2007) includes three guiding criteria of the curriculum: logical and epistemological significance, social relevance, psychological significance. A proposal that would integrate the geographic content sequences on the mentioned criteria and provide an integrated and articulated curriculum on those contents.

The analysis of the curriculum has generated a considerable number of studies on different educational issues of Geography. Thus, Gómez Ortiz (1993) considered it necessary to incorporate the polysemy of the term landscape in the teaching of Geography. This author highlighted the multidisciplinary value for numerous disciplines, giving it various semantic nuances (dynamic balance, energy, flow...). The European Landscape Convention (European Union, 2000) has limited the term Landscape:

> Landscape means any part of the territory as perceived by the population, whose character is the result of the action and interaction of natural and / or human factors

Thus, Gómez Ortiz (1993) referred to the contribution of the Free Institution of Education and the Pedagogical Renewal movements throughout the twentieth century. Along the same lines as the Institution of which he was a part, Vidal Box (1976) expressed that the teaching staff transmitted the love of nature, as part of the direct observation of the phenomena. Carandell (1925) made several fieldwork, which were published with simple diagram blocks of the reliefs represented. In the course of the twentieth century, naturalists, such as Dantín Cereceda, Hernández Pacheco and Solé Sabarís would promote a methodological procedure to Physical Geography, which influenced the teaching of Geography. According to Calaf (1991), the process consists of: observing the recorder, deducing, comparing, classifying... use of the map to contrast reality and the realization of graphs and diagrams. A procedure that leads to fieldwork, as a key in geographic research.

## 3. THE LANDSCAPE IN THE FIELDWORK AND IN THE FIELDTRIP

Usually, fieldwork and fieldtrip (didactic itineraries) are terms that come to be recognized as similar in scientific and educational literature. In principle, the characteristics of both are similar, but their development and scope of educational and academic application turn out to be different. Therefore, we will try to elucidate the terminological thresholds of both concepts. Fieldwork belongs to the empirical corpus of a discipline, such as Geography. Martínez de Pisón (2009: 21) states that "the geographer was trained as an observer, trained to read the Earth, read it by direct contact." The realization of the fieldwork is carried out by a group of teachers and students to carry out an investigation, or to contrast the learning presented in the classroom with reality. It is obvious that the observations in the fieldwork open new perspectives and the evidence and data obtained raise new questions. Therefore, as a real and living laboratory, the landscape shows the elements that are subject to observation and identification (rock, vegetation, settlement...). These observations can generate the taking of samples,

photographs and other types of evidence to carry out a thorough analysis. Thus, the landscape analysis is completed with the analysis of the samples in the laboratory, which will allow an interpretation of the geographical facts involved in landscape dynamics.

Since the end of the 19th century, Giner de los Ríos promotes intuition as a means of approaching reality, influenced by the Krausist current. This process allows both an analytical and synthetic approach to reality and, above all, integral (Melcón Beltrán, 1991). Melcón Beltrán (1991) states that "school trips are the quintessential means of intellectual education. Along the same lines, Souto González (2013) states collective identity is consolidated in the environment that is lived and through the acquisition of the conception of space. This author considers that learning in non-formal educational settings integrates spatial and emotional knowledge of the territory. Moreover, the same author reflects that throughout Spanish curricular history fieldwork is only reflected in the LOGSE (1990). Therefore, the field trip is key in a comprehensive education of people. However, in Geography, the curricular presence of fieldwork has been controversial. Precisely, in the same decade of the nineties, fieldwork becomes a training requirement in British compulsory education, according to Kent and Foskett (2000). These same authors point out that fieldwork, for different reasons, is not common in geographical education in many countries, such as the United States, China and the Netherlands. Harvey (1991) pointed out that the transfer of knowledge through the data collected in the fieldwork... can be a basis for discussion in the classroom.

Bonnett (2008) expresses the ownership of geography by taking children out of the classroom to the city streets and fields. The didactic or geographical fieldtrip constitutes a preparation prepared and designed for an effective learning process. In this process it is necessary to contemplate the own milestones, object of study, raised in the fieldtrip as the didactic strategy proposed and the didactic resources used. The didactic strategy refers, on the one hand, to the approach of the fieldtrip in the educational schedule and on the other, the didactic dynamics of the fieldtrip.

Thus, the fieldtrip needs to be located in the annual program. This forecast of carrying out the fieldtrip requires the presentation of the fieldtrip, the tasks to be carried out by the students in the on-site development of the fieldtrip and, finally, the preparation of a dossier. The dossier will involve carrying out the interpretation of the landscape, which will be used to carry out the evaluation of the entire activity. In addition, this educational planning of the fieldtrip involves designing the role of teachers and students in the development of the fieldtrip. And, also, it means providing the didactic resources of the itinerary, such as paper or offline mapping.

Hammond (2018) states that the fieldtrip is a pillar in geographical education, since it allows the integral development of the geographer. The fieldtrip, says this author, promotes geographic knowledge and skills and allows identification with

the geographer. Along the same lines, Lambert and Reiss (2016) propose a set of educational dimensions that are acquired in the development of the geographical fieldtrip. In this sense, these authors highlight the value of the real place of study, the application and understanding of contextualized skills, development of real-world learning and, finally, social skills.

The fieltrip provides the acquisition of various geospatial skills, which are part of lifelong learning. These skills are organized from the simplest to the most complex. Geography promotes the approach to reality from different perspectives and scales. The fieldtrip encourage the acquisition of orientation skills…. The dimensions and magnitudes provide analogies and differences between geographical contents, such as altitudes and distances, applied to landscapes by means of estimates or absolute calculations (saws and peaks, or roads and cereal fields). García Ruiz (1994 and 1997) and Liceras (2003 and 2013) carried out systematic work to observe and interpret the landscape from an analytical approach. Castiglioni (2009) also promotes a reading of the landscape through various stages. This author provides various readings to observe, identify and describe the different biotic, abiotic and emotional elements of the landscape.

In this same line of interpretation of the landscape elements (Crespo, 2012). Serrano et al. (2016) provide a renewed pattern of identifying, discriminating and defining the milestones that structure the educational fieldtrip. It is also necessary to consider the fieldtrip and fieldwork aimed at reorienting the geographical focus on certain contents. In this sense, García Hernández et al. (2019) address an fieldtrip on the risks of avalanches, or Jerez García and Serrano de la Cruz (2017) guide an fieldtrip on landscapes degraded by human activity. Likewise, the fieldtrip have provided teaching approaches defined by a specific educational dominant. Dole et al, (2016) offer that pedagogical change that centers the interest of learning in the student. The same model, which according to García Pérez (2000), can be applied to the Geography classroom. Consequently, the constructivist approach lies in problem-based learning proposals (Bradbeer, 1996; Savery and Duffy, 2001 and García de la Vega, 2012), the use of the flipped classroom (Jericó and Erneta, 2017), or, a through the didactic resources for primary education and raised by Bovet et al. (2015).

Caton (2006) examines the forms of learning in fieldwork, as forms of real-world learning. This author offers five types of field work, depending on the degree of autonomy of the student in the activities (from the teacher who interprets the landscape to the conduct of small research to make small discoveries) and the type of activity to be carried out (from hypotheses, investigations, problems and case studies). On the contrary, Fuller et al. (2006) question the effective learning of fieldwork in Geography. In this research conducted in universities on three continents, these authors highlight checking three assumptions of the value of fieldwork: real-world experience, skills development,

transferable and technical, and social benefits. The impacts on the effectiveness of learning in the field can vary from unforeseen fieldwork (weather conditions) to cultural and didactic issues (methodological approach referring to the entire process of preparing for the exit).

Finally, both fieldtrip (like as a didactic itinerary) and the fieldwork are consolidated as learning techniques, belonging to pedagogical strategies and methodologies at different educational levels. However, the proliferation of the fieldtrip, both in the areas of formal and non-formal learning, does not confirm its educational success. Therefore, one of the educational challenges of teaching Geography lies in reviewing the didactic factors that determine the fieldtrip, as well as the methodological approach and the evaluation of the lessons learned. Among the factors indicated are the unpredictable conditions that alter the fieldtrip plan, the cultural identity of the group of students with the landscape studied, the commitment of students to get involved in the learning process through the fieldtrip... The review of the methodological approach requires verify the suitability of the student's autonomy in the fieldtrip, the approach of a form of learning through research or problems, for example, or, the group dynamics used. Finally, it is considered that some kind of evaluation must be incorporated both in the different phases of the realization of the fieldtrip and at the end of it.

## 4. LEARNING CHALLENGES ON THE LANDSCAPE IN GEOGRAPHICAL EDUCATION

In geographical education, the landscape constitutes one of the most integrating and agglutinating contents of other subjects. And even, interrelationships can be opened with content associated with other fields of knowledge. This section aims to address two of those issues that could be linked to landscape content and a firm projection of the future in geographic education. The themes chosen are: on the one hand, citizenship and, on the other, the development of spatial thinking and cartography. Both contents are offered in relation to the landscape. There are still other challenges to address in the future, such as sustainability, depopulation, climate change and ocean instability, to name a few.

The landscape study has used geographic information systems and geotechnologies for the identification, classification, analysis, synthesis and representation of the territory. However, the didactic perspective comes from the knowledge, perception and experience of landscapes. To do this, landscape teaching promotes the acquisition of geospatial skills and the promotion of skills in mobile device applications. These disciplinary links between landscape disciplinary studies and geospatial technologies applied to didactics constitute one of the educational challenges of Geography. Before this, there are some experiences and investigations, which have addressed these contents.

### 4.1. Citizenship and spatial citizenship in the landscape

Could not the citizens' commitments to the landscape be addressed here and how it intervenes in the global balance? Thus, for example, the evaluation of a natural landscape leads both to review the keys to climate change and to those related to sustainability. And, even more, vestiges of this balance can also be found in urban and rural landscapes. The solid waste transformation process appears as a key problem in city management. Immigration and depopulation leads to processes of territorial imbalances in property and land exploitation in rural landscapes. Therefore, it is necessary to define the commitment of citizenship, understanding as such the people who inhabit the world (not only cities).

However, citizens could participate in the elaboration of a landscape history, where particular experiences, such as outside experiences on the same landscape, offer a contrasted view of that landscape. In a globalized world, where people's mobility turns out to be a key to geographical analysis, personal impressions of life landscapes, whether they are hospitalized or rejected, such as transit and tourism, provide a personal view of world landscapes. For this, on the one hand, it would be necessary to resort to the perceptions of literature, cartography, history and art, through the sources of documentation, to recognize and interpret the views of landscapes (García de la Vega 2016 and 2018b and Martínez de Pisón, 2017).

In addition, citizens could elaborate their narrative stories, following the guidelines of Bruner (1991), or, the stories of maps, storymaps, recorded by ESRI. Bruner (1991) argues that the experience and memory of human events is recorded primarily in the form of narrative stories. These narratives derive in a variety of expressive and formal forms. Bruner (1991) considers that narratives are a version of reality, governed by conventional acceptance and expressive necessity itself, rather than logical and empirical structure of reality. Therefore, the narrative becomes an instrument of approximation of the perceived landscape.

García Pérez and Alba (2007) affirm that citizen participation is essential to carry out the development of citizenship education. Although, the authors, based on the realization of some experiences, prove that it is very difficult for citizens to participate in the decisions. However, it seems that Donert et al. (2019) consider that it is possible to promote youth empowerment for democratic participation. The use of Geo-ICT promotes decision making in a democratic and transformative youth society.

Piotrowska et al. (2019) show the interest of competencies outside the disciplines, which they call "soft". Among these competencies are: communication, the value of expression, self-esteem and responsibility. However, these competences must be accompanied by specific educational concepts, such as: scientific education based on research, project method, field work, geographical educational paths, use of

geoinformation and geospatial technologies. However, as discussed below, it seems appropriate to structure the information and geospatial representation skills of the students. Given the boom reached by digital media in society, perhaps, an educational perspective on citizen competencies can be offered.

Finally, social participation seems to be a long-term educational objective. Well, it is about promoting an education for citizenship, which leads to participation in the decisive social processes. In the coming decades, the commitment of citizen participation with critical training is expected to increase, which will intervene in the social and economic processes that define landscape transformations. Thus, depopulation and climate change will be part of decision making at different participatory scales.

### 4.2. Spatial thinking and geotechnologies applied to the landscape

The National Research Council (2006) defines spatial thinking as a constructive combination of cognitive skills composed of the concepts of space, the use of representation tools and the application of reasoning processes. There are numerous spatial concepts, such as sense, direction, location, proximity, dimension, scale, continuity, pattern and network that make up the set of geospatial skills. Now, always under the geographical perspective, as Massey (1984) points out, space does not move away from reality, since it is a social construction. And, therefore, space, as a social and abstract concept, links with the elaboration of landscapes, as a social and concrete concept, interrelating natural processes and human interventions.

In the Spanish curriculum, cartography appears as a block of content developed throughout the third year of primary school. However, the development and acquisition of spatial thinking is mainly oriented towards the identification and location of places (Breda et al., 2015). De Miguel (2018a) has reviewed the curriculum of secondary education, where it appears biased and associated with history. Therefore, in both stages, the curriculum registers a low formative interest in cartography, as a means to represent, interrelate and interpret geographical facts. Decades ago, Unwin (1992) stated that the educational responsibility of Geography to offer a critical interpretation of human occupation and differences between places. For this, the same author points to the interpretation of the official curriculum, in order to orient Geography towards reflection on relevant issues of contemporary society, such as environmental deterioration, climate change and unequal access to natural resources.

There are different levels of acquisition of spatial thinking. The relationship established between the type of space lived, perceived and conceived in relation to the stage of concrete and formal thought is not abstract. From an early age, children explore the space around them crawling until they walk. Subsequently, children begin

to explore their immediate environment based on the development of certain geospatial capabilities, linked to the acquisition and application of spatial concepts, such as front-back, left-right... straight-front, up-down...) according Kastens and Liben (2010). In the third stage, children transcend space to the abstract world and incorporate cartographic and mathematical representation, according to the articles mentioned above.

The reading and understanding of the cartographic language to represent the space allows to develop in it and acquire skills related to everyday life. Spatial skills, together with the use of geotechnological applications, which allow lifelong learning (García de la Vega, 2019). In this sense, the acquisition of geospatial capabilities for lifelong learning is necessary to move in space and face real world situations.

One way to develop spatial thinking involves the playful development of geospatial skills. Brown Gaite (1996, 2002 and 2005), Breda and García de la Vega (2018) and Zecha (2019) promote different types of simulation games, manipulable analogs or through geocatching through a playful teaching, both inside and outside from the classroom. Warburton and Higgitt (1997) provide two case studies to verify the use of technologies applied to the preparation of fieldwork. The technologies provide prior knowledge about the geographical area of fieldwork.

Gersmehl and Gersmehl (2007) point out that the location, being necessary and important the development of other features of spatial reasoning. These characteristics are ingrained to the object of Geography, because through conditions and connections between places the studies of them are carried out. These features refer to the comparison, proximity, region, sequence, hierarchy, analogy, model and association. Numerous studies show the spatial capacity to assimilate information from topographic maps and aerial photographs (Uttal, 2000, Plester et al., 2002 and Rapp et al. 2007) from an early age. This fact indicates that if the curricular elements are well designed and organized throughout the school stages, geospatial capabilities are promoted.

Partoune and Merenne-Shoumaker formulated various geographical, disciplinary and transversal competencies, respectively. Among these competencies, Partoune defines numerous competences related to spatial capabilities, such as building maps and sketches or developing spatial models at different scales. Merenne-Schoumaker proposes, among other transversal competences, to construct a synthesis of different forms (systemic, graphic, schematic) (cited in García de la Vega, 2018a)

In this line, if geospatial capabilities are vital in human development, Gryl et al. (2010) propose the term, spatial citizenship, as that ability to use spatial information and geospatial technologies. Kanwischer et al. (2012), under this same term, the proposal of a set of spatial citizenship competencies, included in the curriculum. For this, these authors intend to review the educational keys of conventional technology,

from reflection, communication and participation to develop curricular competencies of spatial citizenship in secondary education. Along these same lines, Shin and Bednarz (2019) promote the study of spatial citizenship from the need for geography to prepare society for access to geospatial technologies. To do this, the authors propose the domain of space, place, scale... and the human relationships that intervene in all areas of society.

Possibly, as noted above, fieldwork is configured as one of the forms of approximation to reality and geographic information systems provide the resources for analysis, interpretation and synthesis of that same reality... Therefore, fieldwork and technology constitute two key pieces of the curriculum in the teaching of Geography. Both allow to approach the knowledge of the landscape from different educational perspectives, although with the same objective. That is, obtaining a neat reading of its components for its informative treatment and management of the territory through the application of geotechnologies, oriented towards the formation of spatial citizenship and critical thinking.

## 5. CONCLUSIONS

The landscape represents a central place in the learning of geography. The landscape constitutes an agglutinating content, where numerous disciplinary and interdisciplinary contents are interrelated. The limitation offered by the curriculum leads to finding possible educational solutions, either from a methodological perspective or from teaching resources. One of them concerns the integration of landscape-related content in the curricular organization. State and European landscape regulations provide some landscape recognition, natural and cultural. Also the figures of national parks, natural parks and geoparks can provide new insights to carry out systematic learning about the landscape. However, there is still a route to specify many of his proposals at the educational level.

This paper reviews the didactic itinerary, or fieldtrip, as it is an educational key in landscape learning. The fieldtrip has a long pedagogical journey, whose didactic phases seem to be consolidated in the teaching of Geography. However, there is still a review of the learning environment and the application of geospatial technologies. Thus, the first approach to the development of geospatial skills can be carried out through cartography and technologies applied to the landscape. In this sense, citizenship, which has been a key issue in the last two decades, acquires a new value. One of the challenges is to build a spatial citizenship, which shows the value of technologies in everyday life, their use and their commitment to social life.