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KINDERGARTEN AND SPATIAL EXPERIENCES: SUGGESTIONS AND PROPOSALS FOR A CHILDHOOD EDUCATION BASED ON GEOGRAPHY

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***Abstract:** The paper focuses on the strategic importance of kindergarten as it represents the first educational environment in which children also begin geographic education. Thus briefly recalling the diffusion of Early Childhood Education and Care (ECEC), it is clear that the kindergarten must focus on the cognitive development of young pupils. In this perspective, the importance of spatial intelligence is focused, as a cognitive code to favour and structure geographic education. After recalling the most up-to-date literature, the structural elements of spatial intelligence and its relationship with geography are focused. On these premises, it is shown how it should therefore be at the centre of the construction of the curriculum in kindergarten. In continuity, indications and suggestions are provided for the construction of the curriculum considering the child-space relationship as the centre of gravity of the didactic activities. However, this ambitious process requires adequate teacher training. In the case of kindergarten, epistemological reflection on the disciplines appears necessary and, in relation to geography, on how to activate observational and exploratory processes, following guidelines from both geography and psychology. In this way, geographic education has the opportunity to become central in the nursery school curriculum and this approach could support the role of this training segment.*

Key words: kindergarten, geography, spatial intelligence, curriculum, teacher training

1. INTRODUCTION

At an international level, kindergarten, or the educational sector that generally deals with children aged between 3 and 6, is considered a fundamental and unavoidable educational experience (Christakis, 2016). Gone are the days when kindergarten was considered useful only in terms of its socialization context and as a support for families; in fact, for at least two decades, pedagogues and psychologists have reaffirmed the cognitive role of this experience (Bouffard, 2016; Snow and Van Hermel, 2008). As the 2019 Eurydice Report makes clear, “Early childhood education and care (ECEC) – the



phase before primary education – is increasingly acknowledged as providing the foundations for lifelong learning and development¹”. In Europe, there is a specific focus on early childhood education, although with some differences, as shown in figure 1. In fact, there are countries where ECEC is guaranteed even before the age of three, while some other countries have no such requirement for the preschool age.

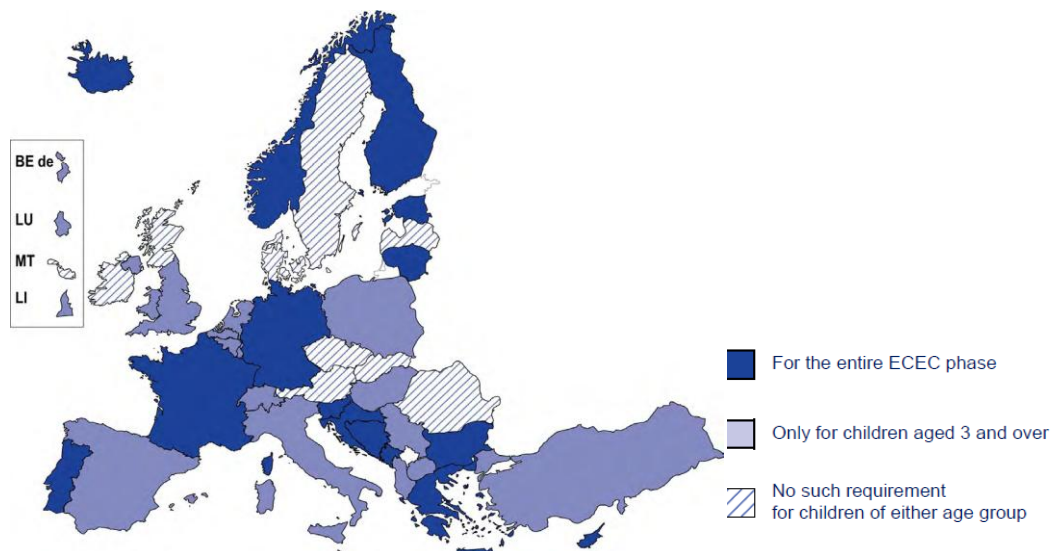


Figure 1. Children’s education and different choices in Europe

(Source: Eurydice Report, 2019)

While taking into account some differences, however, all European education systems have drawn up guidelines that identify the pedagogical vision for educating children (Hörner et Al., 2015). On a global scale, the situation is much more complex and varied. In fact, according to the 2019 UNICEF report, around 175 million children - half of the preschool child population - are not enrolled in kindergarten. Yet, the UNICEF documents make it clear that it is a fundamental opportunity for the future of the younger generations. 47% of children who have attended preschool education courses show definite advantages in literacy, during the course of their life². We can, therefore speak of a gap with regard to childhood, a gap that is growing due to the very evolution that kindergarten is providing in advanced countries, as an environment that favours learning. The cultural evolution of this school as a place of cognitive development, in fact, emphasises the inequalities between those countries where there are economic, social and cultural conditions to educate the little ones, and countries where this vision is absent or precarious (Chzhen et al., 2018).

In the most up-to-date view of learning processes between the ages of three and six, the promotion of basic skills (cognitive, emotional, social) that structure the growth of each student is considered central. In this perspective, the pupil becomes the protagonist of the process of knowledge of reality and of the rights that are recognized: including communication, or the stimulation to learn languages, autonomy, or the ability to gradually conquer independence, exploration, that is the knowledge and management

¹ See: Eurydice Repor, 2019.

² See: <https://www.unicef.org/reports/annual-report-2019>.

of the contexts to which children belong (Bondioli, Savio and Gobetto, 2018). These rights, if they are managed well didactically, translate into skills, and, if we reflect, they are the basis of geographic education. Then, they can be further developed in adolescence through field experiences (Light, Cretan, and Dunca, 2019). So, one may well ask how geographic education can be articulated in relation to kindergarten. It cannot be put forward as a disciplinary path, but more as a direct and guided experience in environments and spaces. In this sense, geographic education relates to a particular pedagogical current, place-based education (Smith, 2002). This orientation, which considers the space in which the child lives as a source of learning, can be strengthened by geographic knowledge, which emphasizes knowledge of places in human formation, in the life plan of people and in future evolution of human communities (Dematteis and Giorda, 2012). Yet, place-based education and geographic education can produce useful educational outcomes, if the development of the cognitive code of spatial intelligence is particularly taken into account in kindergarten. This study therefore intends to show how geographic education should be started already in kindergarten to promote environmental skills in future young adults.

2. SPATIAL INTELLIGENCE

Spatial Intelligence is the cognitive aptitude for orienting oneself in space and reworking space-environmental experiences. It was identified by Gardner and pointed out by pedagogists, psychologists, as well as geographers and territorialists. According to Gardner (2000, 2010) and Chen, Moran and Gardner (2009) spatial intelligence is based upon the ability to transform perceptions, organize information into cognitive maps, and to propose clear and appropriate reproductions. Other authors emphasize the cognitive value of spatial intelligence: it may manifest itself as a particular aptitude for thinking and communicating spatially (Diezmann and Watters, 2000; *Gurbuzoglu Yalmanci and Gozum, 2013*). Moreover, Gardner clarifies how this attitude, albeit potentially innate, develops with growth - *“We thus see a regular progression in spatial development, from the capacity of infants to move in space, to the capacity of small children to form static images, to the capacity of school-age children to manipulate these static images, and, finally, to the capacity of adolescents to connect spatial relations to verbal explanations”* (Gardner, 2000, p.200).

Therefore, spatial intelligence is the cognitive matrix of human activity in space as well as being its ‘primary fuel’. This relationship becomes evident if we study the two chief aspects of spatial intelligence: orientation and representation (Sarno, 2012). Man is able to orientate himself in space, on the basis of his experiences, which however are conceptualized thanks to spatial intelligence. Furthermore, man represents them through cognitive maps thanks to a continual inter-relationship with the environment. This synergy therefore confirms the close connection between spatial thought and use of space, as well as between spatial intelligence and spatial competences. With these characteristics, spatial intelligence represents the cognitive code for interacting with space and therefore with its knowledge/conceptualization. So what is geography if not a process of knowledge/conceptualization of space? Although Gardner has not indicated an ability or knowledge to be connected to spatial intelligence, subsequent studies and experiences have shown a very precise link with geographic and cartographic knowledge (Sarno and Barone, 2004; Klonari and Likouri, 2016; Yani, Mulyadi and Ruhimat, 2018).

Indeed, it can be said that the true learning of geography occurs when the code of spatial intelligence is properly developed, or rather the skills in orientation and representation have been enhanced. In this way, geographic knowledge is not reduced to the acquisition of information, but is an integral part of the individual who knows how to manage his/her relationships with the spaces used/observed/explored with awareness and also knows how to develop mental maps or represent them. However, the recognition of a cognitive code does not reduce the role of didactic mediation (Sarno, 2008). Indeed, the latter, as some researches have shown, plays a fundamental role in strengthening spatial intelligence and therefore favouring the learning of geography (Sarno, 2011; Klonari and Likouri, 2016; Utami and Zain, 2018; Ulyadi et Al., 2018). In this sense, kindergarten is the learning environment in which to enhance spatial intelligence. This enhancement is structured as an unavoidable premise for learning geography in primary and secondary school (Sarno and Siniscalchi, 2011). Geographical education, therefore, in kindergarten, is characterized as attention to the child's relationship with space. The relationship must not be considered in an abstract way, but as a gradual exploration of environments and places, an expansion of orientation skills in them, a targeted approach to drawing, or rather to the representation of the environments and places explored in order to strengthen the conceptualization processes. In kindergarten, where disciplines are not yet addressed, it is necessary to focus on the cognitive dimension and therefore, among the different cognitive codes, on spatial intelligence. Place-based education itself acquires greater solidity, as it broadens its perspectives with respect to the idea that children learn from their context, understood in a generic way. At the same time, the enhancement of spatial intelligence is fundamental for a fruitful interdisciplinary learning experience as well as geographic knowledge, throughout the school career of young pupils, so it must be at the centre of the construction of the curriculum in kindergarten.

3. CURRICULUM CONSTRUCTION AND GEOGRAPHIC EDUCATION

The curriculum is the set of actions and experiences designed and implemented by a school community to achieve the set objectives. In this way, a balanced, gradual and progressive educational path is prepared, consistent with the development processes of the pupils for which the methodologies, verification methods and evaluation criteria are also indicated. If it is a complex operation in general, it becomes even more delicate in kindergarten (Ashbee, 2021; Mondelli, 2015). The curriculum for kindergarten must take into account the time management of the young pupils, their need to play and learn to relate, but also to discover the world. In play, particularly in the symbolic one, children express themselves, they tell and re-elaborate their personal and social experiences in a creative way. Therefore, educational actions must be prepared in which the pupil is an active protagonist, called to act and solve problematic situations, which are obviously appropriate for his/her age group (Nilsson, Ferholt and Lecusay, 2018). Therefore, this curriculum must combine attention to the organization of school spaces, with some specific didactic actions, such as exploration, contact with objects, nature and the territory, in a playful dimension, to be understood as a typical form of relationship and knowledge (Anthamatten, 2010). Furthermore, the curriculum must consider a further element: the informal and implicit experiences that the child lives and experiences within the family and in any case outside school.

On these premises, teachers build the curriculum, taking into account the most up-to-date pedagogical indications and guidelines that, on a national scale, are provided to enhance and strengthen skills such as autonomy, self-discovery, development of the use of languages and knowledge of the world. This last objective specifically indicates the orientative and exploratory processes, the opportunity for the child to gradually recognize and identify environments and spaces, distinguish natural and anthropic elements, know how to focus on shapes and colours; which are skills referring to geographic education. It can be said that in kindergarten geographic knowledge presents itself precisely in its basic characteristics, that is, as the subject's relationship with the world, starting from the surrounding one. If we reflect, this experience is part of the implicit curriculum, because, even without the school, each of us can and must relate to the spaces lived; however, the school has a great value: it can guide, direct, foster this relationship and strengthen it in the right ways, helping students not only in exploration, but also in conceptualization. In short, the educational path between the ages of 3 and 6 can consciously act on the aptitude of spatial intelligence and deal productively with geographic education (Guaran, 2021).

Furthermore, in the path of growth, it is useful to consider the development of linguistic and symbolic skills, because they allow young students to acquire the appropriate terminology and therefore to proceed with the identification of the traits characterizing the spaces explored, while the symbolic skills will allow them to use them creatively. Moreover, by working in this sense with coherence, or by placing the child-space relationship at the centre of the didactic activity, the sense of autonomy and the discovery of the self will also benefit, as the orientation activities will strengthen the awareness of the child's movements and therefore of the actions (Sarno, 2015). Space represents the other path with respect to which each child must measure themselves, differentiate themselves and initiate processes of mutual recognition. Therefore, the child-space relationship is not only the centre of gravity for developing spatial intelligence and for building geographic education, but it can be considered as the starting point for the entire educational process in kindergarten. However, this ambitious process requires adequate teacher training.

4. TEACHER TRAINING

In European schools, but also on an international scale, the kindergarten teacher is required to have knowledge and skills in socio-psycho-pedagogical theories, educational methodologies and techniques, as well as play and animation techniques. In addition, a teacher who has to relate to children aged between 3 and 6 must have good communication skills and be able to analyse their needs and interests. In short, a general preparation is required; however, cultural skills are needed to understand the meaning and epistemological value of the disciplines (Krause et al., 2017). A thorough knowledge of the epistemological dimension of the disciplines is useful for carrying out preparatory work, so that, in the following years, the young students are able to approach the objects, themes and languages of all knowledge (Devos, 2010). Specifically, with regard to geography, future preschool teachers must reflect on the man-space dynamics, starting from perception up to conceptualization. They must place the *behavioural approach*, which studies the individual and collective perception of space, at the centre of their interests (Goodey, and Gold., 1985; Lando, 2016).

This discipline focuses on human behaviour, studying the concepts and images that adults develop in the real world. It offers the tools to analyse the so-called micro-geographies and to understand how space is used by individuals. The criticisms levelled at this subject such as naivety and empiricism do not take into account the need to enhance socio-psychological aspects, which, moreover, have particular relevance in schools (Golledge, 2007). In classroom work, it becomes important that the teacher knows how to intercept if and how a pupil experiences the relationship with the space/spaces, if difficulties are encountered, if and how the child should be guided in certain experiences.

Furthermore, the *behavioural vision* is able to dialogue with Gardner's theories, since both focus on the active role of perception which, as the first clarifies, represents the *passpartout* for the perceptive relationship, and at the same time sets in motion the attitude of intelligence space, according to the American scholar. If teachers allow these two concepts to communicate, they are able to activate targeted perceptual processes, addressing a fundamental method in kindergarten. In short, geographical orientations and psycho-pedagogical proposals must be considered as processes that integrate to achieve didactic objectives. The epistemological reflection on the disciplines and, in relation to geography, on how to activate observational and exploratory processes, confirms the suggestion of the International Charter on geographic education³, according to which, preschool teachers must familiarize themselves with related research on geographic education, so they must reflect on discipline-specific methods and strategies. In this perspective, place-based education also acquires greater depth, because spaces are not considered just a scenario, but subjects to be questioned and related to. At the same time, families collaborate by strengthening knowledge processes.

5. CONCLUSIONS

The reflections proposed have shown the relevance of geographic education in kindergarten and mainly the fact that it should be considered in its founding dimension, that is, the encounter between a subject with his/her attitudes and the spaces with which he/she interacts. Seeing, observing, grasping details are attitudes that, when guided, translate into skills. Spatial intelligence, if requested, allows us to manipulate images and conceptualize them, thus constituting the cognitive cartography that accompanies us in life. These processes guarantee geographic education from two points of view: the child appropriates the tools to understand the categories of the discipline, but acquires the respect and rules that each environment requires. He/She is educated from a behavioural and cognitive point of view. All this implies adequate training of teachers and the participation of parents, who will be able to strengthen the exploration of environments with family experiences. As the international Charter of geographic education always clarifies, it appears necessary for teachers to acquire a "research orientation", a critical and reflective involvement in educational practices and constant attention to improving the quality of geographic education. Specific training, which enriches the general one, allows kindergarten teachers to strengthen the cognitive bases in young pupils to tackle the disciplines in future years. Therefore, although degree and master courses planned, for example in Europe, for teachers in kindergartens, do

³ https://www.igu-cge.org/wp-content/uploads/2019/03/IGU_2016_eng_ver25Feb2019.pdf

provide for the study of specific disciplines, such as geography, they do not give space to specific moments of reflection on how to deal with them in this specific segment. Instead, university courses must provide specific preparation. Educational institutions can build vertical curricula, so that children, during the two/three years of attendance, experience situations of gradual difficulty and at the same time consolidate the skills acquired. The teachers design experiences of orientation and exploration that, from time to time, expand the scale of action and then guide the little students in the representation, through drawing. In fact, some applied research has shown that the development of the ability to conceptualize space is favoured by the close relationship between lived spatial-environmental experiences and their contiguous description through drawing, whether it be guided or free.

In this way, geographic education becomes central in the Kindergarten school curriculum (Chaffer, 2016). Moreover, this approach could support the role of this training segment and help to overcome the gaps reported initially. Certainly, the enhancement of childhood education also depends on political and ideological choices. However, learning aimed at cognitive processes will show further value and convince policy makers more to activate early childhood education and care.

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