

Chapter 69

Digital Intelligences and Urban InfoSystems in Territorial Re-Education

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ABSTRACT

The relationship between education and urban environments identifies a process of societal impact through levels of exploration and knowledge of the territorial system. It emerges from pedagogical levels linked to the development of spatial knowledge as “vision” and “motricity,” finalising education on the use and management of territory and urban space in classes of knowledge. In parallel, the increasing adoption of digital technologies has extended the contamination of digital twins to the existing instruments for territorial management, such as geographic information systems. Their features of representation have increased, and the resulting systems can focus on the opportunity to use virtual territories (cities and landscapes in digital form) as both objects and spaces of education. The chapter focuses on “territorial education” to highlight the potentialities of urban infosystems from advancements in digitisation practices, and their interaction with artificial intelligence to support the educational function of digital urban spaces in experience-based and situated learnings.

INTRODUCTION

The city constitutes a source of education when it recognises its learning tasks and directs its environmental principles towards the full enjoyment of the rights of life and growth of citizens, from every age. The reflection on the relationship between the city and education has today focused mainly on how the city can be at the same time an ‘object’ and a ‘space’ to convey learnings. This concept often takes the definition of ‘territorial education’ (Champollion, 1987).

At the same time, the scientific literature (psychological, sociological, urban planning) provides the image of a city that is increasingly inadequate to meet the needs of its citizens. The logic of specialisa-

DOI: 10.4018/978-1-6684-7366-5.ch069

tion of functions has ended up fragmenting the city into separate components and hierarchies, making it lose its original nature as a place for meeting and social exchange, and thereby weakening its ability to provide educational measures. The landscape of contemporary cities is changing in its dimension of a 'system' of 'systems', in which the multiple social sectors and active practices of citizenship are spatially fragmented even if intertwined with technological apparatuses guided by Artificial Intelligence (AI), with the aim of achieving a collective benefit for human and non-human components (Yigitcanlar et al., 2020).

In relation to the recent pandemic crisis, over more than two years physical distancing has affected the development of spatial interactions and skills in the use of urban space, especially by the younger generations. Restrictions on experience, perception and movement in city places have conditioned the development of 'cognitive mapping' and training skills related to the experience of the city, its signals and the behaviours it conveys. The development of degrees of exploration and knowledge of the territory in the stages from childhood to adolescence (Trisciuzzi et al., 1993) was abruptly interrupted by the pandemic. This thread needs to be re-knotted, also considering AI opportunities for learning mechanisms to facilitate relations between people, digital instances and the same real world. It stimulates a renewed educational purpose, not exhaustively conducted with remote teaching methods, which can include the experience analysis of on-site sensorial data and establish an 'intelligent' learning challenge through AI simulations.

In this unprecedented scenario of COVID emergency, as highlighted in the technical report of the Italian Minister of Youth (Presidency of the Council of Ministers Italian, 2021), young people had serious consequences on their psycho-physical well being, penalised by the physical distance from urban space, precisely in that age stage of learning and orientation. The processes of developing cognition in the context of open physical space and sociality have been drastically interrupted, and for long periods they have lost contact with the city as an object of education. According to the UNICEF report (2021), children and young people could feel the impact of the pandemic on their mental health and well-being for many years to come: *"today more than ever, studying young people and the complex of phenomena affecting them is crucial: young people are in fact real agents of transition, catalysts for changes in consumption and lifestyles"* (UNICEF, 2021). Thereby, their impact involves also their parents and grandparents, and therefore the rest of the future population considering the impact of their growth and action as citizens.

The National Observatory for Childhood and Adolescence, set up in April 2020 by the Italian Ministry for Youth Policy, has approved intervention strategies for future education policies on childhood and adolescence, paying close attention to the causes of youth discomfort, including psychological ones (Lewin, 1936), and to the pandemic consequences. The debate pointed out that *"schools, which are historically burdened by critical points, including those of an infrastructural nature, are not in a position to fulfil, on their own, their role as the only educational and social agency in the area, arguing the need to promote actions capable of interweaving the plan of social policies"* (Presidency of the Council of Ministers, 2021).

With respect to the role of cities in this context of education, in 1991 the Italian Institute of Cognitive Science and Technology of the National Research Council (CNR) has already set up a research group to support and coordinate cities' impact on citizens' learning development. This gave rise to the International Laboratory 'The City of Children' for the recognition of children as citizens (not only future citizens). Among the tools that attempt to respond to the emergence of this issue, the Community Educational Pacts (Mulè, 2022) are specific agreements between the School Institutions and local education and training providers, as urban laboratories can be, with the aim of enriching the educational offer of the schools. Considering the first response to the lockdown in spring 2020 within Distance Learning (DAD), from

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