

# Introduction

The OECD countries are undergoing a major transformation as they are moving from a society based on an industrial economy to a society based on a knowledge economy. The rapid development of information and communication technologies (ICTs) is shifting the boundaries of educational possibilities, in particular enhancing the role of informal learning, in any place and at any time. We are facing a growing importance of online learning, the spread of *homeschooling* experiences and Self-Organized Learning Environments (SOLE) of great educational effectiveness.

These phenomena give the school system new unprecedented challenges. Traditional educational approaches are not equipped to efficiently address the scenarios mentioned here. Studies on the evolution of school systems highlight how the future of the school is based, on the one hand, on its responsible autonomy and on its consequent ability to interact with neighboring and distant communities and, on the other hand, on the individualization of learning. The digital revolution, which allows cognitive distance learning, does not seem to question the role of the school as a physical place for the acquisition of transversal non-cognitive skills. In any case, the successful changes in the school system emerge from the grassroots: all the successful international experiences prove this.

This work aims at studying and empirically verifying how to foster the development of an innovative learning environment, how it is implemented and what its level of innovation is compared to traditional methods. In particular, the authors investigate the organizational variables of learning environments, the factors that make it innovative and the extent to which they do.

In particular, they have investigated whether the introduction of the learning environment is favored as an alternative by

- *top-down* approaches, that is, whether the change should start from the top of the school system, with institutional policies that define the conditions of the context: educational policies, governance models, the role of leadership, the recruitment system, the career perspectives and so on.

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- *bottom-up* approaches, that is, whether the change should start from the grassroots, focusing on the organizational and educational innovation of the single school.

From what we have observed by visiting various Italian schools, innovations generally start from single schools and teachers, from networks of schools and networks of teachers, from parents and sometimes also from students: The perspective of self-organization – in the context of school autonomy – seems to be an effective interpretative key to the development of innovative learning environments.

Our research, therefore, focused on the organizational capabilities that are developed inside a school to guarantee the realization of innovative learning environments.

The structure of the book is described here. In Chapter 1 we examine the nature of learning and the learning classes, the factors of the effectiveness of learning, the concepts of the learning environment and self-directed, emerging and self-organized learning.

In Chapter 2 we proceed with the analysis of the literature on innovative learning environments. Fifteen significant contributions were identified, and five international case studies were analyzed as examples of *best practice*. The fundamental variables and the common principles articulated in the areas of organization, management and evaluation of learning environments were then identified. At the end of the chapter, we provide the definition of a framework for measuring the innovativeness of a learning environment.

In Chapter 3 the future school perspectives are examined first of all, illustrating a series of studies that identify possible scenarios. The first identifies six and the second four; the third investigates the impact of new digital technologies; the fourth explores the conditions of scholastic change in the current socioeconomic and cultural contexts. Answers are given to questions such as: Will the existing bureaucratic model be extended? Will schools continue to do as they have always done, according to *top-down* models? Or will the state withdraw from the management of the school, creating the conditions for a school immersed in the market model, innovative and dynamic, but exclusionary and unequal? Or will the school strengthen its role in close collaboration with the social community, focusing on learning, experimentation and innovation? Or, again, will we have the disappearance of schools, replaced by learning networks of students, parents or professionals?

The school is then analyzed as a complex system, contextualizing the study within the research fields known as *School Effectiveness* and *School Improvement*. Finally, the regulatory context of school autonomy is briefly described, within which the processes of change from the bottom-up can be activated, which gives rise to self-organization.

In Chapter 4 we focus on the perspective of self-organization as a key lever in the processes of change; the relevant experiences are analyzed, first that of self-leadership in the Jesuit order and then the self-activation in the Toyota

experience; finally, we focus on the organizational capabilities that enable self-organization: interconnection, redundancy, sharing and restructuring. A final question is whether hierarchy is inevitable, whether self-organization can be designed and whether hierarchy and self-organization can coexist.

Chapter 5 opens with a review of the literature on the subject of scholastic self-organization. Among the topics dealt with are weak ties, distributed control, distributed leadership, communities of practice and collaborative management. We then focus on the articulation of the capabilities of self-organization in order to build a framework for measuring them in the school environment. Finally, attention is placed on who the actors of self-organization are and what the styles of leadership in self-organized schools are.

Chapter 6 presents the results of the research carried out in 14 educational institutions, seven of which were high schools, five comprehensive schools, one junior high school, one primary and nursery school. Two associations are also described – along with their related projects – which work to reintegrate the students who have left school and which represent particularly innovative learning environments in the sense indicated by us.

The Concluding Remarks highlight the results of the scientific research and the suggestions that arise for *policymakers*. The key conclusion of the work is that the self-organized school's capabilities are connected with the level of innovation of the learning environments, that is, the more self-organized the schools are, the more innovative the learning environments are.

The results of this work are part of the strand of research of bottom-up emergency, understood as a process, and of self-organization, understood as a result of the emergency itself. This is an extremely fruitful trend for those interested in learning and in school systems, as shown by the experience gained on various continents by Sugata Mitra, a well-known scholar of the so-called *Self-Organized Learning Environments*. As reported in the text, according to the author, “education is a self-organized system where learning is an emerging phenomenon”.