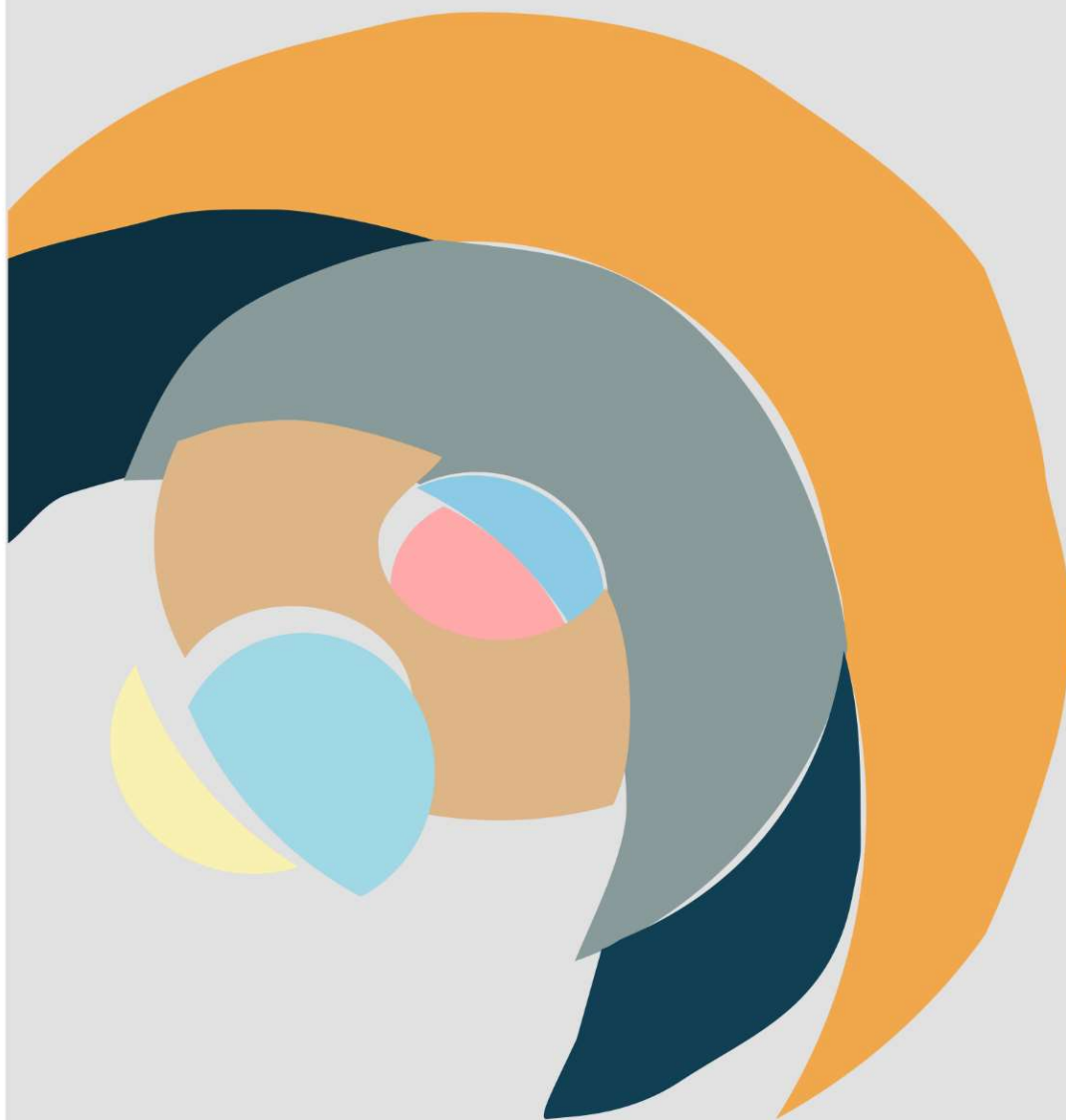


# PROCEEDINGS

Cultures, Practices,  
and Change 02



third international conference  
of the journal *Scuola Democratica*

**education**  
and/for  
**social justice**  
University of Cagliari  
June 3-6, 2024

Education never stands still—it moves, adapts, and transform in response to new realities, while reshaping society in turn. This collection explores some forces defining learning today: digital tools, intercultural dialogue, artistic expression, and the call for ecological responsibility.


At its core, education remains a space for negotiation and reinvention.



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# PROCEEDINGS

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Practices,  
and Change**

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# LIGHTS AND SHADOWS OF GREENCOMP. THE CONTRIBUTION OF THE SOCIO- MATERIAL PERSPECTIVE IN REVIEWING THE EUROPEAN COMPETENCY FRAME- WORK FOR SUSTAINABILITY

Chiara Buzzacchi<sup>a</sup>

Guendalina Cucuzza<sup>a</sup>

<sup>a</sup>University of Milano-Bicocca

To implement the environmental sustainability goals of the 2030 Agenda, the European Green Deal identified a framework of competencies defined as *GreenComp*. Although the framework intends to have a systemic approach, its analysis reveals a need to better understand some key concepts such as complexity, values, sustainability, to clarify what they actually refer to and the assumptions that drive them. They, in fact, are not “neutral” categories but need to be contextualized in their specific contexts. Building on these considerations, this paper aims to explore the *GreenComp* framework from a sociomaterial perspective. In fact, this approach highlights the social and material elements considered in the document, reconstructing the concrete dynamics that led to its genesis and offering some insights about its interpretation. The analysis shows that the *GreenComp* framework is indeed rooted in a cultural substrate that is still human-centered presenting criticalities at the onto-epistemological, methodological and ethical-political levels. These considerations invite us to rethink ecological education research and practices by considering the complexity involved in the process. This challenges institutional education to set up concrete experiences that allow people to undergo the connections, to promote the development of an embodied ecological consciousness.

green competencies; sustainability; sociomaterial approaches; ecology; inter-connections

## INTRODUCTION

The framework of the European Green Deal<sup>1</sup> – aiming to the implementation of the environmental sustainability goals of the 2030 Agenda for Sustainable Development (Rieckmann, 2017) – has identified a set of competencies, referred to as *GreenComp* (Bianchi, Pisiotis, & Cabrera Giraldez, 2022), capable to promote the

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<sup>1</sup> In 2020 the European Commission identifies a series of initiatives aimed at achieving climate neutrality in Europe by 2050.

role of communities, and in particular of new generations, in becoming agents of change and contributing individually and collectively to shaping sustainable futures.

The *GreenComp* are proposed as a driver for shared European collaborative action and strategy in sustainability education, in order to understand and be able to intervene in environmental crises, promoting the protagonism of the whole community. To this end, they identify four main areas that are interdependent on each other. The first considers “embodying sustainability values”, understood as a proposed meta-competence in order to reflect on and challenge our own personal values and world-views; the second, named “embracing complexity in sustainability”, supports the goal of being able to evaluate and make decisions through systemic and critical thinking; the third, “envisioning sustainable futures”, describes a dimension of future literacy, to enable youth to visualise alternative future scenarios and identify actions to achieve a sustainable future; finally, the fourth area consists of political action, collective action, and individual action, understanding in the ability to “acting for sustainability” a necessary requirement for sustainable development.

From this point of view, the interest shown by the Commission leans toward a structured vision tracking the issue of green skills development in a systemic and complex manner. At the same time, it represents a policy orientation, identifying a Europe-wide definition of what sustainability as a competence entails and the value categories associated with it. While being aware of the importance of such programmatic sharing, what raises interest are some concepts such as sustainability itself, complexity, values, equity, and justice that seem to be interpreted in a one-sided way, leaving quite a few questions open: what is the sustainability in question? In what terms and by what factors is complexity characterized? How is the value scale detailed and what assumptions underlie it? Equity and justice to whom and what?

Therefore, this paper’s primary objective will be to re-read the GreenComp framework to de-construct and problematize some of its premises, using a sociomaterial perspective that is considered effective in tracing complexity. This might offer some insights for rethinking the institutional approach to green education in research and practices.

## **1. BRINGING A COMPLEX NETWORK TO LIGHT**

Attempting to intercept and try to understand complexity, epistemological categories and methodological approaches are needed to trace all the elements that contribute to the production of a given phenomenon and to reconstruct the interactions among them.

In this regard, socio-material approaches (Fenwick, Edwards & Sawchuk, 2011; Ferrante, 2014, 2016) can make an important contribution. They correspond to a very diverse set of theories and research that share an interest in materiality and a conceptualization of reality that does not separate the social from the material.

Among them<sup>2</sup>, ANT (Actor-Network Theory) focuses on the theoretical and operational construct of network, highlighting how each phenomenon is the product of a heterogeneous and unstable network of human and non-human elements (spaces, times, bodies, objects, plants, non-human animals, etc.) that through its peculiar materiality produces local and situated effects of formative and transformative character (Ferrante, 2014).

In this view, agency – understood as the potential for action (Mattozzi, 2006) – is not only the prerogative of the human subject but is distributed among human and non-human actors involved in the performance of a specific activity. In other words, the non-human also acts and causes effects, and action is the result of the interaction between social and material components.

The source of agency, thus, lies within broader patterns that perform social action in an ecological sense (Viteritti, 2012; Cucuzza, 2021). Agency, then, is a relational effect and is not attributable to individual network elements.

Starting from these considerations, the sociomaterial perspective is interested in tracing and reconstructing the effects exerted in the network by the human and non-human actors that make up the network, recognizing to both an equal centrality in the process and treating them with the same categories of analysis, according to the principle of symmetry (Ferrante, 2016), that is, not taking for granted that the former play the role of subject and the latter have a purely instrumental function in the action.

In sum, the sociomaterial gaze leads to the problematization and overcoming of a human-centered logic that sees the human being as the undisputed protagonist of courses of action and, by this, the ruler of the planet, in favor of a relational and hybridizing vision that aims to identify the contaminations and connections through which social and material interact in the becoming of the world.

Similarly, it highlights the obsolescence of those disjunctive dualisms and logics that the anthropocentric paradigm brings with it (mind vs. body, nature vs. culture, biological vs. artificial, etc.) as limiting and insufficient to interpret the multiformity of the real, in favor of recognizing the interaction between different dimensions and identifying the connections between them.

Focusing more specifically on the topic of learning – as a process through which acquiring the competencies outlined by the *GreenComp* framework – it cannot be considered as a uniquely human performance but can be traced to the different forms that interaction in the network takes and, therefore, the result of a specific relational pattern (Ferrante, 2016). In this sense what and how the subject knows cannot be defined a priori but is contextual and situated insofar as it is the result of the concatenation of the elements acting in a specific context.

This profoundly changes the image of learning played out solely at the intersubjective level, introducing new factors of complexity that should be faced and taken into

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<sup>2</sup> In addition to Actor-Network Theory (ANT), Complexity Theory, Cultural Historical Activity Theory (CHAT), and Spatiality Theories also belong to the sociomaterial approaches.

consideration by educational design in its various domains and declinations, as will be discussed below.

## **2. THE SOCIOMATERIAL REINTERPRETATION OF GREENCOMP**

Analyzing *GreenComp* in a sociomaterial key means, first of all, problematizing the goals and competencies advocated by the programmatic framework, in light of a world that is “more than human” (Ferrante, Galimberti & Gambacorti-Passerini, 2022). Here, the non-human is constituted not only as an external referent – that is, a bearer of interests and a subject to be considered and protected – but also as an internal referent. Indeed, it is an active participant in the areas of action indicated by the framework, and can be an ally or hinder its implementation, depending on the elements considered and the specificity of the situation. In other words, the development and implementation of *GreenComp*, far from being a uniquely human process, sees the involvement of an intricate network of social and material actors who are affected by and influence the process itself, depending on the singularity of the context considered.

At the methodological level, tracking them and considering their role restores transparency to the process and allows reasoning about the different elements involved in the development of *GreenComp* and the interactions between them, so to identify possible constraints and resources that would otherwise remain opaque.

Emerging from the analysis, some tension points seem to complexify the linearity and implementation of the proposed framework, as will be detailed below.

### **2.1. The points of tension**

A first issue concerns the ownership of the agency of the non-human, which does not seem to be recognized in the framework. In fact, the human is presented as the sole guarantor of ecosystem protection: the “promoting nature” competence requires that humans, recognizing themselves as part of nature, respect it in order to restore healthy and resilient ecosystems. The same approach can be seen in the “problem framing” competence in which humans are protagonists and saviors of the biosphere. In this view, the role of nature is not legitimized, being uniquely considered in a passive position, as the recipient of human actions on which its preservation depends. It is therefore considered only as an external referent of the actions that affect it. In both cases to remain in the shadows is the network’s agentivity. The point of tension here concerns the agency between human and non-human.

A second issue concerns the process of competence development. The framework in fact implies the presence of a set of predefined values to which human beings must adhere in order to become competent. This aspect emerges from the whole area “Embodying sustainability values”. From a pedagogical perspective, however, it is difficult to understand how principles can be embodied without experiencing them. Moreover, the sociomaterial perspective problematizes a transmissive and generalizable approach to knowledge because learning is contextual, situated and inseparable from the network in which it is produced. There is therefore no

knowledge without experience and the process is variable and performed by the actors involved, human and non-human. Raising some problematic issues is the purely cognitive character of learning dynamics detected in several passages of the *GreenComp*, which leaves out the relational, affective and – once again – contextual dimensions of the process itself. The point of tension here concerns the transmission of values and the experiencing of them.

A third and final aspect concerns the dualism between personal values and the values promoted by the framework. The competence “valuing sustainability” is described as the ability to reflect on one’s personal values and align them with the values of sustainability. This leads one to perceive a significant disconnection between individual and institution, and to interpret as vertical and one-way a process that should be recursive, shared and participatory. The point of tension here is between the particular and the universal.

## **2.2. What implications?**

Re-reading *GreenComp* from a sociomaterial perspective allows us to highlight critical issues on three closely interconnected levels.

On the ontological side, the agency of the non-human is not recognized and thematized even though, as already pointed out, it actively participates in the construction of reality and of the human subject itself. In particular, nature remains in the framework the object of human attention and protection, intending people to establish their interests deliberately and to act on it without any recognition of its active role and transformative potential.

On the epistemological and methodological sides what could raise some perplexities is the structuring of a “ready-to-use” framework of skills, to be incorporated and transferred to every context. In this way, a gap is created between theory and practice, knowledge and experience: the real risk here is that such an interpretive framework – presenting a quantifiable and generalizable set of knowledge and skills – is insufficient to intercept the complexity of reality, being uprooted from it. Moreover, the purely cognitive approach to knowledge seems to suggest that the promotion of sustainability is played out only through a logical-rational dimension, excluding other dimensions and in particular the important role held by the affective dimension. Indeed, consider the relevance of the latter in, for example, deep ecology (Naess, 1973) or Rifkin’s (2022) construct of biophilic consciousness.

Finally, on the ethical-political side, we need to ask what model of sustainability is at issue and what forms of participation find room in it. Moreover, the same forms of participation are interpreted anthropocentrically, excluding the active role of the non-human and, in any case, in reference to a very small portion of the world’s population.

## **CONCLUSIONS**

The reinterpretation of *GreenComp* from a sociomaterial perspective highlights the usefulness of a paradigm shift that moves beyond centering on the “I”, this

“competent” human who alone can define the fate of the Planet, in favor of the “we”, meaning with it the human-world interconnection. This orients a rethinking of ecological education research and practices.

At the level of research, it is considered essential to thematize the specificity of educational contexts in order to explore how abstract concepts (such as sustainability and its associated values) are not considered absolutes but are embodied in situated practices. To this end we should consider the network as the unit of analysis, tracing the active role of both human and non-human actors who co-produce the practices: this should be considered central in the exploration of ecological education projects deputed to the acquisition of *GreenComp*. By identifying all the elements involved and the interactions among them, the learning effects produced can be analyzed and problematized.

This orients institutions to design sustainability education practices that enhance the role of the non-human not only as an external referent, namely a bearer of interest with respect to the topic, but as an internal referent able to act and influence the practices themselves, favoring or hindering their development. This makes it possible to educate for sustainability in sustainability (Ferrante, Galimberti & Gambacorti-Passerini, 2022), considering educational environments as oriented ecosystems populated by a plurality of elements human and non-human, questioning the formative effects produced by mutual interconnections. The educational process is thus rooted in experience: it is only by experiencing sustainability, in fact, that it is possible to develop skills that promote it.

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