2. Aesthetics, creativity and human development

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The perspective of Nelson Goodman and aesthetic education

Within the Reggio educational approach, the interest in plurality and in the connections among different expressive forms—rooted in the metaphor of the hundred languages of children—refers to an idea of aesthetic experience understood as a process of inquiry. It is an opportunity to develop new forms of perception, to challenge and revise inherited normative standards and conventions. This perspective promotes the idea that children communicate and learn through many different modalities, recognising the legitimacy of various forms of expression based on complex systems of visual, symbolic, and verbal signs.

In describing the development of the theory of the hundred languages and his interest in different forms of symbolic expression, Loris Malaguzzi (2002) explicitly referred to the perspective of Nelson Goodman (1968). Reflecting on the relationship between aesthetic experience and the creation of new meanings and knowledge, the Reggio pedagogist affirmed that this connection is "more familiar to children than we usually think", a hypothesis also supported by the authoritative work of Gardner and by the extensive research of his mentor Nelson Goodman on the genesis of symbolic systems (Malaguzzi, 2002, p. 37).

This quotation suggests a link between the theory of the hundred languages, developed in the 1970s, and the perspective characterising "Project Zero", a research project centred on arts education founded in 1967 by Nelson Goodman with the collaboration of Howard Gardner.

From Goodman's perspective, science and art are ways of understanding the world that do not refer to separate domains. Intrinsic properties of signs are not recognised, since these function only in relation to symbolic systems—whether scientific or artistic. Both Project Zero and the Reggio educational experience aim to overcome dichotomies between emotional and cognitive, artistic and scientific domains, sharing the idea that artistic understanding implies complex, constructive and active processes rather than being the result of passive contemplation.

The metaphor of the hundred languages, referring to the symbols and codes through which children express themselves as well as to their expressive potential and their capacity to deepen learning processes, affirmed itself in the 1970s—perhaps not by chance—as an identity claim of the "place of the hundred languages": graphic, pictorial, sculptural, plastic, mathematical, and poetic languages (Rinaldi, 2021, p. 121).

In an article dedicated to this theme, Annamaria Contini (2019) discussed some of the most relevant theoretical

results emerging from Project Zero. Among these is the idea that research concerning expressive processes tends to move into a broader study of how human beings learn, discover, and understand.
It is precisely from this premise that the reflections on the relationship between expressive practices and aesthetic experience developed in the following pages.

Expressive practices and aesthetic experience

Within the Reggio Emilia educational experience, reference is made to the category of expressive languages rather than to that of artistic languages. This is because expressive practices arise within the sensory interaction with the environment in which we are immersed—not exclusively within artistic specialisations—where processes of aesthetic education take shape through the experiences that children can have in the earliest years of life. Making matter and materials available, inviting children to explore them, manipulate them, and grasp their possible connections means opening a potential horizon of alternative ways of giving form within an aesthetic niche, in which the environment "shows its expressive face"[1], taking shape in the creation of sounds, symbols, movements and words.
The valorisation of the processual dimension makes it possible to render visible—through documentation—fundamental aesthetic practices such as perceiving and expressing.
The ways in which these expressive practices take place reveal something about the "creative plasticity of human nature", from the moment that nothing predetermined exhausts its potential. The analogical character of this praxis frees things from predetermined meanings and leaves open the horizon of possible concretisations of the "how" (Matteucci, 2022, p. 245).
Within this framework, where the aesthetic dimension constitutes a significant aspect of pedagogical quality, Carla Rinaldi developed the concept of shared aesthetics (Rinaldi, 2021). In particular, this concept refers to a space that allows connections, stimulates curiosity and exploration and consequently fosters children's sense of agency within a diversified ecosystem that is attractive and welcoming—a relational space in which intentional actions and emerging ones configure themselves as predominant elements. These aspects contribute to defining a constructivist perspective in which children actively create their view of the world, negotiating their visions and perceptions through the intersection of polarities such as formality–flexibility, materiality–immateriality, inside–outside, all oriented toward fostering conditions in which learning becomes relational.

[1] The considerations presented in this paragraph translate, within the field of aesthetic education, the relational perspective outlined by Giovanni Matteucci in Estetica e natura umana, Carocci, 2022 (p. 44).

As Howard Gardner observed, such intersections challenge "many false dichotomies: art versus science, individual versus community, child versus adult, play versus study" (Gardner, 2008, XVII).
In such a perspective, learning spaces are conceived as environments sensitive to relationships, capable of recognising and valuing the traces left by children.
Moreover, learning environments are understood as spaces that welcome and encourage exploration, where children can actively interact with diverse materials and objects in search of new affordances and meanings.
As Swann (2008) observed, the Reggio educational experience offers the possibility of exploring the physical properties of materials and media, allowing children to become more familiar with the affordances of objects and media.
Exploratory actions carried out both individually and in small groups support the development of increasingly complex relationships with materials and foster a wide range of emerging symbolic representations, in continuous evolution and dialogue with the advancement of questions raised by children and with learning processes that are constantly developing and reshaping vision.

The affordances of materials

A further aspect of the atelier that supports the exercise of children's agency lies in the possibility of reinterpreting the meaning of unstructured materials.
The process of reinterpretation is supported both by the exploration of different expressive techniques and by the possibilities offered by digital technologies. On the one hand, exploring expressive techniques leads to observing objects from a different perspective, exploiting connections and relationships previously unexplored. On the other hand, digital technologies facilitate the exploration of unusual perspectives, restructuring perception and supporting the identification of new affordances, thus acting on different representational and symbolic levels.
By making visible the multimodal processes through which children construct knowledge and search for meaning—and by describing both visually and verbally the research paths undertaken—the documentation process helps show how children develop a sense of agency by exploring salient and emerging affordances in the environment through the creation of symbolic expressions.

Material Engagement Theory, agency and interactive imagination

Supporting children's sense of agency does not mean deliberately imposing or externalising preconceived ideas onto matter and materials. On the contrary, it means developing a dialogue, a co-evolution between materials

and available technologies, explored through different expressive techniques.
This perspective can be further problematised through the theoretical framework known as Material Engagement Theory (Malafouris, 2013).
In a recent publication, Montani (2020) emphasised how an interactive conception of agency becomes particularly evident within Material Engagement Theory (MET), where intentional design is considered an aspect emerging within processes of material engagement, involving a cognitive dimension that goes beyond merely perceptual aspects.
Malafouris developed Material Engagement Theory drawing, among other influences, on the theory of Alfred Gell, who identified a link between art and agency: an interrelationship between internal elements such as the mind and consciousness and external elements such as artefacts or works of art (Gell, 1998).
According to Malafouris, a central aspect that defines our relationship with materials is constituted by the recursive effects produced by our interaction with matter and materials—and by the ways in which our productions have contributed to the becoming human and to the evolution of imagination.
From this perspective, the interactive quality of imagination emerges in its constant relationship with the "things" of the surrounding world and with the sphere of their possible uses and technical performances.
Defining agency as an interactive process that reveals hidden potentials of the surrounding world, the perspective described here opens new intuitions regarding the possibility of fostering children's sense of agency by developing forms of interactive imagination.
By focusing on expressive languages as a means of investigating the affordances expressed by different materials and technologies at multiple representational and symbolic levels, it becomes possible to promote models of aesthetic education that stimulate forms of interactive imagination and technical creativity.
These forms of creativity involve practices that are simultaneously bodily, perceptual, and cognitive.
Material Engagement Theory is based on the assumption that the relationship between the emergence of our symbolic and cognitive attitudes and technical operativity is grounded in a principle of co-determination.
The high degree of plasticity that characterises digital objects does not derive from their virtuality; rather, it constitutes a material aspect that profoundly influences our technical-creative engagement, placing such objects fully within a pedagogy of meta-operational thinking.