

Addressing Waste as an Educational Matter: The Remida in Reggio Emilia Case Study

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Abstract

The large waste material generated by production systems is part of the environmental emergency affecting the planet. While governments address the issue in technical and mechanical ways, the humanities and ecological sciences question what pedagogies can support a paradigm shift in educational thinking and practices. New feminist materialisms put matter, care, and the concept of interdependence between humans and nonhumans at the center of the debate. This article proposes to consider waste as subject-material worthy of listening as a practice of care, analyzing the case study of Remida, a project part of the educational system of Reggio Emilia (Italy). The first part of this contribution presents the pedagogy of listening practice with children in Reggio Emilia schools, within which Remida's philosophy is situated. The second part examines the activities of the Remida Center between 2021 and 2023, using an ethnographic method. One of the two authors has been carrying out activities in the Remida Center for 12 years, consisting of collecting industrial waste material and proposing it not as an object to be used but as a co-constructor of the educational experience of children and adults. We use data from pedagogical documentation, literature, and direct experiences within the Remida Center. We show that a pedagogy of listening and care extended from children to waste materials helps to see waste as a subject worthy of respect and attention.

Keywords: Waste, Remida, Pedagogy of Listening

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Introduction

As recent studies described, waste greatly impacts global pollution, climate change, and the related loss of biodiversity (UNEP & ISWA, 2024), which will deliver today's children a difficult world. Seen only as a problem to be managed, governments mainly adopt technological solutions to increase the rate of waste recycling (Ureta, 2016). However, part of the solution remains educational and cultural.

We can learn about waste and *with* waste (Hird, 2012). Instead of recounting waste as dangerous or a problem to be solved, waste pedagogies ask what education is possible in a way where (children's) bodies and waste are inseparable.

This article proposes revisiting some waste materials experiences at the Remida Center in Reggio Emilia in light of waste pedagogies and feminist materialist vitalism that considers matter vibrant and active.

This article's discussion of waste as an educational subject is thus based on a theoretical framework that has two pillars:

- (a) *Waste pedagogies and the new feminist materialism*
- (b) *The pedagogy of listening*

In the first part, we present how waste pedagogies conceptualize waste materials in connection with other living and nonliving matter, as feminist materialist scholars Haraway, Tsing, and Bennett argue. In the second part, we present the pedagogy of listening, caring, and relationship as practiced with children in the early childhood centers and preschools of Reggio Emilia, within which Remida's philosophy is situated.

One of the authors, Di Rocco, has been working at the Remida Center since 2012 while the other author, Pacini-Ketchabaw, has known and frequented the Remida Center for a long time.

Consulting the pedagogical documentation produced at Remida, we noted many encounters between humans and matter in which listening and care play an important role in building new ways of living and learning *with* waste. Following a post-human and post-qualitative approach (Taylor & Hughes, 2016), we propose these ethnographic materials to highlight how matter can be active and not passive. And how the agency of discarded materials is a great educational opportunity.

Waste Pedagogies and New Feminist Materialism

Waste studies question the practices surrounding waste, such as recycling. They argue that waste is not automatically disgusting, harmful, or morally offensive and that the boundary between waste and products is socially constructed and part of larger economic systems (Liboiron & Lepawsky, 2022).

Waste studies aim to investigate these systems to understand how waste arises, offering a critical reading of the most common and normative notions of waste.

Instead of narrating waste as dangerous to children, or a problem to solve, waste pedagogies ask what education is possible in a way where (children's) bodies and waste are inseparable.

Inspired by philosopher Donna Haraway's imaginative Chtulucene theory (2016), which envisions a world in which the boundary between synthetic and natural is blurred and animal, plant, and robotic species blend to produce queer creatures, waste pedagogies also welcome waste among the collaborative and generative entities that help shape the world in which children live and learn.

Collaborative and empathic approaches can offer children a way to live with waste (Pacini-Ketchabaw & MacAlpine, 2022) starting with children's inescapable relationship with it. Our lives are inextricably entangled with the materials we produce, use, discard, and then try to manage (Davis, 2015). Matter is everywhere, outside and inside human bodies, and so is waste. Microplastics are in the air and oceans, the flesh of the fish we eat, and human breast milk (Ragusa et al., 2022).

We find it important to consider our relationship with matter and waste because they have an affective and agential nature. They react and transform (Tsing, 2014). They act on us. Waste materials are not static and inert (Bennett, 2010). Rather they transform and mutate, both independently and interdependently of humans.

Waste pedagogies aim to open our perception to human-waste relations so that we can respond thoughtfully and ethically to children's encounters with the vibrant life of waste.

Keeping in mind that "we can no longer separate our fleshy human bodies from synthetic polymer bodies" (Pacini-Ketchabaw & MacAlpine, 2022, p. 4), staying with the problem as feminist scholar Donna Haraway suggests (2016), creates the conditions for different and unexpected futures.

The new feminist materialism inherited the concept of the "common worldling" from Latour (2010) to overcome a binary view between human and nature, nature and culture, artificial and natural, with no boundaries even between humans and nonliving subjects. Therefore, objects can be fully active operators. Materialist thought upholds the principle of shared relational agency, whereby human beings never act alone, independently of the rest, because they depend on and are composed of all the other forces and life forms acting around them, and even inside their bodies (Haraway, 2017).

Many experiences that carry on the work of early childhood education with waste, draw on the posthumanist framework and the new materialism, placing matter, bodies, and their interdependence at the center of the debate. Scholars who embrace the posthumanist framework question the stewardship model of environmental education that underlies the most popular and traditional waste education programs (Cutter-Mackenzie-Knowles & Siegel, 2019), arguing that these must go beyond "habitual-behavioural approach as well as of a rational action approach" (Jørgensen et al., 2017, p. 2) such as simply respecting, cleaning up one's environment, recycling, and reusing waste.

A posthumanist perspective on waste proposes to move to a new model of education, in which nonhuman entities are recognized as co-actors and shapers of the world, and to conceive of matter as central to educational work with children, not for children to shape it but for matter to shape children.

The Pedagogy of Listening

The pedagogy of listening is one of the theoretical pillars of the educational philosophy called the Reggio Emilia approach, practiced in early childhood centers and preschools in Reggio Emilia (Italy). Inspired by philosopher Emmanuel Levinas' theory of Encounter with the Other (1989), listening is an attitude of openness necessary for knowledge construction (Giudici et al., 2011). The literature speaks of the need for sensitive and active listening to children, humans, and all living and nonliving subjects (Rinaldi, 2021).

The Reggio Emilia approach took shape after World War II, inspired by the thought of Dewey, Vygotsky, and Freire. It argues that listening is an antidote to human authoritarian power because being open and sensitive to otherness allows one to perceive connections between entities far apart. Beginning with listening to children, considered by fascist schools and behavioral studies as empty vessels to be filled with information, the pedagogy of listening invites the decentralization of the competent adult through encounters with diversity, a condition necessary for a fair, democratic school, and free society (Dahlberg & Moss, 2004).

In light of Jane Bennet's new vitalist materialism (2010), we want to highlight those aspects of the Reggio Emilia approach that recognize the possibility of pedagogical listening to waste. Listening to waste might help us rethink our relationship with waste and the general role of matter in early childhood educational practices. Paying attention to waste might give us a better understanding of how matter is not dead but alive and active, constantly changing like every organic and nonorganic being.

Remida, the Creative Recycling Center of Reggio Emilia

This work proposes to address waste as a possible object of a pedagogy of listening, analyzing the Remida Center case study in Italy, a project part of the Reggio Emilia approach. One of the authors, Di Rocco, has been working at the Remida Center since 2012 while the other author, Pacini-Ketchabaw, has known and frequented the Remida Center for a long time.

Remida is an educational research center focused on industrial waste materials. Since its founding in 1996, Remida has collected materials classified as "waste" by industries, making them the subject of pedagogical, social, ethical, and cultural investigation through activities with children, teachers, researchers, and professionals.

Remida is a project of the Reggio Children Foundation, Iren, a waste management company, and the Municipality of Reggio Emilia.

Remida's materials come from local companies that dispose of waste, failed materials, stocks, or surplus production destined for disposal. They are new materials, arriving in large quantities and varieties. They are discarded because they are nonconforming, imperfect, and damaged. When something is no longer useful, it is thrown away and waste is sent to recycling or, for the most part, to the landfill.

In Remida you can find papers, plastics, metals, and textiles discarded from industrial production. They arrive without an identity or function, sometimes dirty and all mixed up.

Remida aims to transform this material from waste to intellectual matter (Gandini & Kaminsky, 2005). The goal is not to reuse materials by creating objects, but how it questions us and opens us to ecological reflection. Materials are not there for the use and consumption of people, to perpetuate consumerist logic, instead, they are seen as subjects to be listened to, cared for, and given attention to.

Through investigating materials, Remida's philosophy has developed an idea of waste as a *matter of care* (Puig de La Bellacasa, 2017), rather than useless things to upcycle and be used.

Two Children Encounter a Waste Cardboard Box

The Reggio Emilia approach uses a methodology of observation and analysis called pedagogical documentation (Giudici et al., 2011). Over nearly 30 years, Remida documented hundreds of encounters between waste materials, students, and educators of all ages, nationalities, cultural backgrounds, and geographical origins. And also between human beings, other living things, and natural phenomena. Using this method at Remida we participated in many encounters between humans and matter in which listening and care played an important role.

Sticking to a posthuman and post-qualitative approach (Taylor & Hughes, 2016), we examined this documentation trying to resist the temptation to focus only on the human aspect (Pacini-Ketchabaw et al., 2024).

Adopting an ethnographic method, we chose an experience documented by one of the authors, to support our thesis. Namely, that matter is not passive, it acts on the environment and us, and listening to the agency of matter is a great educational opportunity.



Figure 1: Two Children in the Remida Center. Photo by Eloisa Di Rocco
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In Figure 1, two children from a Reggio Emilia municipal preschool are in Remida. During an activity with paper, the two want to make a hole in a cardboard box with a hole puncher. The task seems difficult. The two children are decided not to be given help. No teacher intervenes in this moment of mutual acquaintance. The reason is not because there is a technical problem to solve that we, as adults, choose to let the children solve. Rather, it is because in front of us, we see a valuable opportunity for both children and adults, to know what relationships of mutual force and agency bind together humans and matter. The cardboard of the box is strong; it resists the children's will to make the hole. The children are active toward the material but the material is also active toward the two children.

The girl and the boy eventually give up making the hole in the cardboard. We do not consider it a defeat, an accident, or a mistake. On the contrary, it is an opportunity to learn that humans have limits and that matter has a force that acts despite humans.

Children learn from the environment and others because they know that there is much to learn from everything around them: from human and nonhuman beings. “Children are the greatest ‘listeners’ to the reality around them,” writes pedagogist Carla Rinaldi, “children listen to life in all its forms and colors, and listen to others” (Giudici et al., 2011, p. 82).

Examples like this make it clear that it is not only humans who act on matter and that the boundary between agent and acted-upon subject is often blurred and dynamic. But connections and boundaries need to be listened to.

Conclusion

Matter is vibrant and active. We live, mutually concerning matter, in a relationship of interdependence. The agentivity of matter is visible if we listen to what matter has to say. The dimension of listening is the opposite of the will to manipulate, use, and exploit; operations that turn matter into waste and pollution.

Rethinking waste in education through a pedagogy of listening makes it possible to consider waste not as a *matter of concern* but as a *matter of care* (Puig de La Bellacasa, 2017), thus worthy of attention and possible co-constructors of the educational experience. Looking at and thinking about waste as an educational matter can corroborate a culture of imperfection and limit, and, at the same time, resist the binarisms of Western schooling (living-nonliving, human-matter, object-subject, product and waste, useful and useless).

The pedagogy of listening applied to matter is a pedagogy that enlightens relationships and connections. Encountering the otherness can help us coexist with all presences and life forms on the planet, to learn and construct a collective and multispecies knowledge, with all material presences, including waste.

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