

SOCIOMATERIAL TURN IN PEDAGOGICAL PRACTICE

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ABSTRACT

Post-humanistic thinking redirects humans to their ethical interdependence with materiality. When we work on materiality, we highlight the ways in which matter can be conceived as more than just a passive surface in which cultural meanings are recorded. This article is an attempt to suggest alternatives to humanistic studies in Education. It begins with the focus on materiality, and is fueled by the observation that human beings are not totally in control of pedagogical practices, but supported by the assumption that objects/things also participate and contribute to their formation. Undoing the privileged category of the human casts much doubt on the Enlightenment that sustained man's supremacy, and trying to do this in education is not an easy task. To think of materiality, it pluralizes educational practices, so as to take into account the bodies, objects/things and spaces on the side and with the human. This is an urgent task in Education, since, increasingly, what, and how we learn happens in our dependence on virtual, physical and material artifacts, as well as through human instructional frameworks.

Keywords: Education. Pedagogical Practice. Sociomateriality. Posthuman Thought.

1 INTRODUCTION

The agendas in Education lack a methodology that does not only begin with human beings, their objectives and their interests, but also through interdisciplinary fields. For Pretto (2014: 348), "it is necessary to understand the contemporary moment with a multifaceted look ... that is strongly articulated with other areas of knowledge". Thinking Education in the contemporary world, from an interdisciplinary perspective, observing the porosity of the borders and bringing a world different from what we know, is pertinent in the educational field, because it enlightens us and shows us little studied forms of social life (Toohey, 2018).

The focus of the article on materiality is nourished by the observation that human beings are not totally in control of pedagogical practices but supported by the

assumption that objects/things¹ also participate and contribute to their formation. We believe that nonhumans can be practitioners, just as humans are.

Pretto (2014: 348) states that "what is sought is to think of [non-human] technologies, all of them, pencil, pen, printed book, e-reader, mimeograph, digital camera, internet, social networks, everything connected to each other [...] "in a relational way. That is, people are relational effects, just as objects are. Therefore, educational research based on studies of soci- emaciality allows us to trace, unravel, and subsequently show how relationality is one of the main characteristics of each educational practice (Decuypere, 2019).

2 SOCIOMATERIALITY

For Santaella and Cardoso (2015) we are living in the anthropocene² and we need a change of perspective, and thus avoid the traditional divisions of humans, animals and things, subject and object, technology and nature using flat ontologies, in order to overcome points of anthropocentric view.

The divergence between the [materialist] social theory presented here and the humanistic myth is evident, according to which, behind every technical apparatus, there is [a human agency], as if we were always, at all times, becoming visible through nonhumans, such as technical instruments (a sort of egocentric mirroring that turns man's gaze to himself, and erases all the artificiality of the technical object, which, however, is immediately present) (Santaella & Cardoso, 2015: 174, emphasis added).

Let us consider that centrality in the nonhuman, in objects/things in social practice, is so important that the lack of these actors can interrupt or even render impossible the realization of an activity. Things are not secondary to the human, but it is through their being together that actions, including those identified as pedagogical practices, become possible.

¹ Objects and things are to be understood as synonyms in this article, although Martin Heidegger has differentiated, we will not appropriate these differences by understanding that they do not alter in any way what I discuss in the research.

² Historical moment in which the human has become geological, with force able to affect all the life in this planet. That is, when climate and other factors, and environmental changes are not only natural

The materialistic turn involves central principles that support the ways of thinking, being a mobile category that is adopted in different ways, by different theoreticians, be it by their approaches, concepts and/or practices. They involve varied combinations such as animal studies³; New Feminism Material; Assemblage Theory; Queer Theory; Speculative Realism; Theory of Things; Theory Actor-Network; Object-Oriented Ontology, among other combinations. But always emphasizing movements for a post-human understanding of what the world is, and our relationship with it. The important thing is to perceive the existence of a profusion of objects/things, besides the subjects, and that these all are acting on, with and between each other.

Although educational studies bring the forms of materialism into the debate, addressing issues of inequality and power in the field of education, these approaches still tend to privilege the intentional human subject, who is assumed to be different from or separate from material; the material is the non-human waiting to be used and animated by human intention (Gorur et al., 2019).

Materiality is often hidden, since most discourses around teaching and learning tend to focus on human changes and human-human interactions. It places learning, intention and action, mainly within the human domain, giving priority to human participation in pedagogical practices.

It was the development of the human or social sciences from the eighteenth to the twentieth centuries that made humans a collective worthy of scientific study. It was the idealist and positivist programs of the Enlightenment that produced mankind as a scientific object and a political project. In these terms, the materialistic approach can potentially disrupt these linear regimes and broaden understandings outside traditional forms of representation (Reddington & Price, 2018).

Undoing the privileged category of the human casts much doubt on the Enlightenment that sustained man's supremacy, and trying to do this in education is not an easy task. To think of materiality, it pluralizes educational practices, so as to take into account the bodies, objects / things and spaces on the side and with the human. This is an urgent task in Education, since, increasingly, what and how we learn

³ Researchers in this field have emphasized the need to take into account the animals' point of view. Attributed to them are interests, wants, preferences and, in a sense, subjectivity. Domestication is often treated as a form of relationship in which the interests of animals are suppressed and subjected to human purposes (SOUZA, RABELO, 2018, 110).

happens in our dependence on virtual, physical and material artifacts, as well as through human instructional frameworks (Taylor, 2017).

3 SOCIOMATERIAL TURN IN PEDAGOGICAL PRACTICE

The post-humanist approach has become a contemporary theme in various fields of research, including Philosophy, Politics, Art, among others, and now in Education; and certainly comes to challenge the disciplinary limits, as it questions the dogmas of humanist ideology.

Post-human thinkers begin by questioning the human as a privileged category. They argue that the binary that Humanism has instituted and that has been used to mark the human as a separate, exceptional, distinctive, privileged, and superior category of the rest of life in the universe is illegitimate and fallacious.

These questions are based on the philosophy of Friedrich Nietzsche, Michel Foucault, Gilles Deleuze and Félix Guattari, among others, and on the inquiries that these thinkers make about man, which arise with the intention of facing the unilaterality and rigor inserted by the modern humanist vision, which "makes the supreme value of man, and who sees in him the measure of all things" (Japiassú & Marcondes, 1996: 132; Käll, 2017).

There is no single moment when we are not affected by objects/things, we can not fall into the world of objects/things, because there are no humans without this world, that is, "the history of material is from the beginning part and parcel of human history" (Braun & Whatmore, 2010: xix).

The sociomaterial turn recognizes that social, material and affective relations are inseparable and are interconnected in everyday practice. Its purpose is to challenge the notion that things (including objects, texts, human bodies, intentions, concepts, etc.) exist separately. In this way, it is understood that it is impossible to consider pedagogical practice simply and simply as the execution of a task of humans. Such a statement has a different position from Freire (1986 apud Verdun, 2013), which starts from a conception of pedagogical practice adjectivada by the dialogical term, in which the construction of knowledge is seen as a process carried out by human actors: teacher and student.

It is fundamental to affirm that the concept of pedagogical practice used in this work goes beyond the teacher and student. If the modern world developed the scientific

method by differentiating subject and object, nature and culture, mind and matter, these distinct domains of knowledge proved to be incapable of taking into account the experience of our globalized and interconnected relations.

Caldeira and Zaidan (2013), elaborated a comparative table between the paradigms of social research with regard to pedagogical practice (Table 1).

Table 1 - Paradigms *versus* Pedagogical Practice.

PARADIGM	PEDAGOGICAL PRACTICE
Positivist	It is the result of the application of theoretical knowledge, extracted from different scientific disciplines, in solving problems, traversing a path from idea to action, from theoretical to practical principles.
Phenomenological	It is understood as the result of a process that has its beginning in the practice itself, informed by both the theory and the particular situation experienced by the actor.
Historical-Critical	It is a complex social practice, which happens in different spaces/times, in the daily life of those involved and especially mediated by teacher-student-knowledge interaction.

Source: Caldeira & Zaidan, 2013.

It is important to observe in table 1 that none of the paradigmatic perspectives presented account for sociomateriality in pedagogical practice. It is dangerous to assume that competence lies in the individual or group of human subjects who are participating together on one occasion. This assumption neglects the important types of connection between them.

The positivist approach to analysis "presupposes the existence of a unique reality that can be fragmented into independently manipulable parts." Phenomenology "considers that reality is constructed socially by man, by giving meaning to objects, situations and lived experiences", and the historical-critical approach starts from the point that the gaze will not be the school, nor the room but the broader social reality (Caldeira & Zaidan, 2013:16-17).

Having said this, a paradigmatic revision is necessary, expanding the perspectives on pedagogical practice and its interaction processes in sociotechnical networks, where the mixture of elements interacts to produce teaching, learning, research or understanding. This understanding compels us to be open and to realize where the action is taking place, leading us to guide the actors involved. It also allows us to recognize how the agency of these actors participates in the creation of the world in which we live.

A fairly common understanding in educational literature is to speak of pedagogical practice in terms of praxis. Although it is usual to substitute one term for the other, that is, practice by praxis, according to Schmidt, Ribas and Carvalho (1998), a theoretical problem is not being solved, and when this happens it is due to ignorance of the field, to see table 2.

Table 2 – Practice x Praxis.

PRACTICE	PRAXIS
It derives from the Greek <i>praktikós</i> and has the sense of acting, accomplishing, doing. It concerns the action that man exerts on things.	Word with origin in the Greek term praxis which means conduct or action. It corresponds to a practical activity as opposed to theory.
From the Latin <i>practicare</i> means to act, to deal with agents, to carry out,	It designates a dialectic relationship between man and nature, in which man, by transforming nature with his work, transforms himself.
Man only sees practice as utilitarian practice. What he uses to satisfy the immediate needs of everyday life	Human activity that produces objects, but on the other hand this activity is conceived with the strictly utilitarian character.

Source: Adapted from Schmidt, Ribas & Carvalho (1998).

We believe that the difference between the terms is philosophical, and as such, we will not go into the research on these issues. we choose to use the word practical because we understand that "social phenomena consist in the nexus of human material practices and arrangements [...] and that materiality is part of these phenomena. Let us look at the example in the classroom, which is composed of practical meshes (content, teaching, evaluation), and arrangements (teachers' diaries, didactic resources, projectors, computers), thus, they maintain an intimate relationship,

since pedagogical approaches are composed of multiple forms of arrangements (Schatzki, 2003, 2005, 2010:123).

Schatzki (2001b) admits that there is a variety of theoretical perspectives on the concept of practices and therefore it is not possible to establish a unified approach to the subject. There is, however, a common point among these theorists: phenomena such as knowledge, meanings, power, among others, are manifestations of the field of social practice and therefore must be understood and analyzed from this field of practice (Schatzki, 2001a).

Zabala (1998:15) also emphasizes that pedagogical practice "is something fluid, fugitive, difficult to limit with simple coordinates and, moreover, complex, since it expresses multiple factors, ideas, values, habits [...] ". That is, they will be, at every moment, an expression of the moment and the present circumstances.

Franco (2016:546-547), adds that pedagogical practice is "provisional syntheses that are organized in the teaching process. Education situations are always subject to unforeseen, unplanned circumstances, and thus, unforeseen events redirect the process and often allow a reconfiguration of the educational situation".

However, the term - pedagogical practice - is difficult to conceptualize, since it assumes different meanings and meanings according to the theoretical-epistemological perspective adopted (see Table 3), and tends to be expressed in quite functional terms (Barry, 2018; Caldeira & Zaidan, 2010).

According to Machado (2005:127), defining pedagogical practice "became almost a torment, since few had dedicated themselves to such zeal, since for many, practice is not theorized, practice is practiced."

Table 3 - Definitions of pedagogical practice

THE BEHAVIORALISTS	They understand pedagogical practice as the exclusively observable activity that manages a concrete activity, the results of which can be recorded, proven.
THE COGNITIVISTS	They understand the pedagogical practice as the activity that develops the rationale of the student and that leads him to solve problems.
THE HUMANISTS	They understand pedagogical practice as the whole teaching-learning process, prioritizing human relations.

Source: Machado (2005).

In addition, pedagogical practices are strongly affected by conjunctural and structural societal issues (Souza, 2005), for example in the One Computer Per Student (UCA) project, figure 1, which reconfigured an entire pedagogical practice in the schools participating in the project in Brazil, using the educational (non-human) laptop, according to Almeida and Freire (2015). When we refer to the structural questions of society, these are marked by "class social relations, inequalities and income concentration" (Souza, 2005, without pagination).

Figure 1 - One Computer per Student (UCA).



Source:<http://ucaescolaastrogildo.blogspot.com/2012/04/projeto-nosa-turma-e-ucauca.html>

When we expose them to the notion of pedagogical practices, we understand that they flourish in the essence of groups, and thus result and provoke interactions between subjects, including nonhumans, in their environments (natural, social, cultural) in order to "to produce goods, to transmit values, meanings, to teach to live and to control living, and finally, to maintain the material and symbolic survival of human societies" (Oliveira et al., 2009: 4).

Thus, to account for the process in which actors try to mobilize resources, persuading other actors in the construction of their networks, in order to promote their cause is unavoidable. Therefore, sociomateriality in pedagogical practice brings the reader closer to everyday experiences and events that can affect our classrooms. Thus, there is no feasibility of studying pedagogical practice without recognizing these nonhuman actors.

Visualizing the pedagogical practice only in humans predisposes us to exclude the materials that characterize daily activities, giving the subjects any responsibility for the actions, and consequently not focusing on a greater scope of participants in the practices, abandoning the action of nonhumans in the process (Schatzki; Knorr-Cetina & Von Savigny, 2001). In this way, the definitions of pedagogical practices shown in table 1 need to be added to the post-humanist vision.

In this way I understand pedagogical practices, in a post-human vision, as activities with which human and nonhuman agents act together, entangled, interacting and forming alliances and bonds, from certain established and organized activities, representing a temporary involvement, in the name of which they speak (Schatzki; Knorr-Cetina & Von Savigny, 2001; Gonçalves, 2018).

And so, according to Barbosa and Oliveira (2018:137), "We assume as presupposition that all material communicates characteristics expected for the pedagogical practice that will be used of it." In this sense, pedagogical practice is related to social practice, in the construction of a critical and reflective world. As such, it is determined by a set of forces (interests, motivations, intentionalities); by the degree of awareness of its actors; by the worldview that guides them; by the context where this practice takes place; (Caldeira & Zaidan, 2010, with no pagination).

Therefore, pedagogical practice is more than isolated actions (Veiga, 1992) by humans, encompassing interconnected and interconnected entities and their complexities and relationalities. However, what we observe in most research is that there is a strong prejudice that such a practice is a realization of humans and nonhumans. Such a conception can not be adopted by a post-humanist approach because it predefines pedagogical practice as performed by humans. The various other forms, that materials participate in social interaction, from a post-human perspective, remain sub-theorized and poorly examined, that is, how materials participate in interactions in educational practices, is rarely considered in the literature.

4 CONCLUSIONS

In developing the sociomaterial approach in this research, the aim is to recover objects / things and consequently materiality in social life, rethinking their relationships within educational agendas and observing that these need to be treated as integral

parts of the promulgation of human existence and social life, not simply contexts or tools (in) visible.

The human and non-human (things, objects, materialities, spaces) of Education need, when considered in a post-humanist context, respect they deserve and require as actors.

Fenwick and Edwards (2013) argue that research sociomateriality offers opportunities for more engaged and focused forms of educational practice. The sociomaterial turn in Education presents a more realistic and responsible strategy for the hybrid phenomenon we face and who we are. This gap allows social actors (human and non-human) to have equal, symmetrical treatment, shedding light on educational microdynamics and the ways in which such actors provoke, modify, and aid the results of an action (Jarrahi & Nelson, 2018).

Thinking about sociomateriality in education is one way of dealing with the difficulties of humanistic assumptions, which have led, and still lead, many educational surveys.

Fenwick and Edwards (2013) add that even with the contribution of influential learning researchers, such as Piaget and Vygotsky, have theorized about human beings learning as active agents in the material world, they did so by bringing the ontological distinction (human and nonhuman), and therefore materiality is often considered only as a background context and seen as tools that humans use.

Although in Karl Marx's work there is no absence of objects / things - inorganic nature - which is seen as the outer body of man, Marx provides innumerable openings for a materialism, yet the objects / things are not 'agitated' on the contrary, they are incorporated into human desires, intentions and actions - they exist as 'fetishes' (Braun & Whatmore, 2010).

Although educational studies (based on Marxist feminists and on the traditions of critical theory) bring the forms of materialism into the debate, addressing issues of inequality and power in the field of Education, these approaches still tend to privilege the intentional human subject, who is assumed to be different from or separate from the material; the material is the non-human, that is, the object / thing waiting to be used and animated by human intention.

Materiality is often hidden in such theories, since most discourses around teaching and learning tend to focus on changes in humans and human-human interactions. They still place learning, intention, and action principally within the human

domain, giving primacy to human participation in practices and their structures of the role of material in teaching and learning.

Therefore, the sociomaterial turn is useful because it encourages us to think, as Education would be if we did not assume a position that sees the human as a kind of transcendent observer of the world. Instead, this approach sees humans, as one more, entangled in the world.

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