


## Article

# Rethinking Economics Education for Sustainable Development: A Posthumanist Practice Approach

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**Abstract:** This conceptual paper proposes a posthumanist practice approach as an alternative onto-epistemological framework for economics education. It applies a critical literature review to examine the positivist and neoliberal foundations of mainstream economics education. We find that the prevailing economics education promotes a decontextualized and hyperrational perspective on economic phenomena and human behavior, which impedes sustainable development goals by pushing pressing socio-ecological challenges to the periphery. In response, we propose a posthumanist practice approach grounded in social practice theory, which aims to provide a more holistic, contextualized, nature-immanent, and materially mediated understanding of human behavior and economic realities. By emphasizing practical learning through knowledgeable doing, relational entanglement, and multisensory interactions, the posthumanist practice approach recognizes economic knowledge to be situated, pluralistic, and shaped by interdependent human/nonhuman relations. This opens up a more ethical and relational way of understanding, learning, and acting that helps to reconnect the social with the natural and to align economics education with the goals of sustainable development. In order to apply a posthumanist onto-epistemological foundation for economics education, we provide guidance by outlining appropriate pedagogical methods, such as diversifying learning environments, embracing community and nature engagement as well as service learning, and revising the role of educators.

**Keywords:** economics education; social practice theory; posthumanism; sustainable development goals



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## 1. Introduction

Economics education has long been dominated by a neoliberal and positivist paradigm that impedes sustainable development goals by promoting a narrow, decontextualized, and hyperrational understanding of human behavior and economic activity guided by individual utility and profit motives [1,2]. This ontological foundation has shaped the way in which economics is taught and has influenced policies that derive from economic knowledge imparted in the classroom, devoid of social considerations and ecological concerns [3–7]. The mainstream economic curriculum still focuses on developing students' rational reasoning skills by applying mathematical models and abstract theories to highly simplified representations of economic phenomena [8,9]. What is lost are the social, embodied, affective, and intertwined aspects of being in the world, which fundamentally steer economic thinking away from inquiries into making the world a 'better' place and towards the pursuit of market efficiency. In recent years, however, there has been growing criticism of this prevailing approach to economics education, with scholars calling for more interdisciplinary, pluralistic, and biophysical perspectives that recognize the complex, entangled nature of economic configurations and the role of human values, affections, and practices in shaping economic outcomes [10–17].

Despite these valuable contributions, there is a lack of a coherent alternative theoretical foundation, coupled with a pedagogical concept, that challenges the current approach

to economics education to reorient it towards addressing pressing socio-ecological challenges [3]. The purpose of this conceptual article is to propose a posthumanist practice approach that addresses this deficiency through an onto-epistemological framework specifically tailored to economics education. By conducting a critical literature review of the status quo of mainstream economics education and drawing on social practice theory as an alternative lens, we aim to transcend the traditional neoliberal and positivist foundations of economics education and to provide a more holistic, contextualized, nature-immanent, and materially mediated understanding of human behavior and economic phenomena. In doing so, we hope to open up new possibilities for teaching and learning in economics that foster a deeper appreciation of co-constitutive material-discursive practices shaped by interwoven relations between humans, nonhumans, and more-than-humans, and unlock potential for transformative change by aligning economics with pressing sustainability issues [18]. Hence, the purpose of this article is twofold. First, we seek to demonstrate how the positivist and neoliberal foundations of economics education promote a narrow and hyper-individualized understanding of the economy, which entails harmful attitudes and behaviors and fails to reflect the complex socio-material realities of the world. Second, we outline an alternative onto-epistemological approach to economics education based on social practice theory, which emphasizes practical learning through knowledgeable doing, relational entanglement, and multisensory interactions. This implies the following three research questions:

- What constitutes the dominant foundation of mainstream economics education and in what ways is it undermining efforts to address pressing socio-environmental challenges?
- How can a posthumanist practice approach, grounded in social practice theory, provide a more relational, nature-immanent, and materially mediated understanding of human behavior and economic phenomena in order to better align economics education with the goals of sustainable development?
- What are the pedagogical implications of applying a posthumanist practice approach to economics education in terms of teaching methods, learning environments, and the role of educators?

Our article is structured as follows. In the second section, we critically examine the current state of mainstream economics and the ontology of economics education, highlighting the negative implications of the prevailing foundation for understanding economic phenomena and the failure to address socio-ecological issues. In Section 3, we introduce social practice theory as a promising alternative framework for economics education, providing a conceptual overview of its key concepts and principles, and discussing its relevance to the field of economics. Section 4 then proposes a practice-based onto-epistemological approach to economics education, detailing how knowledge is created, and how it can be implemented in and beyond the classroom to promote more inclusive, pluralistic, and socially engaged forms of economic understanding and action. Finally, in the last section, we conclude by summarizing the main contributions of our article and outlining the implications of our proposed approach for the future of economic education.

## **2. The Neoliberal and Positivist Foundations of Economics Education and Its Implications**

The proposal for a posthumanist practice approach to economics education is not rooted in a desire for theoretical thought experiments, but rather in the current state of economics teaching. The neoliberal and positivist foundations of economics education indicate a blindness to humanity's embeddedness in nature and represent a significant obstacle to the urgent sustainable transition of the economy. Today's economics courses generally eschew heterodox or pluralist approaches and neglect sustainability-related issues, applying and replicating mainstream theorizing that presents environmental issues as externalities [3,5]. In this way, the economy is continually decoupled from society's challenges in addressing social-ecological issues. Students are not sufficiently equipped to

understand the intrinsic value of nature and the detrimental impact of economic configurations on the Earth system, nor are they equipped with the competencies to participate in critical decision-making on social–ecological issues.

This is due to a prevailing positivist epistemological approach that seeks ‘objective’ knowledge and hermetically separates positive and normative positions in favor of the former, resulting in a methodological monism characterized by an absence of ethical and social considerations [1,2,19,20]. Given the proclaimed ‘value-free’ economics approach (see, e.g., [21]), the pursuit of logical positivism implies a subjective view of value, an (over-)emphasis on demand-side analyses, and a mathematically driven and anti-metaphysical mechanization of economics towards utility through self-interest [1]. This reflects a sharp departure from utilitarianism that dominated early neoclassical economics, in which comparisons of utility served as an inherent means of maximizing collective welfare and addressing social problems [22]. In contrast, logical positivism degenerated utility as a tool for analyzing choice behavior into a description of consumer preferences devoid of ethical considerations [23,24]. This methodological stance, coupled with an epistemological approach of abstract mathematical deduction, reflects key aspects of current economic orthodoxy [1,2,25]. Value judgments are excluded, and interpersonal comparisons of utility are reduced to the Pareto principle, which hampers debates about (global) social justice, since material improvements for one person are only recognized as such if no other person is made worse off [26,27]. In times of excessive resource depletion, material overconsumption, and unsustainable affluence in high-income countries, utility comparisons based on Paretian welfare economics limit the scope of social–ecological policy debates to address poverty or income and wealth inequities. Environmental and social discourses are either excluded from the realm of economics or rejected because of value judgments that contradict a positivist approach prioritizing economic efficiency over wellbeing [28–30]. In this way, interrelational and ethical perspectives are sacrificed to a highly technical accumulation of value-free ‘facts’, which neglects experience and virtue as sources of wisdom and prioritizes individual achievement over intersubjective and interspecies appreciation.

As a result, economics education tends to be guided by a pseudo-neutrality that attempts to separate value and factual judgments, neglecting their entanglement, because value connotations necessarily underlie scientific models and shape thought patterns and interpretations regardless of the particular methodological approach. According to Mankiw [31], “deciding what is good or bad policy is not merely a matter of science. It also involves our views on ethics, religion and political philosophy” (p. 28). Similarly, Reiss [32] shows how even seemingly descriptive economic indicators, such as consumer prices, GDP, or unemployment rates, are subject to value judgments. Notwithstanding debates about the plausibility of positivist economics, Green [5] illustrates that economics education is by no means free of value judgments. In particular, his interviews with economics students reveal that introductory economics courses present economic growth as inevitable for social progress, government intervention as detrimental to market efficiency, consumerism as beneficial to welfare and wellbeing, and self-interest as anthropologically constant and desirable. The narrow ontological and epistemological conception of economics education implies a set of values that are internalized by students. According to the quasi-experiment by Racko [33], key values associated with the teaching of economics comprise hedonism, power values, and individual achievement. This set of values is associated with specific behaviors and attitudes, including opportunism [34], a morality of greed [35], disregard for ethics [6], and dishonesty [36]. Guided by a methodological individualism that aggregates individual behavior to explain collective group action, it implies an image of humanity driven by self-interest that governs both micro- and macroeconomics. This neoclassical and monist description of economic behavior and social interactions, which often ignores climate change issues, continues to permeate all relevant economics textbooks [2,37]. Given the importance of economics for other (management) disciplines and policy debates, the phenomenal world is undeniably influenced by the principles of positivist and neoclassical economics taught in the classroom [33]. It is evident that the

core values of mainstream economics are detrimental to social–ecological pathways; homo economicus as a guiding model is devoid of concern for social equity, climate justice, and nature conservation. Consideration of these issues is rather an obstacle to the egocentric accumulation of power and wealth as the logical end of rational behavior [33,38]. Consequently, there is not only an alienation from nature due to human exceptionalism and the commodification of nature without intrinsic value, but also an obstruction of benevolence towards others and otherings due to an extrinsic orientation of rational economic behavior as a means of maximizing individual utility [39,40]. Correspondingly, economics education is oblivious to encouraging critical thinking as a way of reflecting on conflicting human interests and properties [2]. Although mainstream economics is increasingly challenged by more heterodox and pluralistic approaches being incorporated into curricula, the neoclassical core persists and retains its centrality [1,41].

### 3. Social Practice Theory: Conceptual Overview and Relevance to Economics Education

#### 3.1. Key Concepts and Principles of Social Practice Theory

Broadly defined, social practice theories are part of a range of theoretical approaches that aim to explain and make sense of social phenomena in new ways [42–48]. One of the challenges in discussing and applying social practice theory is its broad interpretive scope, which stems from a lack of epistemological unity [42]. Nevertheless, applying a practice approach has gained momentum and has extended to areas such as organizational strategy [49], entrepreneurship [50], marketing [51], behavioral economics [52], sustainable consumption [53], and responsible management [47]. The various approaches to practice emerged in the twentieth century as part of a ‘culturalist’ movement and are thus rooted in structuralist and phenomenological thinking. All practice approaches emphasize the social in a set of routinized and interdependent behaviors (social practices) rather than in discourses, interactions, or mental activities [43]. Key theorists who developed and advanced theoretical reasoning around social practices include Heidegger [54], Wittgenstein [55], Giddens, Giddens, Giddens [56–58], Bourdieu, Bourdieu [59,60], Latour, Latour, Latour [61–63], Reckwitz [43], and Schatzki [45]. Despite the multiplicity of approaches to social practice theory, Feldman and Orlikowski [48] articulate three shared key assumptions, namely that (1) situated actions are consequential in producing the structural contours of social life, (2) dualisms are rejected as a way of theorizing, and (3) relations are mutually constitutive. The rejection of dichotomies corresponds with a desire to transcend conceptual oppositions between categories, such as mind and body, objective and subjective, structure and agency, individual and society, or freedom and determinism [60]. Thus, a practice approach theorizes the dynamic nature of dualities and seeks to overcome an “objectivist reification” as much as a “subjectivist reduction” [64]. Accordingly, phenomena have a mutual constitution because they exist in relation to each other and are never separated from other phenomena [65,66]. For instance, constitutive structures are not only manifested through the ongoing actions of agents, but these structures also constitute recurrent actions [67]. Consequently, the social order, including structures, institutions, and norms, cannot be decoupled from the role of agency, which creates the social order through actions that are themselves configured by structural conditions. However, social relations are not characterized by equal dynamics of mutual constitution, but by asymmetries, inequities, diverging access to resources, and power dynamics based on domination. Institutionalized social complexes, such as economic configurations, inequities, identity, or social order, are constituted and reproduced by the elements of social practices that constantly interact to shape reality [68]. This way, social practice theory is not a direct description of the social world, but rather a means to capture and illustrate it. Practices are therefore highly contingent and can either reinforce and strengthen existing collective frames as constitutive elements of the social order, or create divergent frames that challenge the status quo and generate alternatives [69]. At this point, it is important to distinguish two main strands of practice theory: a humanist and posthumanist approach to practices.

At the heart of a humanist perspective on practice resides the belief that social life is continually created by people's routinized actions. Social reality is not merely socially constructed—and by no means determined—but rather emerges from social practices that are characterized by a shared practical knowledge and evolves in everyday activities. This reflects the central role of human agency in shaping the social world [48]. Here, knowledge is described as a consequential and ongoing activity exercised in routinized activities and hence, constructed and constituted within social practices [56]. These routinized behaviors that constitute social practices are composed of interrelated elements that can be broadly categorized as bodily activities, mental processes, material entities and their use, and background knowledge [43]. The individual functions as a bodily and mental agent who is characterized by routinized forms of understanding, know-how, emotional feelings, and desires that are necessary elements of social practices. Agents are carriers and simultaneously carry out social practices (ibid). The implicit set of knowledge for making sense of the world and one's own desires is inherent in social practices and as such is highly culturally dependent. This implies that individuals as carriers of social practices and their underlying mental and bodily components are neither autonomous nor extrinsically determined. Rather, social constituencies function as cultural reference groups that constitute, debate, adapt, and mediate competencies that adhere to accepted social practices [68].

Despite significant overlap in underlying assumptions, a posthuman theory of practice questions the centrality of the human as the exclusive source and bearer of meaning and agency. Accordingly, it rejects the view that the material world exists in relation to, but outside of, the sphere of practices that only account for human activity [70]. It aims to transcend the narrow conceptualization of humanist approaches by including nonhumans (tools, technologies, materialities, and the biosphere) and more-than-humans (other living beings) as essential elements of practices. In this way, it seeks to overcome species hierarchies, human exceptionalism, and anthropocentrism by recognizing the entanglement of humans with the environment in which they exist and operate [71]. A shift away from scientific rationality enables a logic of practices that is shaped by an overarching entwinement and constitutive entanglement of humans, non-humans, and the environment in a relational whole that exists a priori to any postulated subject–object separation as described in existential ontology [54]. The mutual constitution of interwoven agencies implies viewing practices as the interplay of various human, more-than-human, and nonhuman elements, such as norms, knowledge, bodies, activities, and phenomena. This interplay results in performative agency through the interactional nature of the elements to affect and be affected [47]. This performative flow of practicing is one of the main differences to a humanist approach to practice which separates humans from the biophysical world in which they are embedded and embodied in by attributing agency to individual actors in a world of passive and immutable matter (ibid). A posthuman practice approach reflects the condition that 'matter matters' [72,73] and recognizes the co-constitution of social practices and material phenomena. Consequently, the focus shifts from the social construction of defined subjects to social production, characterized by an inseparable interplay of the social and the material, from which agency emerges [70].

### 3.2. *Relevance of Social Practice Theory to Economics Education*

A social practice approach is well suited to challenging the status quo of the particular research topic in order to rethink and redesign the ontological and epistemological foundations of the phenomena of interest [47,48,67,74]. By focusing on relational practices that constitute outcomes, social practice theory allows for a revised self-understanding and a redefinition of the relationships among humans, and between humans and the biophysical world that we embody and are embedded in. It transcends a narrow and hyperrational view of human agency and social arrangements in the form of rigid formal rationalization by treating institutional arrangements and social orders as routinized practices of entangled mental, physical, and object-related patterns. Thus, economic behavior and configurations

can be viewed from a different perspective, enabling economics education to move beyond positivist and neoliberal reasoning. The epistemology of practices provides a framework for reconceptualizing knowledge as an activity, shifting the focus from education to educating [70]. While ongoing debates on the role, function, impact, and legitimacy of business and economics education tend to adopt an ontological approach, characterized by asking what education is (for), a practice approach enables a move to an (onto-)epistemological perspective, reflecting on how educating is conducted and what practices constitute education. This may yield a more fruitful debate about specific practices and corresponding patterns of thought that facilitate the reintegration of the economy into the broader social and natural context in which it is embedded. Following a practice approach, the focus shifts to the dynamics of interactions as the basis of situated action between different actors involved in the practical activity of educating. This challenges the transmission of abstract knowledge detached from a practical logic that permeates knowing and acting in practice. Accordingly, it emphasizes the importance of situated communication and embodiment and the entanglement of the physical and material world [42,68,70].

Social practice theory provides a perspective on human behavior and social structures that clearly deviates from the prevailing individualistic and neoliberal reasoning in economics, which describes the social (order) as a product of aggregated individual and subjective interests of independent subjects. In contrast, a practice approach emphasizes that social practices carried out by individuals and shared by collective groups create and reproduce the social order. By recognizing the importance of social practices in shaping economic behavior and outcomes, the teaching of economics can be enriched by cultivating a wide range of social, ecological, cultural, and historical components embedded in social practices. Moreover, the distinction between ‘micro’ and ‘macro’ phenomena, fueled by mathematical abstraction, can be overcome by understanding the underlying mechanisms of the economy and economic behavior as sociomaterial relations that connect and are performed within different elements of practices, including artifacts, social norms and discourses, and technologies. Through these entangled elements, agency emerges as an outcome of evolving associations and material–discourse relations [68,70]. Consequently, educating can be viewed as a process shaped by an interplay of interwoven and inseparable elements of situated practices that form a texture of practices operating within and moving beyond the sphere of education.

#### **4. Towards a Practice-Based Onto-Epistemological Approach to Economics Education**

##### *4.1. Rethinking the Onto-Epistemology of Economics Education through Practice*

As social practice contradicts the view that knowledge can be ‘owned’ or transferred and exchanged through a process of cognitive learning, new approaches to economics education need to be formulated and applied. In attempting to propose a new framework that combines a sound theoretical underpinning and practical applicability, we refrain from distinguishing between the ontology of economics education as an object of knowledge and epistemology as a pedagogical approach to the production of knowledge. In other words, both the objects of knowledge and the methods for knowledge production are constructed through practices of educating [75]. Rather than transmitting knowledge through instruction, learning occurs through participation in social practices, and knowledge is constituted through collective activities situated in practices as generative sources of socially embodied knowledge [76]. Accordingly, learning is not an individual experience of self-development, but rather a dynamic enactment of co-constitutive material-discursive practices shaped by interwoven relations between humans, nonhumans, and more-than-humans. Instead of compartmentalizing and individualizing learning [77], economics education needs to embrace its interdisciplinary and interrelated nature in a more holistic, critically reflexive way to overcome harmful paradigms and practices and to effectively address the multiple challenges of the 21st century. Consequently, an onto-epistemological approach must facilitate sensitivity to the world and decenter the human being as an exceptional entity by

adopting an ethic of interrelation, recoupling the social and the natural, and complementing the cognitive with the affective.

Given the unprecedented rate of ecological degradation and the widespread disregard for social inequities fueled by hyper-individualism and the commodification of the Earth system, the urgency of moving beyond the rational and anthropocentric homo economicus as an ontological leitmotiv to describe who we are becomes clear. Humanity's self-understanding of subjugating the world, which always involves stratifying certain groups (e.g., indigenous people, women, and people of color), stems from a capitalistic humanist worldview that entails violence, oppression, and alienation. Taylor [78] argues instead for an educational imperative that reflects the plurality of interrelationality. Accordingly, humans, nonhumans, and more-than-humans constitute each other and are co-articulated in an intra-action that produces agency through the interconnectedness and interplay of humans and materiality [61,79]. Consequently, the process of educating cannot be separated from other forms of life, because knowledge resides in one part of the world (e.g., humans) only to make itself intelligible to another part of the world (e.g., more-than-humans) [72]. For instance, economic actors cannot be equated with people surrounded by and embedded in collectives, institutions, and social norms. Rather, economic actors can be understood as an interplay of relational components, including humans, biophysical flows and embodiments, artifacts, conventions, and technologies. This interplay, or 'agencement', gives meaning to action and unfolds agency through these sociomaterial relations performed within a practice [75,80,81]. Therefore, an onto-epistemological approach to economics education needs to depart from individual achievement as a form of subjective self-development and recognize that agency resides in the intra-active material process of emergence [82] and cannot be assigned to a separately bodied individual. Understanding an actor as a relational entanglement challenges the current mode of economics education and can replace the current positivist and hyperrational approach devoid of social and ecological concern by creating awareness and sensitivity for the well-being and flourishing of other humans and species as the boundaries between different entities begin to blur.

Delving deeper into the epistemological side of a practice-based approach to economics education, knowing in practice reflects that knowledge is situated in practices and is the result of social norms, discourses, technologies, ideologies, and social narratives. Knowing and doing do not appear separately, but collectively emerge from ongoing intra-action [75]. It follows that educating does not appear as a process of knowledge acquisition, but rather as a collective knowledgeable doing through situated activities that can never be more than knowledge in the making. This is also essential for competence development, which plays an integral role in the academic debate on economics education, e.g., [83]. Competencies adhere to a contingent logic, as knowledgeable doing can be considered competent reasoning [84]. Therefore, collective knowledgeable acting as an agential practice of educating needs to acknowledge and embrace the interplay of practice elements in an intertwined way, without separating certain components from others. In this way, knowing is progressively invented and enacted by human action only in relation to nonhumans and more-than-humans [75,82]. Although human exceptionalism pervades most disciplines, economics complements it with a form of individualism that entails attitudes and behavior patterns that are detrimental to planetary boundaries and social equity. Shifting the dominant pursuit of individual utility maximization towards alternative conceptions of being in the world beyond a narrow market logic is essential to revitalizing economics education. Viewing the self as a relational and embodied emergence and manifestation of the world implies a sense of connectedness and affective interaction that fosters an intrinsic interest in addressing ecological degradation and injustice, and can help direct the economy toward society's pressing problems.

#### *4.2. Implementing a Practice-Based Onto-Epistemological Approach in and beyond the Classroom*

The question remains of how to implement a practice-based onto-epistemological approach in the context of economics education. Because learning cannot be 'done' but only

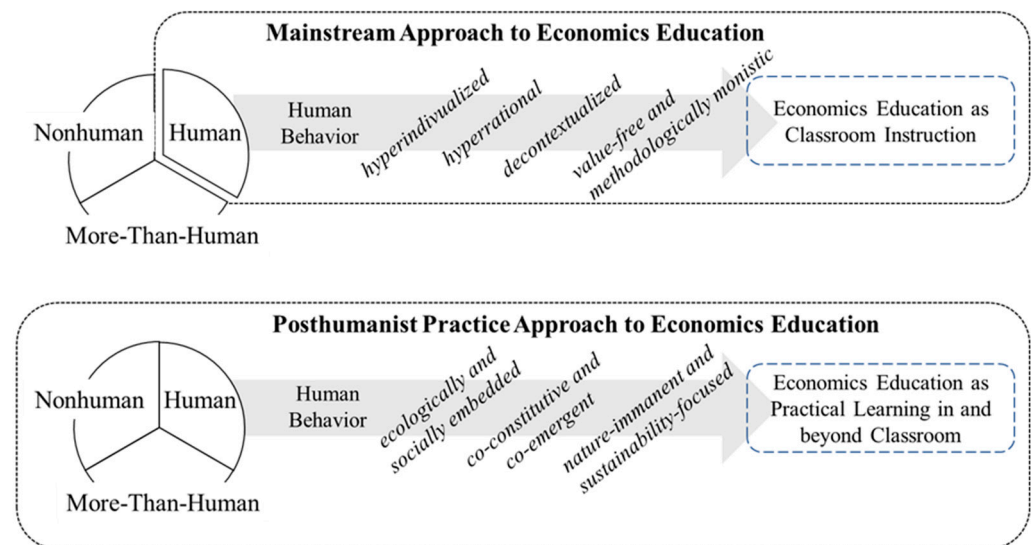
activated and enacted as a participatory social process, it requires a culture of inclusion, multidimensional experimentation, and contingency that values reflexive deliberation, playfulness, recursive realization, artistic creation, collective decision-making, and susceptibility towards others. This also includes reflecting on behaviors, routinized actions, and linguistic patterns that manifest unequal power dynamics and domination through hierarchies that structure the classroom space [82,85]. Designing a learning environment, therefore, requires consideration of how to normatively support situated actions and activities that involve sociomaterial relations between people, and equally importantly, between humans and other forms of life. Peer projects, characterized by the interplay and co-facilitation of materiality, affect, and embodiment, can enable meaning-making and immersion in engagement as well as collaboration and self-realization. As illustrated by Doukanari et al. [86], collaborative teamwork to promote sustainability dynamics in learning environments requires prior training to help students to provide and receive feedback, comprehend the value of teamwork, and create an inclusive and appreciative team structure. To this end, lecturers should devote some time to teamwork training before introducing peer projects to the group. These projects need to draw on relations between different inseparable entities within the biophysical world that they embody and are embedded in. This requires a conception of tasks and activities around a reciprocal and co-constitutive emergence of thinking and acting as a facilitating process to dissolve the body–mind and human–nonhuman dichotomy. Conversely, this implies that the classroom cannot serve as the sole source and nucleus of learning, but rather that grasping, exploring, discovering, and observing need to occur in different social and environmental environments. This includes deep immersion in lived experience through multisensory interactions and co-learning with human and more-than-human elements immanent in practices. The ongoing process of making shaped by the vibrant materiality of the world can only be experienced through partial and situated practices that bear ‘encounter value’, an appreciation of the interconnectedness of all life, and a sense of being in common with others and otherness [79,87].

Because learning reflects a dialectical endeavor of integral pluralism that combines practical action with theoretical reasoning, off-campus and community projects, as well as service learning, can be key ingredients in facilitating reflection-in-action and real-world problem-solving [88,89]. Guided by sociomaterial relations, such projects should be oriented towards the common good, centered on affective and embodied socio-natural encounters that may alter mentalities about one’s own and humanity’s co-constitution and role in shaping a more desirable future. Encountering and collaborating with others and different entities can create a sense of belonging and unity, and can strengthen the view of nonhumans and more-than-humans as a source of wisdom. Cognition is thus complemented by the embodied realms of affection and feelings, not in addition and incrementally, but as inseparable accompaniments [79]. It is crucial to recognize the important role of emotions in the context of economics education, as Bartunek and Ren [90] have shown for management students. Combining intellectual stimulation with the emotional dimensions of experiencing can increase engagement and well-being, creating a psychologically safe learning space that contributes to meaningfulness and relevance [90,91]. Practical doing and experimenting with different solutions are meaningful and communicable when infused with ideas and concepts that turn experience into knowledge [92]. This calls for economics education to move beyond a sole focus on written assignments and pre-defined and abstract-mathematized case studies to apply a more spatio-material and nature-immanent ecology of learning through creating, building, and producing different things across a wide range of topics, spaces, and matter. The prioritized focus on openness to the world, passion, wonder, and appreciation is not intended to obscure the importance of a technical understanding of economic configurations. Indeed, we argue that understanding economic complexity necessarily involves co-emergent sociomaterial relations that are rooted in the economy as a materially mediated system.



Another central facet of a practice-based pedagogical approach is to reflect on and ultimately overcome the gendered, racialized, and classed power relations that determine what is worth knowing [93] and can limit the impetus for sustainability education [94]. The decoupling of economics from the Earth system and the ethics of social justice pursued by powerful actors is reproduced in the classroom and fed back into practice. Human beings should be seen not only as objectified economic actors, according to a logic of late-capitalist exploitation of human capital, but as embodiments of the social and natural world that is constituted by an intertwined web of entanglements and power structures. An increasingly important component of this entanglement is digital technologies that directly relate to our ways of being in the world and function as mediators of human–world interactions [48,77]. This seems all the more urgent given the rapid and widespread accessibility of powerful AI-generated chatbots, which are already having a profound impact on the process of educating. Promoting an embodied and multisensory form of learning seems challenging in an increasingly digitalized learning environment. However, there are also potentials that are reflected in the inseparable and reciprocal interaction of humans and technologies, in the sense that the latter function as an extension and expression of the body, as humans cannot be separated from (digital) tools as an essential aspect of (human) embodiment. Consequently, didactical approaches to physical co-presence and virtual presence need to focus on the affective, bodily, and interactive dynamics of knowledgeable doing embedded in and performed through digital technologies that are constitutive of students' economic understanding [77].

An interdependent and technology-enabled learning environment must encourage a view of the self in relation to others, which requires a pedagogy of curiosity and connectedness to openly acknowledge and embrace the needs, experiences, and feelings of others as unique and simultaneously related to one's own condition and constitution. To promote co-created sense-making, Hinz et al. [95] suggest rituals of mindful listening in the form of real plays in which students equally and alternately engage in the 'doing' of listening to provide insight into their lived experiences, with the aim of mutual understanding, empowerment, and the elimination of social hierarchies. These empathetic and benevolent encounters should be extended beyond the classroom to other members of the community, as well as nonhumans to embrace differences and recognize interdependence in the collective pursuit of wellbeing and flourishing. These practices of connectedness and co-constitution challenge the traditional power dynamic between educators and students and suggest a revised role for the lecturer as a guiding facilitator of dislocated and transpersonal inquiry rather than a purveyor and explicator of knowledge. This is in line with Doukanari et al. [86], who argue that pedagogical mentors are important figures in cultivating a team culture with shared values, a coherent mission, and a collaborative team spirit. Overall, economic reasoning provides the basis for detrimental practices that manifest and reproduce inequities, social hierarchies, and ecological degradation. Thus, a posthumanist practice approach to economics education suggests a novel set of knowledgeable activities characterized by entanglement, co-constitution, and human–nature connection that can contribute to a new understanding of the self as a co-emergent element and of economics as an open-ended and interwoven inquiry into how to make the world a 'better' place in terms of the totality of intertwined material life (see Figure 1).



**Figure 1.** Contrasting mainstream and posthumanist approaches to economics education. This figure contrasts the dominant mainstream approach to economics education with the proposed posthumanist practice approach. The former promotes an individualized, rationalistic, and decontextualized understanding of economics, while the latter recognizes human behavior and economic phenomena as ecologically and socially embedded, co-constitutive and co-emergent, and entangled. By proposing a posthumanist practice approach, this paper contributes an alternative onto-epistemological foundation for economics education aimed at cultivating nature-immanent and sustainability-oriented economic thinking and ultimately aligning economics education with the goals of sustainable development.

## 5. Concluding Remarks

In this conceptual article, we have proposed a posthumanist approach to practice that seeks to overcome the positivist, hyperrational, and individualized reasoning of mainstream economics that continues to permeate curricula and impede sustainable development goals. Drawing on social practice theory, we have offered a more holistic and critically reflexive approach that transcends human exceptionalism and foregrounds the complex interplay of various human and nonhuman elements of practices through which objects of knowledge and methods of generating that knowledge are constructed. In this way, we have departed from the view that knowledge can be ‘owned’ or transferred, but is rather constituted through collective activities and experiences situated in practices. Consequently, we have emphasized that learning cannot occur individually, but only collectively through the enactment of co-constitutive practices. In facilitating sensitivity to being in the world, we have argued for an ethics of mutual relation and reciprocity to reconnect the social and the natural, and to complement the cognitive with the affective.

Our practice-based onto-epistemological approach has several important implications for economics education. First, it highlights the need for a more nuanced appreciation of the multiple ways in which people engage with economic systems through co-emergent sociomaterial relations and the role of social practices in mediating these engagements. This shift in perspective opens up new possibilities for interdisciplinary inquiry and the development of innovative pedagogies that promote critical thinking, collaboration, benevolence, and connectedness. For instance, we argue for moving beyond the classroom as the sole source of learning and embracing community and nature engagement and service learning to comprehend sociomaterial relations and facilitate real-world problem-solving by combining intellectual stimulation with emotional dimensions to enhance meaningfulness, engagement, and psychological safety. In order to overcome power relations and embrace diversity and interdependence, we propose to revise the role of educators as guiding facilitators of open-ended inquiry.

Second, the constitutive and co-emergent entanglement of humans, nonhumans, and more-than-humans emphasizes the situated and contingent nature of economic knowledge in social practices. This transforms the role of economics into a discipline characterized by a qualitative and interwoven exploration of how collective agency shapes economic outcomes. The focus on collective agency represents a sharp departure from the positivist and abstract reasoning of mainstream economics, and can inspire engagement with real-world economic issues aimed at a shared responsibility and commitment to social and environmental justice. Social practice theory as a foundation for economics education shifts attention from individual utility to practices that either impede social progress through inequities and unequal power relations, or enhance the well-being of all life through effective responses to social–ecological problems. Rather than simply incorporating heterodox perspectives, this pluralist orientation can contribute to a more democratic, participatory, and inclusive economics education, where different voices and experiences are valued and respected.

Third, examining economic phenomena and economic behavior through the lens of social practices challenges the dominant focus on individual responsibility and market-based solutions. Students can cultivate skills that enable them to meaningfully engage with policy issues by critically evaluating the theories and conceptual frameworks they encounter through knowledgeable doing and embodied experience. By foregrounding the role of social practices in shaping economic outcomes, we draw attention to the ways in which individuals and groups can collaborate to challenge and transform dominant economic paradigms in order to create more equitable, sustainable, and just economic systems.

Future research is required to empirically examine whether aspects of a posthumanist practice approach are already being applied in economics education, and evaluate how transformative their potential impact on students' attitudes and behaviors is. In addition, further empirical and conceptual work is needed to explore in more depth how sustainability challenges can be addressed through economics education by aligning learning objectives, curricula, and assessments with the goals of sustainable development.

In conclusion, our proposed posthumanist practice approach to economics education offers a promising alternative to the neoliberal and positivist foundations that have long dominated the field. By rethinking the onto-epistemology of economics education through the lens of social practice theory, we can foster more inclusive, pluralistic, embodied, and socio-environmentally engaged forms of economic understanding and action. Implementing this approach in and beyond the classroom will require new methods, multi-stakeholder collaboration, and a commitment to challenging the status quo, but we believe that the potential rewards—in terms of improved educational outcomes, policy relevance, and socio-environmental impact—are well worth the effort.

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