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The Generative Paradigm of Co-Emergent Consciousness: Ontological Crisis and Renewal in the Age of AIGC

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Abstract: This article examines the profound philosophical shift induced by the integration of AIGC into education. It argues that generative feedback mechanisms unsettle the long-standing human-centered model of learning, transforming consciousness from an internal attribute of the individual into a distributed network spanning teachers, students, and algorithms. Through cognitive, ontological, and subject-oriented analyses, the paper identifies structural ruptures involving the externalization of thought, the dissipative reorganization of educational order, and the relational reconfiguration of subjectivity. It further claims that education no longer operates outside generative processes; rather, it attains its very being within them as an ecology of co-emergent consciousness. Within this paradigm, ethics shifts from external regulation to the orchestration of generative conditions, while responsibility becomes distributed across multiple agents. The article concludes that the central question of the AIGC era moves from "What is learning?" to "Who qualifies as a learner?", calling for a renewed understanding of freedom, responsibility, and subjectivity in generative educational environments.

Keywords: AIGC; Externalized consciousness; Generative education; Posthuman subjectivity; Educational ontology

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1. The fracture of educational being—When consciousness is no longer "Mine"

For centuries, educational philosophy has rested on a Cartesian premise: consciousness is owned by the individual, and learning unfolds as the intentional extension of the autonomous self [1]. Yet the advent of AIGC unsettles this very premise. Through recursive feedback, generative models penetrate the cognitive process, pushing thought beyond the boundaries of human, technological, and environmental agents, and reorganizing it through their interaction [2]. Learning no longer follows a linear trajectory from teacher to student; it becomes entangled in a generative relation shaped jointly by multiple human and non-human agents [3]. Education now confronts an unforeseen condition: non-human agents have entered the very

constitution of consciousness.

This transformation alters far more than instructional technique. Algorithmic perturbation reorganizes the relation between subject and knowledge, displacing the very logics of subjectivity, epistemicity, and educational being. Knowledge no longer coheres around a single subject but emerges through multi-agent collaboration; learning can no longer be fully steered by intention; and education shifts from a stable order to an open, fluid ecology of generation.

In light of this historical shift, the article advances three core claims. First, the structural crisis of contemporary education stems from the externalization of consciousness, which unsettles the human-centered assumption of learning. Second, AIGC transforms learning from an inward, self-initiated act into a generative event involving multiple human and non-human agents. The third and most consequential claim is that education exists within, rather than outside, the generative process. It functions less as the cultivation of consciousness than as the habitat in which consciousness comes into being. Finally, the paper considers how the meaning, responsibility, and ethical structure of education must be reconceived once algorithms participate substantively in the networks through which consciousness is formed.

2. Theoretical lineage: Three ruptures

2.1. The cognitive rupture: Externalized thought and the extended mind

When an external medium reliably performs a cognitive function, it ceases to be a mere aid and becomes part of the cognitive system itself. The implication is clear: the boundaries of thought are not physiological but extendable, capable of projecting beyond the individual mind.

AIGC renders this idea in a more radical, practical form. Generative models do not merely supply information; through iterative cycles of input and feedback, they co-organize cognitive structures with the learner. Thought is reordered through algorithmic deviation, resonance, and correction, shifting learning away from an internally contained process toward a collaborative cognitive event [4]. Consciousness thus assumes a new position: it becomes a node within an open system rather than an intrinsic property of the individual subject.

2.2. The ontological rupture: Dissipative order and emergence

Prigogine's theory of dissipative structures holds that an open system, when driven far from equilibrium, may generate new forms of order [5]. Stability is not the outcome of control but a transient configuration arising within continual fluctuations. Order and disorder are not opposites; together they drive the dynamics of emergence.

AIGC introduces a similar dynamic into the classroom. Algorithmic error, generative contingency, and structural uncertainty disrupt the linear logic of instruction. Learners reorganize their knowledge through interpreting and negotiating these outputs, while the teacher's role shifts from maintaining order to orchestrating the conditions of generation. This marks an ontological displacement in educational practice: rather than reproducing established knowledge, education seeks points of emergence amid fluctuation and generativity.

2.3. The subjective rupture: Posthuman co-being and relational subjectivity

In Braidotti's posthuman framework, the subject is not a self-sufficient entity but a relational configuration

continuously assembled across organisms, technologies, and environments [6]. Subjectivity rests not on autonomy but on the modes through which it is generated within relational networks. Heidegger's notion of Mitsein reinforces this view, holding that existence is always co-constituted with others [7]. The arrival of AIGC renders these theories tangible within educational practice. Teachers, students, and algorithms form a distributed network of consciousness in which meaning emerges through cycles of prompting, generation, and revision. Learning no longer appears as an internal cognitive act but as a generative event unfolding within a relational assemblage. In this process, the very identity of the "learner" is continuously rewritten—not as an autonomous subject, but as a shifting node within the system whose role changes with the dynamics of generation.

3. Philosophical argumentation

3.1. The necessity of cognitive externalization

A historical view of media shows that human thinking has always depended on external structures: language, writing, and tools are not supplements but constitutive components of cognition itself[8]. Stiegler likewise argues that technology functions as a form of "exteriorized memory," binding consciousness to a continuous circuit between the internal and the external[9]. Without such external supports, thought cannot sustain its own continuity. Cognitive externalization is therefore not a technological anomaly but a fundamental condition for the emergence of consciousness.

In the context of AIGC, this condition becomes even more pronounced. Generative models do not merely extend memory; through cycles of error and correction, they intervene directly in the formation of meaning [10]. A learner's path of understanding is no longer shaped solely by internal processing but gradually constructed through reciprocal interaction with the algorithm. Cognition thus becomes a cross-subject, cross-media co-performance in which the central task is not the absorption of external knowledge but the collaborative organization of cognitive structures with the generative system. Externalization is therefore essential to this mechanism.

3.2. The generative logic of co-emergent consciousness

AIGC's deeper impact lies not in improved technical performance but in its entry into thought as a "teacher in otherness" [11]. Algorithmic generation does not aim to replicate but to introduce probabilistic deviations that interrupt the learner's habitual chains of thought, forcing consciousness to reorganize itself through the negotiation of difference. Deleuze's claim that "difference is generative" becomes palpable here: meaning emerges not from repetition but from the tensions produced by deviation [12]. As this structure operates continuously, learning is no longer merely a "cognitive event." The input, generation, and revision among teachers, students, and algorithms constantly form a certain resonance of consciousness, making the production of meaning a product of multi-agent relationships. Consciousness thus breaks free from the boundaries of the internal subject and presents itself as a dynamic activity distributed within the human-machine system. The essence of learning also transforms accordingly: it no longer ends with the possession of knowledge but unfolds itself in maintaining the continuity of generation. Difference becomes the source of meaning, and resonance constitutes the form of the subject—this is the generative logic of conscious symbiosis.

3.3. Reflective loop: The paradox of generation

A noticeable paradox lies inherent in the generative mechanism. When the formation of meaning relies on algorithmic feedback, if the preset model parameters excessively influence the generative path, will the learner's freedom be correspondingly constrained? Generation seemingly brings openness, yet it may inadvertently lead thinking into a cycle bounded by probabilistic limits, confining creativity within a predictable space [13]. In this context, "freedom" needs to be redefined. It no longer signifies breaking away from external constraints, but rather points to the ability to understand, engage with, and navigate the generative mechanism. While using generative systems, learners must maintain reflective capacities to identify model biases and discern the sources of differences, ensuring that algorithmic structures do not fully dictate the formation of meaning. Consequently, the mission of education has transformed: it no longer merely imparts knowledge, but fosters reflectivity within the generative loop, enabling learners to retain judgment, maintain critical distance, and preserve the capacity to embrace the unknown.

AIGC has not diminished human freedom; instead, it has redirected freedom toward a new form—the ability to understand generation, intervene in it, and shape oneself within its framework. Reflection is no longer an isolated contemplation divorced from technology, but a means of sustaining agency within the generative network. Education thus emerges as a reflective practice, granting subjects a new space for action within the symbiotic human-machine system.

4. Ethics and practice: Relational emergence and responsibility ecology

With the integration of AIGC into classrooms, ethics no longer manifests as an "external norm" but directly constitutes the operational condition of teaching within the generative process. Correspondingly, the role of teachers has shifted: from controlling behaviors to mediating relationships; ethical judgment has also moved from subjective will to the balancing mechanism of the generative network. To grasp this transformation, it is essential to simultaneously address two dimensions: "relational emergence" and "responsibility ecology."

In a practical AIGC-supported teaching session, a student raised a question in response to the unexpected output generated by the algorithm: "Who exactly is the creator of this work?" The teacher also recognized that they could no longer act as the ultimate arbiter of meaning, but only maintain tension and regulate feedback between learners and the algorithm to facilitate the formation of meaning. The classroom thus presents itself as a dynamically evolving open system: meaning is not pre-determined but gradually emerges through interactions among multiple agents. Consequently, the role of ethics has transformed from external discipline to an internal pillar of the generative order.

4.1. Ethics of relational emergence: From norms to the mobilization of generative conditions

Traditional educational ethics is built on subjective will and stable relationships, with relatively fixed positions assigned to teachers, students, and knowledge. Ethical issues thus primarily revolve around the division of power and responsibilities[14].However, when generative mechanisms participate in the constitution of meaning, traditional approaches to responsibility allocation can hardly accommodate new scenarios. The formation of meaning does not rely on the judgment of a single agent, but emerges from the complex collaboration between input, feedback, and revision. Ethics must therefore shift toward a framework of "relational emergence" [15].

In generative environments, the teacher's primary ethical task is to maintain a workable balance between difference and co-emergence. Algorithmic deviations may redirect interpretive trajectories, and students' inputs may introduce new lines of meaning. The teacher's responsibility is therefore not to enforce correctness but to keep the system open while preventing the generative process from collapsing into confusion or illusion. Ethical judgment shifts from identifying a single right answer to orchestrating the conditions under which a sustainable structure of co-being can emerge.

For students, ethical responsibility takes the form of conscious participation in the generative process. Although AIGC outputs are highly unpredictable, the selection of prompts, the revision of feedback, and the interpretation of emerging meanings all require active engagement. Students cease to be passive recipients of knowledge and become operative agents within the generative network; their responsibility arises from relational collaboration rather than isolated autonomy. The ethics of relational generation is thus not an external prescription but an order that arises immanently from the workings of the generative system itself.

4.2. Responsibility as ecology: The emergence of distributed accountability

Within traditional educational frameworks, responsibility is allocated by subject: teachers are accountable for instruction, students for their actions, and technology is treated as a neutral medium. In a generative human–machine assemblage, however, meaning itself arises collaboratively, requiring responsibility to be reorganized as a distributed ecology. The teacher's role shifts from controlling outcomes to explicating generative mechanisms, helping learners locate the sources of deviation and maintain judgment under conditions of uncertainty. Transparency regarding how generation occurs thus becomes integral to the teacher's task.

Students, likewise, must assume responsibility for the interpretive meanings of generative outputs. Algorithms cannot replace judgment; learners must discern significance within divergent results and understand how their inputs interact with model architectures to shape what is produced. Responsibility is no longer passive reception but a participatory mode of understanding. Technical designers also enter this ecology: training data, model architecture, and parameter design establish the boundaries of what can be generated, thereby shaping the educational landscape itself. Generative models are not value-neutral; their construction determines the horizons of educational possibility. Designers must therefore bear institutional responsibility for ensuring transparency, interpretability, and ethical alignment.

In this distributed configuration, responsibility shifts from individual attribution to multi-agent collaboration: teachers articulate mechanisms, students exercise interpretive judgment, and designers define the generative boundaries. Together they sustain the order of the generative system. Under the structural transformation introduced by AIGC, ethics moves from adjudicating behavior to governing generative conditions, and responsibility evolves into a relational–ecological formation. This transformation lays the groundwork for the subsequent reconceptualization of educational being.

5. Conclusion

The advent of AIGC confronts education with a form of consciousness that is no longer entirely its own. It reshapes not only how knowledge is produced but also compels education to revisit its ontological foundations. The central claim advanced in this article is that education does not stand outside the generative process; it comes into being through it. Learning no longer originates in internal intention but emerges

through the reciprocal interplay of algorithms, teachers, and learners.Under this shift, cognition is no longer bounded by the individual mind but becomes a fluid configuration forged through multi-agent collaboration. Subjectivity loses its grounding in autonomous selfhood and takes shape relationally. Educational order can no longer rely on linear control; it persists through the interplay of perturbation, difference, and feedback. Generation is not a means of education but its operating ontology. Education thereby appears not as a system of transmission but as a living ecology of consciousness.

Yet generativity does not automatically guarantee freedom. The probabilistic structures, training biases, and feedback mechanisms that underpin generative models shape learning trajectories in subtle ways, demanding vigilance in balancing openness with reflexivity. Freedom must thus be redefined—not as withdrawal from technology, but as the capacity to understand, intervene in, and modulate generative processes. Ethics likewise shifts from external regulation to a form of co-production enacted across interacting agents.

Consequently, the focus of future educational philosophy will likely move from questions of knowledge transmission to inquiries into how consciousness comes to co-emerge among diverse agents. The issue will no longer be simply what learning is, but rather: Who counts as a learner when algorithms participate substantively in the production of meaning? In the generative era, education becomes a site of co-emergent consciousness—continually reshaping its significance in response to uncertainty, interaction, and ongoing transformation.

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