



# The Impact of Generative Artificial Intelligence on the Structure of Modern Education: The Decentralization of Epistemic Authority and the Reconfiguration of Teacher–Student Power Relations

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**Abstract.** The rise of generative artificial intelligence (Generative AI) is reshaping the power structure of modern education. Its development and widespread application foreground two central issues: first, the decentralization of epistemic authority—the traditional monopoly of knowledge held by teachers and institutions is being destabilized; second, the reconfiguration of teacher–student power relations—the democratization of information access fundamentally challenges the authority of teachers while redefining student agency. Drawing on Foucault's theory of power/knowledge and Freire's critical pedagogy, this paper systematically examines how generative AI disrupts the structure of modern education and proposes pathways for reconstructing educational ethics in the post-AI era.

**Keywords:** Generative Artificial Intelligence; Educational Structure; Epistemic Authority; Teacher–Student Relationship; Power Reconfiguration; Critical Pedagogy

## 1 Introduction: A Quiet Revolution of Power

The rise of generative artificial intelligence at the end of 2022, by the launch of Chat GPT, represented a significant development of contemporary education. Its rapid development has not merely introduced a new technological tool into pedagogical settings; rather, it has revealed the vulnerabilities of a set of assumptions that have historically shaped contemporary teaching methods. When students are able to produce lucid academic prose, receive instant clarifications, and utilize highly responsive forms of textual support without direct teacher guidance, the fundamental structure of teaching, learning, and evaluation are rendered newly debatable.

Interpreting this advancement only as an instance of academic dishonesty or technological upheaval is to overlook its wider implications. The deeper challenge presented by generative AI is its ability to disturb the knowledge and teaching structures of contemporary education. Specifically, it challenges the historically established con-

centration of epistemic power within educational institutions and the unequal power dynamics through which knowledge has typically been communicated, legitimized, and assessed.

In the contemporary educational framework, the teacher is recognized not only as a pedagogical mentor, but also as an authentic keeper of knowledge. It relies not just on expertise or professional training, but also on an institutional structure where access to socially recognized knowledge is distributed unequally. The educational relationship has thus been grounded partly on a structural imbalance: students are seen as needing guidance, whereas teachers and institutions hold the role of defining what constitutes valid knowledge, the methods for its acquisition, and the criteria for its evaluation.

Generative AI upon this setup at the structural level rather than just at the technical level. On one side, its importance is broadening informational access, on the other side it is altering the circumstances under which knowledge is generated, shared, and validated. It allows students to interact with a non-human system that can produce academically valid discourse, and generative AI blurs traditional lines between expertise and support, authorship and facilitation as well as learning and creation. Finally, the educational sector faces practical regulatory issues and a profound crisis regarding the nature of authority, the credibility of assessment, and the ethical implications of teaching itself.

This thesis put forward the idea that the emergence of generative AI must be viewed as a fundamental shift in the dynamics of power, knowledge, and education. Utilizing the analytical frameworks constructed by Michel Foucault and Paulo Freire, it explores how generative AI undermines traditional forms of knowledge authority while fostering new types of reliance, control, and disparity. The primary focus of this study is not on whether AI should be embraced or dismissed in education strictly as a tool, but on how its arrival necessitates a reexamination of the ethical and political that underpins the educational practice. This thesis particularly explores: what structural dilemmas does generative AI introduce to educational ethics, and how might it alter the power dynamics between students and teachers.

## **2 Power, Knowledge, and Education**

In his genealogical analysis of modern institutions, Michel Foucault argues that power and knowledge are not separate domains but mutually constitutive forces. As he writes, “We should admit rather that power produces knowledge ... that power and knowledge directly imply one another; that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations” [1]. In the realm of education, this insights shows that teaching is never a neutral process of conveying information. Educators hold the institutional power to determine what is considered valid knowledge; curriculum development acts as a method of power, and evaluation systems operate as regulatory tools through which learners are categorized, standardized, and evaluated. The authenticity of knowledge is therefore validated by institutions and facilitated by ed-

ucators, while learners are regarded as individuals who are anticipated to absorb, internalize, and replicate approved types of comprehension.

The emergence of generative AI introduces a significant external disruption to this power/knowledge nexus. When a non-human, decentralized system becomes capable of producing knowledge claims and discursive forms that align with academic conventions, the institution's exclusive authority to authorize knowledge is fundamentally unsettled. In this sense, generative AI is not merely a new instructional tool; it challenges the epistemic hierarchy through which educational institutions have traditionally maintained control over what is recognized as valid knowledge.

Paulo Freire's critique of the "banking concept of education" offers a complementary framework for understanding this tension. Freire argues that, in traditional education, "knowledge is a gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing" [2]. He further observes that "The teacher talks about reality as if it were motionless, static, compartmentalized, and predictable" [3]. Freire views this educational model as an institutionalized framework of control rather than a neutral teaching method, where teachers are seen as the holders and conveyors of knowledge, and students are merely passive recipients tasked with storing and reproducing what has been imparted to them. This type of framework stifles critical awareness and aids in the perpetuation of prevailing social hierarchies over generations.

In Contrast to this model, Freire advocates "problem-posing education," in which teachers and students become co-investigators in the production of knowledge [4]. In one regard, generative AI seems to fulfill aspects of this vision by altering the unidirectional flow of knowledge and allowing students to engage in inquiry more independently. However, Freire's educational initiative focuses on fostering critical consciousness instead of reliance on a new authority. The key contradiction is that although generative AI could diminish the dominance of institutional knowledge, it might also promote a new dependence on algorithmic authority.

### **3 Technical Characteristics of Generative AI and Its Integration into Education**

Generative AI, particularly in the form of large language models (LLMs) such as GPT-4 and Gemini, is trained on massive corpora of text and generates outputs probabilistically on the basis of contextual prediction rather than simple information retrieval [5]. Unlike earlier rule-based educational technologies, LLMs are capable of producing extended, contextually coherent discourse across virtually every academic domain, a capability that fundamentally distinguishes them from prior generations of instructional tools [6]. In educational settings, such systems are increasingly used for learning support, content production, assessment feedback, and even curriculum-related tasks, suggesting that AI is no longer external to education but is becoming embedded within multiple stages of the pedagogical process [7]. Empirical studies conducted since 2023 have documented a rapid and widespread uptake of generative AI tools among both students and educators across higher education institutions globally,

with usage patterns ranging from essay drafting and exam preparation to research synthesis and language learning [8].

Nonetheless, this production logic is fundamentally distinct from the creation of human knowledge. The understanding produced by AI lacks the experiential foundation of real-life experience, the personal grounding of a values-oriented perspective, and any true ability for discernment amid uncertain situations. Yet, the seamless fluency and seeming expertise of its outputs often mask these crucial shortcomings. Recent scholarship has drawn particular attention to the risks of epistemic over reliance, whereby students increasingly treat AI-generated content as authoritative without subjecting it to critical scrutiny—a tendency that risks atrophying the very evaluative capacities that education is intended to cultivate [9].

Furthermore, conventional educational technology studies have long presupposed the instrumental neutrality of technology—treating it as a transparent medium in the service of pre-established educational objectives, one that carries no value commitments of its own and does not intervene in the processes through which knowledge is produced [10]. The emergence of generative AI, however, renders this presupposition untenable. Bruno Latour's Actor-Network Theory positions generative AI as a non-human actor within the educational field—a concept native to ANT, designating non-human entities that actively participate in the construction of networks and shape the behavioral trajectories of other actors [11]. Within this framework, generative AI does not passively relay pre-existing knowledge; rather, through its algorithmic logic, it actively participates in shaping the very form that knowledge takes. The ways in which it selects, organizes, and presents information constitute a substantive intervention in cognitive pathways, shaping both the modes through which teachers and students come to understand the world and the boundaries of what can be understood.

More significantly, this intervention reconfigures the agentic relations among actors within the educational network: the epistemic authority of the teacher, the learning trajectories of students, and the organizational logic of curriculum content are all quietly being reconstructed through sustained interaction with AI. The processes of knowledge production in which generative AI participates are not value-neutral acts of information processing; they constitute a new mechanism of power. The questions of whose knowledge is generated, whose voices are silenced, and which epistemologies are tacitly recognized as legitimate are all embedded within the design logic and training data of AI systems. As Bender et al. have warned, the statistical patterns encoded in large language models inevitably reflect the cultural assumptions, historical biases, and structural inequalities present in their training data [5], a concern that has been further substantiated by more recent critical evaluations of the sociotechnical risks embedded in deployed generative AI systems.

The entry of this non-human actor transforms what was originally a binary relationship between teacher and student into a more complex diacritic structure, one that extends into a composite network of “person–technology–institution.” Navigating this reconfigured network demands not only new pedagogical strategies but also new frameworks of institutional governance and ethical accountability [12].

## 4 The Decentralization of Epistemic Authority

Generative AI carries considerable potential for democratizing access to knowledge. In principle, any learner—regardless of educational background, geographic location, or socioeconomic circumstance—can access highly personalized explanations and guidance through AI-powered tools [12]. This prospect holds significant implications for educational equity, at least in theory. Recent large-scale surveys conducted across multiple national contexts confirm that students from under-resourced educational backgrounds report disproportionately high reliance on generative AI as a substitute for institutional support, suggesting that AI is already functioning, in practice, as an informal equalizer of access—though one operating entirely outside institutional oversight [13]. However, scholars have cautioned that such potential depends heavily on conditions of digital access, and that without deliberate intervention, AI may reinforce rather than redress existing educational inequalities [14]. The so-called “AI divide”—the gap between those who possess the digital literacy to critically and strategically engage with AI tools and those who do not—threatens to introduce a new axis of educational stratification that maps onto, and potentially deepens, pre-existing socioeconomic hierarchies.

This process of democratization also brings the danger of fragmentation. AI-generated knowledge frequently lacks a cohesive epistemological structure; it usually offers discrete answers to particular questions instead of aiding in the formation of an integrated body of knowledge. As students encounter vast quantities of disjointed information, they might forfeit the chance to form organized thought processes typically fostered by teachers’ guidance. Empirical research has begun to document this concern: students who habitually outsource complex reasoning tasks to AI systems demonstrate measurably reduced performance in tasks requiring sustained analytical argumentation and the integration of knowledge across disciplinary boundaries [15].

Moreover, generative AI is susceptible to what are known as “hallucinations”—the creation of factually inaccurate information expressed in very assertive language. This technical feature leads to a significant ethical issue in education: when knowledge that seems reliable may actually be incorrect, how can confidence in knowledge be restored? On a more profound level, the information generated by AI is not devoid of value. Training data biases, the cultural backgrounds of model creators, and commercial interests all influence the AI-driven knowledge production process, quietly reinforcing specific ideologies and power dynamics. This situation imposes new expectations on educators and students alike, necessitating a heightened ability for critical interaction with knowledge compared to the past.

## 5 The Reconfiguration of Teacher–Student Power Relations

The traditional teacher-student relationship is characterized by a clearly stratified power structure. Teachers possess epistemic authority, the power to evaluate, and disciplinary authority over students, exercised through mechanisms of examination,

hierarchical observation, and the normalization of conduct [1]. Students, in turn, are seen as individuals who accept, assimilate, and are evaluated according to officially approved standards of knowledge. Scholars working within the ethics of care tradition have argued that the teacher-student relationship also carries significant ethical dimensions of responsibility, guidance, and genuine concern for the student's development [16]. Nonetheless, the underlying imbalance of power continues to be a key characteristic of this relationship.

This framework significantly influences all aspects of educational engagement: who is permitted to ask questions, the ways in which questions can be asked, and what types of responses are acknowledged as correct—these all represent tangible manifestations of power dynamics.

Generative AI offers students unique tools for autonomy: it boosts cognitive freedom, reinforces the ability to question authority, and facilitates individualized learning paths. This type of empowerment has a liberating aspect, but it also brings new dangers. An over dependence on AI could undermine true cognitive independence instead of fostering it, replacing reliance on the teacher with dependence on the algorithm. For educators, the emergence of generative AI has triggered a significant crisis in professional identity. As AI can partially take on the role of knowledge transmission, the issue of what defines the unique and indispensable value of the teacher becomes pressing.

This question strikes at the very core of teacher professional identity. Educational researchers have widely observed that the teacher's role is undergoing a transition from that of the “sage on the stage” to the “guide on the side” [17], the rise of generative AI has greatly increased the need for this change. The unique and essential worth of the educator is increasingly recognized in the following abilities: fostering emotional bonds and compassion, applying moral discernment in intricate and unclear circumstances, promoting critical discussions, and deriving meaning from knowledge—unlike simply delivering information. However, this change requires a completely different array of professional skills and inherently entails extensive teacher re-training and a fundamental restructuring of the profession.

In the age of generative AI, the connection between teachers and students has experienced significant transformation. However, this change has not removed the power imbalances that define the educational sector; instead, it has created new types of inequality. A new type of cognitive stratification is developing between students who can critically and reflectively engage with AI tools and those who cannot. Algorithms have created new and unseen forms of control. Educators are increasingly vying with AI for knowledge-based credibility. These tensions are not random aspects of the present situation; they represent a new and uniquely modern arrangement of power.

## 6 Conclusion

The changes in education driven by generative AI fundamentally involve a redistribution of power: who defines knowledge, who evaluates it, and which knowledge is acknowledged as legitimate. It holds both liberating possibilities—the interruption of knowledge monopolies and the enhancement of students' cognitive autonomy—and

the danger of new domination forms: the replacement of personal authority with algorithmic control, the substitution of critical independence with cognitive reliance, and the concealment of the essential worth of human empathy under the pretense of technical efficiency.

Among this structural change, a more profound level of contemplation is needed. How far should current educational power structures be reconsidered? On what principles should the moral foundation of the teacher–student relationship be reestablished? In a time when machines can produce knowledge, what is the essential goal of education?

The main goal of educational ethics in the post-AI age may be to shift education from a power-based relationship focused on knowledge transfer to an ethical relationship focused on meaning-making. In this framework, a teacher's authority comes from support and guidance; student growth stems from critique and creativity; and AI is positioned as a tool for critical engagement, not a new authority source. This does not dismiss AI, but rather underscores the essential value of human education.

## Acknowledgement

This essay is supported by Chengdu University of Information Technology Scientific Research Project, the project Number is KYTZ2022106.

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