

Who comes to AI already oriented? Sociotechnical belonging and curricular justice in Higher Education¹

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Abstract

This article examines how inequalities that predate the use of generative artificial intelligence shape students' relationships with these technologies in higher education. Rather than treating differences in performance as expressions of individual talent or mere technical mastery, the text argues that they result from unequal distributions of cultural repertoire, linguistic confidence, familiarity with systems, and authorization to experiment, revise, and sustain critical intention. Its objective is to propose the concept of sociotechnical belonging as an analytical operator for understanding why some subjects arrive more oriented to interaction with AI than others. This is a theoretical-analytical essay grounded in Pierre Bourdieu, Sara Ahmed, Donna Haraway, Lucy Suchman, Ruha Benjamin, and Paulo Freire. It argues, finally, that AI does not create such inequalities in isolation, but rather makes them more visible and reorganizes them, which requires universities to adopt an approach to curricular justice that goes beyond access to the tool itself and incorporates orientation, suspicion, iteration, and situated authorship.

Keywords: Situated authorship; Higher Education; Artificial Intelligence; curricular justice; sociotechnical belonging.

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Quem chega orientado para a IA? Pertencimento sociotécnico e justiça curricular no Ensino Superior

Resumo

Este artigo analisa como desigualdades anteriores ao uso da inteligência artificial generativa condicionam a relação de estudantes com essas tecnologias no ensino superior. Em vez de tratar diferenças de desempenho como expressão de talento individual ou simples domínio técnico, o texto argumenta que elas resultam de distribuições desiguais de repertório cultural, segurança linguística, familiaridade com sistemas e autorização para experimentar, revisar e sustentar intenção crítica. O objetivo é propor o conceito de pertencimento sociotécnico como operador analítico para compreender por que alguns sujeitos chegam mais orientados à interação com a IA do que outros. Trata-se de um ensaio teórico-analítico, fundamentado em Pierre Bourdieu, Sara Ahmed, Donna Haraway, Lucy Suchman, Ruha Benjamin e Paulo Freire. Argumenta-se, por fim, que a IA não cria isoladamente tais desigualdades, mas as torna mais visíveis e as reorganiza, o que exige da universidade uma abordagem de justiça curricular que vá além do acesso à ferramenta e incorpore orientação, suspeita, iteração e autoria situada.

Palavras-chave: Autoria situada; Ensino superior; Inteligência Artificial; justiça curricular; pertencimento sociotécnico.



¿Quién llega ya orientado a la IA? Pertenencia sociotécnica y justicia curricular en la Educación Superior

Resumen

Este artículo analiza cómo desigualdades previas al uso de la inteligencia artificial generativa condicionan la relación de los estudiantes con estas tecnologías en la educación superior. En lugar de tratar las diferencias de desempeño como expresión de talento individual o de simple dominio técnico, el texto sostiene que resultan de distribuciones desiguales de repertorio cultural, seguridad lingüística, familiaridad con sistemas y autorización para experimentar, revisar y sostener una intención crítica. El objetivo es proponer el concepto de pertenencia sociotécnica como operador analítico para comprender por qué algunos sujetos llegan más orientados a la interacción con la IA que otros. Se trata de un ensayo teórico-analítico, fundamentado en Pierre Bourdieu, Sara Ahmed, Donna Haraway, Lucy Suchman, Ruha Benjamin y Paulo Freire. Se argumenta, por último, que la IA no crea aisladamente tales desigualdades, sino que las vuelve más visibles y las reorganiza, lo que exige de la universidad un enfoque de justicia curricular que vaya más allá del acceso a la herramienta e incorpore orientación, sospecha, iteración y autoría situada.

Palabras clave: Autoría situada; Educación Superior; Inteligencia Artificial; justicia curricular; pertenencia sociotécnica.



Introduction

In higher education, the spread of generative artificial intelligence has recast, in a new form, a pedagogical problem that is far from merely technical: when using the same tool, students produce markedly unequal results. Some are able to formulate contextualized prompts, maintain a clear intention, revise responses, test alternatives, question unreliable outputs, and transform generated material into work of their own. Others obtain generic, inconsistent texts that poorly address the task and are unable to turn their interaction with the machine into rigorous academic work. A superficial interpretation tends to explain this difference in terms of individual talent, digital affinity, or technical proficiency. This article proceeds from a different hypothesis: what appears to be “AI competence” rests on socially unequal dispositions, repertoires, and forms of authorization that precede the use of the tool itself.

This shift is important because it moves the debate beyond a narrow framework. The concern here is not to discuss plagiarism, institutional policing, or simplified manuals on prompt-writing best practices. The problem runs deeper. From a Bourdieusian perspective, the aim is to understand that practices do not derive from an autonomous consciousness acting on neutral ground; rather, they are organized through socially produced dispositions, formed along unequal trajectories and activated in concrete situations (Bourdieu, 1996). From this perspective, the relationship with AI cannot be reduced to an instrumental matter. It involves linguistic confidence, familiarity with systems, cultural repertoire, experience with reading and writing, and the confidence to experiment, compare, revise, and judge. What is commonly described as fluency may therefore conceal a prior history of socialization.

Sara Ahmed’s contribution deepens this argument by shifting the question from competence to orientation. More than knowing how to operate a tool, being oriented means recognizing points of support, perceiving what is within reach, knowing where to turn, what to test, what to disregard, and what to retain



in a setting saturated with possibilities (Ahmed, 2006). Applied to the use of AI in higher education, this perspective helps reveal that some students enter this relationship already relatively aligned with its codes, rhythms, and expectations, whereas others experience it as an opaque, unfamiliar, or unstable space. This is not, therefore, a matter of individual inadequacy in a moralizing sense, but rather of unequal forms of proximity to objects, languages, and practices that already appeared familiar to some and distant to others.

At the same time, it would be insufficient to assume that better orientation alone would resolve the relationship with AI. In dialogue with Lucy Suchman, this article understands the human-machine interface as neither transparent nor neutral, but as a sociotechnical arrangement in which capacities for action are represented, distributed, and reconfigured in historically situated ways (Suchman, 2007). As Ruha Benjamin cautions, technologies presented as efficient, objective, or benevolent may conceal, accelerate, and reorganize existing inequalities rather than overcome them (Benjamin, 2019). For this reason, the difference between students who are able to engage critically with AI and those who are not cannot be interpreted as mere individual success in dealing with a universally accessible tool. Even when the device appears to be the same for everyone, the conditions under which students enter into a relationship with it are far from equal.

It is at this point that the debate returns to its pedagogical consequences. If the problem concerns not only access but also orientation, repertoire, confidence, and judgment, then universities cannot respond to the presence of AI solely through prohibition, surveillance, or the uncritical celebration of innovation. For Paulo Freire, teaching entails creating the conditions for critical learning rather than merely making objects available or transmitting content (Freire, 1996). Applied to the contemporary debate, this means that curricular justice cannot be reduced to the formal provision of a tool. It requires institutions to teach precisely what some students already bring from their



educational, cultural, and digital trajectories, while others must develop it under less favorable conditions.

Against this background, this article asks: How do inequalities that precede the use of generative artificial intelligence shape students' relationships with these technologies in higher education, and what do they require of universities in terms of curricular justice? It argues that the difference between more inventive and more limited uses of AI reflects not so much a contrast in individual talent as unequal distributions of sociotechnical orientation, cultural capital, and authorization to act critically in technological environments. As a theoretical contribution, the article proposes the concept of sociotechnical belonging to describe a condition in which individuals not only have access to a tool but also perceive themselves as authorized, oriented, and capable of engaging with it in reflective, iterative, and situated ways. In doing so, the article offers an analytical lens for understanding why AI, far from creating an entirely new form of inequality from nothing, makes more visible and reorganizes divisions already present in contemporary university experience.

Methodological note and positioning of the article

This article takes the form of a theoretical-analytical essay situated within the field of education and developed through an articulation among the sociology of education, phenomenology, social studies of science and technology, and critical pedagogy. It is therefore not an empirical study aimed at statistically measuring the relationship between social background and performance in the use of generative artificial intelligence. Rather, it proposes a conceptual elaboration with analytical and pedagogical implications, capable of interpreting a contemporary phenomenon that has frequently been reduced to a matter of individual skill, technological innovation, or instrumental adaptation.

The choice of this mode of inquiry does not stem from a rejection of empirical research, but from the recognition that the problem, as formulated



here, requires above all a theoretical repositioning. Instead of taking widely used categories such as digital competence, AI fluency, or technical proficiency as self-evident, the article examines the social, cultural, and institutional conditions that make such capacities more or less likely for different students. In this respect, the article draws on the praxiological tradition associated with Pierre Bourdieu, according to whom practices can be explained neither by rigid external determinisms nor by the full sovereignty of individual consciousness, but by the relationship between socially constituted dispositions and concrete situations of action (Bourdieu, 1996; Setton, 2002). This framework makes it possible to approach the relationship with AI not as a merely technical act, but as a situated practice shaped by prior trajectories, schemes of perception, and unequal forms of familiarity with languages, devices, and institutional environments.

At the same time, the interpretation proposed here is not limited to the sociology of dispositions. By incorporating Sara Ahmed's work, the article assumes that orientation concerns not only cognitive competencies or accumulated repertoires, but also the ways in which individuals find support, direction, proximity, and legibility within particular material and symbolic worlds (Ahmed, 2006). This makes it possible to understand that the encounter with artificial intelligence does not occur in a homogeneous and neutral space, but in a setting already structured by different degrees of accessibility, recognition, and estrangement. In turn, the dialogue with Lucy Suchman moves the analysis away from any simplistic understanding of technology as a passive or transparent tool, insisting that capacities for action at the human-machine interface must be interpreted within specific sociomaterial arrangements rather than through universalizing abstractions about "the user" and "technology" (Suchman, 2007).

At the educational level, the article is guided by a critical perspective according to which all pedagogical reflection entails taking a position. José Carlos Libâneo argues that thinking and acting in the field of education require



stating not only why something should be done, but also what should be done and how, which entails theoretical, social, and ethical responsibility toward educational processes (Libâneo, 2005). In line with this perspective, Paulo Freire rejects the understanding of teaching as the mere transmission of content and repositions educational practice within the horizon of autonomy, critical consciousness, and the formation of historical subjects (Freire, 1996). Within this framework, the article does not seek to provide a technical protocol for the use of AI in higher education, nor a set of instrumental recommendations. Its purpose is more fundamental: to offer an analytical framework for understanding why some students enter into a relationship with AI from a position of greater sociotechnical orientation, whereas others do so under conditions of relative disorientation, and what this difference requires of universities.

For this reason, the essay also makes its limitations explicit. It does not establish strict causal relationships between social class and performance in the use of AI, nor does it claim empirical generalizations that would require specific field research. Neither does it treat technology as a sufficient cause of the inequalities under analysis. On the contrary, it proceeds from the hypothesis that generative artificial intelligence makes prior inequalities more visible, reorganizes them, and, in some cases, intensifies them. Its primary investment, therefore, lies in the construction of theoretical intelligibility: naming the problem, moving beyond simplified formulations, and proposing the concept of sociotechnical belonging as an analytical lens capable of connecting orientation, repertoire, authorization, and curricular justice in higher education.

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by the author, who assumes full responsibility for the manuscript's originality, theoretical consistency, academic integrity, and final version.

The false problem of “AI skills”

Describing the difference between students who obtain more sophisticated responses and those who produce weak results as a matter of “AI skills” is itself a problematic reframing. The expression appears to describe a neutral, individual, and measurable competence, as though what were at stake were merely a more or less effective command of a recent technology. Yet this framework impoverishes the problem. It turns into a personal attribute what depends, to a considerable extent, on prior trajectories of socialization, familiarity with abstract forms of language, confidence in formulating complex requests, cultural repertoire, and previous experience with reading, writing, revision, and judgment. What appears to be spontaneous talent in dealing with generative artificial intelligence may instead be the cumulative effect of socially produced dispositions.

It is at this point that the concept of habitus becomes decisive. Drawing on Pierre Bourdieu, Maria da Graça Jacintho Setton defines habitus as a mediation between external conditioning and subjectivity, rejecting both mechanical determinism and the fiction of an entirely autonomous consciousness. She therefore states precisely that “Habitus is not destiny” (Setton, 2002, p. 61). This formulation prevents two recurring simplifications in the contemporary debate on AI: on the one hand, the idea that some students were simply born better equipped to engage with technology; on the other, the assumption that merely providing technical access would automatically produce critical and inventive uses. Neither a natural essence nor a pedagogical automatism is at work. What exists are unequally formed dispositions that are continuously actualized through the relationship between individual trajectories and specific circumstances.



From this perspective, so-called AI fluency should not be understood as an isolated competence, but as the practical activation of previously developed schemes of perception and action. Formulating a productive prompt, recognizing the inadequacy of a response, insisting on reformulation, comparing versions, questioning generic formulations, maintaining criteria of relevance, and critically incorporating machine-generated material are not purely technical acts. They are operations that depend on prior ways of relating to language, doubt, experimentation, and authority. Even when the interface appears simple, its successful use presupposes a series of largely invisible dispositions that are not equally distributed among individuals. In this sense, the vocabulary of “skills” conceals the prior work of socialization and reintroduces, under a new guise, an old meritocratic fantasy.

Bourdieu’s analysis of schooling itself helps further develop this point. In a classic text on processes of educational exclusion, Pierre Bourdieu and Patrick Champagne observe that “The school excludes, as it always has, but it now excludes continuously” (Bourdieu & Champagne, 2008, p. 485). Despite the differences between that diagnosis and the problem examined here, the statement offers a powerful analytical framework. In the case of AI in higher education, formal access to the technology may coexist with profound inequality in the capacity to convert it into academic, discursive, and symbolic gains. In other words, the democratization of access does not eliminate asymmetries in the conditions of use. Students may be included in the technological setting and still remain marginalized within it, lacking the resources required to transform interaction into intellectual work. The risk, therefore, is that universities interpret as individual failure what is, to a significant extent, inequality resulting from prior educational formation.

This interpretation also helps explain why institutional responses focused exclusively on technical training tend to be insufficient. If the problem involved only mastering more effective prompts, multiplying operational workshops would be enough. However, if engagement with AI involves deeper dispositions,



the pedagogical task is different. For Paulo Freire, critical education cannot be reduced to training or instrumental adaptation; it requires reflection on practice, curiosity, autonomy, and the capacity to intervene in the world (Freire, 1996). Applied to the present debate, this means that universities should ask not only who knows how to use the technology, but also who arrives already authorized to test, revise, make mistakes, judge, and maintain intentionality when engaging with it. The false problem of “AI skills,” therefore, must be rejected not because technical knowledge is irrelevant, but because it becomes intelligible only when reinscribed within the social configuration of dispositions, forms of capital, and experiences that precede it.

In summary, speaking of AI skills as though they constituted an autonomous individual attribute amounts to naturalizing a socially produced difference. The language of skills simplifies, individualizes, and moralizes. In doing so, it obscures the fact that engagement with artificial intelligence is shaped by unequal histories of socialization and differentiated forms of proximity to writing, abstraction, experimentation, and technological authority. It is precisely for this reason that the debate must move beyond the narrow vocabulary of individual competence and turn toward the social conditions of possibility for sociotechnical action in higher education.

Orientation, disorientation, and reach

If the previous section demonstrated that so-called “AI skills” cannot be treated as a natural individual attribute, the problem now shifts to another level: that of orientation. For Sara Ahmed (2006), the decisive question concerns not only what a subject knows, but how that subject finds their way through space, which objects they turn toward, what they recognize as a point of support, and what remains beyond their reach. This shift matters because it allows us to move away from the narrow language of competence and instead consider the relationship among bodies, space, familiarity, and action. In higher education, this means asking less who has mastered a tool and more who enters the



sociotechnical setting already relatively aligned with its codes, rhythms, languages, and forms of legitimation.

At the beginning of *Queer Phenomenology*, Ahmed formulates orientation not as a merely abstract position, but as a practical relationship with the world. She writes that “being oriented is also about being turned toward certain objects, those that help us find our way” (Ahmed, 2006, p. 1, author’s translation). Being oriented, therefore, does not simply mean knowing how to use something. It means recognizing objects, signs, and references that make it possible to know where one is, where one can go, and what to do next. Applied to the use of AI in higher education, this point helps explain why the same interface may function as a field for expanding action for some students and as an opaque, disorienting, or hostile space for others. The difference does not arise solely from the immediate encounter with the tool, but from the fact that some subjects enter that encounter with more stable points of support for interpreting the situation before them.

This hypothesis becomes more compelling when Ahmed connects orientation with reach. By stating that bodies “take shape as they tend toward objects that are reachable, that are available within the bodily horizon” (Ahmed, 2006, p. 2, author’s translation), she offers a particularly productive framework for the problem examined here. Engaging critically with AI depends not only on material access to the device. It also depends on a practical horizon within which certain actions appear possible, plausible, and sustainable. Formulating a more precise prompt, insisting on another attempt, comparing versions, identifying an argumentative weakness, or treating the machine’s response as provisional material are not actions that automatically occur to every subject placed before the tool. For such movements to take place, they must already appear, in some sense, as available forms of action. When this is not the case, the technology may be formally accessible while remaining distant as an effective experience of use.



For this reason, Ahmed also makes it possible to understand that orientation does not take place in neutral space. Orientations, she argues, shape “not only how we inhabit space, but how we apprehend this world of shared inhabitation, as well as ‘who’ or ‘what’ we direct our energy and attention toward” (Ahmed, 2006, p. 3, author’s translation). In this sense, generative artificial intelligence does not appear to students as a pure, identical, and transparent object. It enters a field already organized by unequal experiences with writing, reading, abstraction, technical language, software, interfaces, textual revision, and regimes of authority. Thus, two students facing the “same” tool are not, in fact, in the same situation. What presents itself to one as an environment open to exploration may appear to another as an oversaturated surface, lacking a clear perceptual hierarchy, clear criteria of relevance, or sufficient confidence to sustain an iterative process.

Ahmed further shows that disorientation is not a marginal accident, but an analytically important condition for understanding orientation itself. She states that “to become oriented, we might suppose that we must first experience disorientation” (Ahmed, 2006, p. 5, author’s translation). She later adds that, when we are oriented, “we might not even notice that we are oriented” (Ahmed, 2006, p. 5, author’s translation). Part of sociotechnical privilege lies precisely in not having to make one’s own alignment an explicit object of reflection. Those who enter already oriented tend to experience their relationship with the tool as natural, intuitive, or merely individual. Those who enter in a condition of disorientation, by contrast, perceive more intensely the instability of the setting, the absence of reference points, and the difficulty of transforming contact into meaningful action. What appears to some as spontaneity may be, for others, the invisible name of a prior advantage.

In dialogue with the phenomenological tradition, Ahmed also observes that orientation depends less on an abstract consciousness of direction than on familiarity with the world. In her words, “the question of orientation becomes, then, a question not only of how we ‘find our way,’ but of how we come to



‘feel at home’” (Ahmed, 2006, p. 7, author’s translation). For some students, discursive experimentation, the reflective use of tools, and movement among instruction, testing, and revision already appear as relatively familiar practices. For others, the same environment is experienced through a sense of exteriority, as though the academic-technological setting always belonged more fully to someone else. In the latter case, the difficulty lies not only in knowing what to do, but in feeling authorized to do it.

It is at this point that the notion of reach becomes decisive for the concept of sociotechnical belonging proposed in this article. Ahmed writes: “Even when things are within reach, we still have to reach for them for them to be reached” (Ahmed, 2006, p. 8, author’s translation). It is not enough for universities to make a tool available, because availability is not equivalent to appropriation. Between being presented with a resource and being able to act critically with it lies a form of mediation composed of confidence, repertoire, authorization, habits of revision, and the capacity for judgment. The mere institutional presence of technology does not resolve inequality in the conditions of use; in some cases, it merely makes that inequality less visible by reinforcing the fiction that everyone begins from the same position.

Ahmed’s work also allows us to move beyond a simplistic opposition between familiarity and estrangement. She observes that even in unfamiliar environments it is possible to find one’s way, but doing so depends on one’s prior relationship with social forms, modes of spatial organization, and impressions accumulated in the body (Ahmed, 2006). Students who are disoriented in relation to AI are not incapable. They are moving through a setting whose codes have not been equally made available to them. Hence the importance of rejecting moralizing or deficit-based interpretations. Disorientation, in this context, does not designate subjective inferiority, but an unequal relationship with the forms of mediation that make action possible. Rather than naming an essential lack, it indicates a historically and institutionally produced condition.



Ahmed's work thus makes it possible to formulate a more precise hypothesis for this article. Some students enter into a relationship with AI already oriented because they recognize the relevant objects within the setting more quickly, distinguish more clearly what deserves attention, know where to persist, where to remain skeptical, and where to stop, and possess greater familiarity with practices of experimentation and revision. Others enter without the same degree of alignment. The difference between these groups should not be captured through the language of spontaneous ability, but through the unequal distribution of reach, familiarity, and authorization. In this sense, artificial intelligence does not create a new inequality from nothing. It condenses, accelerates, and makes more visible a prior difference between subjects who already feel relatively "at home" in the university's sociotechnical space and subjects for whom that space continues to require translation, proof, and additional efforts of legitimation.

If orientation and disorientation concern not only technical competencies, but also the ways in which bodies and practices align with objects, spaces, and regimes of visibility, then a productive relationship with AI cannot be conceived as mere operational mastery. In addition to orientation, it will require reflection on opacity, mediation, and authorship. Before the machine becomes an apparent partner in writing, it must be understood as a sociotechnical interface that responds, reformulates, redirects, and intervenes—that is, as something that never entirely disappears behind the actions of the person using it.

Situated authorship, algorithmic opacity, and the human-machine interface

At this point, it is no longer enough to state that students arrive more or less oriented toward artificial intelligence. It is necessary to ask what kind of relationship they enter into when they use it to read, write, reformulate, or make decisions. The question of authorship must therefore be reframed. What is at stake is neither a romantic defense of a pure voice detached from



technology nor the surrender of writing to a system that would function as an innocent extension of thought. The problem is different: how should authorship be understood when textual production passes through an opaque, historically situated interface materially configured by infrastructures, biases, protocols, and regimes of legibility that exceed the user's control?

It is at this point that Donna Haraway becomes crucial. Her critique of universalizing regimes of knowledge prevents AI-assisted production from being understood as though there were, on the one hand, an abstract and disembodied subject and, on the other, an equally abstract, neutral, and readily available machine. Instead, Haraway insists that all knowledge is situated, partial, and produced within concrete relations of power, mediation, and materiality (Haraway, 2023). This framework shifts authorship from a logic of origin to a logic of positioning: what matters is not only who writes, but from where they write, with what repertoires, through which instruments, under what institutional frameworks, and in relation to which forms of visibility and authority. Applied to generative AI, this perspective makes it possible to reject two symmetrical illusions: that the subject remains intact and merely uses an external resource, and that the machine could entirely replace authorial work. In both cases, the complexity of mediation is lost from view.

Haraway offers another important insight by conceiving of the world not as a passive object to be captured, but as a reality with which one must learn to converse (Haraway, 2023). The relationship with the machine cannot be reduced to an act of content extraction. The user is not merely consulting a repository of answers; they enter a scene of continuous reformulation in which language, expectations, prompts, responses, and revisions mutually affect one another. In this sense, situated authorship does not mean individual purity, but responsibility for a process of discursive co-formation that is never neutral. The subject continues to write, select, discard, redirect, and judge, but does so in contact with a technological exteriority that actively interferes with the form of the utterance.



It is precisely this shift that Lucy Suchman helps formulate more accurately. Rather than asking whether machines are agents in the fullest sense, she proposes investigating “how the effect of machines-as-agents is generated” (Suchman, 2007, p. 2, author’s translation). From this perspective, the human-machine interface is not a neutral channel through which a fully formed intention simply passes. It constitutes a sociomaterial arrangement in which capacities for action are distributed, represented, and reconfigured. In the case of generative AI, this means that part of what appears as the subject’s writing already emerges through the mediation of predictive architectures, sedimented linguistic patterns, response optimization, and interaction designs that guide, constrain, and suggest possible paths.

For this reason, Suchman is also important in preventing an enchanted view of the interface. Her concern lies with the discursive, practical, and political consequences of the ways in which humans and machines are placed in relation to one another (Suchman, 2007). This prevents AI from being treated as a merely transparent instrument equivalent to a pen, keyboard, or word processor. Unlike these media, it returns formulations, reorganizes problems, stabilizes certain discursive registers, obscures its own criteria of production, and frequently offers outputs whose immediate intelligibility may conceal their fragility. A productive relationship with AI, therefore, does not consist in forgetting mediation, but in maintaining critical awareness of it. The easier the interface appears, the more necessary it becomes to ask what it is doing to the text, to the rhythm of the argument, to the appearance of coherence, and to the distribution of authority within the act of writing.

Ruha Benjamin reinforces this point by showing that technical solutions are often presented as remedies for complex social problems when, in fact, they recode those problems under an appearance of neutrality. As she argues, “technical fixes” often “hide, speed up, and even deepen discrimination, while appearing neutral or benevolent” (Benjamin, 2019, p. 7, author’s translation). Although her analysis directly addresses race and technology, the formulation



has broader conceptual reach and helps explain why AI cannot be celebrated as a democratic instrument merely because it is formally available. Algorithmic opacity is not a peripheral detail. It is part of the tool's very mode of legitimation. What appears as an efficient response may condense prior selections of language, value, and world that remain invisible to the user, particularly when that user lacks the repertoire necessary to interrogate them.

When a machine-generated output is treated as a finished text, opacity affects not only the reliability of the information, but also the subject's position in relation to what they write. The risk lies not only in factual error or generic wording. It also lies in the naturalization of a voice produced within a technological circuit as though it were immediately one's own, neutral, or universal. Benjamin (2019) helps reveal that technology does more than provide means. It organizes visibility, distributes credibility, defines what appears plausible, and tends to make acceptable what arrives already packaged as objective, progressive, or efficient. In a university environment, this means that the uncritical use of AI may not only impoverish writing, but also obscure the work of discernment that sustains academic authorship.

A brief engagement with Maurice Merleau-Ponty is useful precisely for establishing a limit. His phenomenology makes it possible to understand that the relationship with instruments is embodied and practical: perception cannot be reduced to a mental representation of the world, but occurs through lived contact, action, and bodily engagement with what one uses and with the environment in which one acts (Merleau-Ponty, 1999). This framework helps explain why tools, once incorporated into action, may cease to appear as the central object of attention and begin to function as extensions of action itself. There is, therefore, an important element of incorporation in the repeated use of AI: through practice, subjects may learn to iterate, correct, select, and modulate their interactions with increasing fluency.

Generative AI, however, does not disappear as a medium in the same way that a relatively stable manual instrument may disappear within skilled



action. It responds discursively, reformulates the problem, anticipates linguistic structures, and interferes with the content of what is produced. Rather than merely extending an intention, it configures the field in which that intention becomes explicit. For this reason, the authorial relationship with AI can be understood neither as a harmonious fusion with the tool nor as complete mastery over it. It is a tense coexistence with a system that participates in production without thereby being able to assume responsibility in place of the subject.

Authorship remains human, but it can no longer be imagined as an isolated and sovereign center. It must be understood as a situated practice of decision, selection, response, and accountability amid opaque technological mediations. In this sense, situated authorship is neither essential authenticity nor the disappearance of the author. It is the critical work of sustaining a position amid systems that produce language, suggest paths, and blur the boundary among assistance, delegation, and capture. The more AI presents itself as a natural partner in writing, the more necessary it becomes to insist that writing still means assuming responsibility for what one circulates as a legitimate utterance.

This formulation prepares the transition to the specifically political dimension of the argument. If the relationship with AI is shaped by unequal orientation, opaque mediation, and the demand for authorial judgment, then the educational question cannot be reduced to access or operational training. The problem becomes one of determining who arrives at the university with more robust conditions for sustaining this situated authorship and who must learn to develop it within a setting already saturated by technological, cultural, and institutional asymmetries.

From fluency to curricular justice: sociotechnical belonging in higher



education

If engagement with artificial intelligence is shaped by unequal dispositions, differentiated forms of orientation, and opaque technical mediations, then the university's response cannot be limited to asking who does or does not use the tool. That question is inadequate because it assumes that the central problem lies in access or adoption. This article proposes a different framework: what matters is identifying who enters higher education already authorized to experiment, make mistakes, revise, sustain an intention, and critically contest the statements produced in sociotechnical environments, and who enters without the same degree of practical and symbolic authorization. It is through this shift that the notion of curricular justice acquires analytical substance.

For Paulo Freire, teaching cannot be reduced to transmitting ready-made content or adapting students to a reality treated as fixed. On the contrary, educational practice requires creating the conditions for the production of knowledge, strengthening critical curiosity, and recognizing the knowledge that learners already bring with them (Freire, 1996). When universities treat artificial intelligence merely as a tool to be made available or as a risk to be policed, they leave a prior inequality largely intact: some students arrive with greater familiarity with linguistic experimentation, textual revision, abstraction, information processing, and movement among different registers of language, while others must develop all of these capacities at the same time that they respond to ordinary academic demands. The difference, therefore, lies not only in possessing a technology, but in having the conditions necessary to transform it into a means of critical intellectual production.

For this reason, the curricular justice discussed here cannot be confused with mere instrumental inclusion. Ensuring that everyone has physical access to AI, or offering brief training sessions on its use, does not resolve the underlying problem. For Freire (1996), education involves far more than training learners to perform particular skills; it requires fostering autonomy, critical consciousness,



decision-making, and responsibility in relation to the world. Applied to the contemporary debate, this formulation requires curricula to teach what technicist discourse typically assumes to be already given: how to formulate problems, recognize argumentative weaknesses, revise responses, compare versions, question easy answers, and sustain authorship when working with materials produced through algorithmic assistance. In other words, universities must teach forms of mediation, not merely procedures.

This consequence becomes even clearer once the fantasy of neutrality that often accompanies educational technology is rejected. Ruha Benjamin (2019) shows that technical solutions frequently present themselves as responses to complex problems while repackaging those problems through new forms of classification, control, and inequality. Her critique helps explain why contemporary enthusiasm for AI in higher education cannot be taken as evidence of democratization. In discussing students' refusal of digital education programs marketed as innovation, Benjamin draws attention to the unease produced by atomized learning models that are heavily mediated by screens, involve limited human interaction, and make inflated promises of personalization. The point is crucial here: expanded technical access does not necessarily correspond to a genuine expansion of the conditions for learning, participation, and the production of critically substantive knowledge.

It is precisely for this reason that the concept of sociotechnical belonging must be formulated in curricular terms. Sociotechnical belonging does not simply mean knowing how to operate tools. It means recognizing oneself as authorized to enter into a critical relationship with them and perceiving that one can test, fail, persist, disagree, correct, rewrite, and decide. This condition is not equally distributed. It depends on educational histories, cultural capital, digital trajectories, relationships with language, experiences of institutional recognition, and varying degrees of confidence in acting within technical and academic spaces. When universities ignore these differences, they tend



to convert educational inequality into individual deficit. When they recognize them, they can begin to reorganize their own teaching practices.

In this sense, curricular justice requires more than adapting the curriculum to a technological innovation. It requires questioning the curriculum itself as an institutional structure that authorizes some modes of presence while disauthorizing others. In *A Pedagogy for Liberation*, Ira Shor and Paulo Freire (1986) emphasize the importance of a dialogical, situated pedagogy committed to transformation rather than to the mere reproduction of what has already been legitimized. This perspective helps explain why university curricula should treat AI neither as an external supplement nor as a prohibited shortcut, but as an opportunity to make explicit the historical conditions under which knowledge is produced. Instead of asking only whether students used the tool, it would be more consequential to ask how they approached the task, what repertoires they brought with them, how familiar they were with academic codes, how much room they had to experiment, and whether they were able to assume responsibility for what they wrote.

A concrete pedagogical consequence follows from this argument. If some students enter the university already relatively “at home” in academic language and sociotechnical experimentation, while others enter under conditions of estrangement, the role of higher education is not to naturalize this difference, but to address it. This entails teaching students how to read algorithmic outputs critically, formulate problems, rewrite texts, compare versions, identify biases, distinguish verbal plausibility from conceptual consistency, and participate in learning environments in which error is not immediately converted into subjective disqualification. Within this framework, curricular justice is not a form of compensatory benevolence. It is the recognition that formal equality before a tool conceals material and symbolic inequalities in the capacity to act with it.

At this stage of the argument, sociotechnical belonging can therefore be defined as the condition in which a subject not only has access to a technology,



but also perceives themselves as legitimate, oriented, and capable of engaging with it critically within an institutional environment. In higher education, this means being able to participate in academic life without allowing tacit mastery of particular technical and discursive codes to remain the invisible privilege of a few. A university seeking to respond critically to the presence of AI must therefore shift its concern from access to mediation, from use to education, and from the tool itself to the conditions of authorship and judgment. Only then does the discussion of artificial intelligence cease to be a simplistic debate about innovation and become, in fact, a matter of curricular justice.

Final considerations

Throughout this article, we have sought to move beyond the interpretation that differences in higher education students' use of generative artificial intelligence can be adequately explained by individual talent, technological affinity, or technical mastery of prompts. The analysis developed here supports a different hypothesis: what often appears to be spontaneous fluency depends, to a considerable extent, on prior dispositions, culturally accumulated repertoires, and unequal experiences with language, abstraction, revision, and familiarity with technological systems. The problem, therefore, cannot be reduced to the tool itself. It concerns the social and institutional conditions that make certain forms of use more likely for some subjects than for others.

The incorporation of Sara Ahmed's work was crucial to refining this argument. Rather than remaining within the narrow vocabulary of competence, the article sought to demonstrate that the issue involves orientation, reach, familiarity, and legitimacy to act. Some students enter into a relationship with AI already relatively aligned with the objects, codes, and rhythms of this sociotechnical setting; others enter under conditions of relative disorientation, even when faced with the same interface. This difference does not justify deficit-based interpretations. Rather, it indicates that technical action also depends on



how subjects have been historically positioned in relation to particular worlds, instruments, and forms of recognition (Ahmed, 2006).

The discussion of situated authorship and algorithmic opacity, in turn, made it possible to avoid naïve solutions. AI can be treated neither as a neutral and transparent instrument nor can the subject be understood as a sovereign center that merely makes use of it without being reconfigured by it. In dialogue with Lucy Suchman, Donna Haraway, and Ruha Benjamin, the article has argued that AI-assisted production occurs through historically situated technical mediations structured by infrastructures, embedded judgments, linguistic patterns, and regimes of visibility that exceed the user's immediate control. The question of authorship therefore does not disappear. On the contrary, it becomes more demanding: writing with algorithmic assistance requires greater discernment, responsibility, and positional awareness.

It is through this line of argument that the concept of sociotechnical belonging emerges as the article's central contribution. The concept seeks to name the condition in which a subject not only has access to a tool, but also perceives themselves as authorized, oriented, and capable of engaging with it critically. This formulation helps explain why universities cannot respond to the presence of AI solely through prohibition, technological enthusiasm, or operational training. The issue is curricular: how can forms of mediation that have thus far been unequally distributed be made teachable—such as formulating problems, sustaining intention, revising responses, identifying shortcomings, and assuming ethical responsibility for what one writes?

For Paulo Freire, teaching entails creating the conditions for the critical production of knowledge rather than merely transmitting content or training skills (Freire, 1996). Applied to the problem examined here, this perspective reveals that formal equality in access to the tool conceals substantive inequalities in the conditions of appropriation. The pedagogical task, in this context, is neither to naturalize difference nor to promise redemptive technological solutions, but to develop educational practices capable of addressing orientation, critical



skepticism, iteration, and authorship as central dimensions of contemporary university life.

This article, of course, does not exhaust the issue. Its theoretical-analytical nature opens a research agenda that should be pursued through empirical investigations of educational trajectories, cultural repertoires, and concrete uses of AI in higher education. At the same time, it reaffirms the need to reflect on teacher education, curriculum design, and assessment criteria in a context in which learning, research, and writing increasingly take place through opaque sociotechnical interfaces. The challenge is considerable. Yet reducing it to a debate about efficiency, surveillance, or innovation would mean losing sight of what is actually at stake: the conditions under which knowledge is produced, circulated, and legitimized within the university.

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Note

- 1 Statement on the Use of Artificial Intelligence – ChatGPT, an artificial intelligence tool developed by OpenAI, was used to assist in translating this article into English. The translated version was fully reviewed and adjusted by the editorial team to ensure fidelity to the original text, terminological accuracy, and compliance with the journal’s editorial standards. The tool was not used to generate the article’s arguments, analyses, or academic content.



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