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When Data Speaks, What Issues Are Silenced? Evidence, Statistics, and Curriculum

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Abstract: This paper presents a discussion that operates within the tension between deconstructionist philosophy—centered on the *event* as a rupture of stable meanings—and statistical practices in education, which seek to standardize data and suppress uncertainties. It argues that statistics, as a tool for curriculum design, reduce social complexities to homogeneous patterns, rendering alterity and adversity invisible, as well as neglecting contingency and the unpredictability of events in educational and curricular policies. We contend that the undecidability of the event displaces the notion of data neutrality in describing reality, exposing the erasure of uncertainty as an effect of power. Combining an interdisciplinary review (philosophy, statistics, curriculum studies) with an interpretation of evidence-based policies, this paper argues that deconstruction allows for a rethinking of educational assessments and their effects on the curriculum. This argument aligns with the defense of hybrid models for education policy that integrate quantitative rigor while recognizing uncertainty not as a flaw, but as an ontological condition of education and curriculum—thus contributing to a more critical and democratic debate in the field.
Keywords: deconstruction; educational statistics; uncertainty; curriculum policy

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Cuando los datos hablan, ¿qué cuestiones son silenciadas? Evidencias, estadísticas y currículo
Resumen: Este artículo presenta una discusión que opera en la tensión entre la filosofía deconstructivista—centrada en el acontecimiento como ruptura de significados estables—y las prácticas estadísticas en educación, que buscan estandarizar datos y suprimir incertidumbres. Se argumenta que la estadística, como herramienta de diseño curricular, reduce complejidades sociales a patrones homogéneos, invisibilizando la alteridad y la adversidad, así como descuidando la contingencia y la imprevisibilidad inherente a los acontecimientos en las políticas educativas y curriculares. Se defiende que la indecidibilidad del acontecimiento desplaza la pretensión de neutralidad de los datos en la descripción de la realidad, exponiendo el borramiento de la incertidumbre como efecto del poder. Combinando una revisión interdisciplinaria (filosofía, estadística, estudios curriculares) y una interpretación de políticas basadas en evidencias, el texto sostiene que la deconstrucción permite repensar las evaluaciones educativas y sus efectos sobre el currículo. Esta argumentación se vincula a la defensa de modelos híbridos que integren rigor cuantitativo, reconociendo la incertidumbre no como una falla, sino como condición ontológica de la educación y del currículo.
Palabras-clave: deconstrucción; estadística educativa; ética; incertidumbre; política curricular

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Resumo: Este artigo traz uma discussão que opera na tensão entre a filosofia desconstrucionista—centrada no acontecimento como ruptura de significados estáveis—e as práticas estatísticas em educação, que buscam padronizar dados e suprimir incertezas. Argumenta-se que a estatística, como ferramenta de desenho curricular, reduz complexidades sociais a padrões homogêneos, invisibilizando a alteridade e a adversidade, bem como negligenciando a contingência e a imprevisibilidade acontecimental nas políticas educacionais e curriculares. Defende-se que a indecidibilidade do acontecimento desloca a pretensão de neutralidade dos dados na descrição da realidade, expondo o apagamento da incerteza como efeito de poder. Combinando revisão interdisciplinar (filosofia, estatística, estudos curriculares) e interpretação de políticas baseada nas evidências, o texto defende que a desconstrução permite repensar avaliações educacionais e seus efeitos sobre o currículo. Tal argumentação se associa à defesa de modelos híbridos que integrem rigor quantitativo, reconhecendo a incerteza não como falha, mas como condição ontológica da educação e do currículo.
Palavras-chave: desconstrução; estatística educacional; ética; incerteza; política de currículo

When Data Speaks, What Issues Are Silenced? Evidence, Statistics, and Curriculum[1]

The phrase "evidence-based policy" has become increasingly common in education policy and management circles, both in Brazil and abroad. This mantra has operated as a synonym for decisions guided by an instrumental rationality grounded in the use of statistical data. Relying on this motto allows its proponents to avoid prolonged debate or counterarguments—except for those equally supported by evidence or, as it is also called, empiricism. In the absence of such evidence, the triumph of applied research over "ideological," anti-pragmatic, and "purely" theoretical discourses (often dismissed as "merely academic") would appear both consensual and legitimized. In

[1] This is a translation of the original article in Portuguese, provided by the author, and this version has not been peer reviewed.

the name of efficiency, effectiveness, and efficacy, public policy management, much like private management, could not afford to waste time (or space) on such agonisms (Mouffe, 1993), given the urgent need for change.

This *rationale* centered on statistical evidence operates in tandem with common sense: when faced with empirical data, we are left with no choice but to accept them. As a tool of governmentality, such a conception permeates classrooms, universities, public and private organizations, and international agencies. It is common practice, for instance, for intellectuals in the educational sector of the Organization for Economic Cooperation and Development (OECD) to (re)cite a well-known aphorism by William Edwards Deming: "Without data, you are just another person with an opinion."

Obviously, the fact itself does not exempt politicians, administrators, or technical experts who grapple with the complexities of education from clarifying the evidence that supports their positions and decisions. After all, persuasion and the construction of hegemonies require precisely that. But wouldn't making evidence truly evident demand going beyond epistemic reflections? Is there space to engage with their underlying regional ontologies? Is there room to explore the contingencies that led to the selection of certain pieces of evidence over others, and of specific political decisions at the expense of those disregarded?

This truth regime (Foucault, 1975, 2014) does not emerge in a vacuum. It is catalyzed by multilateral organizations such as the World Bank and the OECD, which, since the 1990s, have actively promoted a culture of accountability and performance measurement as prerequisites for funding and technical cooperation (Ball, 2013). In Brazil, think tanks and corporate foundations have come to exert significant influence on the educational agenda, advocating for the application of private management models and data-driven decision-making as antidotes to the supposed "ideologization" of education (Adrião & Peroni, 2018). Understanding these actors and their networks of influence is crucial to denaturalize the alleged neutrality of evidence.

In Brazil, the emergence of the *Novo Ensino Médio* (New Secondary Education) was accompanied by a coordinated intervention of private and intermediary actors involved in producing studies, designing pilot programs, establishing partnerships with education departments, and disseminating curricular agendas. Among the most visible actors are large foundations and philanthropic initiatives (e.g., Fundação Lemann, *Instituto Unibanco*, *Itaú Social*), networks and third-sector organizations (for example, *Todos pela Educação* [Education for All]), as well as consultancies and some think tanks that produced technical reports, manuals, training courses, and advocacy materials (Araujo, 2022).

These organizations promoted narratives centered on the modernization of Brazilian education, employability and life projects, autonomy, student agency and choice, 21st-century skills, and comparable metrics, mobilizing financial resources and networks of influence with education departments and productive-sector actors. Research on educational philanthropy shows how such initiatives convert private preferences into technical consensuses and regulatory pressures (Pugliese & Santos, 2022; Tarlau & Moeller, 2019; Tompkins-Stange, 2016). The practical effect of these interventions has been the circulation of formats of evidence (reports, indicators, and pilot programs) that favored curriculum segmentation guided by measurability and employability, to the detriment of contextual priorities and teacher education.

The resulting dynamic tends to produce an inversion of symbolic and pragmatic causality: it is not the curriculum that first guides the production of evidence; rather, it is evidence—understood as selected, comparable indicators that lend themselves to statistical aggregation—that comes to define curricular priorities and metrics of success. In practice, this translates into a fragmentation of the curriculum according to criteria of measurability and employability, with an emphasis on trajectories and competencies framed as '21st-century' skills, favoring areas and practices compatible

with standardized assessments and international rankings (for example, pathways focused on STEM [science, technology, engineering, and mathematics] and employability), to the detriment of contextual, formative, and qualitative dimensions less amenable to quantification.

The literature examining the effects of the Programme for International Student Assessment (PISA), organized by the OECD, and of international rankings on national agendas shows how these metrics function as normative devices that reorder educational priorities, while studies on political philanthropy demonstrate how the organized action of foundations can transform political preferences into technical and implementation-level consensuses (Carvalho, 2009; Pugliese & Santos, 2022; Sellar & Lingard, 2013, 2014).

Such questions prompted us to explore the theme of this article, seeking to argue that education and politics are intrinsically tied to cultural and historical conditionalities that cannot be fully captured by numbers through an evidence policy based on statistics. Our focus is on the impact of evidence—particularly that concerning the results of centralized assessments—on curriculum policies, using the high school reform as a case in point.

Several studies published in *Education Policy Analysis Archives* (*EPAA/AAPE*) show that large-scale assessments and accountability mechanisms do not merely measure educational phenomena; rather, they constitute devices that produce regimes of "evidence" and reconfigure meanings of "quality," shaping narratives of success and failure, management practices, disciplinary structures, and curricular arrangements within schools (Dutra et al., 2024; Freitas et al., 2019; Ghisleni & Luce, 2016; Meo et al., 2023). These instruments, by becoming privileged refractors of "educational reality," redefine what is considered relevant and operate in synergy with policies of centralization and accountability, potentially undermining the reflective and plural use of data. Further studies published on the same platform have also shown how such devices reorder relations of power and knowledge within the educational field (Andrade et al., 2022; Parcerisa & Falabella, 2017).

Thus, our interpretations align with recent empirical investigations published in *EPAA/AAPE* that critically examine the use of evidence in Brazilian institutional contexts. For instance, Andrade et al. (2022) found limited effects of a program aimed at promoting "data use" in the Rio de Janeiro municipal school system; Valente and Almeida (2020) demonstrated how techno-scientific narratives reconfigure priorities through the introduction of technologies; and studies on philanthropy (Tarlau & Moeller, 2019; Tompkins-Stange, 2016) explain the ways in which private actors influence technical consensuses. By juxtaposing these studies with our documentary analysis, we broaden the understanding of how evidence is selected, naturalized, and politically operated within the curricular field.

This study engages with that empirical-analytical body of research *EPAA/AAPE*, offering, through a deconstructionist theoretical-epistemological inflection, an explanation of the mechanisms through which certain formats of evidence achieve hegemony and, consequently, the knowledge, voices, and issues that are systematically silenced. Such an interpretation not only expands the understanding of already documented institutional effects but also informs critical approaches to curriculum policy that aim at the co-production of indicators, epistemic pluralization, and deliberative safeguards against reductive uses of data.[2]

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[2] Other studies also argue that the recurrent presentation of PISA results fuels narratives of failure and marginalization, shaping public perceptions of the educational system (Horta Neto, 2024). They further question the notion of quality as informed by such assessments, emphasizing how these can impose a homogeneous and reductionist view of schooling—one that disregards the cultural and contextual specificities of Latin America (Machado et al., 2024)—as well as the technical issues underlying large-scale assessments (Díaz Barriga, 2006).

The heterogeneity of these works, when compared with other investigations, has prompted us to reflect on how the mathematization of statistics has transformed politics into a metaphysics of presence and how faith in numbers has come to regulate what is considered "educational reality": the thresholds of political relevance (Addey, 2016); epistemological governance (Sellar & Lingard, 2013); the selective use of results to justify controversial policy reforms (Volante & Mattei, 2024); the entanglement of ontologically impoverished objects (Gorur, 2015); externalization at the expense of political learning (Lingard, 2011); and the effects of transnational political regulation and expert knowledge on agenda-setting, the definition of education's "reality," and its "appropriate" forms of governance (Carvalho, 2009, 2016).

Likewise, other studies that address—directly or indirectly—the idea of "evidence-based policies" have prompted us to reflect on curriculum: the use of epistemological tools as a biopolitical technology (Foucault, 1975); the reproduction of structural racism through educational algorithms (Benjamin, 2019); "epistemic injustice" through the invisibility of marginalized groups in dominant quantitative models (Fricker, 2007); the risks of "data determinism," driven by the belief that large data volumes eliminate the need for theory (Boyd & Crawford, 2012); statistics as a "weak form of knowledge" that simplifies complex realities (Appadurai, 2009); the reinforcement of colonial hierarchies through standardized performance metrics that disregard cultural contexts (Crawford, 2021); the perpetuation of exclusion cycles through data-driven educational artificial intelligence (AI) with racial and gender biases (Gebru et al., 2021); "knowledge brokerage" as a strategy for "rational" educational governance (Elfert, 2024); the notion of evidential "rigor" and "what works" (Cartwright, 2019) versus proposals such as an "ecology of practices" that integrates quantitative data with local knowledge (Stengers, 2018); and the redesign of educational algorithms with community participation to mitigate structural biases: "design justice" (Costanza-Chock, 2020).

Following the movement of these studies on education and curriculum policy, which seek to deepen the understanding of the many ways in which "evidence-based policy" has been imposed on education, our aim in this article is to contribute to this discussion from a deconstructionist perspective. Drawing on the notions of contingency, undecidability, event, and intra-action, we seek to discuss the concepts of scientificity, truth, and certainty in the description of reality—concepts associated with evidence and statistics—that underpin many of the arguments in defense of evidence-based policy as a guiding framework for curriculum policymaking.

To this end, in the first section we discuss the relationship between statistics and the forms of evidence that guide policymaking—particularly in education—arguing for the continuous conceptual postponement of the notion of evidence. Drawing on a brief historical overview of statistics, we present a discussion of its limits and gaps, as well as of the construction of a normative framework through the data it produces. Our aim in this discussion is to highlight potential displacements within this normativity from a post-structuralist perspective, which we introduce in the following section. Building on this approach, the two subsequent sections—preceding the conclusion—critically examine the effects of evidence-based policy in education, specifically in curriculum.[3]

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[3] To ensure that the theoretical critique does not remain at an abstract level, this study articulates a critical conceptual framework—drawing on thinkers such as Derrida (on the event) and Barad (on intra-action), along with reflections on epistemological power—and combines it with a documentary analysis of the formulation process of the *Novo Ensino Médio* [New Secondary Education] in Brazil. The aim is to demonstrate empirically how statements about "evidence" and "performance," for instance, circulate among institutional actors and are translated into administrative decisions, producing material effects on curricular priorities, institutional arrangements, and the distribution of resources.

Are All Statistics Evidence, and Is All Evidence Statistics?

The questions posed in this section's subtitle lead us to further inquiries: Does stating that a policy, research study, or scientific investigation is evidence-based necessarily imply that statistical data necessarily supported the work? Furthermore, does asserting that an action is based on statistics necessarily mean that it is evidential? Let us begin with the concept of evidence.

The signifier "evidence" has etymological roots in the Latin *evidentia*, derived from the verb *videre*, meaning "to see." A policy based on evidence would therefore be one supported by visible references. The belief that visibility guarantees truth treats evidence as if it were an undeniable truth *per se*—clear, obvious, and unquestionable—supported by solid foundations or direct perception.

This conception of evidence echoes meanings from ancient philosophy, where the immediate apprehension of truth (*aletheia*) was understood as the unveiling of reality—a form of self-evidence. In this sense, evidence was regarded as the most privileged form of knowledge, independent of inference or complex argumentation.

In the absence of a direct vision of the reality of *forms* or of eternal and immutable *ideas*, according to Plato, there would be no evidence as a signifier of genuine knowledge, but only opinion-based variations (*doxa*) or common belief. The philosopher, comparing the idea of evidence with the notions of knowledge and perception (a dialogical subject in *Theaetetus*), associated the term with true knowledge (*episteme*), as opposed to opinions derived merely from appearances.

This Platonic hierarchy of knowledge elevated evidence as the most sophisticated foundation of truth in the face of the unknown: *episteme*. In contrast, opinion (*doxa*) could only attain the status of well-founded and persuasive belief or faith (*pistis*), usually supported by indirect evidence or authority. It would thus be detached from *logos* (explanation), poorly grounded (*eikasia*), and based on images and shadows, like those observed on the cave walls in *The Republic's* allegory.

Thus, in ancient philosophy, evidence represented the transcendence of mere opinion (*doxa*) and belief (*pistis*), leading to the most genuine and well-founded knowledge (*episteme*).
Between these two levels stood the thought of the prisoner who had just left Plato's cave and begun reflecting on the shadows projected on the walls (*dianoia*). This would be a hybrid form of thought—discursive, logical, and argumentative—surpassed mere opinion but still fell short of the intuitive and direct comprehension of "deepest truths" (*noesis*).[4]

Certainly, the notion of evidence in modern Western philosophy is not merely an evolutionary continuation of ancient concepts; these notions are contingent identifications of their time. However, in the continuous process of translating these ideas, we emphasize how traces of meaning linked to reason, empiricism, and sensory experience persist as pillars of knowledge. The collection and analysis of empirical evidence, as advocated by Bacon, Cartesian hyperbolic or methodological doubt, and the British empiricism in the18th-century (John Locke, George Berkeley, and David Hume) all deepened the relationship between evidence and knowledge. The pursuit of clear and undeniable evidence continues to pursue epistemic certainties.

It seems that, to some extent, modernity has brought the condition of evidence closer to an empiricist foundation, where knowledge is constructed from sensory experiences, much like writing on a *tabula rasa*. What is not perceived as measurable does not exist. There are no innate ideas or *a priori* knowledge beyond sensory impressions. The notion of "evidence-based policy," in turn, assumes that empirical data, when presented clearly and objectively, are self-explanatory.

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[4] It is worth noting that, for Aristotle, "unproven," undemonstrable, or inconclusive opinions from experienced individuals could be considered valuable forms of evidence in ethical contexts (*anapodeikton*).

As the unpredictability, fluidity, complexity, and contextual representational dynamics inherent to human and even post-human relationships in the spatio-temporal contexts that constitute them are increasingly recognized, the emergence of modern and contemporary epistemologies has witnessed intense debates and disputes over the meanings of this *objective* nature of evidence.

It is not possible here to present the long history underlying the transformation in the way we perceive the world. What matters for our purposes is to highlight how the traditional bipartition between empirical and *a priori* knowledge has long been called into question. On this point, Wilfrid Sellars (1997) draws attention to the correlation between evidence and theory: evidence is not something merely given; its interpretation arises from our theories, conjectures, and linguistic practices. For the philosopher, the notion of "raw evidence"—of knowledge that is purely immediate and devoid of theoretical mediation—is a myth, since evidence is not something simply given or directly accessible; its understanding is shaped and accommodated by theoretical-conceptual structures. Theories can directly influence how we read evidence and what kinds of evidence we seek.

Contemporary epistemological approaches continue to explore the complexity of evidence and its justification within a multifaceted context, where knowledge is increasingly understood as situated and involved in a relational dynamic. Different approaches help us understand the richness of the current field of epistemology, with critical reflections on cognitive processes and the ethical, social, and contextual angles that affect the acquisition and reasoning behind knowledge. Contextualist epistemology, for example, argues that standards of knowledge justification depend on specific conditions of evaluation, varying according to context—as shown by DeRose (2009) and Cohen (1999), who highlight the dependence of interpretation on contextual and social assumptions. Pragmatic epistemology, in turn, contends that truth and justification are intrinsically linked to human and social practices (Rorty, 1979), understanding knowledge as a social tool for solving practical problems through negotiation and discursive transformation.

On another front, the cognitive virtues of the subject (competence and critical reflection) are brought to the forefront as the basis for epistemic justification, according to virtue epistemology. Sosa (2007) argues that knowledge reflects a subject's "aptitude" to form well-justified beliefs. Meanwhile, Zagzebski (1996), combining morality and virtue, proposes that the exercise of knowledge is inseparable from ethical conduct.

Through the lens of testimony epistemology, the notions of trust and credibility have been explored in the social relationships of knowledge dissemination. Fricker (1987) argues that testimony is a legitimate source of knowledge, but it is subject to the credibility of the source and the social conditions surrounding it. Lackey (2008) emphasizes the responsibility of the receiver to critically evaluate testimony, while Coady (1992) expands on the idea that testimony is among the most common—and often most reliable—ways of acquiring knowledge.

More recently, social epistemology has emphasized the role of power and identity in the production and evaluation of knowledge, supporting the idea that social structures shape the meanings and access to knowledge (Haddock et al., 2010; Haslanger, 2012). In this line of argument, credibility and justification cannot be detached from social inequalities, which impact the conditions of access to knowledge.

With this brief overview of the signifier "evidence," we argue in favor of the continuous conceptual deferral of the notion of evidence: any idea of valid evidence is historically and contingently constrained. At the same time, we emphasize how the perception of evidence as a foundational element in the pursuit of knowledge endures as a central discourse within epistemological thought.

In turn, its influence on the direction of education policies expands with the use of statistics as a tool for organizing data in the construction of diagnoses and the definition of goals. The suturing of statistics and evidence has intensified with the application of probabilistic methods to complex data, allowing for more robust inferences about populations and phenomena. Yet, contrary to common assumptions, statistical choices are influenced by subjective factors, by historical context, by the epistemological priorities of the researcher, and by prevailing cultural values.

The exponential proliferation of data collection during the Industrial Revolution expanded the role of statistics in decision-making (Porter, 1986). This expansion inevitably exposed how evidence was mobilized to support political and economic agendas. On the one hand, mortality statistics, for example, played a crucial role in justifying sanitary reforms in industrialized urban centers, as exemplified by Florence Nightingale's pioneering work on public hygiene (Hacking, 1990). On the other hand, population censuses legitimized regulatory interventions and control policies in British colonies. As a tool of power, statistics shaped narratives about development and inequality, forging connections between quantitative models and social structures.

The expansion of statistics across various fields of knowledge illustrates an informational period characterized by an enormous amount of data, but also new challenges in interpretation and inference, as well as the complex interaction between intuition and numerical analysis. It brings about a shift in the natural and social sciences regarding the growing dependence on quantitative data. Statistics consolidate themselves as a hegemonic tool (Hacking, 1990) and a central analytical instrument in modern science, although criticisms have emerged warning against conflating numbers with evidence *per se*, in every sense.

This process has, in fact, unfolded in ways that obscure earlier critiques of the validity of statistics, particularly when applied to complex social phenomena, and predating its formalization (Salsburg, 2002; Stigler, 1986). It likewise silences critiques arising from within statistics itself. To mention a few briefly: the argument that statistical inference should focus on the capacity to detect errors, not merely on significant results (Mayo, 2018); the poor communication of statistical uncertainty and the presentation of educational data as "objective facts," which masks inherent uncertainty and creates an illusion of precision that can lead to dogmatic policy decisions (Spiegelhalter, 2019); the neglect of complex causal mechanisms, leading to superficial policies that focus excessively on correlations (Pearl & MacKenzie, 2018); and the inappropriate application of normal distributions to complex social phenomena, resulting in education policies grounded in assumptions of normality that fail to address extreme events and social heterogeneity (Taleb, 2007).

By the late 20th century, Bayesian statistics emerged as a counterpoint, reintroducing subjectivity (prior probabilities) and contextualization in inferences (Gelman & Shalizi, 2013; Jaynes, 2003). The digital era, with big data, expanded horizons (Mayer-Schönberger & Cukier, 2013) but also exposed dilemmas: large-scale spurious correlations and the fragility of evidence without theory (Kitchin, 2014; Pearl & MacKenzie, 2018).

In conjunction with data science and techniques such as machine learning and neural networks, contemporary tatistics shifts the conception of evidence toward a new episteme. However, its technical complexity does not overcome inherent limitations, such as the difficulty of translating social contexts into variables. The segmentation between statistics and other types of evidence is crucial for understanding the boundaries and possibilities of each approach. The notion that "all statistics is evidence" overlooks the fact that quantitative evidence, no matter how robust, cannot definitively prove theories, as any calculation arises from an incomplete system.

This issue is particularly relevant in public policies, where an exclusive reliance on quantitative evidence can overlook the provisional and interpretative nature of scientific knowledge. In public policies specifically, methods such as randomized experiments (Duflo, 2017) and econometrics (Heckman, 2001) have popularized "quantitative evidence," while behavioral

economics (Kahneman & Tversky, 1979) has integrated statistics into decision-making models under uncertainty. However, this hegemony does not resolve historical dilemmas: hasty generalizations, confusion between correlation and causation, and the marginalization of qualitative approaches (Creswell, 2014; Pearl & MacKenzie, 2018).

Thus, even when considering contemporary contributions, it can be acknowledged that educational and curricular policies—our primary focus here—based primarily on statistical evidence tend to overlook the provisional nature of scientific knowledge, which, by principle, is subject to theoretical interpretations and to the logic of continuous development. Moreover, such policies ignore emerging epistemes that challenge established ontological foundations. As a hegemonic discourse, statistics runs on two tracks: it validates quantitative knowledge while simultaneously marginalizing alternative epistemes, thereby reinforcing hierarchies of knowledge that persist into the present.

This duality reflects the tension between statistics and evidence persists in the contemporary era, where technical expertise coexists with a plurality of voices (Foucault, 1989). Post-structuralist approaches, in particular, challenge the supposed neutrality of statistics, emphasizing how it is influenced by power structures and dominant discourses, making it subject to a double reading in a Derridean sense (Derrida, 1981). Such approaches can thus contribute to deconstructing fixed notions of truth, questioning the presumed objectivity of statistics, and highlighting its complex relationship with interpretation.

To advance a critical reading of statistical evidence in curriculum, it is essential to understand two notions that challenge the conventional view of data and reality: intra-action (Barad, 2007) and the event (Derrida, 2007a).

In contrast to interaction—which presupposes preexisting entities that relate to one another (for example, a policymaker who "uses" data)—intra-action suggests that specific practices (such as operationalizing indicators, collecting data, or calculating averages) produce the very entities that seem merely to relate. It is in the act of quantifying that what is taken as "data," "school," "performance," or "quality" simultaneously comes into being.

The event, in turn, refers to what breaks forth unpredictably—the eruptive and undecidable character of certain occurrences that disrupt preestablished structures of intelligibility. In education, this might be a student movement contesting the evaluation criteria of a policy, revealing affects, cultural demands, and contradictions that escape statistical capture.

Together, these notions allow us to recognize statistics not as a neutral representation but as a performative practice that actively produces educational realities—naturalizing certain truths, silencing others, and materializing relations of power.

Drawing on Barad (2007), we might say that the statistics–evidence dyad constitutes an intra-action: the "things" we imagine as interacting (data, methods, subjects) result from agential cuts that produce them. In Appadurai's (1996) terms, there are no things in flux, but rather fluxes that—once halted or cut by effects of power—produce things. Attempting to reduce the uncertainty of life by seeking to control it mathematically is, therefore, to interfere in its very evental dimension.

Statistics, therefore, does not constitute a definitive narrative but rather an attempt to represent complex reality. Uncertainty is inherent to the statistical process, and meaning is always unstable—subject to translation and supplementation (Derrida, 1991). Any descriptive language—such as statistics—is performative, since there is no separation between describing and producing realities (Lopes, 2018). The search for evidence about human relations is, therefore, precarious and never self-sufficient. If statistical description is always precarious and performative, this condition becomes especially critical when the object in question is the curriculum—a dynamic arena of knowledge, power, and subjectivation.

The constitutive tension between the event (Derrida, 2007a)—which erupts and challenges preestablished structures—and the statistical operation—which identifies patterns and, in doing so, inevitably suppresses contingencies—is not merely a philosophical impasse. It materializes in raw and political form in the production of curricular data. These are not neutral representations but the products of agential cuts (Barad, 2007) that perform the very reality they claim to describe. By operating through dichotomous categories (proficient/non-proficient, official/unofficial curriculum), curriculum-related statistics do not interact with preexisting entities; rather, they intra-act, producing the very contours of what will be recognized as "curriculum," "learning," or "quality."

If, in the terms of Austin's (1962) speech act theory, "to say is to do," and if, as Butler (1990) radicalizes, performativity is consolidated through repetitions that institute norms, then to signify the curriculum through statistical metrics is to engender a powerful normativity. This normativity pressures the curriculum to conform to what is measurable, generating an obsessive pursuit of control and precision through data. It ultimately produces a fiction of controllability, obscuring the intrinsically polysemic, contingent, and conflictual nature of curricular knowledge.

It is within this (bio)political machinery that statistical normativity—constructed and maintained through repetitive performative practices (Butler, 1990)—feeds into the rigid selection of indicators. Evidence-based education policy, in this way, often defines the very parameters of success and failure. This mechanism invites a radical questioning: Who holds the epistemic and political authority to define these norms? And, crucially, how are these norms—once naturalized through data—mobilized to reinforce hierarchies of knowledge and power, silencing alternative voices and possibilities?

It is not far-fetched to imagine that the historical shifts from statistics to the human and social sciences have led to the establishment of techniques for governance, control, and social regulation through the meaningful instrumentalization of the notion of evidence as a mechanism of governability (Foucault, 1978). To explore such relationships, let us delve into the connection between statistics, evidence, and power.

Displacements: Statistics, Evidence, and Power

The relationship between statistics and power is deeply constructed and far from accidental. This connection mirrors both the quantification aspirations of modern societies and the control mechanisms that sustain the exercise of power. As Foucault (1999) stated, power is not an institution, nor a structure, nor a certain strength with which some are endowed: it is the name given to a complex strategic situation in a given society (p. 89). This strategic situation, in the context of biopolitics, is significantly enriched by the assimilation of statistical practices, echoing Foucault's perception that power operates through knowledge.

Statistics, initially conceived as a scientific endeavor to quantify social phenomena, were gradually transformed into a powerful instrument of governance. The emergence of governmentality, as Foucault (2007) elucidated, fostered a mode of power that operates through calculated interventions in populations and their behaviors. In this sense, statistics became essential to the construction and rationalization of governmental strategies.

Statistics not only quantify but also create a social reality, thereby influencing how society is conceived, organized, and governed. Through their performative effect—closely tied to their prevalence in public policy cycles and to regimes of truth—public administrators have linked statistical data to the fiction of singular, ultimate, and unquestionable evidence. The risk of shaping the perception of social phenomena in a closed manner, disregarding traces and gray areas that elude

statistical evidence, lies in the construction of hegemonic discourses that, through policies, impact people's lives and become entrenched as democratic, participatory, indisputable, and just. Moreover, they can homogenize, sterilize, neutralize, and absolve public managers of responsibility for their actions (or inactions), as decisions are "evidence based."

Statistical knowledge thus emerges as a truth regime capable of shaping policies. The digital era expands the capacity for data accumulation and analysis, expanding control through surveillance capitalism. The fusion of big data and algorithmic governance embodies the essence of Foucault's biopolitics, as control is exercised through predictive analytics and behavioral modifications (Lemke, 2011; O'Farrell, 2005; Zuboff, 2019).

Faced with the Western need to master uncertainty, Popkewitz (2012) highlights: "The trust in numbers for assessing and planning affairs provided a technology of consensus and harmony in a world that would appear, otherwise, as uncertain, ambiguous, and contentious" (p. 176). Furthermore, statistics, "in this historical context (...) tamed chance. It gave stability to things in fluxand inscribed an apparent consensus that made things of the world seem amenable to control" (p. 176). The scholar emphasizes that evidence is a social construct subject to multiple interpretations and cultural contexts. From this perspective, the notion of "evidence" often reflects underlying values, norms, and interests, raising questions about the objectivity of statistical evidence in political contexts. Popkewitz (2012) also points out that evidence can be selectively chosen or manipulated to serve specific objectives, prompting a critical view of statistical narratives that may obscure the complexities of divergence.

A clear example of this contested construction is the very concept of "educational quality." What counts as evidence of quality? For the idealists of Evidence-Based Policy Making (EBPM)—in Brazil, promoted as *Formulação de Políticas Baseadas em Evidências*—it is the standardized results of tests. For Indigenous social movements, however, evidence of quality may lie in the school's ability to preserve languages and traditions—a metric incommensurable with hegemonic instruments. This conflict exemplifies "epistemic injustice" (Kidd et al., 2017), in which non-hegemonic systems of knowledge are silenced for not conforming to dominant standards of evidence. The same effect can be observed in cases of "racial epistemicide" in Brazil, as articulated in Carneiro's (2019) work on racism as the systematic destruction of forms of knowledge, culture, and subjectivity produced by Black populations. This process is further amplified by mechanisms of global governance, in which assessments such as PISA not only measure but also help *construct* a specific educational reality, becoming a "mirror of the expert" that defines what is considered good or bad education on a planetary scale (Carvalho, 2009).

In this vein, a fundamental critique of statistics as a basis for education policymaking is its tendency to homogenize human diversity. The statistical approach often groups data on individuals and their realities into broad categories, obscuring nuances and cultural or contextual particularities, thus leveling or erasing differences. This can lead to the implementation of misguided or inequitable policies, as failing to account for these differences results in disparate effects relative to the intended goals.

From the perspective of underdetermination[5] of theory by data, evidence assigns only degrees of probability to hypotheses, which, by their very choice over other possibilities, carry a degree of *doxa*, or belief. Regarding policymakers' perception of the very meaning of evidence, it is essential to clarify that there is no consensus.

[5] Underdetermination indicates that the same set of data can be compatible with different theoretical explanations; therefore, numbers do not, by themselves, determine a single interpretation (Quine, 1951).

A study conducted in Wales (MacKillop & Downe, 2022) involving individuals ranging from state ministers to public servants, members and staff of parliament, civil society organizations, and academics, concluded that attitudes and perceptions regarding the meaning of the term evidence varied in four distinct directions: "idealist of Evidence-Based Policy Making (EBPM)," "Political," "Pragmatist," and "Inclusive."

For those considered *idealists*, "evidence ought to be rigorous, clear, and well-presented, (...) policy-makers have a responsibility to use evidence in an impartial way (...). (...) evidence could be likened to truth and facts" (p. 1041). For those classified as *political*, "what counts as evidence is influenced by policy," "evidence being political in the way it is articulated (...), and evidence reflecting power relations" (p. 1042). Meanwhile, for *pragmatists*, "not all evidence can be measured," "what counts as evidence varies between professions" (p. 1042), and "It depends on who the evidence is from." Lastly, for those identified as *inclusive*, "evidence [being] anything that helps draw a rich picture of an issue" and it is "what helps to answer a policy question" (p. 1043).

Thus, it is shortsighted to claim that an evidence-based policy necessarily reflects statistically supported facts. For the purposes of this paper, the next section discusses these issues regarding education, and more specifically, to curriculum policies.

How Much Evidence Does Education Need?

The discourse on the alleged low quality of Brazilian education has not been shaped exclusively by evidence-based policies, but such policies serve as one of the key flows sustaining such hegemonization. A classic example of this discourse's dissemination is the media coverage driven by the release of large-scale student performance assessment results, such as the triennial PISA. Depending on the disseminating outlet, the same student performance results are scrutinized in vastly different ways, leading to highly divergent conclusions.

Take, for instance, the reception of the PISA 2022 results in Brazil. A newspaper emphasized that "the problem lies in public schools," arguing that the national average was negatively impacted by public school performance, thereby obscuring the "excellent" results of private institutions (Sardenberg, 2023). However, this type of analysis overlooks key structural and methodological factors essential to understanding the broader educational landscape.

School performance is strongly correlated with students' socioeconomic status (SES). Studies indicate that students from higher SES backgrounds tend to achieve better results due to a range of external factors, such as access to educational resources, a family environment conducive to learning, and lower exposure to social vulnerabilities (Alves et al., 2014; *Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira* [Inep], 2013; OECD, 2014). Thus, asserting that "the problem lies in public schools" without considering this variable is, at the very least, inaccurate.

When analyzing the average mathematics performance of 15-year-old Brazilian students in PISA 2022 based on the OECD's Economic, Social, and Cultural Status (ESCS) index, we find that only 4% of them are classified as top performers, while 12% fall into the lowest-performing group internationally (OECD, 2023, pp. 141-142). This distribution not only reveals internal disparities but also situates Brazil within the global educational landscape.

If we isolate students in the top two ESCS deciles—which largely correspond to those enrolled in private schools—we find an average mathematics score between 440 and 480 points. This places them below students of the same socioeconomic bracket in 40 other countries or regions.[6] In other words, even Brazil's most privileged students, who presumably benefit from

[6] These scores are below the OECD average (≈472) and well below those of the top performers (≥600) (OECD, 2023).

private education, score lower than students from significantly lower SES backgrounds in countries such as Turkey, Latvia, the United Kingdom, Ireland, and Poland.

They also fall behind the poorest 30% of students in Estonia and South Korea and the poorest 10% in Japan—making any comparison with Chinese provinces, Taiwan, or Singapore entirely unfeasible. Needless to say, international comparative assessments are not exempt from questions regarding their validity, neutrality, and intent simply because they are based on statistical "evidence" (Elfert, 2024).

If, on the one hand, these data demystify the notion that Brazilian private schools represent a model of excellence, on the other hand, it illustrates how statistics can be selectively used to reinforce pre-established arguments. Assigning public schools sole responsibility for the country's educational performance disregards the role of socioeconomic and structural inequalities in shaping learning outcomes. At the same time, it obscures a crucial question: What would education in Brazil look like without public schools?

Now, let us shift our focus specifically to discourses advocating curriculum reform in Brazil based on statistical data. What statements were presented as evidence of the urgent need for reforms in the country?

Consider a high-impact example:[7] *Exposição de Motivos* no. 00084/2016/MEC [Statement of Reasons of the Ministry of Education], the official document that served as the basis for the Ministry of Education's urgent request for a Provisional Measure to reform the National Education Guidelines and Framework Law (LDB, acronym in Portuguese) regarding high school curricula in Brazil. According to the document (Ministry of Education, 2016), curriculum reform was urgently needed to address bottlenecks negatively affecting student performance and retention at this level of education. Let us examine some of the data presented in the document:

- High school has an extensive, superficial, and fragmented curriculum that does not engage young people, the productive sectors, or the demands of the 21st century. (Ministry of Education, 2016, p. 1)

This raises some questions: At what point does a curriculum become extensive? Who defines its length, and on what basis? Once deemed extensive, what should be left out?

- A high number of young people are out of school, and those who are enrolled do not perform well academically; research has shown that low-income youth do not see meaning in what the school teaches; only 58% of young people are in school at the right age (15 to 17 years old); 41% of 15-to-19-year-olds enrolled in high school perform very poorly; regarding proficiency levels, 75% of students are below expectations, and more than two million young people are unable to apply the knowledge acquired in Portuguese and mathematics classes; only 16.5% of young people enter higher education, and 8% enroll in vocational education. (Ministry of Education, 2016, pp. 1-2)

One must ask: Is the fact that young people do not see meaning in what they study the reason why they are out of school, perform poorly, and do not pursue higher education? Or is their disengagement related to factors stemming from their realities outside of school? Why, then, is the

[7] Naturally, the high school reform in Brazil involved antagonistic actors, each presenting arguments based on different forms of "evidence." Nevertheless, the process was not without the silencing—or even the invisibility—of voices, both for and against the reform.

meaning that privileged students attribute to the same 13 subjects ignored, along with the fact that they have a significantly higher rate of progression to higher education? Does this argument not implicitly defend the idea that, given the socioeconomic reality of poor students, only subjects directly related to their context make sense—hence the emphasis on mathematics and Portuguese at the expense of sociology, philosophy, and music, for example?

- Brazil is the only country in the world with a single high school model that includes 13 mandatory subjects; in other countries, young people, from the age of 15, can choose different educational pathways to continue their studies; freedom to choose their paths according to their life goals; seeking a broad education for young people, both cognitively and socioemotionally, is fundamental to making school more attractive and meaningful, reducing dropout rates, and improving proficiency levels. (Ministry of Education, 2016, pp. 2-3)

First, Brazil is not the only country in the world with 13 compulsory subjects: Chile, for example—considered by statistical measures to have some of the best educational outcomes in Latin America—has just as many subjects as Brazil. Second, countries with fewer mandatory subjects do not agree on what should be required: from philosophy and music to mathematics and history, there is no consensus on what constitutes "essential and indispensable skills" (only hegemonic sedimentations). Third, having mandatory subjects can be just as frustrating for students as being required to choose subjects that do not interest them.

If the appeal of school lies in students' ability to choose their subjects, how can this be reconciled with the fact that, in 2022, nearly 50% of municipalities in Brazil had only one high school institution (Fernandes, 2023)? How can different educational pathways be offered to poor students who live far from urban centers? Would this not merely shift students' frustration from the existing curriculum to the school's inability to offer other options?

If curricula deemed poor because of their excessive breadth are supposedly the cause of irregular school trajectories, low proficiency, disengagement from school, and failure to advance to higher education, then why—under the same curriculum—is there such disparity in youth indicators when socioeconomic levels are taken into account? For a young person who is wealthy and/or raised in a certain environment, is what seems interesting, enjoyable, and appealing the very same thing that feels boring and tedious to a young person from a poorer background, who has lived through different life experiences? Or might what is considered boring or engaging be more closely correlated with the reality and context experienced by young people beyond the school walls?

No matter how engaging or innovative a school's curriculum is, how can a malnourished student, one experiencing domestic physical and psychological violence, and/or one humiliated by their socioeconomic condition, simply disconnect from their world outside school and fully immerse themselves in the curricular choices and freedoms offered? Is it merely a matter of switching mental frames? Or is this world brought into the classroom, confronting any and all curricula?

A concrete analysis of the Reform of Upper Secondary Education (Law no. 13.415, 2017) strongly suggests the second option. The reform clearly illustrates this erasure of context and has become a paradigmatic case of the strategic use of evidence. The discourse of "urgency" and "crisis," grounded in dropout and performance data from PISA and the Brazilian *Sistema de Avaliação da Educação Básica* (SAEB, Basic Education Assessment System in English), was mobilized to justify a profound curricular change through a provisional measure—a procedure that, in itself, curtailed democratic debate on the curriculum in Brazil. The data cited in *Exposição de Motivos* no.

00084/2016/MEC (Ministry of Education, 2016) were used selectively to construct the narrative that an "extensive" and "encyclopedic" curriculum was the main culprit.[8]

However, many issues were silenced, and critical analyses of this process have already been well documented (e.g., Da Silva & Scheibe, 2017). A few points are worth highlighting: (1) The issue of funding: The reform was not accompanied by an increase in resources or by the minimum infrastructure needed to ensure the multiple *itinerários formativos* (learning pathways), especially in small and peripheral schools, thereby deepening inequalities (Fernandes, 2023). (2) The issue of teacher education: The reform deliberately neglected the precariousness of teacher training for the implementation of the pathways, lacking any theoretical or methodological framework to guide pedagogical practice in fluid and transdisciplinary curricular contexts. This revealed a structural mismatch between the reform's premises and public policies for teacher education. (3) The issue of competing projects: The deepest silencing was the absence of public debate about what kind of critical and civic education is desired for youth, subordinating it instead to a "life project" logic aligned with the so-called demands of the 21st century—that is, those of the productive sector. The critiques of educational organizations, students, and researchers who presented alternative forms of evidence—such as studies emphasizing the importance of sociology and philosophy for critical formation—were largely ignored. This demonstrates how "evidence-based" rhetoric can serve a specific political project, one that selectively determines which evidence is allowed to speak.

This leads to a fundamental question: Was the data the evidential basis for the need for curriculum reform, or was the desire for reform the *a priori* basis for the presentation of evidence?

Statistical data provides both answers and questions. Openings and closures reflect power relations, meaning that "evidence" is not as evident as it may seem. This leads to an *aporia*: What, in revealing things to us, do statistical data suppress? Asking this question is not about simplifying the blame on numbers that seek to represent reality (statistics is currently a tool for distributing resources to education or for confronting distinct perceptions of "school reality"), but rather reinforcing, as we have attempted to do so far, that the attempt to read reality tends to carry a burden of uncertainty, a wager that (only) traverses the numbers. Reading the numbers is translating them, and to translate is to betray the original text.

We conclude here a discursive (and performative) exercise with numbers as evidence of reality. The aim was not the statistical accuracy of the exercise proposed. There are, in fact, intentionally questionable hypotheses or estimates. Our sole intention was to highlight that relying on numerical evidence does not necessarily make social problems more evident but rather gives evidence to certain interpretations of the social while obscuring others. It is not about denouncing mathematical errors but about making evident the need to shake up sedimentations, to open space for evidence beyond the numbers, the calculations, the decimal points. This is what we attempt to do in the next section by focusing specifically on the curriculum.

[8] In this study, we apply the theoretical framework developed to the analysis of the official documentation that supported the *Novo Ensino Médio* (New Secondary Education), with particular emphasis on the regulations issued by federal and state governments (cf. Fernandes, 2022, 2023). This theoretical reading guided the identification of framings and discursive operations that reveal how statements about "evidence" and "performance" are mobilized and translated into institutional decisions. More than merely describing problems, such statements operate as devices that reconfigure curricular priorities, reposition actors, and restructure institutions, making visible the inherently political dimension of technical-discursive practices.

Is Curriculum-Making Evident?

In the field of curriculum reforms developed in Brazil and worldwide in recent decades, the discourse that (re)designing curricula must follow evidence-based systemic processes has become hegemonic. From this perspective, discussions revolve around themes such as the gap between practiced curricula and future needs, curriculum overload, the pursuit of educational equity through curricular innovation, and the development of flexibility and autonomy through student agency. It is common to see the formulation of roadmaps that draw on statistical data on academic performance to narrow the possibilities of *currere* and define policies—even influencing curriculum theory itself. These fixations are not limited to the cognitive-disciplinary field; they extend into so-called metacognitive and behavioral skills.

However, as Ball et al. (2012) repeatedly argue, policies must be translated into school practices, and "practice is sophisticated, contingent, complex, and unstable" (p. 3). Moreover, "there is little recognition of the different cultures, histories, traditions, and communities of practice that coexist in schools" (p. 6), just as it is often overlooked that schools are active participants in the production of policy.

Simultaneously, with the rise of big data, education has become increasingly dominated by large volumes of data. On the one hand, massive dataset analysis has revealed previously invisible patterns. On the other hand, it raises concerns about biases (such as confirmation biases), oversimplifications, availability heuristics, and spurious correlations in the interpretation of these forms of evidence. As Ian Hacking (1990) warned in *The Taming of Chance*, the very concept of "chance" is a social construct, and the way we select and interpret data profoundly affects the conclusions we draw. Thus, in employing big data in education, it is crucial to recognize that, while data provides valuable insights, it also embodies the theoretical and methodological choices of those who collect and interpret it, influencing educational (and curricular) decisions in ways that can be both productive and limiting.

Faced with these contingencies, which also impact curriculum theory and shape how curriculum is conceived, we question what data takes away from us—how it arrests or totalizes what should remain open, thereby shifting crystallized meanings. After all, what data about the curriculum has not been produced? How can we defamiliarize the data that is presented to us?

Interrogating these issues from a post-structuralist perspective constitutes one way to examine the boundaries between sciences, considering the tangential cuts within the entanglements of forces that give eventful potency to school life. As seen in the historical shifts of statistics, its very cosmogony involves controlling eventful flows to operate within a closed system, composed of variables that, once controlled, generate universalizable explanations, reproducible and verifiable. That is, a universal explanation of reality is only possible within an open and incomplete system that power conceives as closed through acts of power. The eventful becomes evidential, allowing the emergence of what is (or is considered) "emergent," seeking to control or even nullify meanings, experiences, and alternative interpretations that could influence what is defined as an observable phenomenon. In the face of the spectral or the imponderable, it retreats into the insular system of "all else being constant," frequently applied in economics when addressing problems with multiple, complex variables. As a result, every effort is directed toward eliminating the potential contamination of life's affectations—whether human or post-human—on the investigated phenomenon.

Thus, even while marked by its technical jargon, as is typical of any scientific discipline, statistics creates a controlled investigative environment, governed by predefined rules and interrelated elements, aiming at a universal and capturable understanding. The description and

inference of variables and their interactive behaviors explain why observable facts in education take the forms they do. In other words, evidence underpins—or attempts to underpin—events.

It is not uncommon today, in both national and international contexts, to find the belief that evidence-based education policies are more assertive and more resistant to ideological or political swings. Curriculum reform initiatives in Brazil, in pursuit of epistemic closures (and ontological silence), have redefined or recalibrated the limits within which affectations and intra-actions should occur. Although these curricular reform initiatives are grounded in technical rationalities (with perlocutionary effects), any measuring instrument is inherently dual—a technical and a social endeavor. Primary (and secondary) research results stem not only from an enduring historical pursuit of technical-methodological rigor[9] but also from epistemes founded on ontological constructions (or regional ontologies), often accepted out of ignorance, convenience, indifference, or even *hamartophobia*[10] in research practices.

The shallow horizon of support for public policies leads to an interesting consequence: by failing to interrogate ontological foundations, researchers become mere servants of sedimented epistemologies. This, in turn, removes them from the principal action of research: (self-)questioning. This silence distances research from its most compelling aspect—confronting (without any presumption of success) contingency, unpredictability, and the paradox of life's abyssal depths. It reduces ontologically complex entities to impoverished abstractions, thereby facilitating their commensuration, calculation, and promiscuous mobility (Gorur, 2015). In short: by impoverishing the questioning of the ontological foundations underlying researchers' work, the world itself is impoverished to fit within predefined mathematical equations.

In questioning the evidential nature of curriculum-making, it is essential to recognize the plurality of epistemologies that permeate it and, *ipso facto*, the ontologies that underpin and give meaning to its existence—the inherent contingency of any curriculum-making. This implies that attempts to standardize education based on quantitative evidence tend to disregard the cultural and local dynamics that shape the educational process. What may seem "evident' within a curriculum framework based on statistics often ignores local complexities and translations, resulting in policies that reinforce the coloniality of knowledge while neglecting the cultural differentiation of educational contexts.

Statistical science provides answers, albeit subject to contingencies, to the dilemmas posed in education. It is difficult to ignore administrative data about schools, their subjects, and their contexts, such as infrastructural precariousness, working conditions of teachers, student access, retention, and performance, as well as the opinions of teachers and administrators about their professional realities. However, reducing the school to these records overlooks intersubjective dynamics and contextual relationships that are difficult to translate into such data. How can we translate the descriptive and inferential fixity of the school's space-time into the curriculum? What agential cuts would be required? What baseline information should compose the data upon which curriculum policies are designed? At what cost?

A post-structuralist approach (among others) could help us formulate responses (and new questions) by challenging the established limits of curriculum interpretation and the conventions that shape it. Opening ourselves to this possibility might involve considering what would happen if the eventful potency of the curriculum were captured within statistical frameworks. Or if alterity and adversity invaded the very system that statistically conceptualizes the curriculum. If there are internal limits to scientific areas that confine them within margins sedimented by their ontological structures,

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[9] A perceptive discussion of what is meant by rigor—whether as the confirmation of the evidence itself and/or of the hypothesis that such evidence supports—can be found in Cartwright's (2019) article.

[10] From the Greek *hamartia* (error, sin) and the suffix *-phobia* (fear).

it is a challenge to try to work with shifting borders, with defined places and variables that are not exactly there, except by convention, questioning the defense of universalizing explanations. After all, when boundaries are porous, fixed readings of the social can no longer be sustained.

Therefore, to defamiliarize statistical curriculum data means asking: What intra-active practices perform this curriculum? What events are suppressed by its agential cuts? The alternative is not to abandon data, but to hybridize it. Models such as the "ecology of practices" (Stengers, 2018) or design justice (Costanza-Chock, 2020) open up spaces to discuss how quantitative data might be integrated with local, testimonial, and contextual knowledge. This would imply, for instance, that the indicators of a "successful" curriculum be co-constructed with the school community, incorporating metrics of well-being, civic participation, and cultural appreciation—not merely proficiency on standardized tests. Such an approach shifts evidence from a raw datum to the outcome of a relational and necessarily contingent process. The production of understanding about the world does not occur solely through the performativity of the language that describes it, but also through the data that are part of that language. In Foucauldian terms, evidence is always already given within an *episteme*. Yet, given the porous boundaries between the sciences, how can we critically question statistical data *vis-à-vis* their attempt to fix meanings for the curriculum?

Building on this, how might statistics, through its discursive-evidential performativity, both nourish and be nourished by curriculum thought? Exploring the potential normativity embedded in current curricular statistics means placing our own conventions into motion (*gira*; Rufino, 2019)—the very conventions that constitute us as curriculum researchers. This alternative exercise confronts us with the question of how we might produce different forms of curriculum research and study, leading us to examine our own subjectivations and identity fixations, without certainty or control over what is to come. Disturbing margins may further marginalize us. But if everything is margin, if there is no outside, only constitutive outsides of meaning, then the risk lies in the movement toward new rights of representation.

Conclusion

Throughout this text, we have argued that a statistical-agential cut into the entanglements and fluid margins of curriculum can constitute an act of violence—whether by diluting or fixing meaning in curriculum theory and practice or by excluding everything that remains unrepresented or unrepresentable by statistical evidence.

This possible arbitration invites us to consider forms of alterity (and adversity) that challenge the norms of representation embedded in the technical and communicative repertoire that transforms the world into numbers. We do not propose an impatient or equally universalizing rejection of numbers, which constitutes one of many ways of subjectivation and identification. Instead, we wager—without certainty—that data should grant us more, not take away our possibilities of meaning. Data that are not merely taken as 'given' but remain open to questioning the representational norms that constitute them. We also wager on the possibility of challenging political relations through a plurality of meanings, sharpening the very tools of public policy—such as statistical evidence—as languages of numbers.

As normative beings, we must strive to keep norms and their mechanisms of definition open-ended. We must question the sufficiency of the binary 'either-or' and the performativity of the '0–1,' not by renouncing statistics but by continually challenging the normative (and governmental) impulses that capture it—favoring instead an eventful perspective, a non-statistical potency of non-foundation. De-categorizing what has been categorized, insisting on constructing disturbances

against classificatory closures, recognizing that statistical categorizations of the curriculum are discursively constructed, and acknowledging that this discursivity does not exclude the material.

Engaging in a statistical approach to curriculum, therefore, requires more than merely describing interactions; it calls for entering the dimension of intra-action—understood as a generative force that both anticipates and enables the agential cuts inherent in the production of knowledge. Such cuts, grounded in regional ontologies, do not describe a preexisting world but performatively constitute meanings, normativities, and educational practices, shaping in a constitutive way the subjectivities and realities we inhabit.

It means moving not toward a statistics of flows, but toward a statistics for flows. Is this possible? Perhaps as potentiality, as estrangement, as an explosion of boundaries. After all, an event is only an event because it is impossible.

The question that gives this article its title—*When data speak, what issues are silenced?*—points to a central problem in current education policies: the monopolization of the "legitimate voice" by statistical regimes of truth. As demonstrated, through devices such as PISA, *SAEB*, and "urgent" curricular reforms, numbers alone can fail to speak to fundamental issues: structural inequalities, inadequate funding, teacher education, epistemological diversity, and, above all, the democratic debate over what kind of education and society we wish to build. Far from being neutral, statistics operate as a biopolitical technology that produces specific educational realities and subjects—*performing* curricula, hierarchies of knowledge, and learning expectations. Its hegemonic use tends to erase alterity, contingency, and the event (Derrida, 2007a, 2007b), subsuming the complexity of the real under totalizing and comparable categories.

When data speak, what often happens is that they speak on behalf of government projects and institutional actors who monopolize the power to translate and disseminate numbers.[11] As a result, the following are silenced: (a) structural inequalities that cannot be captured by simplified indicators (or by pre-defined policy agendas); (b) deficiencies in funding and infrastructure (such as laboratories, libraries, and connectivity), which appear in *Censo Escolar* [Brazilian School Census, in English] databases as determinants of the learning process; (c) the specificity of teaching practices and knowledge, as well as the precarization of the teaching profession and the weakening of its autonomy; (d) ways of being and community knowledge, cosmologies, and local epistemologies;[12] and (e) the democratic debate rooted in diverse perceptions and positions on the purposes of education—debates that follow the historicity, context, and contingency of those who propose them.

These issues tend to be suppressed because they do not fit the formats of evidence that are most highly valued—aggregated indexes, rankings, and international indicators—and because their inclusion would require political horizons and investments that conflict with the short-term agendas of institutional and financial actors. Making them explicit allows for policy recommendations that prioritize plural ecologies of evidence and deliberative processes of co-constructing indicators. We will only escape the epistemological trap that mistakes the hegemony of data for scientific neutrality when we move beyond the false dichotomy between their idolization and their total rejection, building public policies that adopt deliberative processes to co-produce "evidence" and establish safeguards against the prescriptive and singular use of data.

In short, the centrality of indicators operates on the curriculum through three interrelated mechanisms: (1) the prioritization of measurable content and practices (technical agenda-setting); (2)

[11] Which does not necessarily coincide with the actors who produce them.

[12] Decisions guided by rankings and indicators concentrate interpretive power within technical-institutional spheres, reducing opportunities for listening and co-construction with local voices—students, families, and communities.

the institutionalization of accountability routines that reshape institutional incentives; and (3) the amplification of technical interpretations by intermediary actors (consultancies, foundations, networks). These mechanisms explain why programs conceived as "evidence-based" tend to promote curricular fragmentation that responds more effectively to what is measurable than to what is formative.

Thus, it is not a matter of rejecting quantitative data altogether, but of denaturalizing them as the sole form of evidence and restoring them to their proper place: as one tool among many—always partial, interested, and intrinsically tied to power relations and societal projects (Ball, 2013; Foucault, 2007). As Barad (2007) suggests, it is crucial to recognize that every datum results from specific agential cuts that privilege certain intra-actions over others. The challenge—for researchers, policymakers, and school communities alike—is to build fairer and more pluriepistemic ecologies of evidence (Stengers, 2018), capable of embracing marginalized knowledge, differential contexts, and the constitutive unpredictability of education. This means resisting the seduction of easy numbers and embracing uncertainty not as a flaw but as an ontological condition of curriculum and education. Only then can we escape the trap of believing that, when data speak, there are technical justifications for silencing otherness.

References

Addey, C. (2016). O PISA para o desenvolvimento e o sacrifício de dados com relevância política. *Educação & Sociedade*, *37*(136), 685–706. https://doi.org/10.1590/es0101-73302016166001

Alves, M. T. G., Soares, J. F., & Xavier, F. (2014). Índice socioeconômico das escolas de educação básica brasileiras. *Ensaio: Avaliação e Políticas Públicas em Educação, 22*(84), 671–708. https://doi.org/10.1590/S0104-40362014000300005

Andrade, F. M. de, Ceneviva, R., & Koslinski, M. C. (2022). Escolas em Foco: The assessment of the impact of an "evidence-based public policies" program of the municipal education network of Rio de Janeiro. *Education Policy Analysis Archives*, *30*, (110). https://doi.org/10.14507/epaa.30.7096

Appadurai, A. (1996). *Modernity at large: Cultural dimensions of globalization*. University of Minnesota Press.

Appadurai, A. (2009). *O medo ao pequeno número: Ensaio sobre a geografia da raiva*. Iluminuras.

Araujo, H. G.(2022). *A nova filantropia e a Base Nacional Comum Curricular: A política investigada por redes*. (Tese Doutorado em Educação), Universidade do Estado do Rio de Janeiro.

Ayer, A. J. (1936). *Language, truth, and logic*. Gollancz.

Ball, S. J., Maguire, M., & Braun, A. (2012) *How schools do policy: Policy enactments in secondary schools*. Taylor and Francis. https://doi.org/10.4324/9780203153185

Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press. https://doi.org/10.2307/j.ctv12101zq

Benjamin, R. (2019). *Race after technology: Abolitionist tools for the new Jim code*. Polity Press.

Boyd, D., & Crawford, K. (2012). Critical questions for big data: Provocations for a cultural, technological, and scholarly phenomenon. *Information, Communication & Society*, *15*(5), 662-679. https://doi.org/10.1080/1369118X.2012.678878

Butler, J. (1990). *Gender trouble: Feminism and the subversion of identity*. Routledge.

Butler, J. (2007). *Undoing gender*. Routledge.

Carneiro, S. (2019). *A construção do outro como não-ser: O mito da democracia racial brasileira*. Pólen.

Cartwright, N. (2019). What is meant by "rigour" in evidence-based educational policy and what's so good about it? *Educational Research and Evaluation*, *25*(1-2), 63–76. https://doi.org/10.1080/13803611.2019.1617990

Carvalho, L. M. (2009). Governando a educação pelo espelho do perito: Uma análise do PISA como instrumento de regulação. *Educação & Sociedade*, *30*(109), 1009–1036. https://doi.org/10.1590/S0101-73302009000400005

Carvalho, L. M. (2016). Intensificação e sofisticação dos processos da regulação transnacional em educação: O caso do Programa Internacional de Avaliação de Estudantes. *Educação & Sociedade*, *37*(136), 669–683. https://doi.org/10.1590/es0101-73302016166669

Coady, C. A. J. (1992). *Testimony: A philosophical study*. Clarendon Press.

Cohen, S. (1999). Contextualism, skepticism, and the structure of reasons. *Philosophical Perspectives*, *13*, 57–89. https://doi.org/10.1111/0029-4624.33.s13.3

Costanza-Chock, S. (2020). *Design justice: Community-led practices to build the worlds we need*. MIT Press. https://doi.org/10.7551/mitpress/12255.001.0001

Crawford, K. (2021). *The atlas of AI: Power, politics, and the planetary costs of artificial intelligence*. Yale University Press. https://doi.org/10.12987/9780300252392

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.

Da Silva, M. R., & Scheibe, L. (2017). Reforma do ensino médio: Pragmatismo e lógica mercantil. *Retratos da Escola, 11*(20), 19–31. https://doi.org/10.22420/rde.v11i20.769

DeRose, K. (2009). *The case for contextualism: Knowledge, skepticism, and context*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199564460.001.0001

Derrida, J. (1981). *Dissemination* (B. Johnson, Trans.). University of Chicago Press. (Original work published in 1972). https://doi.org/10.7208/chicago/9780226816340.001.0001

Derrida, J. (1991). *Margens da filosofia* (J. Torres Costa & A. M. Magalhães, Trans.). Papirus.

Derrida, J. (1993). *Specters of Marx: The state of the debt, the work of mourning, and the new international* (P. Kamuf, Trans.). Routledge.

Derrida, J. (2004). *Gramatologia* (M. Schnaiderman & R. J. Ribeiro, Trans.). Perspectiva. (Original work published in 1967).

Derrida, J. (2007a). A certain impossible possibility of saying the event. *Critical Inquiry*, *33*(2), 441–461. https://doi.org/10.1086/511506

Derrida, J. (2007b). *Psyche: Inventions of the other* (Vol. 1, P. Kamuf & E. Rottenberg, Eds.). Stanford University Press.

Díaz Barriga, Á. (2006). Las pruebas masivas: Análisis de sus diferencias técnicas. *Revista Mexicana de Investigación Educativa*, *11*(29), 583–615.

Duflo, E. (2017). The economist as plumber. *American Economic Review*, *107*(5), 1–26. https://doi.org/10.1257/aer.p20171153

Dutra, K. A. M., Negreiros, H. L., & Santos, W. dos. (2024). Statewide standardized exams and the shaping of education policies for assessment: A comparative analysis of Paebes (Brazil) and Exeims-BC (Mexico). *Education Policy Analysis Archives*, *32*. https://doi.org/10.14507/epaa.32.8454

Efron, B. (1979). Bootstrap methods: Another look at the jackknife. *The Annals of Statistics*, *7*(1), 1–26. https://doi.org/10.1214/aos/1176344552

Elfert, M. (2024). Can we trust "evidence" in policymaking? In C. Baek & G. Steiner-Khamsi (Eds.), *The rise of knowledge brokers in global education governance* (1st ed., pp. 199–207). Elgaronline. https://doi.org/10.4337/9781035326426.00014

Engel, E. (1857). The production and consumption relations of the Kingdom of Saxony [*Die Productions- und Consumtionsverhältnisse des Königreichs Sachsen*]. *Journal of the Royal Statistical Bureau of the Kingdom of Saxony*, *8*, 1–54.

Eyler, J. M. (1979). *Victorian social medicine: The ideas and methods of William Farr*. Johns Hopkins University Press.

Fernandes, E. F. (2023). Condições do ensino médio para a oferta de itinerários formativos no Brasil. *Cadernos de Estudos e Pesquisas em Políticas Educacionais*, *8*, 113–157. Inep. https://doi.org/10.24109/9786558011125.ceppe.v8.5768

Fernandes, E. F. (2022). Reforma curricular e pandemia: Percursos da BNCC do ensino médio em tempos pandêmicos. *Cadernos de Estudos e Pesquisas em Políticas Educacionais*, *7*, 119-171. Inep. https://doi.org/10.24109/9786558010630.ceppe.v7.5578

Foucault, M. (1989). *A ordem do discurso*. Martins Fontes/

Foucault, M. (2014). *Do governo dos vivos*: *Curso no Collège de France (1979-1980*). WMF Martins Fontes.

Foucault, M. (1999). *História da sexualidade I: Vontade de saber* (M. T. da Costa Albuquerque, Trad.). Graal. (Original work published in 1976).

Foucault, M. (2007). *Nascimento da Biopolítica* (E. Brandão, Trans.). Martins Fontes.

Foucault, M. (1975). *Surveiller et punir: Naissance de la prison*. Gallimard.

Foucault, M. (1978). *The history of sexuality, volume 1: An introduction* (R. Hurley, Trans.). Pantheon.

Freitas, R. G. de, Chaves, V. L. J., & Nozaki, H. T. (2019). Marginalisation in education systems: The Programme for International Student Assessment (PISA) and the failure discourse around the Italian education system. *Education Policy Analysis Archives*, *27*(127). https://doi.org/10.14507/epaa.27.4317

Fricker, E. (1987). The epistemology of testimony. *Proceedings of the Aristotelian Society, Supplementary Volumes*, *61*, 57–83. https://doi.org/10.1093/aristoteliansupp/61.1.57

Fricker, M. (2007). *Epistemic injustice: Power and the ethics of knowing*. Oxford University Press.

Gebru, T., Morgenstern, J., Vecchione, B., Vaughan, J. W., Wallach, H., Iii. H. D., & Crawford. K. (2021). Datasheets for datasets. *Communications of the ACM*, *64*(12), 86–92. https://doi.org/10.1145/3458723

Gelman, A., & Shalizi, C. R. (2013). Philosophy and the practice of Bayesian statistics. *British Journal of Mathematical and Statistical Psychology*, *66*(1), 8–38. https://doi.org/10.1111/j.2044-8317.2011.02037.x

Ghisleni, A. C., & Luce, M. B. (2016). Large-scale effects of national policy assessment on the political and pedagogical management of schools of Porto Alegre: Exploring relationships and uses. *Education Policy Analysis Archives*, *24*(71). https://doi.org/10.14507/epaa.24.2328

Good, I. J. (2003). A short history of the foundations of modern probability and statistics. *IEEE Information Theory Society Newsletter*, *53*(4), 1–14.

Gorur, R. (2015). Producing calculable worlds: Education at a glance. *Discourse: Studies in the Cultural Politics of Education*, *36*(4), 578–595. https://doi.org/10.1080/01596306.2015.974942

Hacking, I. (1990). *The taming of chance*. Cambridge University Press.

Haddock, A., Millar, A., & Pritchard, D. (2010). *Social epistemology*. Oxford University Press.

Haslanger, S. (2012). *Resisting reality: Social construction and social critique*. Oxford University Press.

Heckman, J. J. (2001). Micro data, heterogeneity, and the evaluation of public policy. *Journal of Political Economy*, *109*(4), 673–748. https://doi.org/10.1086/322086

Horta Neto, J. L. (2024). As fragilidades do PISA, um protagonista global em políticas educacionais. *Educar em Revista*, *40*, 1–17. https://doi.org/10.1590/1984-0411.93646

Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira. (2013). *Indicador de nível socioeconômico das escolas de educação básica (INSE)*. INEP MEC.

https://download.inep.gov.br/educacao_basica/prova_brasil_saeb/resultados/2013/nota_tecnica_indicador_de_nivel_socioeconomico_das_escolas_de_educacao_basica_inse.pdf

Ioannidis, J. P. A. (2005). Why most published research findings are false. *PLoS Medicine*, *2*(8), 0696–0701. https://doi.org/10.1371/journal.pmed.0020124

Jaynes, E. T. (2003). *Probability theory: The logic of science*. Cambridge University Press.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47*(2), 263–291. https://doi.org/10.2307/1914185

Kitchin, R. (2014). *The data revolution: Big data, open data, data infrastructures and their consequences*. SAGE.

Kuhn, T. S. (1996). *The structure of scientific revolutions*. University of Chicago Press. (Original work published in 1962).

Lackey, J. (2008). *Learning from words: Testimony as a source of knowledge*. Oxford University Press.

Lemke, T. (2011). *Biopolítica: Uma introdução*. Vozes.

Lingard, B. (2011). Policy as numbers: Ac/counting for educational research. *The Australian Educational Researcher*, *38*(4), 355–382. https://doi.org/10.1007/s13384-011-0041-9

Lopes, A. C. (2018). Políticas de currículo em um enfoque discursivo: notas de pesquisa. In A. C. Lopes, A. L. M. Oliveira, & G. G. Oliveira (Eds.), *A teoria do discurso na pesquisa em educação* (1ª ed., pp. 133–167). Editora UFPE.

Machado, C., Alavarse, O. M., & Chappaz, R. O. (2024). Avaliações em larga escala na América Latina: Problematizando a qualidade da educação escolar. *Educar em Revista*, *40*, 1–15. https://doi.org/10.1590/1984-0411.94031

MacKillop, E., & Downe, J. (2022). What counts as evidence for policy? An analysis of policy actors' perceptions. *Public Administration Review*, 83(5), 1005–1431. https://doi.org/10.1111/puar.13567

Mayer-Schönberger, V., & Cukier, K. (2013). *Big data: A revolution that will transform how we live, work, and think*. Houghton Mifflin Harcourt.

Mayo, D. G. (2018). *Statistical inference as severe testing: How to get beyond the statistics wars*. Cambridge University Press.

Meo, A. I., del Monte, P., & Chervin, M. (2023). The rubriquization of evaluation and the fabrication of teachers as "agents of change" in an inclusive secondary school in the City of Buenos Aires, Argentina. *Education Policy Analysis Archives*, *31*. https://doi.org/10.14507/epaa.31.7375

Ministry of Education. (2016). *Exposição de motivos no. 00084/2016/MEC*. https://www.planalto.gov.br/ccivil_03/_ato2015-2018/2016/exm/exm-mp-746-16.pdf

Mouffe, C. (1993). *The return of the political*. Verso.

Neyman, J., & Pearson, E. S. (1933). On the problem of the most efficient tests of statistical hypotheses. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, *231,* 694-706. https://doi.org/10.1098/rsta.1933.0009

O'Farrell, C. (2005). *Michel Foucault*. Sage.

Organisation for Economic Co-operation and Development. (2014). *PISA 2012 results: What students know and can do* (Vol. I, Revised ed.). OECD Publishing. https://doi.org/10.1787/9789264208780-en

Organization for Economic Cooperation and Development (OECD). (2023). *PISA 2022 results (Volume I): The state of learning and equity in education*. https://doi.org/10.1787/53f23881-en

Parcerisa, L., & Falabella, A. (2017). The consolidation of the evaluative state through accountability policies: Trajectory, enactment and tensions in the Chilean education system. *Education Policy Analysis Archives*, *25*(89).

Pearl, J., & MacKenzie, D. (2018). *The book of why: The new science of cause and effect*. Basic Books.

Popkewitz, T. S. (2012). Numbers in grids of intelligibility: Making sense of how educational truth is told. In H. Lauder, M. Young & H. Daniels (Eds.), *Education for the knowledge economy?* (1st ed., pp. 169–191). Routledge.

Porter, T. M. (1986). *The rise of statistical thinking, 1820–1900*. Princeton University Press. https://doi.org/10.1515/9780691210520

Pugliese, G. O., & Santos, Vinicio De M. (2022). The connections between the PISA and the STEM education movement in Brazil. *Educação Em Revista*, *38*, e35153. https://doi.org/10.1590/0102-469835153t

Quine, W. V. O. (1951). Two dogmas of empiricism. *The Philosophical Review*, *60*(1), 20–43. https://doi.org/10.2307/2181906

Rorty, R. (1979). *Philosophy and the mirror of nature*. Princeton University Press.

Rufino, L. (2019). *Pedagogia das encruzilhadas*. Mórula. https://doi.org/10.24065/2237-9460.2019v9n4ID1012

Salsburg, D. (2002). *The lady tasting tea: How statistics revolutionized science in the twentieth century*. Freeman.

Sardenberg, C. A. (2023, December 16). A escola pública é que vai mal. *O Globo*. https://oglobo.globo.com/opiniao/carlos-alberto-sardenberg/coluna/2023/12/a-escola-publica-e-que-vai-mal.ghtml

Schultz, D. P., & Schultz, S. E. (2014). *A history of modern psychology*. Cengage Learning.

Sellar, S., & Lingard, B. (2013). PISA and the expanding role of the OECD in global education governance. In H.-D. Meyer & A. Benavot (Eds.), *PISA, power, and policy: The emergence of global educational governance* (pp. 23–44). Symposium Books.

Sellar, S., & Lingard, B. (2014). The OECD and the expansion of PISA: New global modes of governance in education. *British Educational Research Journal*, *40*(6), 917–936. https://doi.org/10.1002/berj.3120

Sellars, W. (1997). *Empiricism and the philosophy of mind*. Harvard University Press.

Sosa, E. (2007). *A virtue epistemology: Apt belief and reflective knowledge* (Vol. 1). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199297023.001.0001

Spiegelhalter, D. (2019). *The art of statistics: How to learn from data*. Pelican.

Stengers, I. (2018). *Another science is possible: A manifesto for slow science*. Polity Press.

Stigler, S. M. (1986). *The history of statistics: The measurement of uncertainty before 1900*. Harvard University Press.

Taleb, N. N. (2007). *The black swan: The impact of the highly improbable*. Random House.

Tarlau, R., & Moeller, K. (2019). 'Philanthropizing' consent: How a private foundation pushed through national learning standards in Brazil. *Journal of Education Policy*, *35*(3), 337–366. https://doi.org/10.1080/02680939.2018.1560504

Tompkins-Stange, M. E. (2016). *Policy patrons: Philanthropy, education reform, and the politics of influence*. Harvard Education Press.

Valente, J. A., & de Almeida, M. E. B. (2020). Brazilian technology policies in education: History and lessons learned. *Education Policy Analysis Archives, 28*(94).

Volante, L., & Mattei, P. (2024). The politicization of PISA in evidence-based policy discourses. *Policy Futures in Education*, *22*(8), 1478–1493. https://doi.org/10.1177/14782103241227309

Weber, M. (2002). *The Protestant ethic and the spirit of capitalism* (T. Parsons, Trans.). Routledge. (Original work published in 1905).

Zagzebski, L. (1996). *Virtues of the mind: An inquiry into the nature of virtue and the ethical foundations of knowledge*. Cambridge University Press. https://doi.org/10.1017/CBO9781139174763

Zuboff, S. (2019). *A era do capitalismo de vigilância*. Intrínseca.

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