Pedagogical Innovation and Platformization of Teaching: critical notes

Inovação Pedagógica e Plataformização da Docência: apontamentos críticos

Innovación pedagógica y plataformización de la docencia: notas críticas

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Highlights

Critical analysis of the technological shift imposed on teaching work, highlighting redefinitions of pedagogical practices.

Critical examination of pedagogical innovation and the platformization of teaching, including a reflection on terminological concepts within the educational context.

We observe an emptying of pedagogical innovation claims subjected to platformization and its digital training practices.

Abstract

The logic of algorithmic digital technology has entered the educational field in ways that intensify ties, networks, and connections. Under this dynamic, we hypothesize that the intensification of digital technology—under the guise of innovation and platform-based modulation—disrupts and impacts teaching work, revealing displacements in pedagogical relationships between teachers and students. Based on an analytical bibliographic review, we seek to reflect on whether the platformization of teaching can be regarded as pedagogical innovation. The results of the object's immanent analysis indicate a tendency toward the emptying of meaning in such claims, as they emerge in contradiction. We thus conclude that both innovation and platformization stand in opposition to disruptive opportunities due to the prevailing practices of digital educational training.

Resumo | **Resumen**

Keywords

Pedagogical Innovation. Teaching profession. Critical Theory of Society.

Introduction

The present reflection is guided by the following question: can the platformization of teaching profession be understood as pedagogical innovation? Grounded in a critical perspective on immanent contradictions, this question shapes our analysis of the concepts of innovation, platformization, and teaching work. In discussing contemporary society, education, and the impacts brought about by algorithmic digital technologies, we present several concerns and displacements that affect teaching work and pedagogical relationships within formative experiences.

Furthermore, we conducted an integrative review of concepts that are already widely systematized, such as the characterization of 21st-century social and technological dynamics, and the different understandings of technological-economic innovation and how it differs from pedagogical innovation. We also review recent studies on the construction of sociotechnical infrastructures of digital platforms and the phenomenon of platformization, which ultimately leads to their incorporation into work processes and, once assimilated, shapes and integrates teaching work—thereby affecting dynamics that are either already established or still in the process of consolidation within the educational field. This analytical path is supported by contributions from Critical Theory of Society, with the immanence of the object serving as a methodological reference.

Neoliberal, Monitored, and Ubiquitous Context

Looking retrospectively, the 1980s marked a political and economic turning point that Dardot and Laval (2016) referred to as "the new reason of the world." A rationality architected through new contractual forms and unprecedented digital control devices, gradually reshaping all social institutions—from the State to the family. This has unfolded in an environment whose basic postulate is the exacerbation of competitiveness, coupled with the erosion of the legal guarantees of social security once in place, thereby reducing individuals to the status of economic agents exposed to the inherent risks of a widely disseminated competitive logic (Lastória & Peres, 2023).

The constitution of this neoliberal rationality has taken shape in contemporary times through the establishment of a new disciplinary regime—one that is internalized and capable of articulating management, responsibility, and rewards. These are characteristic features of the current stage of capitalism, marked by a globalized (deregulated and financialized) economy, a productive sector shaped by post-Fordist transformations (flexible production systems), and intense, predatory competition driven by the accelerated pace of digital microelectronic technology.

It is important to note that this new disciplinary regime—meant to be internalized by individuals themselves—has not diminished traditional hierarchical pressures; on the contrary, it has intensified them through algorithmic-technological mediations of traceability, registration, control, and assessment. In this regard, Zuboff (2018)

offers a valuable contribution by detailing aspects of simultaneity, predictive information, and metric transparency made possible by Digital Information and Communication Technologies (Digital ICT).

In her essay, Zuboff (2018, pp. 19–20) presents the features of a "new logic of capital accumulation," in which information becomes the commodity that enables the prediction and modification of human behavior through the universalization of transparency, the extraction and quantification of data that guides, controls, and models behavior. This logic centers on the participation and involvement of subjects who are both watchers and watched—reinforcing ubiquitous, automated operations devoid of reciprocity, where the quantity of information prevails over its quality (Lyon, 2018).

The characteristics of neoliberal rationality, combined with the conditions imposed by surveillance capitalism, align with the overwhelming insertion of digital technology into every sphere of life. This dynamic became even more acute and complex following the declaration of the *Coronavirus disease* (Covid-19) pandemic by the World Health Organization (WHO) in March 2020, which forced society into confinement as a survival strategy.

Not only because of this context, but also as a result of it, we have witnessed an unprecedented transformation in school routines, curricular content, and in the very meaning and purpose of school and education—now mediated by digital technology. The teaching and learning relationship between educators and students, which once took place in the physical and educational setting of the classroom, shifted to the alternative, precarious, and circumstantial model of Emergency Remote Teaching (ERT). This model gave rise to a form of ubiquitous education and communication (Santaella, 2014) in a society shaped by Covid-19, ultimately realizing the long-standing aspiration for communication to become omnipresent—even in moments of encounter between teachers and students.

We have thus witnessed the materialization of what has been called "ubiquitous teaching" (Cunha & Bianchetti, 2018). This term refers to teaching work shaped by the condition or nature of professional activity as it is transformed through the incorporation of digital technologies into everyday educational life. Ubiquitous teaching is not limited to the work processes typical of Distance Education (DE) modalities. Rather, it draws from the ubiquity characteristic of digital culture, which permeates the communicative processes of teaching and learning—and, consequently, of work itself. This is because the insertion of online and offline spaces has blended and become entangled within the fabric of daily life (Santaella, 2014), due to the simultaneity of different environments (Cunha & Bianchetti, 2018).

Omnipresence and ubiquity in the context of digital culture: education and teaching work are intrinsically linked to hypermobility and connectivity, and they imply a paradigm shift, as there is no longer any ritual separating public and private spaces —no boundary between the classroom and the living room. People are constantly available to that which is mediated by cyberspace, by platforms, by apps, and by

networks—especially in relation to work demands. This is, therefore, a paradoxical characteristic of contemporary teaching:

> [...] the ubiquity that allows teachers to move more fluidly between different spaces, to optimize work time, to reduce physical distances and displacements, and to establish non-presential work processes, is the same that triggers a dynamic in which the teacher remains in constant contact with work, regardless of non-work times and spaces. (Cunha & Bianchetti, 2018, p. 179)

During the period of ERT, the relationship between communication and interaction intensified, as it took place entirely online through virtual communication environments. The service packages provided by platform companies such as Google and Microsoft—namely Google Classroom, Google Meet, and Microsoft Teams—were seen as viable solutions in response to the unprecedented context. This is because Departments of Education and Universities "[...] quickly adopted services—videoconferencing tools and productivity apps—offered by major commercial platforms that make extensive use of data-driven AI as a business model" (Comitê Gestor da Internet no Brasil, 2022, p. 12), thereby solidifying the integration of teaching work into communicational ubiquity.

Beyond the debate surrounding the immediate adoption of communication platforms as the primary mediators of interaction during emergency teaching, it is important to note that even before the pandemic scenario, didactic-methodological choices involving technological tools and mediation were already part of everyday educational practice. This trend was particularly evident, in Brazil, from the mid-1990s onward, with the emergence of distance education policies and their various institutional and financial investments aimed at expanding and consolidating this modality as a technological mediation reference.

Consequently, teacher training and professional practice, in the face of the unprecedented (re)configurations of the teaching and learning process—now increasingly technological and massified—have demanded a reshaping of curricular, didactic, and methodological conceptions in order to incorporate the mediation of digital technologies into both social and educational life. In this context, the use of digital platforms and tools as synonymous with innovation in the formative process and in teaching work has come to represent a form of "solutionism" (Morozov, 2018), which often positions such communication technologies as solely responsible for improving teaching performance and the teaching-learning relationship.

Innovation: Technological, Economic, and Pedagogical

Innovation "[...] etymologically originates from Latin, *innovatio*, meaning renewal, restoration, experimentation" (Michaelis, 2023, n.p.), with the prefix *in* – referring to something new—something that had not been done before, a novelty. However, one may question whether there is a significant difference between innovation and novelty. According to Cláudia Battestin and Arnaldo Nogaro (2016, p. 360), "[...] innovation is a term often used to designate some novelty." When this dynamism of

the 'new' occurs, we simultaneously associate it with the idea that something good has happened or is about to happen.''

In terms of technological innovation, in which innovation encompasses experimentation, success, new ideas, and technology, it is defined as "[...] a set of processes, methods, techniques, and tools related to art, industry, education, etc.; technical and scientific knowledge and its application to a specific field" (Michaelis, 2023, n.p.). In this sense, technological innovation may be understood as:

> [...] the creation of new technologies that produce effective results in the fields where they are applied, introducing novelty into productive and/or social environments, and that bring quality to what is generated—especially by improving living conditions in society and ensuring its socio-environmental sustainability. (Schlünzen Júnior et al., 2017, n.p.)

Innovation, when qualified by technology, originates in the business sector. In this context, technical progress via innovation is presented as a driving and emphatic force behind Brazil's economic development in the face of international competition, resulting in legal frameworks that promote participation in the capitalist system.

Since the beginning of the 21st century, legislation has been enacted to define, guide, and regulate the debate on innovation—its development and implementation in the technological and economic spheres. Law No. 10.973 (2004) defines innovation as "[...] the introduction of novelty or improvement in the productive or social environment that results in new products, processes, or services" (Brasil, 2004, n.p.), representing a set of measures aimed at promoting scientific and technological innovation, with a strong focus on Research, Development, and Innovation (R&D&I), "[...] which contributes to increasing the competitiveness of companies and both domestic and international markets" (Brasil, 2004, n.p.).

In 2016, this law was amended to regulate innovation funding, while Law No. 13.243 (Brasil, 2016) seeks to promote technological training to expand the autonomy and development of the country's national and regional productive systems. This legislative change granted innovation the status of an economic development driver, and the discourse supporting it emphatically legitimizes a utilitarian conception of science and education (Delgado, 2015).

When we add the educational dimension to technological and economic innovation, we arrive at what Delgado (2015, p. 769) understands as:

> [...] through an unavoidable pressure to also innovate, educational policies—as well as the actions and practices of educational management—are conditioned [...] by the discourse of adaptation to the permanent change imposed by such rationality, which originates from the productive sector and the market.

As a result, we consider the act of "innovating," as well as the noun "innovation," to be intrinsic to capitalist market rationality, which, according to Dardot and Laval (2016), manifests not only as a productive dynamic but also as a social and psychological one—regulating and determining mechanisms of control and behavior.

Such expectations align with the aspirations of the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2008), which promotes the development of teaching competencies. These competencies are tied to the mastery of Digital ICT pedagogical innovations in school planning, and the organization of learning environments—proposing teachers as "innovation leaders" (Schlünzen Júnior et al., 2017).

The educational practices linked to teacher leadership and innovation have come to be referred to, broadly, as "pedagogical innovation." Pedagogical innovation is defined as "[...] a deliberate and consciously assumed change in the organization of teaching and learning processes in relation to existing models, which succeeds in bringing better outcomes [...], introducing new hybrid, dynamic, and integrative configurations" (Moran, 2018, p. 354).

Pedagogical innovation may also involve "[...] the combination of active methodologies with mobile digital technologies" (Moran, 2018, p. 355), as well as more specific or more profound and disruptive innovations—those that impact formal education across all levels and formats (in-person, hybrid, distance)—and is further expressed in "[...] each individual's ability to learn in a more open, deep, shared, flexible, and meaningful way" (Moran, 2018, p. 357).

Within such configurations, the role of the teacher is redefined, as it is understood as "[...] a broader and more advanced designer of individual and group learning paths, an advanced mediator who is not merely focused on transmitting information from a specific field" (Moran, 2018, p. 356). Thus, the teaching role—framed as inherently innovative in formal education—is expressed as "[...] a break from traditional methods of teaching and learning, with greater emphasis on practice, competencies, mediation, and student agency" (Moran, 2018, p. 354).

Moreover, there are educational models that aim to meet the demands of pedagogical innovation by reconciling quality and quantity, and by promoting structured yet flexible pedagogical planning to maximize personalized learning. The educational models considered the most innovative exhibit certain characteristics, such as welcoming, stimulating, and participatory environments, with curricula that are interdisciplinary or transdisciplinary—combining active and personalized learning with peer-to-peer learning, according to José Moran (2018).

These pedagogical models also claim to innovate in their assessment processes and tools, as they are connected to the development of cognitive skills and socio-emotional competencies. Innovation in assessment is presented as a continuous and flexible process that can take various forms—such as digital portfolios, narratives, reports, observations, rubrics, self-assessments, peer assessments, and so on. Pedagogical innovation is considered disruptive when it is implemented through platforms designed to organize and monitor personalized learning pathways via various digital technological devices. In this way:

> Technologies expand the possibilities for research, authorship, communication and network sharing, publication, and the multiplication of spaces and times; they monitor every stage of the process, make results visible, highlight

progress and difficulties. Digital technologies blur, expand, and redefine the exchange between formal and informal spaces through social networks and open environments for sharing and co-authorship. (Moran, 2018, p. 356)

These understandings of pedagogical innovation align with recent international and national policies on innovation in the educational and technological fields. One key reference is the report by the International Commission *Reimagining Our Futures Together: A New Social Contract for Education* (UNESCO, 2021), which includes a central call for research and innovation. It asserts that:

> [...] curricular approaches should link cognitive mastery with problem-solving, innovation, and creativity skills, as well as incorporate the development of social and emotional learning and self-awareness. [...] Education should play a role in guiding *technological innovation* and the digital transformation of societies [...]. Teachers can be pioneers in efforts to collaborate and learn together in a culture of research, *innovation*, and exploration, and to foster integrated systems for organizing and sharing learning. (UNESCO, 2021, pp. 69–70, 88, *emphasis added*)

These goals can also be seen in Brazil's Law No. 14.533/2023, which establishes the National Digital Education Policy (PNED). This policy is structured to "[...] enhance standards and improve the outcomes of public policies related to providing the Brazilian population with access to digital resources, tools, and practices, with priority given to the most vulnerable populations" (Brasil, 2023, n.p.).

Nevertheless, the call for necessary "pedagogical innovation" is constructed and manifested within the current cultural and sociotechnical dynamic not only as a drastic reduction of the "society of knowledge" into the "information society," but also as the convergence of the latter with the "design society." This convergence leads to iconic forms replacing alphabetic text, resemanticizing, re-signifying, substituting, and recontextualizing it (Barreto, 2018), ultimately emptying the meanings and purposes of the very concept, text, and idea. In this sense, we once again endorse Delgado's (2015, p. 771) analysis when he states that:

> [...] the discussion of pedagogical innovation as a field of study presents an extremely technical language and tends to conceive innovation as an administrative process, disregarding the importance of the social, cultural, historical, and political frameworks in which all innovation operates. One can observe that efforts have been directed more toward disseminating and modeling experiences than toward understanding them in their full complexity and integrity—considering the actors, processes, relationships, dynamics, resistances, dilemmas, conflicts, and contradictions involved.

What is ultimately at stake, therefore, is not innovation itself, but what it conveys under the label of "innovation" in the face of the proposal for a "new social contract" in education—and in the restructuring of teaching work—which may represent significant displacements and modifications. Through the logic of technology—in terms of scale and operational reach—data flows and transparency not only reveal but may even modulate and replace teaching work with digital technological determinations.

Platformization: Impacts on the Teaching Ethos

When we relate "pedagogical innovation" to teaching work within learning platforms —such as those used in DE, ERT, or even in hybrid curricula and in-person administrative processes—we position the debate within a broader movement known as platform studies (Abílio et al., 2021; Gillespie, 2010; Helmond, 2015; Van Dijck, 2013). These studies recognize platforms as sociotechnical arrangements and consider the technical materiality generated by platforms as an agent that significantly transforms the processes in which it is involved.

Drawing from the entry on platformization by Thomas Poell et al. (2020), we understand the diversity of meanings that characterize platform studies. However, in summary, there is a distinction between platform and platformization. Platforms are defined as: "[...] (re)programmable digital infrastructures that facilitate and shape personalized interactions between end users and complementors, organized through the systematic collection, algorithmic processing, monetization, and circulation of data" (Poell et al., 2020, p. 6). That is, they allow multiple parties to interact with each other simultaneously and remotely, enabling economic exchanges.

Platformization, on the other hand, is described as: "[...] the penetration of platform infrastructures, economic processes, and governmental structures into different economic sectors and spheres of life—a process that reshapes and reorganizes cultural practices and imaginaries around platforms" (Poell et al., 2020, p. 6). It represents a digital architecture, a mode of operation, and a logic that governs an ecosystem based on the premise that: "[...] platforms do not reflect the social: they produce the social structures in which we live" (Vilalta, 2023, s.p.).

This means that platforms are not neutral. Quite the opposite. They organize and control the ways in which interactions take place within networks and digital environments, since: "[...] they are computational, architectural, political, and subjective overlays that mystify/conceal the operations carried out by platform companies" (Gillespie, 2010, p. 355 – translation provided by the authors).

David Lyon (2018) argued that the effects of the hyperexposure of the "self" on social media and the delegation of life under surveillance have produced human beings who engage in a kind of sacrificial citizenship—where both labor and the realm of culture are almost inevitably bound to computational processes. As a result, we witness a gradual abandonment of the public nature of culture, communication, and the public sphere more broadly, with platforms being elevated "[...] to the role of true social institutions that use their algorithms as mediating elements between data and metadata—in informational terms—and between norms and values—from ethical, political, and social perspectives" (Vilalta, 2023, n.p.).

Beyond their infrastructural dimension, platforms function as political and economic agents with their own rhetoric. They are embedded in social relations and shaped by the appropriation of their potential by a wide range of users. As José van Dijck (2013) has noted, these users—alienated from the internal mechanisms and

dynamics of the platforms—are almost inexorably compelled to accept the policies and terms dictated by the platforms in order to participate in something perceived as inescapable.

As an illustration of this relentless adherence and the modular conditioning of platformization as an expression of contemporary life, we highlight some of its effects on the organization of labor, as characterized in the works of Rosenblat and Stark (2016) and Abílio *et al* (2021). Platform labor is configured as algorithmic labor, shaped by platform design and by the asymmetry of information and power between platforms and users. There are dynamics of mass data collection, mining/extraction, and automated action over behaviors, promoted through the logic of platforms—either through data extraction in on-demand labor ("uberization"), or through platformization as labor conducted exclusively via digital platforms.

More specifically, as Abílio *et al*. (2021) explain, uberization expresses a transformation in labor dynamics: it represents a shift in the notion of entrepreneurship toward new forms of management and control over just-in-time workers. In the context of uberization, workers are subjected to "subordinated self-management." Furthermore, these individuals are viewed as entirely responsible for managing and ensuring their own survival—a process that involves the transfer of risks and costs, in which hundreds of thousands of workers become surveilled, mapped, and controlled by app-mediated labor management.

> The algorithmic distribution of labor is not a random roulette wheel that spins without hands. Algorithmic management refers to the ability to translate ways of life, social relationships, trajectories, and inequalities into manageable data that will produce and reproduce inequalities and mechanisms of labor exploitation. It is the capacity to assign rides to the favela to the Black driver, and rides to downtown São Paulo to the white driver. (Abílio et al., 2021, p. 53)

In the platformization of labor, the novelty lies in the technical-political means of mapping and controlling work processes (informatization and surveillance), which enable the ubiquitous, programmed, rationalized, and highly controlled synchronization of working time and production time.

That is, it refers to the dependency on digital infrastructures powered by data and automated by algorithms to carry out labor activities such as remote work or telework; distance education; live broadcasts; and app-based gig work. Platformization is both the materialization and consequence of a historical process that combines rentier capitalism, Silicon Valley ideology, continuous data extraction, and neoliberal governance (Morozov, 2018).

Platformization affects different social subjects in multiple ways, without taking on a homogeneous form. These are diverse work scenarios, intersected by social markers such as race, gender, class, temporalities, and the spatialities of digital labor (Global North/South), which materialize through platform-based work in the deep web, click farms, content moderation, microtasking and AI training—as well as through the more spectacularized versions of platform labor, such as that carried out by YouTubers, gamers, and influencers, who are also platformized workers.

Similarly, the platformization of teaching reveals a type of teacher who seeks to stay up to date and produce innovative work. However, in the rush to adapt, this teacher may ultimately submit to the same conditioning processes of compulsory updating —which can strip their work of meaning by molding it into subordinated, algorithmically-driven self-management.

This dynamic is already evident in situations where educational policies—aligned with a conception of pedagogical innovation as inherently positive and economically viable within school routines—impose applications and tools on their school networks that, rather than expanding, actually limit teacher autonomy and the recognition of their work as essential, regardless of technological or digital resources.

One such example is the *Registro de Classe Online*, Online Class Record, (RCO) application, which has been gradually implemented since 2013 and became mandatory across the entire public school system in the state of Paraná in 2022. Aiming to streamline administrative procedures within schools, Resolution No. 3550/2022 instituted the Livro de Registro de Classe Online (LRCO), which is defined as: "[...] a software that enables teachers to record content, evaluations, and student attendance, eliminating the need for a physical class record book" (Paraná, 2022, s.p.). On the surface, such discourse conveys efficiency and agility in administrative tasks. However, beyond these aspects, the RCO also provides pre-designed lessons in PowerPoint (PPT) format, as well as exams prepared by the State Department of Education (SEED) of Paraná. Teachers are recommended to use the materials made available in the application, which leads to the assumption that the entire state of Paraná will follow the same didactic sequences and the same timeline for content development—thus stripping teachers of something fundamental and inherent to their role: their pedagogical authority.

Following the same rhetoric, the state of São Paulo faced a similar situation starting in mid-2023, when public school teachers and students suddenly found an application installed on their mobile devices—without prior consent—to track grades and attendance. This situation revealed a breach of privacy and autonomy for those whose personal data was used for undisclosed purposes, marking yet another step toward surveillance and behavior modulation in teaching practices mediated by digital platforms.

Furthermore, educational processes and dynamics—both in schools and universities—have incorporated the logic that everything must be commodified, and everything must be accelerated: from beginning to end, from teaching to learning, from grading to graduation (Rosa, 2019). School time is no longer the time of reflection, analysis, dialogue, questioning, and synthesis. It has now become the time of efficiency, speed, metrics, and indices that drive competitiveness and, consequently, investment and profit.

In the study conducted by Carrigan and Jordan (2021), it was also possible to observe how some Higher Education Institutions (HEIs) have incorporated the logic of digital platforms into their university practices, prioritizing efficiency, speed,

metrics, and performance indicators. The researchers emphasize that from the very conception of technology—as in the case of platforms, media, and social networks —HEIs have adopted these elements both naively and problematically, treating them as standardized tools capable of replicating the multiple and dynamic dimensions of contemporary social ethos. This adoption is not merely a matter of individual attitudes among teachers, administrators, and students. Rather, it reflects the integration of platforms as intermediaries in a process that accelerates and transforms the nature of activities mediated by digital tools and metrics—exerting influence over the organizations in which such mediation occurs.

Carrigan and Jordan (2021) note that platforms are proliferating in higher education at a rapid pace—whether through service offerings that contribute to the individualization and restructuring of academic labor and social relations, or as a form of marketing bureaucracy (Nash, 2019), insofar as they standardize the experiences of students and educators as consumers and routinize their interactions with the university.

The warning regarding: "[...] the reduction of human experience to measurable and observable behaviors while remaining steadfastly indifferent to the meaning of that experience" (Zuboff, 2018, p. 376) is clearly reflected in how platforms operate within HEIs. In this context, data generation becomes a central mechanism for impact evaluation, public outreach, teaching and learning, and institutional relevance—ultimately determining their greater or lesser ability to secure funding and resources. As a result, institutions reproduce a new form of capital accumulation that incorporates the university into a business model based on data generation, treating such data as assets for advertising, promotion, and regulatory purposes aimed at maximizing user engagement.

This form of evaluation is opaque, as only the platforms themselves have access to the most robust data—surpassing the visibility offered by the university's own access and sharing metrics. These data are operated by platforms in such a way that they algorithmically modulate what is presented to users, conveying the perception that the platform is merely a neutral intermediary that records and measures user activity—instead of revealing its interference in and modulation of all activity that occurs within its infrastructure.

It is also important to highlight the element of lock-in, which is both constitutive and decisive to platform logic, as it enacts a dynamic of "capturing" users within its evaluative operations through various mechanisms. In academic settings, this process also unfolds through the metrics formulated by platforms, which condition and naturalize their own categories as being the truly relevant and valid ones— simply because they are engaged with and shared within online activity.

However, David Beer (2018) cautions that viewing this issue solely through that lens offers an impoverished understanding of the politics of data circulation, making it more difficult to think critically and in more sophisticated ways about online interactions and their dissemination structures. The reflection goes deeper, as the reproduction of these categories—despite being insufficient and precarious—

inhabits our imaginaries in terms of engagement, reach, amplification, and validation of the communicational possibilities that platforms generate, sell, and manipulate.

In this light, we propose a perspective grounded in the construction of a behavioral engineering, where recommendation systems have abandoned performance metrics based on users' stated evaluations, giving precedence instead to implicit metrics extracted from users' interaction behavior. This subjugates pedagogical relationships between teachers and students to the validation of platformized parameters, rather than to the teaching and learning processes that constitute the formative relationship itself—and the very meaning of the teaching ethos.

Final Considerations

Based on the foregoing, we can conclude that one of the core assumptions of teaching under surveillance capitalism and neoliberal rationality is the reconfiguration and flexibilization of space and time within the teaching-learning relationship (communicational ubiquity). This gives rise to a teaching ethos that closely resembles the performative dynamics demanded by the digital logic of technological life.

The teacher, therefore, becomes a professional operating within a process of surveilled self-management, expected to perform and handle multiple functions while navigating dualistic conditions such as: transparency / opacity, production / data extraction, presence / absence,

simultaneity / precariousness, metrification / evaluation. These are all characteristic of the platformization of labor that defines ubiquitous teaching, situated at the threshold of labor precarization—corrupting free time with "more work," co-opting multitasking skills and competencies, and fostering competitive, metric-driven behaviors that reproduce platform logics within academic routines of research and social interaction. Such dynamics also bring about psychological effects, particularly in the attention economy, which is altered, fragmented, and ultimately tends toward depletion.

Pedagogical innovation—promoted as transgressive and disruptive in relation to traditional teaching and learning—reveals itself, in the daily life of communicational ubiquity, to be a signatory of platformization dynamics. On one hand, it demands new expressions of teaching and learning, with the teacher driven by the promise of novelty, progress, and technological mediation as a solution to educational challenges. This is pursued through the combination of active methodologies and "[...] hybrid, dynamic, and integrative configurations" (Moran, 2018, p. 354), which are expected to yield improved outcomes. On the other hand, it also reveals market-oriented characteristics, whose flexible and ubiquitous nature corresponds to the indiscriminate determinations of the market and to the financialization of production and consumption relations—ultimately aimed at economic development. In this context, teaching professionalism is redefined as synonymous with a "[...]

designer of personal and collective learning projects" (Moran, 2018, p. 355), or as a learning coach.

The ambitions embedded in the concepts of pedagogical innovation and the platformization of labor, as some authors have argued (Delgado, 2015; Ferretti, 1995), present contradictions that are often framed as polarizations or typologies, whether instrumentalized or critical. In our analysis, the question of whether the platformization of teaching contributes to pedagogical innovation is grounded in the theoretical contributions of the first generation of Critical Theory of Society.

If "[...] only in the contradiction between what is and what pretends to be can the essence be known" (Adorno, 2009, p. 45), then the assumption underlying any analysis of reality must be dialectical. Thus, by taking on the very principles embedded in the prevailing discourse and identifying their contradictions as the basis for critique, we are able to revive normative concepts and principles that guide the debate. In our case, this approach is evidenced by the identification of the emancipatory—yet contradictory—claims of the discourse on pedagogical innovation: one that posits itself as novelty, progress, and a solution for improving educational processes. Digital platforms, when integrated into the educational dynamic and into the discursive and practical structure of everyday school life, come to transform the very meaning of teaching and education—reducing or, more likely, metamorphosing them into a techno-economicist discourse.

The analysis carried out here recognizes that teaching work, when platformized under a rhetoric of innovation, modernization, development, and improved administrative and educational processes, is in fact subordinated to a heteronomous configuration—a condition that strays from its own essence, expressing a logic of instrumental rationality. As a result, it produces a conception of education and of teaching work that is geared toward the individual's adaptation to the social system and to the market.

As Gruschka (2008) argues, beyond the global process that subordinates education to the economy, there is also an internal deformation of education, both as content and as process. In other words, instrumental reason has migrated from the economic sphere and become embedded within education itself, insofar as: "[...] both at the broader level and in the daily pedagogical practice of schools, we are witnessing the weakening of the internal logic and autonomy of education and learning as organizers of culture." (Gruschka, 2008, p. 175) Thus, identifying and resisting the corrosion of this internal logic of education becomes a challenge that must be addressed — especially in the context of technology — as an immanent critique of the rationality of the administered society (a society that is surveilled, ubiquitous, and shaped by neoliberal rationality).

Adorno (1995), when asking *Education – for what?* — or more precisely, reflecting on where education should lead us — called for a necessary debate on the role of education in the face of an objective reality whose critical features have only deepened in recent times. In a 1967 radio dialogue, he stated: "[...] education should aim toward the production of true consciousness." (Adorno, 1995, p. 143).

That is, education should contribute to conscious thinking about reality, and about the relationship between content and the forms and structures of thought within the subject.

Adorno (1995) clarifies that the deeper meaning of consciousness — or the capacity to think — is not limited to logical or formal development, but rather corresponds, quite literally, to the capacity to have experiences.

If that is the case, we continue to ask ourselves: Could pedagogical innovations, when mediated by platforms, from a critical perspective, be embedded in policies, educational actions, and teaching practices in such a way that they might be capable of restoring the capacity for formative experience in both teachers and students — given that it is through such experiences that the emancipatory potential aimed at the formation of consciousness could possibly find some resonance?

By carrying out an immanent critique of the structures that permeate high-tech, ubiquitous, surveilled, and highly rationalized neoliberal society, we observe the power of platform companies in shaping behavioral dynamics and social values within both public and private life. These forces contribute to the redefinition of teacher professionalization into the figure of the entrepreneur, guided by a rational-instrumental *ethos* and *telos*, such that so-called disruptive and innovative actions —championed by the productive, market-oriented, and thus administrated sector— become legitimized. These actions are increasingly embedded in the dynamics of educational and professional life.

Thus, continuing to reflect on the initial question—"can the platformization of teaching signify pedagogical innovation?"—is urgent in this digitally hyperconnected context. By recognizing the emptiness and appropriation—through the logic of technology and platform corporations—of educational concepts and meanings, we are able to expose their contradictions and reclaim the emancipatory and critical origins of teaching.

Therefore, returning to Gruschka's (2008) seminal idea, it is essential that any truly innovative dynamic emerge from within the school—with teachers, education professionals, and the school community as protagonists. From this internal nucleus, it would be possible to pursue the consolidation of pedagogical and administrative autonomy, which is indispensable for reclaiming the original social function of formation and education as organizers of culture.

▌References

Abílio, L. C., Amorim, H., & Grohmann, R. (2021). Uberização e plataformização do trabalho no Brasil: conceitos, processos e formas. *Sociologias*, *23*(57), 26-56. https://doi.org/10.1590/15174522-116484

Adorno, T. W. (1995). *Educação e emancipação*. Paz e Terra.

Adorno, T. W. (2009). *Dialética negativa*. Zahar.

Barreto, R. (2018). Objetos como sujeitos: o deslocamento radical. Em G. M. S Ferreira, L. A. S. Rosado, & J. S. Carvalho. *Educação e Tecnologia: abordagens críticas* (pp. 124-159). SESES. https://ticpe.wordpress.com/wp-content/uploads/2017/04/ebook-ticpe-2017.pdf

Battestin, C., & Nogaro, A. (2016). Sentidos e Contornos da Inovação na Educação. *HOLOS*, *2,* 357–372. https://doi.org/10.15628/holos.2016.3097

Beer, D. (2018). *The Data Gaze: Capitalism, power and perception*. SAGE Publications Ltd. https://doi.org/10.4135/9781526463210

Brasil. (2004). *Lei 10.973 de 2 de dezembro de 2004* (Dispõe sobre incentivos à inovação e à pesquisa científica e tecnológica no ambiente produtivo). Presidência da República. Secretaria-Geral. https://www.planalto.gov.br/ccivil_03/_ato2004-2006/2004/lei/l10.973.htm

Brasil. (2016). *Lei 13.243 de 11 de janeiro de 2016* (Dispõe sobre estímulos ao desenvolvimento científico, à pesquisa, à capacitação científica e tecnológica e à inovação e altera a Lei n. 10.973). Presidência da República. Secretaria-Geral. https://www.planalto.gov.br/ccivil_03/_Ato2015-2018/2016/Lei/L13243.htm

Brasil. (2023). *Lei 14.533 de 11 de janeiro de 2023* (Política Nacional de Educação Digital – PNDE). Presidência da República. Secretaria-Geral. https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2023/lei/l14533.htm

Carrigan, M., & Jordan, K. (2021). Platforms and Institutions in the Post-Pandemic University: A Case Study of Social Media and the Impact Agenda. *Postdigital Science and Education*, *4,* 354-372. https://doi.org/10.1007/s42438-021-00269-x

Comitê Gestor da Internet no Brasil. (2022). *Educação em um cenário de plataformização e de economia de dados*: parcerias e assimetrias. CETIC. https://cgi.br/media/docs/publicacoes/1/20221129114057/educacao_em_um_cenario_de_plataformiza%C3%A7ao_e_de_economia_de_dados_parcerias_e_assimetrias.pdf

Cunha, R., & Bianchetti, L. (2018). Verbete docência ubíqua. Em D. Mill (Org.). *Dicionário de educação e tecnologias e de educação a distância* (pp. 178-180). Papirus.

Dardot, P., & Laval, C. (2016). *A nova razão do mundo: ensaio sobre a sociedade neoliberal*. Boitempo.

Delgado, D. M. (2015). Inovação em educação na berlinda: da instrumentalização à emancipação. *Linhas Críticas, 21* (46), 764-783. https://doi.org/10.26512/lc.v21i46.4725

Ferretti, C. J. (1995). A inovação na perspectiva pedagógica. Em W. E. Garcia (Coord.). *Inovação educacional no Brasil: problemas e perspectivas* (pp. 76-92). Autores Associados.

Gillespie, T. (2010). The Politics of Platforms. *New Media & Society*, *12* (3), 347-364. https://doi.org/10.1177/1461444809342738

Gruschka, A. (2008). Escola, didática e indústria cultural. Em A. Zuin, & F. A. Durão (Orgs.). *A indústria cultural hoje* (pp. 274-286). Boitempo.

Helmond, A. (2015). The platformization of the Web: Making Web data platform ready. *Social Media + Society, 1*(2). https://doi.org/10.1177/2056305115603080

Lastória, L. A. C., & Peres, H. (2023). Racionalidade, Educação e Sofrimento Psíquico: A pandemia da COVID-19 como marco temporal. Em A.A.S. Zuin. *Relatório Científico Parcial FAPESP/ONU Ensino Remoto na Era da Computação Ubíqua*: *análise comparativa dos processos formativos de alunos universitários brasileiros e alemães em tempos de COVID-19* (pp. 135-163). FAPESP.

Lyon, D. (2018). Cultura da vigilância: envolvimento, exposição e ética na modernidade digital. Em F. Bruno, B. Cardoso, M. Kanashino, L. Guilhon, & L. Melgaço (Orgs.). *Tecnopolíticas da vigilância: perspectivas da margem* (pp. 151-180). Boitempo. https://medialabufrj.net/wp-content/uploads/2020/10/Tecnopoliticas-da-vigilancia_miolo_download.pdf

Michaelis*.* (2023). *Dicionário brasileiro da Língua Brasileira*. Melhoramentos.

Moran, J. (2018). Verbete inovação pedagógica*.* Em D. Mill (Org.). *Dicionário de educação e tecnologias e de educação a distância* (pp. 233-336). Papirus.

Morozov, E. (2018). *Big Tech: Ascensão dos dados e a morte da política*. UBU Editora.

Nash, K. (2019). Neo-liberalisation, universities and the values of bureaucracy. *The Sociological Review*, *67*(1), 178-193. https://doi.org/10.1177/0038026118754780

Organização das Nações Unidas para a Educação, a Ciência e a Cultura (UNESCO). (2008). *Educação de qualidade para todos: um assunto de direitos humanos*. Escritório Regional de Educação para América Latina e Caribe. https://unesdoc.unesco.org/ark:/48223/pf0000150585

Organização das Nações Unidas para a Educação, a Ciência e a Cultura (UNESCO). (2021). *Reimaginar nossos futuros juntos: um novo contrato social para a educação*. Comissão Internacional sobre os Futuros da Educação Boadilla del Monte. https://unesdoc.unesco.org/ark:/48223/pf0000379381_por

Paraná. (2022). Resolução SEED 3550 de 23 de junho de 2022. (Institui o Livro Registro de Classe e Livro Registro de Classe Online). Casa Civil. Secretaria de Estado da Educação. https://www.legislacao.pr.gov.br/legislacao/pesquisarAto.do?action=exibir&codAto=267067&indice=1&totalRegistros=1&dt=4.3.2024.17.53.14.924

Poell, T., Nieborg, D., & Van Dijck, J. (2020). Plataformização (Platformisation). *Revista Fronteiras – estudos midiáticos, 22*(1), 2-10. https://doi.org/10.4013/fem.2020.221.01

Rosa, H. (2019). *Aceleração*. EdUnesp.

Rosenblat, A., & Stark, L. (2016). Algorithmic labor and information asymmetries: a case study of Uber's drivers. *International Journal of Communication*, *10*, 3758-4784. https://ijoc.org/index.php/ijoc/article/view/4892/1739

Santaella, L. (2014). *Comunicação ubíqua: repercussões na cultura e na educação*. Papirus. https://ria.ufrn.br/jspui/handle/123456789/1449

Schlünzen Júnior, K., Schlünzen, E. T. M., Malheiro, C. A. L., & Santos, D. A. do N. dos. (2017). Inovação no processo de formação na docência universitária: estratégias formativas da Universidade Estadual Paulista. *EaD em Foco*, *3* (2). https://ticsead.uemanet.uema.br/index.php/ticseadfoco/article/view/222

Van Dijck, J. (2013). *Culture of connectivity: a critical history of Social Media*. Oxford University Press.

Vilalta, L. (2023, agosto 09). Seriam Cândidas as plataformas de internet? *Outras palavras* https://outraspalavras.net/outrasmidias/seriam-candidas-as-plataformas-de-internet/

Zuboff, S. (2018). Big Other: capitalismo de vigilância e perspectivas para uma civilização de informação. Em F. Bruno, B. Cardoso, M. Kanashino, L. Guilhon, & L. Melgaço. (Orgs.). *Tecnopolíticas da vigilância: perspectivas da margem* (pp. 17-46). Boitempo. https://medialabufrj.net/wp-content/uploads/2020/10/Tecnopoliticas-da-vigilancia_miolo_download.pdf

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Resumo

A lógica da tecnologia digital algorítmica adentrou o campo educacional de modo a adensar laços, redes e conexões. Sob tal dinâmica, hipotetizamos que a intensificação da tecnologia digital, em sua proposta de inovação e modulação plataformizada, abala e impacta o trabalho docente, revelando deslocamentos nas relações pedagógicas entre professores e alunos. A partir de investigação bibliográfica analítica pretendemos refletir se a plataformização da docência pode significar inovação pedagógica. Deste modo, os resultados das análises de imanência do objeto evidenciam a predileção ao esvaziamento de sentido de suas pretensões, posto que, manifestadas em contradição. Assim concluímos que inovação e plataformização recaem no oposto de oportunidades disruptivas em razão das práticas de formação educacional digital.

Palavras-chave: Inovações Pedagógicas. Docência. Teoria Crítica da Sociedade.

Resumen

La lógica de la tecnología digital algorítmica ha entrado en el campo educativo de tal manera que densifica los vínculos, las redes y las conexiones. Bajo esta dinámica, planteamos la hipótesis de que la intensificación de la tecnología digital, en su propuesta de innovación y modulación plataformizada, sacude e impacta la labor docente, revelando desplazamientos en las relaciones pedagógicas entre profesores y alumnos. A partir de una investigación bibliográfica analítica, pretendemos reflexionar sobre si la plataformización de la enseñanza puede significar innovación pedagógica. De este modo, los resultados de los análisis de la inmanencia del objeto muestran una predilección por vaciar sus pretensiones de sentido, ya que se manifiestan en contradicción. Por lo tanto, concluimos que la innovación y la plataformización son lo opuesto a las oportunidades disruptivas debidas a las prácticas de formación educativa digital.

Palabras clave: Innovaciones pedagógicas. Docencia. Teoría crítica de la sociedad.