


The platformization of Public Education: the construction of public policy through networks of visible and invisible actors

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**Fundação de Amparo à Pesquisa e
Inovação do Estado de Santa
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Abstract

The Platformization of Education has become a relevant topic, especially after the Covid-19 pandemic, when the digital platforms became common in education. To deal with the emergency, state departments and higher education institutions encouraged the adoption of digital information and communication technologies (ICT), which are incorporated into platform systems such as Google Workspace for Education and Microsoft 365 Education. Previous research has mapped the scale of this phenomenon and identified the actions of governmental, non-governmental and private organizations in this process. However, little is known about how these groups influence governments in agreements and partnerships, which culminate in the contracting of software and technological infrastructure services developed by big tech. This research identified the third sector organizations and other agents who played crucial roles in promoting collaboration agreements, partnership terms, and other legal devices between Google and the State Education Department of Santa Catarina. With a qualitative approach and a methodological focus on Case Studies and Document Analysis, this study seeks to reveal the dynamics and strategies used by the different players who determined educational policies aimed at integrating digital technologies into the basic education curriculum and contracting information services and software by state departments, providing a critical view of the implications of this dynamic for public education in the country

Keywords: Platformization of education. Public policy. Public-private partnerships.

Received in: 03/11/2025

Approved in: 09/15/2025



 <http://dx.doi.org/10.5007/2175-795X.2025.e105685>

<http://www.perspectiva.ufsc.br>

Resumo

A plataformização da Educação Pública: a construção de políticas públicas através de redes de atores visíveis e invisíveis

A Plataformização da Educação tornou-se um tema relevante, principalmente após o período de isolamento social provocado pela pandemia de Covid-19, quando o uso de plataformas digitais se tornou comum nas instituições de ensino. Para lidar com a situação emergencial, secretarias de estado e Instituições de Ensino Superior incentivaram a adoção de Tecnologias Digitais de Informação e Comunicação (TDIC), incorporadas a sistemas de plataformas, tais como *Google Workspace for Education* e *Microsoft 365 Education*. Pesquisas realizadas anteriormente, mapearam a dimensão deste fenômeno e identificaram a ação de organizações governamentais, não governamentais e entes privados neste processo. No entanto, ainda pouco se sabe sobre como esses grupos se articulam, facilitam e influenciam governos na formalização dos acordos e parcerias, que por sua vez, culminam na contratação de softwares e serviços de infraestruturas tecnológicas desenvolvidas pelas *big tech*. A pesquisa aqui apresentada identificou as organizações do terceiro setor e outros agentes que desempenharam papéis cruciais na promoção de acordos de colaboração, termos de parceria e outros dispositivos jurídicos, no contexto do estado de Santa Catarina, formalizado entre a Google e a Secretaria de Estado da Educação. Com abordagem qualitativa, enfoque metodológico no estudo de caso e análise documental, este estudo procura revelar as dinâmicas e as estratégias utilizadas pelos diferentes atores que determinaram políticas educacionais voltadas à integração de tecnologias digitais ao currículo da educação básica e à contratação de serviços e software informático pelas secretarias de estado, fornecendo uma visão crítica sobre as implicações desta dinâmica para a educação pública no país

Palavras-chave:

Plataformização da educação.
Políticas públicas.
Parcerias público-privadas.

Resumen

La plataformización de la Educación Pública: la construcción de políticas públicas a través de redes de actores visibles e invisibles

La plataformización de la educación se ha convertido en un tema relevante, especialmente después de la pandemia de Covid-19, cuando el uso de plataformas digitales se generalizó en las escuelas. Para hacer frente a la situación de emergencia, las secretarías de estado y las Universidades fomentaron la adopción de Tecnologías de la Información y Comunicación (TIC), integradas en sistemas de plataformas como *Google Workspace for Education* y *Microsoft 365 Education*. Investigaciones han mapeado la magnitud de este fenómeno y identificado la participación de organizaciones gubernamentales, no gubernamentales y entidades privadas en este proceso. Sin embargo, aún se sabe poco sobre cómo estos influyen en los gobiernos en la formalización de acuerdos y asociaciones, que conducen a la contratación de software y servicios de infraestructura tecnológica desarrollados por las *big tech*. Esta investigación identificó a organizaciones del tercer sector y otros agentes que desempeñaron roles clave en la promoción de acuerdos de colaboración, términos de asociación y otros dispositivos jurídicos entre Google y la Secretaría de Estado de Educación de Santa Catarina. Con enfoque cualitativo y una metodología basada en el Estudio de Caso y el Análisis Documental, este estudio busca revelar las dinámicas y estrategias utilizadas por los diferentes actores en la configuración de políticas educativas dirigidas a la integración de tecnologías digitales en el currículo de la educación básica y a la contratación de servicios y softwares informacionales por las secretarías de estado, proporcionando una visión crítica sobre las implicaciones de esta dinámica para la educación pública en el país.

Palabras clave:

Plataformización de la educación.
Políticas públicas.
Asociaciones público-privadas.

Introduction

Since the 2010s, there has been a marked increase in the adoption of digital platforms, developed by large technology companies, in Brazilian public educational institutions. Driven by optimistic appeals and the need to adapt education to the digital age, this trend has led to a proliferation of agreements between state departments and private companies, based on a presumed free offer of digital services and products, cloud storage, and communication tools (Amiel, Zanatta, Pezzo, 2024). This dynamic has raised questions about compliance with constitutional principles of public management, especially the transparency and impersonality of such agreements and contracts, as well as the risks of dependence on closed-source platforms developed by private companies through confusing contracts and terms (e.g. Chacon, Castro, and Morales 2022), compromising the pedagogical autonomy of public institutions and the privatization of technological services, which can directly affect the sovereignty and protection of educational data.

Technology giants, known as *big tech*, which include companies such as Google (Alphabet) and Microsoft, have emerged as protagonists in this scenario, providing Brazilian schools with Digital Information and Communication Technologies (DICT), incorporated into platform systems such as *Google Workspace for Education* and *Microsoft 365 Education*. The Covid-19 health crisis, by requiring a rapid transition to remote learning regulated by Opinion 05/2020 of the National Education Council (CNE), accelerated this process, making platforms indispensable for maintaining the school calendar and raising alarm bells in the scientific community about the increasing precariousness of public education (Pretto; Bonilla; Sena, 2020) and the urgency of public debate on the quality of education in the face of growing dependence on platforms.

Previous research has mapped the scale of this phenomenon and identified the actions of governmental, non-governmental, and private organizations in this process. Amiel et. al (2021) point to the existence of actors within the public education system who contribute to the insertion of *big tech* in basic and higher education. As an example, they cite the role of *brokers* (intermediaries) in the adoption of platforms, such as the Rede Nacional de Pesquisa [National Research Network] (RNP) and the Conselho de Secretários Estaduais de Educação [Council of State Secretaries of Education] (CONSED).

Avelar (2025) points out the central role of *big tech* in the platformization of education, and identifies a large number of other actors, including investors, foundations and *startups* that act to promote the digital education market, concluding that "the shift towards networked governance, a global trend in education, is particularly clear in educational technology, in which private entities are increasingly becoming part of public management itself" (Avelar, 2025, p. 8). Studies like this are

still scarce, especially in local contexts, where little is known about how these groups collaborate, influence governments, and facilitate the formalization of agreements and partnerships to contract *software* and technological infrastructure from *big tech*.

In this context, the article asks: how do governmental and non-governmental organizations, associations, and private entities articulate and influence governments in the formalization of agreements and partnerships that result in the contracting of software and technological infrastructures offered by *big tech*? How do networks of visible and invisible actors influence the development of public policies for the platformization of basic education in Brazil?

This study seeks to understand how the formulation of policies to integrate digital technologies into the basic education curriculum is influenced by networks of actors, both visible and invisible, who operate in the contexts of influence. The analysis focuses on the strategies and modes of operation of these actors to promote the adoption of proprietary educational platform products and services, such as the *Google for Education* (GfE) project developed in Santa Catarina. This project was directly responsible for the most important platformization process in Santa Catarina education, consolidating a management and teaching model based on corporate digital tools, which reconfigured pedagogical and administrative practices in the state. In addition, the study assesses the impacts of these networks on the autonomy of educational institutions and the quality of public policies, with special attention to the phenomenon of the platformization of Brazilian education (Evangelista, 2024), highlighting its effects on the educational landscape and the power dynamics among those involved.

Methodology

The article analyzes the policies for integrating DICT into the basic education curriculum, based on a case study: the GfE project. Developed by the Santa Catarina State Department of Education (SED-SC) in partnership with companies in the technology sector between 2016 and 2019, the project was responsible for articulating public-private partnerships to implement digital educational resources in the school context. Announced in 2016 (SED-SC, 2016), it stood out as an initiative to integrate digital technologies into the Brazilian educational context, due to its large-scale implementation, which allowed this research to have better conditions for visualizing and identifying the actors involved in the process.

The analysis is based on the principle developed by Ball (1994) that the implementation of public policies is the result of a continuous and dynamic process involving multiple actors and different contexts of practices and their reinterpretation, which would explain the gap observed in cases where what the policy does in practice differs from what it proposes to do in the texts (Ball, 1994). Therefore, this research understands that the integration of digital technologies into the

Brazilian public education curriculum, through the adoption of products and services provided by *big tech*, develops under the same logic of interpretations, disputes, and adjustments, which leads us to highlight the importance of analyzing a policy, not only through its regulations, but also through the way it develops in practice.

The choice of the case study as a method is justified by the fact that its tools enable in-depth exploration of a situation that can represent a broader set of analogous experiences (Meirinhos; Osório, 2010; Yin, 2001). In this case, the GfE project is seen as a specific experience that brings together characteristics that highlight challenges, possibilities, and results, making it a microcosm of broader trends and problems that can be observed in other contexts.

For data collection, a survey was conducted of official documents, reports, legislation, and materials from the companies involved, such as publications on websites and the publication of internal documents and reports. These documents were analyzed using content analysis methodology techniques (Bardin, 2011; Franco, 2012). It was possible to categorize the process of platformization of education on three fronts, as will be presented throughout the article: a) international influences through the production of official documents, discussed in the section "Actors and network agreements: International influences and local implications"; b) political articulations at the state and national levels, addressed in the section "Santa Catarina and the context of the production of political texts"; c) the action of companies and organizations that act as local representatives of *big tech*, presented in the section "Partnerships and cooperation: visible and invisible actors in the advance of platformization" and; d) concluding the discussion is the section "Digital technologies in education: a territory in global dispute", in which the consequences of platformization are addressed, also referencing studies carried out in Paraná on algorithmic governance and surveillance in public schools.

Actors and network agreements: international influences and local implications

Public education in Santa Catarina has been the subject of studies and analyses by multilateral organizations such as the Organization for Economic Cooperation and Development (OECD). In 2010, funded by the State Government and the European Training Foundation, the OECD produced a general assessment report on the education system and promoted the conference "A Escola do Futuro, Hoje (The School of the Future, Today)" in Florianópolis, discussing technological innovations in education. As a result of the conference, the document entitled "Inspired by Technology, Driven by Pedagogy: A Systemic Approach to Technology-Based School Innovations" was published (OECD; CERI, 2010).

Selwyn (2010), in his text published in the OECD report, warned about the risks of ideologies implicit in discourses on the adoption of digital technologies, linking them to neoliberal ideals of radical individualization, belief in market forces, and self-interest, where education is understood as a driving force at the service of the market. The notions of "human capital" and "innovation" are presented as responses to successive economic crises in the contexts of both advanced and emerging capitalist countries. Good performance and system improvement are conceived as results of applying an economic logic that values "the ability of individuals to make choices and achieve results established as conditions for access to a certain level of well-being" (Dardot; Laval, 2016, p. 230). This perspective, however, reduces subjects to mere agents of result maximization, ignoring the social and cultural dimensions and the objective and subjective conditions present in different educational contexts.

Initiatives such as that of the OECD marked the beginning of a long-lasting process of integrating the Santa Catarina state education network into national and international policies for the integration of digital technologies; This movement accompanied the growing trend of collecting, managing, and analyzing increasingly detailed data on individuals (Zuboff, 2018, 2020), in this education case, with the aim of monitoring, evaluating, and holding them accountable through increasingly unique performance and productivity metrics.

At the national level, in 2014, the production of texts promoting the policy of digital technology integration reached an important milestone with the launch of the document "Technologies to transform Education: successful experiences and expectations" (UNESCO, 2014) produced by the UNESCO Office in Brazil, a study on the use of digital technologies in education, the result of the international seminar of the same name, which was funded by private companies, including Google and Microsoft, revealing the role of these companies alongside multilateral organizations in promoting large-scale educational data mining. This trend is expressed in the 2017 Global Education Monitoring Report published by UNESCO (2017, p. 27):

Teachers need the skills to assess student performance, analyze data, and use it for teaching. However, many teachers feel ill-prepared to use data. A study in the United States showed that two-thirds of teachers did not find it easy to use data to improve teaching, and often found the volume of data excessive.

The report highlights the need to prepare teachers, via training programs, to use data in their teaching practices. In addition to focusing on technology, teachers must learn to use "data on literacy skills" (UNESCO, 2017, p. 27). Also in 2017, the World Bank presented its report entitled "A Fair Adjustment: Efficiency and Equity of Public Spending in Brazil" (World Bank, 2017). The text pointed out "the need for monitoring and evaluations of spending" based on "greater availability of

administrative data" (World Bank, 2017, p. 15). The report also suggests that data analysis could be used as a basis for the salary composition of education professionals, pointing out that this practice has not yet been implemented due to the lack of consistent information that would enable such an application.

Over the decade, these documents have influenced local policies and paved the way for the adoption of proprietary digital platforms, a condition of possibility for the use of large volumes of data in little-explored areas such as education. The narrative of events confirms that policies, in their formulation, are shaped in contexts of influence by interest groups that "dispute the definition of the social purposes of education and what it means to be educated" (Mainardes, 2006, p. 51). In this sense, "there is a dialectical interaction between the global and the local" (Mainardes, 2006, p. 52), which we will present below with the case of Santa Catarina.

Santa Catarina and the context of text production

With international disputes and discourse taking center stage, another movement in policy development began to take shape in the context of text production (Bowe, Ball, & Gold, 1992), with documents being drafted at the state and national levels. Within the state of Santa Catarina, SED-SC began the process of preparing its own documents, with emphasis on the State Education Plan for the decade 2015 - 2024 (Santa Catarina, 2015), in which the promotion of so-called "innovative educational technologies" gained prominence, so as to ensure that innovation was assumed as a premise for state policies.

As Laval (2019) pointed out, the idea of innovation adopted by states around the world does not result from "transgressive intentions of the mobilized bases," but rather the materialization of a private enterprise ideal, in which innovation "is a 'burning obligation,' a policy in itself, an institutional norm that must undergo standardized measures and increasingly resembles a 'reform from above'" (Laval, 2019, p. 220).

In 2017, SED-SC launched the State Technology and Innovation Plan (PEITE-SC), a document based on OECD and UNESCO reports, thus revealing the alignment and induction of international policy into local policy. In line with this movement, CONSED launched the Política Nacional de Inovação e Tecnologia Educacional [National Policy for Innovation and Educational Technology] (2017-2021), which outlined guidelines "developed based on comparative analyses of public policies in other countries and lessons learned from educational technology initiatives already implemented in Brazil" (CONSED, 2016, p.1). When the document was drawn up, CONSED was chaired by the then Secretary of Education of Santa Catarina. At the same time, the coordinator of the Technology and Innovation Working Group, who was directly responsible for drawing up the

document, was the then director of SED-SC's educational technology management. The role played by these actors in developing the policy of platformization of education in Santa Catarina, both at the state and national levels, occupying strategic positions in SED-SC and CONSED, was crucial in driving actions that facilitated the participation of non-governmental and private entities in policy formulation.

Among the actors involved in this dynamic, we can highlight the Centro de Inovação para a Educação Brasileira [Innovation Center for Brazilian Education] (CIEB), which on its website presents itself as "a non-profit association created in 2016 to promote a culture of innovation in Brazilian public education" (CIEB, 2017). Among the sponsors announced in 2017 are private organizations such as the Lemman Foundation, Roberto Marinho Foundation, Natura Institute, Península Institute, and others; and as partners, UNESCO, CONSED, Undime, Vetor Brasil, among others (Almeida, 2021).

Throughout this period, CIEB has acted by supporting the development of official documents, using the strategy of setting up State Plans for Innovation and Technology, notably in the cases of Santa Catarina (PEITE-SC), Paraíba (PEITA-PB - Plano Estadual de Inovação e Tecnologia para Aprendizagem da Paraíba [State Plan for Innovation and Technology for Learning in Paraíba]), and an initiative with the São Paulo State Department of Education (CIEB, 2019).

Figure 1 - CIEB supporters and partners in 2017



Source: Photo from the official CIEB portal, published by Almeida (2021).

It is important to note that CIEB was a key player in the network responsible for implementing the platformization of public education in Santa Catarina. As the technical lead in drafting the documents that justified state and national policy—with PEITE-SC and the Guidelines for a National Policy on Educational Innovation and Technology (2017–2021) developed by CONSED— it established itself as a prominent entity, benefiting mainly from the presence of managers familiar with the platform project in strategic positions at SED-SC, who established terms of technical

cooperation and business *networking* (Almeida, 2021). It was observed that this network of partners joined forces to develop a policy for integrating digital technologies into the curriculum, stimulating and promoting the advancement of the GfE project. Another special mention should be made of Vetor Brasil, which played an important role in this process, as detailed below.

Partnerships and cooperation: visible and invisible actors in the advance of platformization

Vetor Brasil is a “non-profit, non-partisan civil society organization (CSO)” created in 2015 with the aim of “improving people management in government, enabling the development of new strategies for attracting, selecting, and developing professionals in the public sector” (Vetor Brasil, 2018). Through a technical cooperation agreement established with SED-SC in 2016, this organization appointed professionals trained in its staff to occupy management positions with SED-SC, directly linked to the development of the GfE project.

Operating nationwide, between October 2015 and August 2017, Vetor Brasil had signed partnership agreements with the state governments of Alagoas, Amazonas, Ceará, Maranhão, Mato Grosso do Sul, Mato Grosso, Pará, Pernambuco, Rio de Janeiro, Santa Catarina, and São Paulo, as well as with the municipal governments of Blumenau (SC), São Paulo (SP), Niterói (RJ), Salvador (BA), and Alagoinhas (BA). The organization also stood out for being one of the four winners of the *Google Impact Challenge Brazil 2016* award, which, according to its official website, “is a Google initiative that aims to strengthen Brazilian NGOs that act for positive change in the country, stimulating the creative use of technology to promote social impact” (Vetor Brasil, 2018).

Therefore, it is clear that a well-established articulation existed, from the drafting of documents justifying the development of the policy to the formation of a management structure that favored the work of actors in tune with the platformization policy through the GfE project. This dynamic exerted what Stephen Ball called a “regime of influence”, a process in which groups with aligned interests mobilize resources and networks to shape political decisions more directly, through the influx of ideas and the acquisition of market “solutions” (Mainardes, 2006, p. 51). As such, we observed the direct action of “invisible actors” who sought to stimulate the progress of the platforms at local and national levels. In this scenario, the regimes of influence and policy production had already been consolidated, and all that remained was to identify the company or companies responsible for the technical development of the project that would bring the policy to reality.

In 2015, SED-SC signed a “Partnership Agreement” with the company QiNetwork Soluções Tecnológicas, as publicized in the corporate media and official government portals. The objective was to implement and enable the *Google Apps for Education* platform and its applications, as well as to provide a training platform for students, teachers, and network managers. On its official website,

the company advertised itself as "representative of Google's educational initiatives in Santa Catarina", being "one of the first companies in the country to achieve this certification" (QiNetwork, 2017). Founded in 2011, the company became a *Premier Partner Google Cloud* in 2015, the same year it signed an agreement to work with the state's education system. With this certification, it began to "work even more deeply with innovative solutions for the Brazilian corporate market. Since then, it has been recognized by the market as one of the fastest growing companies in Brazil" (QiNetwork, 2017).

The figure below shows the evolution of QiNetwork. In the same year that it became a "strategic *Google Cloud* partner", the company signed a Partnership Agreement with SED-SC, starting a pilot project at the Instituto Estadual de Educação (State Institute of Education), the largest public school in the state. In 2016, the project was expanded to 36 schools, one in each region, and was later extended to all units in the state network. This data suggests a symbiosis between state and company, highlighting the relation between QiNetwork's rise in Google certifications and the implementation of the platform in the public network.

Figure 2 - QiNetwork's Google certification timeline



Source: Taken from QiNetwork's official website. Published by Almeida (2021).

As a local representative and promoter of Google's products and services, QiNetwork informed its clients that " *Google for Education* is a solution that includes a package of free productivity tools for collaboration in the classroom. In addition, it offers educational content through *Google Play* for Education and *Chromebooks* and *tablets* integrated into the platform" (QiNetwork, 2017). This description made it clear that the project was not limited to providing *software*, but also opened the way to acquiring *hardware*, such as laptops and *tablets*, as well as distributing digitized curricular content.

This dynamic revealed that the platformization project extended beyond the adoption of digital tools, consolidating a model in which the state became a client of Google. In addition, it met a demand identified by CIEB through the *Four in Balance* model, which proposes a balance between four pillars

for the integration of digital technologies in education, namely “vision,” “competence,” “digital content and resources,” and “technological infrastructure” (Kennisset, 2015).

Google's local representatives, such as QiNetwork, play a crucial role in offering the company's products. They work on the technical development of the synchronization of the platform, currently called *Google Workspace for Education*, with government information systems that manage enrollment data, classes, grades, and others, integrating it through *web services*, in the replication of data from the local server in *Google Cloud Directory Sync*. In other words, they operate in administrative processes and in the migration of data from local sources to *big tech* systems.

We identified that, in addition to QiNetwork, which operated in Santa Catarina, other companies had signed similar contracts in different states of the country. The company MSTECH carried out this service in Rio Grande do Sul. On its website, it informs its customers that it offers "a complete solution for schools, education networks and education departments", and that in 15 years on the market it has already reached 8 million students and 10,000 schools (MSTECH, 2024). In addition to the *Google Partner* seal, it is also a *Microsoft Gold partner* with the AEP (*Authorized Education Partner*) seal and a partner of Cisco Systems, an American multinational company that develops, manufactures, and sells network equipment, software, and other technological products.

In the state of Pará, through contract No. 243/2017, Inteceleri Tecnologia para a Educação was the company responsible for specialized technical services for installation, configuration, parameterization, environment preparation, technical support, and other services. The company also has the *Google Partner* seal, and the government financed this service through a loan with the Inter-American Development Bank, worth nine hundred and seventy-nine thousand two hundred reais. According to its website, Inteceleri has already impacted "450,000 students in 5 states (Pará, Amapá, Ceará, Maranhão, and Amazonas)" (Inteceleri, [n.d.]).

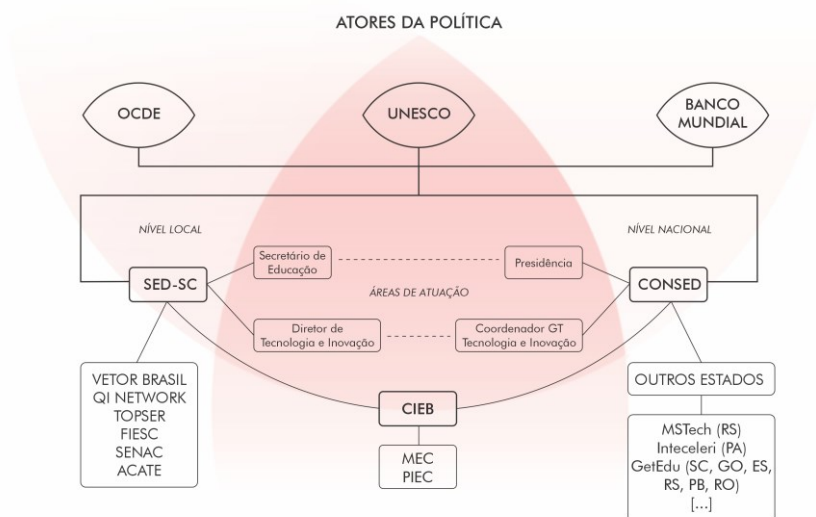
Another example is GetEdu, also a *Google Partner*. It has played a significant role in the platformization of education, especially during the Covid-19 pandemic, when isolation measures were taken and classes were paralyzed. With the need to resume the school calendar, the company stepped up its activities, providing educational services through Google products in various states, including Santa Catarina, Goiás, Espírito Santo, Rio Grande do Sul, Paraíba, and Rondônia. The company publishes the following information on its website:

In 2020, during the pandemic, we assisted many Brazilian states, municipalities, and private educational institutions in implementing the Google Workspace for Education Platform, enabling them to maintain a functioning teaching and learning structure despite social distancing. More than 6 million accounts were implemented, thousands of teachers trained, and exponential growth on our YouTube channel, which surpassed 50,000 subscribers and more than 2 million viewers (Getedu, 2023).

The examples of these *big tech* intermediary companies show that their actions reinforce a problematic model in which private companies profit as they mediate access to education. Although some platformization projects do not involve direct economic transfers, these companies use the field of education to qualify and improve their business models through certifications. Furthermore, the examples do not merely name the companies involved in the platformization of public education; they expose the subtle and strategic mechanisms by which they operate to inoculate private products and services into basic education, consolidating a business model that has been repeated in several states and has transformed public education into a field of commercial expansion and technological dependence.

The following image illustrates schematically what we have discussed in this section. There were a number of influences in the development of the GfE project. Initially, multilateral organizations such as the OECD, UNESCO, and the World Bank provided guidance through documents and reports that highlighted the integration of digital technologies in basic education and the urgent need to use massive user data. On a second level of influence, it can be observed that key players from the state of Santa Catarina, including the secretary of education and the technology manager, have held strategic positions in CONSED, such as the presidency and the technology directorate. Finally, the qualification of private and non-governmental actors who are gaining prominence and influencing local and national policies, such as MSTECH, Inteceleri, GetEdu, and CIEB.

Figure 3 - Hierarchical map of policy actors



Source: Almeida (2021). Updated for this article.

The importance of "top-down" action on the part of the top executive in defining the agenda and the problems that will receive attention and focus in the context of public policy is highlighted

(Kingdon, 1995). This dual action allowed these agents not only to influence the formulation of state policies but also to actively participate in the design of policy texts with national scope, consolidating a specific vision on the integration of digital technologies in public education. This intersection between state and national positions highlights how power relations and networks of influence shape educational guidelines, which are often aligned with the interests of specific groups and an expanded technological agenda.

Digital technologies in education: a territory in global dispute

The issues presented were analyzed from the perspective of the formulation and implementation of public policies, highlighting the processes and the role of the actors involved in the adoption of DICT in Brazilian public education. The case of Santa Catarina illustrated the ways in which *big tech* occupied the space of digital technologies in schools, culminating in the hegemonic scenario observed nowadays. Data from the survey carried out by the Observatório Educação Viggiada showed that by January 2021, at least 19 State Education Departments (São Paulo, Ceará, Pernambuco, Rio Grande do Sul, Sergipe, Distrito Federal, Alagoas, Bahia, Minas Gerais, Mato Grosso, Rio de Janeiro, Roraima, Paraná, Santa Catarina, Espírito Santo, Goiás, Pará, Rondônia and Tocantins) were using proprietary platforms, Google or Microsoft (Educação Viggiada, [s. d.]), reaching a percentage of 70% of state public networks.

The scale of this phenomenon cannot be ignored or naturalized so as to ignore the implications of this dynamic for public education in the country. It is crucial to debate the reasons why this configuration is problematic, highlighting the importance of a critical look at the process of adopting platforms in schools. To address this, it is first necessary to contextualize the problem in global terms, as it is impossible to consider issues involving socio-technical disputes within the world's current societal dynamics without doing so in a systemic manner (Martins, 2011; Santos, 2015).

With the implementation of the algorithmic governance model embedded in the school platformization process, education has undergone yet another transformation, becoming the object of a dispute of interests that overlaps national borders. In addition, algorithmic governance has brought with it a model for operating and managing school spaces based on “corporate normativity,” which occurs not through its direct introduction into public policy, but through the construction of channels of action that platforms organize through equipment and software that privilege certain forms of action, thus contributing to the transformation of the system and its operating instruments (Cardoso, 2018).

This new configuration is problematic because it increases the level of disputes in the field of education, both politically and economically, as well as ideologically, as the number of actors and

interests involved in the process increases, catapulting the public debate to a global level. There are many implications of this phenomenon, and these are reflected at different levels of education (pedagogical, cultural, social, political, economic), affecting both individuals and societies (Ball, 2020; Couldry; Mejias, 2019; Morozov, 2018; Zuboff, 2020). Some of these are not yet observable due to their "reflexivity", that is, due to the consequences of the use of social practices resulting from the insertion of new scientific discoveries or technologies that can only be evaluated in the future (Giddens, 1991). As for the observable consequences, many of them have been studied by the scientific community and have already become recurring topics of public debate. These range from the risk of loss of personal data privacy and surveillance of students and members of the school community; to the subjectification of neoliberal logic in the context of the education of children and adolescents and the consolidation of a culture of individualization and competitiveness in the school environment; to the consequent precariousness of the work of educators and administrators; to cultural and geopolitical issues such as symbolic homogenization and threats to national sovereignty.

The data governance model set up in education is rekindling discussions about collection criteria and especially the use of data collected from the school community, even with the creation of the General Data Protection Law (LGPD). They are still a cause for concern due to the opacity of the platforms' policies and because this is a space in which students, who should be under the protection of the state, have been subjected to a regime of continuous surveillance carried out by the platforms through the use of metadata (Van Djick, 2014). The phenomenon of datification, whose implications in different social spheres are consolidated (Van Djick, 2014; Zuboff, 2018; Morozov, 2018; Couldry; Mejias, 2019), takes on new contours when inserted into schools, as it becomes directly related to the capture of futures.

In Brazil, an example of what data governance can achieve in terms of surveillance in public education has already been studied in the state of Paraná. According to research conducted by the Observatório das Metrópoles Núcleo de Curitiba, Israel *et al.* (2023), the government of Paraná, which had already invested more than R\$ 53 million in educational platforms from private companies and held negotiations with educational technology companies that increased the risk of exposure of data on children and adolescents in the network (Israel, 2021), also implemented in schools the facial recognition system of the Attendance Regime (RF) in 2023, which, according to the study, increases the risk of violations of the General Data Protection Law (LGPD). The report showed that more than 1,667 schools have adopted the system across the state and points out that 15 other states in the country are already using this system, which is expanding rapidly (Israel *et al.*, 2023).

The study also evaluated Facial Recognition of Emotions (RFE), also known as "Educatron" by the Department of Education, a project implemented on an experimental basis in ten classrooms

of a civic-military public school. The project features equipment used to display educational videos and conduct video conferences, but its primary function is to monitor student attendance through facial recognition. The initiative would be worrying enough because of the potential for privacy violations inherent in facial recognition systems, as well as possible programming biases, such as algorithmic racism, capable of acting in a discriminatory manner in the school context and beyond. However, the system goes further:

The camera would capture facial information continuously during lessons to measure student performance, with the aim of generating graphs and indexes on class performance [...]. All facial information would be automatically converted into numbers and performance data (Israel *et al.*, 2023).

The system was built to monitor the students' level of attention and dispersion by analyzing their facial expressions, thereby measuring the quality of the classes. It is a process of making decisions based on data. For Morozov (2018), the reliance on algorithms and the use of data to make decisions is responsible for weakening democratic processes, since they shift power from the state to large technology companies, reducing the role of public debate in these contexts. The author explains that this has been the way societies have approached social and political problems, through solutionism—a concept that refers to the tendency to address social and political concerns as technical issues that can be solved exclusively through technology—ignoring democratic debate and the ethical implications of technology (Morozov, 2018). In terms of sovereignty, the mass collection of education data, as well as data from other sources, is also subject to the risks of its use by companies that are not subject to the regulations and laws governed by the countries of origin of this data, making it vulnerable to unethical uses or uses aimed at private or political interests (Zuboff, 2018).

The interest of large technology companies in Brazilian public education is not new. Companies associated with *big tech*, such as Microsoft in Brazil and Apple in the US, have been offering products for the education market since the 1970s and 1980s (Microsoft, 2009; Silver & Wuerthele, 2018) in the form of software licenses or equipment. Amiel, Zanatta, and Pezzo (2024) explain that the supply of hardware, operating systems, and productivity packages by companies to the public education sector in Brazil is an established practice. However, the migration to cloud-based models, such as Platform and Software as a Service (PaaS/SaaS), is a recent phenomenon. The authors state that, although the model offers apparent economic and functional advantages, such as improved security, efficient backup, and better device management, it also raises concerns about privacy and data collection for commercial purposes, highlighting the delicate balance between profitability and the protection of sensitive information. By offering these services apparently "free of charge", they

hide the real value of the transactions. In other words, they hide the fact that they may be being "paid" through data extraction and loyalty.

Big tech's strategy of offering services in exchange for data emulates the colonizing experience of the expansionist period by reinforcing the exploitation of commodities and the creation of markets for the supply of manufactured products, characterizing what Couldry; Mejias (2019) have called "data colonialism". A dynamic capable of amplifying socio-economic differences and perpetuating relations of domination at different levels. One of them is that of the sovereignty of nation-states, which lies in the transfer of decision-making power from public institutions to transnational private companies that control the collection, processing, and use of information to predict or influence behavior, in a logic known as "surveillance capitalism" (Zuboff, 2020).

The inclusion of *big tech* in education reflects profound changes in the global production system, which is now organized around the digitization and textualization of work. This transformation is not limited to the use of emails or text messages. Still, it encompasses diverse languages such as codes, images, and videos, whose data and metadata are continuously transacted, redefining power relations (Zuboff, 2018). The centralization of this information by corporations based in countries of the global North, mainly the United States of America, has reinforced the flow of capital, transforming the transfer of data into a synonym for economic transactions (Morozov, 2018). In the educational context, this data logic permeates both macro-policies, with the adoption of centralized management systems, and micro-policies, through the use of apps in the classroom and methods of control and surveillance. Thus, real-time, data-based learning has become a strategic axis that not only shapes education but also redefines forms of work and social control (Cerny, Almeida, Espíndola, 2023).

This movement extends far beyond the interest in improving learning and shifts towards explicit management and control interests, as evident in the use of facial recognition in schools. Despite numerous problems, this collection and interpretation of personal data in real time is suggested to lead, among other things, to time savings in the classroom (with automatic attendance recognition), school dropouts, and improved school safety, for example (Tavares *et al.*, 2023). However, by making schools a field for experimenting with and expanding surveillance technologies, there is a risk of producing effects on subjects who are still not very well defined, distancing them from a critical, creative, and civic education.

Conclusions

Throughout the text, we present the process of platformization of public education through the case of Santa Catarina, highlighting that relations between companies, local Google representatives, and the state have occurred similarly in other Brazilian states. The cases analyzed do not limit

themselves to identifying the corporations and organizations involved, but reveal the refinement of neoliberal strategies planned to insert private digital platforms into basic education, consolidating a business pattern replicated in multiple states.

This paper contributes to studies on the platformization of education by demonstrating, through a concrete case, the relations established between various actors, enabling public policies to be directed in this direction. It also shows that these are no longer mere commercial agreements between companies and governments to offer specific services. The platformization of education must be critically examined by institutions and society, as well as being the subject of public debate, so that decisions regarding it are made through a democratic and participatory process, as are the policies that regulate it, contrary to what has been happening, as demonstrated in this paper, which found that the network of influence in the construction of policies leading to platformization involves the participation of various non-governmental actors.

As an example of these actors, we highlight Consed, which, as of October 22, 2019, assumed the central role of facilitator and intermediary for the states in the adoption of *Google Workspace for Education*, marking a new phase in this process, since the Technical Cooperation Agreement was signed directly with Google LLC, and no longer with local representatives. The agreement focused on “exchange and technical cooperation between the participants,” aiming to “share knowledge, transfer experiences, and carry out joint activities by providing solutions, research, and studies focused on improving actions to enhance the quality of education” (CONSED; Google LLC, 2019). However, we must ask ourselves: what are these solutions, and for whom? Which research objects and with which subjects? Which studies and who carries them out?

Big tech, for its part, has not acted as a mere spectator in this process but has acted strategically and actively to strengthen its influence on public education. Google has acted on several fronts to consolidate its strategy. The company did this by sponsoring an event that produced a guiding document for public policies, offering awards to organizations, and certifying companies that acted as its representatives. This set of actions involved brokering and reaching agreements with governments, which not only met existing demands but also helped to shape them, creating an environment conducive to the adoption of its platform.

Other elements still need to be uncovered, since this action consolidates a model of technological dependence and privatization of education, in which corporate interests override real pedagogical needs, taking up time and money from public networks, while little is known about the data they are capable of or interested in collecting, how this data is used and for what purposes, and even less about the educational impacts of these platforms on education.

The process of platformizing education occurred largely without the direct participation of teachers, unions, and school communities in the decision-making processes regarding why and how to use digital technologies, thereby alienating these key stakeholders in the debate on basic education. This model reinforces a historical logic in the field of educational technology, of *top-down* decisions, in which corporate technologies are imposed without considering the real needs and contexts of schools.

Another relevant dimension of the adoption of these platforms is the gradual abandonment of proprietary electronic communication systems, many of them based on free software, developed or used by the states as public alternatives for the integration of digital technologies. Driven by algorithmic governance, this dynamic shows that public education remains a disputed territory, transcending national borders. This phenomenon, which should not be naturalized, poses significant risks, including loss of privacy, surveillance of students and teachers, subjectivization of neoliberal values, precariousness, and increased demand for teaching work, as well as threats to national sovereignty.

The platformization of public education is a topic that still has much to be revealed, since the actions of the actors, even the visible ones, occur in varying degrees of invisibility, making it a Herculean task for researchers to obtain documents and information. In short, for new perspectives to permeate the public debate, it is essential that we know how to identify the networks of influence, their actors, and the ways in which they operate.

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