ARTICLES

SCHOOL RESPONSES TO THE COVID-19 PANDEMIC: AN ANALYSIS OF THE STATE EDUCATION SYSTEM OF MINAS GERAIS, BRAZIL

Resposta das escolas à pandemia de Covid-19: Uma análise da rede estadual de Minas Gerais

Respuesta de las escuelas a la pandemia COVID-19: Un análisis de la red estatal de Minas Gerais, Brasil

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ABSTRACT

In addition to the health and economic effects, the COVID-19 pandemic shocked educational systems with school closures. The Brazilian state of Minas Gerais adopted the Regime Especial de Atividades Não Presenciais (Reanp), followed by heterogeneous strategies and results in each school. This article seeks to understand and analyze how public schools in Minas Gerais responded to the pandemic in 2020 and 2021 regarding the main strategies imposed for the continuity of activities and their possible effects. This descriptive research with a qualitative nature is based on documentary research and semistructured interviews. The results demonstrate the validity of the official strategies but also highlight their limitations and criticisms regarding their content and applicability. Learning losses and impacts related to health, socialization, and engagement in studies were observed, influenced by the socioeconomic contexts of school communities.

Keywords: education, COVID-19, inequality, Minas Gerais, state education network.

RESUMO

Além dos efeitos sanitários e econômicos, a pandemia de Covid-19 representou um choque nos sistemas educacionais, com o fechamento das escolas. Em Minas Gerais, foi adotado o Regime Especial de Atividades Não Presenciais (Reanp), seguido por estratégias e resultados heterogêneos em cada escola. Diante disso, o presente artigo busca compreender e analisar a forma pela qual se deu a resposta das escolas públicas mineiras à pandemia em 2020 e 2021, quanto às principais estratégias adotadas para a continuidade das atividades e aos seus possíveis efeitos. Trata-se de uma pesquisa descritiva, de natureza qualitativa, baseada em pesquisa documental e na realização de entrevistas semiestruturadas. Os resultados encontrados demonstram a validade das estratégias oficiais, mas também sinalizam suas limitações e críticas quanto a seus conteúdos e aplicabilidade. Ainda, perdas de aprendizagem e impactos referentes à saúde, à socialização e ao engajamento nos estudos foram constatados, influenciados pelos contextos socioeconômicos das comunidades escolares.

Palavras-chave: *educação, Covid-19, desigualdade, Minas Gerais, rede estadual.*

RESUMEN

Además de los efectos sanitarios y económicos, la pandemia de COVID-19 representó un shock para los sistemas educativos, con el cierre de escuelas. En Minas Gerais se adoptó el Regime Especial de Atividades Não Presenciais (Reanp), seguido de estrategias y resultados heterogéneos en cada escuela. Por lo tanto, este artículo busca comprender y analizar la forma en que las escuelas públicas de Minas Gerais respondieron a la pandemia en 2020 y 2021, en cuanto a las principales estrategias adoptadas para la continuidad de las actividades y sus posibles efectos. Se trata de un estudio descriptivo, de carácter cualitativo, basado en investigación documental y entrevistas semiestructuradas. Los resultados demuestran la validez de las estrategias oficiales, pero también resaltan sus limitaciones y críticas en cuanto a su contenido y aplicabilidad. Además, se observaron pérdidas de aprendizaje e impactos relacionados con la salud, la socialización y la participación en los estudios, influenciados por los contextos socioeconómicos de las comunidades escolares.

Palabras clave: *educación, COVID-19, desigualdad, Minas Gerais, red estatal.*

INTRODUCTION

Officially announced on March 11, 2020, by the World Health Organization (WHO), the COVID-19 pandemic caused many deaths, and tackling the dissemination of the virus led to significant job losses. This impacted productivity, employability, and poverty, disproportionately affecting the most vulnerable groups. Furthermore, the pandemic affected critical social issues, such as food insecurity and people's physical, mental, and emotional health (Instituto Butantan, 2022; United Nations [UN], 2020; World Bank, 2021).

The mass closure of educational institutions was one of the health measures implemented to reduce the spread of the virus (World Bank, 2021), contributing to a scenario that represented the greatest global disruption in the history of educational systems. Studies in European countries indicated that school closures had the potential to exacerbate educational inequalities, increase school dropout rates, and reduce social mobility, particularly for vulnerable populations (Education Endowment Foundation, 2020a, 2020b; Engzell et al., 2020; Halterbeck et al., 2020; Maldonado & Witt, 2020, as cited in Koslinski & Bartholo, 2021).

In this context, Brazil experienced the highest number of school closures in 2020 for early childhood and elementary education, with approximately 180 days of total closure (Organisation for Economic Cooperation and Development [OECD], 2021). Only in the second half of 2021 and more significantly in early 2022 that the progress of vaccination and improvements in COVID-19 case indicators allowed a return to hybrid activities, and later to fully in-person activities, in most state schools (National Council of Education Secretaries [Consed], 2022).

Thus, various remote learning and teaching strategies were adopted in the home environments of students and teachers to continue educational activities (World Bank, 2021). Hence, heterogeneous strategies emerged among Brazilian schools regarding reorganizing the school year and implementing emergency actions to minimize learning losses. However, at the federal level, coordination failures and the lack of a unified, well-defined strategy led to unequal approaches and results, often involving improvisation at the subnational level (Costa & Brandão, 2021).

At that time, remote teaching represented an emergency strategy rather than a formal methodology or teaching modality. Unlike distance education, emergency remote education was intended to respond to the crisis by approximating actions previously implemented in classrooms (Silva et al., 2020, as cited in Aureliano & Queiroz, 2023). It is important to emphasize that remote teaching requires adaptations of teaching plans, strategies, methodologies, and educational resources rather than a simple transposition of face-to-face teaching to the virtual environment (Oliveira et al., 2020, as cited in Aureliano & Queiroz, 2023).

In general, in Brazil, teaching strategies based on the use of applications, video classes broadcast on open television channels, audio broadcasts via radio, distribution of printed materials, and the provision of live and recorded content on online platforms predominated in the states' school systems (Centro Regional de Estudos para o Desenvolvimento da Sociedade da Informação [Cetic.br], 2021; Consed, 2022; World Bank, 2021).

States such as Acre, through the *Escola em Casa* (school at home) Program, and Amapá, with the *Aprendizagem em Casa* (learning at home) Program, primarily used video classes on

open television channels and distributed printed materials. Other initiatives worth highlighting are the programs that offer tablets and notebooks to students and teachers in the states of Ceará and Espírito Santo, and the distribution of food kits by the State Secretariat of Education of Piauí (Seduc PI) and the State Secretariat of Education, Culture, Sports and Leisure of Rio Grande do Norte (SEEC) (Consed, 2022).

In Minas Gerais, classes were suspended in all schools within the state school system, and the special regime of online activities (Reanp) was implemented to ensure compliance with the minimum required workload. Reanp included the provision of tutored study plans (PETs), teleclasses offered within the *Se Liga na Educação* program, and access to the *Conexão Escola* application and the *Estude em Casa* website (Consed, 2022; Minas Gerais Department of Education, 2022; SEE Resolution No. 4,310, 2020).

Research by the National Institute of Studies and Educational Research Anísio Teixeira (INEP) revealed that in Minas Gerais, the main strategies adopted by schools were distributing materials for collection at school or home delivery and providing online content. However, there was a low percentage of measures taken to provide technology equipment to teachers and students, indicating that those directly involved in these measures often had to rely on their own resources to participate in activities (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira [INEP], 2021, 2022).

Despite efforts to adopt multiple strategies in public schools in Minas Gerais, data from the 2019 and 2021 evaluations of the *Programa de Avaliação da Rede Pública de Educação Básica* (PROEB) (a program of assessment of the state's basic education system) of Minas Gerais show that, in general, students experienced learning losses due to the pandemic. The greatest losses in average proficiency occurred in the fifth year of Elementary School. Moreover, institutions with more critical socioeconomic indices obtained worse average proficiency results, demonstrating a strong association between the socioeconomic context of the school community and learning outcomes (Diretoria de Avaliação da Aprendizagem da Secretaria de Estado de Educação de Minas Gerais [DAAP/SEE-MG], 2022).

However, it is important to consider the atypical context around the processes of data collection and assessment. It was a context marked by the school closures and the posterior transition from online back to in-person teaching. Therefore, data must be examined considering each state, education system, and school to ensure better applicability (Todos pela Educação, 2022).

Despite the efforts of remote teaching strategies, several challenges persisted. Along with difficulties in using digital technologies – the main component of remote teaching – there were obstacles to student engagement, increased chances of school dropout and abandonment, and compromises to individuals' physical, mental, and emotional well-being. These were significant obstacles and risks faced by the school community (Cetic.br, 2021; Costa & Brandão, 2021; Sepúlveda, 2021; World Bank, 2021; Fundação Lemann, 2020, as cited in World Bank, 2021).

These negative impacts on education are not randomly distributed, as remote learning has been experienced as heterogeneous and unequal, depending on the students' context. Theorists in the field of sociology of education point out that the socialization functions of schools are

not equally experienced by all social groups (Bourdieu & Passeron, 1970; Tarabini, 2018, as cited in Tarabini, 2020).

The literature in this field converges on the idea that the entire school experience is mediated by inequalities in terms of class, gender, and ethnicity, which compromises the role of education in correcting inequalities. Therefore, policies aimed at educational equity require strategies that minimize the weight of family and social characteristics on educational outcomes (Costa, 2005; Tarabini, 2020). However, the pandemic amplified these unequal conditions, placing some social groups at greater vulnerability and disadvantage, thereby jeopardizing the possibility of social emancipation through education (Tarabini, 2020).

Studies show that significant existing social, economic, and regional inequalities hit the most vulnerable groups harder. These disparities manifested in differences in digital skills, access to and acceptance of remote learning, family support, and economic difficulties due to job losses, which could produce serious equity problems for the future of human capital. In peripheral areas of Rio de Janeiro, for example, the greater difficulty in accessing remote activities, combined with the lower level of education of parents and guardians, the need for students to work to help with family income, and the low investment in public policies aimed at combating inequalities, exacerbates the severity of this scenario (Cetic.br, 2021; Redes da Maré & Instituto Unibanco, 2022; Tarabini, 2020; Fundação Lemann, 2020, as cited in World Bank, 2021; World Bank, 2021).

Historically, schools have represented the locus of the efforts to minimize inequalities. With the school closures during the pandemic, the mechanisms of exclusion in the educational sphere were likely to deepen, especially affecting the most vulnerable individuals from a socioeconomic perspective (Costa & Brandão, 2021). Consequently, the weight of socioeconomic conditions on education was shifted back to the family, further amplified by unequal opportunities in areas such as food, housing, and work.

Therefore, it is necessary to investigate how schools responded within the context delineated for this study. This work examines school responses in the state educational system of Minas Gerais, Brazil, to the COVID-19 pandemic during 2020 and 2021, focusing on non-face-to-face teaching strategies and their effects on learning and the well-being of educational actors. This analysis is justified by the current and significant impact of the pandemic on education.

METHODOLOGY

This qualitative and exploratory study is based on documentary research and semistructured interviews. The research focuses on the regular basic education system in the Brazilian state of Minas Gerais, examining elementary and high schools.

The specific objectives of this investigation are to analyze the main online teaching strategies, including guidelines, pedagogical changes, and specific technologies adopted by state schools and their impacts on learning and the well-being of the school community; to investigate the perception of educational actors regarding the teaching strategies and their impacts; to assess

the main determinants and inequalities in the scope and differences in the responses of schools to the pandemic, especially concerning socioeconomic status.

The documentary research focused on the analysis of standards and documents from the State Secretariat of Education of Minas Gerais (SEE-MG) and other state government agencies, which provided guidelines to the schools during the pandemic. Documents were selected based on their availability on the SEE-MG Portal, with a particular focus on official communications, including legislation such as SEE Resolution 4310, dated April 17, 2020, which instituted the special regime of online activities (Reanp) and the Reanp's Guiding Document, which detailed its specific aspects. This research aimed to map and analyze the main strategies regarding guidelines, public policies, programs, projects, and actions adopted by schools in the education system of Minas Gerais to continue educational activities during the pandemic.

The interviews were based on semistructured scripts designed for each category of actors: teachers, principals, and managers. The questions were based on dimensions of analysis derived from previously conducted bibliographic and documentary research. The questions were divided into two blocks: one focused on the perception of the strategies adopted and the other on the impacts perceived within the school community and the educational sector. Six interviews were conducted with two teachers, one vice-principal, one principal of schools in the state of Minas Gerais, and two managers from SEE-MG. The interviews were conducted online in October 2022 via Google Meet, considering the availability and preferences of the participants. The interviews were recorded, with the explicit permission of all interviewees, solely for academic purposes to aid in the transcription and analysis of the statements.

Different contexts were selected for the teachers, vice-principal, and principal. Two of the four interviewees worked in the Metropolitan Region of Belo Horizonte, associated with the regional education superintendency (SRE) *Metropolitana C*. The other two were based in a municipality north of the state, with a lower socioeconomic status, under the SRE of Araçuaí. The SREs are responsible for technical supervision in various regions of the state, providing guidance on norms, promoting cooperation and integrated actions between the state and municipal education systems, and ensuring adherence to state policies and guidelines (Secretaria de Educação de Minas Gerais, 2020a).

The selection of the interviewed managers considered their participation in formulating and implementing the Reanp strategies in 2020 and/or 2021. The intention was to obtain from them the perspective of the agency that originated the initiatives.

The selection of interviewees aimed to analyze the contrasts between different regional and socioeconomic realities, particularly regarding the perceptions of those most directly involved in school community practices. Additionally, gathering perspectives from managers at the state education department allowed us to explore the perspectives from the instance where the strategy is formulated, which is in a context often distant from the reality of policy implementation in schools. It is important to note that this research is limited by the number of interviewees, and further analyses are needed to provide a more detailed understanding of online teaching in the state.

After conducting and transcribing the interviews, the study followed the content analysis method to understand the immediate meaning of the communication and additional messages

(Câmara, 2013). The process involved pre-analysis, exploration of the material, and treatment of the results. In the first phase, the materials were organized, and the reports were transcribed. Then, the main reports relevant to the themes of the question blocks were edited and extracted (Câmara, 2013).

With these results, the data were organized into main categories and subthemes. Finally, the reports were processed to make the results meaningful and valid within the research objective. This involved inferring causes and effects from the reported experiences and interpreting the information (Câmara, 2013). The analyses sought to summarize the main perceptions of the interviewees within each category, including direct quotes to illustrate their experiences.

The main objective of the interviews was to identify and analyze the actors' perceptions regarding their experiences. It is expected that the reports from educational actors directly involved in the adaptations imposed by the pandemic will complement the institutional dimensions documented.

Therefore, the documentary research and semi-structured interviews focused on several key dimensions to guide the analysis of responses to the COVID-19 pandemic in schools within the state education system of Minas Gerais. Table 1 provides a detailed overview of the methodology:

Table 1 – Details of the research methodology

RESEARCH PROBLEM	METHODOLOGY	DIMENSIONS OF ANALYSIS	DATA SOURCES	FORM OF ANALYSIS	OBJECTIVES
How did schools in the state education system of Minas Gerais respond to the COVID-19 pandemic in 2020 and 2021, particularly regarding the strategies adopted to continue their activities? What are the potential effects of such a response on the children's education?	Documentary research	Norms, guidelines, and other orientations followed by the schools	Legislation and official documents from the Government of the State of Minas Gerais	Descriptive analysis of the main strategies adopted in the state schools	Mapping and analyzing the main strategies adopted
		Programs, projects, and actions developed by the schools			
	Semistructured interviews	Perception of strategies adopted and their management	Interviews based on a semistructured script and conducted with representatives of schools from the education system of the state of Minas Gerais (teachers and principals) and with managers of the State Secretariat of Education (SEE-MG)	Content analysis, examining the interviewees' perception of their experience	Identifying and analyzing the perception of actors about their experiences regarding the public education offered by the state of Minas Gerais during the COVID-19 pandemic
		Perception of the followed norms, guidelines, and orientations			
		Perception of the schools, students, and teachers' performance			
		Relationship with the students' families			
		Influence of health, economic, technological, social, and emotional factors related to the pandemic			

This work is divided into four sections, including the introduction and the current section detailing the methodology. The next section presents the development of the research, offering a description and analysis of the strategies adopted by schools within the state education system during the pandemic. It also examines the perceptions of various actors and discusses the study's findings. The final section summarizes the conclusions, highlighting the study's limitations and suggesting future perspectives.

DEVELOPMENT

Main strategies adopted by the schools within the Brazilian state of Minas Gerais education system to face the COVID-19 pandemic: Regulations and guidelines

The closure of schools within the state education system in Minas Gerais due to the pandemic was immediately followed by the implementation of the special regime of online activities (Reanp). This was the primary strategy employed by the State Secretariat of Education (SEE-MG) to address the challenges posed by COVID-19. In practice, Reanp involved the provision of tutored study plans (PETs) that included activities to be completed both independently and with guidance, supported by the school community and SEE-MG itself (Resolução SEE n. 4.310, 2020; Secretaria de Educação de Minas Gerais, 2020b; Secretaria de Saúde de Minas Gerais, 2022).

During the pandemic, non-face-to-face means of communication were preferred for sending and receiving activities, including telephone, email, digital platforms, and social media. In collaboration with the regional education superintendencies (SREs), school managers were responsible for determining how materials would effectively reach students and how these students would return to schools once social distancing measures were lifted. For students without internet access, schools and their respective SREs were tasked with printing the PET material and defining a method for delivery. Additionally, the SREs were responsible for ensuring that schools within the state system adhered to the planned activities (Resolução SEE n. 4.310, 2020; Secretaria de Educação de Minas Gerais, 2020b).

From this perspective, PETs consisted of monthly handouts with weekly activities, seeking to cover the skills and learning objects for each level of education and for each curricular component. Furthermore, in addition to correcting the activities, teachers were also responsible for appropriating the content of the PETs to identify the need for constructing complementary and support activities and resolving doubts regarding the use of the materials (Secretaria de Educação de Minas Gerais, 2020b).

In addition to PETs, the initiatives included teleclasses through the *Se Liga na Educação* program, which was broadcast on the TV channel Rede Minas de Televisão and on YouTube. Another strategy involved the application *Conexão Escola*, which was integrated with the Google platform and provided state-sponsored internet access. Additional materials were available on the *Estude em Casa* website (Consed, 2022; Resolução SEE n. 4.310, 2020). Furthermore, teachers were offered training through free online courses for public school professionals prepared by

the *Escola de Formação e Desenvolvimento Profissional de Educadores* (School of Educators Training and Professional Development) (Secretaria de Educação de Minas Gerais, 2020b).

The *Se Liga na Educação* program involved the transmission of daily classes in both recorded and live video formats, available on an open television channel and on YouTube. These classes could also be accessed through the application *Conexão Escola*. The classes covered various curricular components and featured teachers from the Minas Gerais state educational system. In addition to providing access to recorded classes, *Conexão Escola* included PET content, supplementary exercises, and a chat feature that allowed for the exchange of information and experiences, fostering closer interaction between teachers and students (Secretaria de Educação de Minas Gerais, 2020b).

The application, available from the Google Play store, was integrated with the Google Classroom tool accessed through an institutional email created by SEE-MG. Furthermore, SEE-MG was expected to make free mobile data available to students and teachers to expand the possibilities of access to the materials produced (Secretaria de Educação de Minas Gerais, 2020b).

Finally, the Estude em Casa website served as a centralized information hub for the SEE-MG. Updated in 2022 and renamed as part of the *Se Liga na Educação* program, the site provided comprehensive data and materials related to Reanp. This included PETs, relevant legislation for addressing the pandemic, practical guidelines for the school community, and answers to common questions (Secretaria de Educação de Minas Gerais, 2020b).

It is worth mentioning that the gradual return of face-to-face classes in the state education system started on June 21, 2021, in a hybrid and optional manner, seeking to follow the health protocols in force at the time and subject to municipal decrees (Secretaria de Educação de Minas Gerais, 2021). The mandatory in-person return (except for some exceptional cases, such as students in the risk group and schools in municipalities with impediments to the return of in-person activities) began on November 3, 2021, based on Resolution 4644, of October 25 of the same year, from SEE-MG, which also revoked Resolution 4310/2020, from Reanp (Resolução SEE n. 4.644, 2021).

This overview makes it clear that general guidelines were provided to schools, students, and teachers regarding the tools used to continue educational activities. However, given the heterogeneity among municipalities and schools in Minas Gerais, many adaptations to the specific context of each class were likely necessary, particularly by teachers. Furthermore, it is important to assess the extent to which these strategies were adopted and their potential impacts on educational actors and students, considering the inequality of access to digital media and socioeconomic disparities between and within schools.

Therefore, given the varying administrative capacities and economic, social, and cultural differences in Minas Gerais, the response to the pandemic's emergency context varied significantly for each school. To examine these differences, the next section analyzes the perceptions of those who directly participated in this scenario, focusing on the use of Reanp strategies and their consequences.

Perception of educational actors about the experience of public education in Minas Gerais in the context of the COVID-19 pandemic

Three different scripts were used to conduct the interviews and cover the specificities of each interviewee's performance, including teachers and principals/vice-principals of state schools in Minas Gerais and managers from the State Secretary of Education (SEE-MG). The identities of the interviewees will be kept anonymous so as not to compromise their personal data. Still, it is necessary to highlight some aspects that contextualize the reality that these actors were inserted due to the pandemic (Table 2).

Table 2 – Interviewee profile

INTERVIEWEE PROFILE			
CATEGORY/ IDENTIFICATION	TEACHERS	PRINCIPALS	MANAGERS
A	Male. He worked at the SRE *Metropolitana C*, in a school with the INSE "High." High school teacher in 2020 and 2021	Female. She worked as vice-principal at the SRE *Metropolitana C*, in the same school as teacher A, with the INSE "High." She was vice-principal in 2020 and 2021	Female. Although having gone through recent changes in her position in the office, she has been working in the SEE-MG since 2019 (she had previous experience in education) and was working in the SEE-MG in 2022
B	Female. She worked at the SRE Araçuai, in a school with the INSE "Average Low." Primary school teacher in 2021	Female. She worked as a principal at the same school as teacher B, with the INSE "Average Low." She was principal in 2020 and 2021	Female. She was working in the SEE-MG between 2017 and 2020. She participated at the start of the discussion to elaborate and implement the Reanp

Note: INSE = Index of Socioeconomic Status. The ranges are described as depicted in the Proeb database for the years 2009 and 2021, provided by SEE-MG.

Initially, the interviewees highlighted a sense of unfamiliarity with digital tools and the initial challenges of disconnecting from the school environment and face-to-face interaction. Over time, however, through strategies like Reanp and ongoing dialogue among various stakeholders, it was possible to adapt to the guidelines, as reflected in the perspective of Teacher B:

> At first, it was quite daunting for me, you know? Because I like to work looking at the student's face, I like talking to the student. Some still call me "*tia*" [or "aunty," a term children use informally to refer to a teacher] [...]. I like being close, by their side... But we started off in line with what was required, and then we progressed... and finally, things worked out well. (Teacher B)

The main approach to distance learning in state schools revolved around PETs, available in both print and digital formats. Supplementary initiatives such as the *Se Liga na Educação* program, the *Conexão Escola* application, and the *Estude em Casa/Se Liga na Educação* website complemented PETs alongside virtual meetings using Google Meet, a favored option among the interviewed teachers.

Despite the efforts of SEE-MG, communication was perceived as predominantly internal within schools and the secretariat's various sectors, with limited inclusion of implementers in the formulation of initiatives. This resulted in significant information demands but insufficient dialogue, consultation, and incorporation of local actors responsible for implementation, such as representatives from regional education superintendencies (SREs) and individual schools. This sentiment was articulated in the following statements:

> These are things that come from the top down, you know? There wasn't enough dialogue with the teachers [...] I believe that was lacking [...] I didn't observe openness regarding the utilization of these materials. (Vice-principal A)

> Yeah... I would say it was a top-down collective construction. It was collective among the leadership, but there was no input from the implementers... There was no involvement from the schools or regional offices, even though they were tasked with implementing everything... nor from the students... [...] A quick response seemed prioritized over a response that was effective and of high quality. (Manager B)

Reanp's strategies faced criticism regarding their quality and relevance to the actual contexts of teachers and students. A significant issue was the inequality in access to the internet, with many teachers and students lacking quality access or ease of engagement with digital content. This disparity is highlighted in the following reports:

> Look, I think it's very unrealistic. It was very out of touch with our reality. But we had to comply [...] we had to work on the PETs, there was no point in arguing. (Teacher B)

> The PETs were all printed for the students because they did not have access to the internet. [...] They lived in rural areas, on farms [...] so they didn't have access, so the school printed and found a way to send it to the students (Teacher B)

> I think it was low quality, it was made by people who were there at the Secretary of Education and the central office [...] So this meant that the quality of the material was poor, at least the first materials. (Manager B)

In response to these challenges, schools, principals, and teachers had to develop strategies more suited to their realities. They utilized tools such as the WhatsApp messaging application, developed spreadsheets, sought training courses, used videos, and employed other supplementary methods. One of the most notable positive aspects was the effective use of technological tools by teachers, principals, and managers, although they acknowledged that the use of these tools was more complicated from the students' perspective.

Another highlight is the need for students to develop greater autonomy in managing their activities. However, due to the adverse context and the lack of direct contact with teachers and the school, not all students could participate and learn the content satisfactorily. Greater engagement was observed at the SRE school in Araçuaí, which served many students from rural areas. A notable aspect was the personal effort of the principal and teacher to enhance the monitoring of classes and PETs for all students, involving home visits to deliver materials and discuss progress.

There is a significant association between the socioeconomic context of students, their families, teachers, and the school as a whole and academic performance. This was evident from interviews, where at the SRE school in Araçuaí, the Index of Socioeconomic Status (INSE) was more critical than at the SRE *Metropolitana C* school. More students faced technological difficulties, impacting their ability to follow the content, which can strongly affect learning.

All actors perceived significant and potentially lasting impacts on the school community. Reports indicated that students experienced losses in learning and engagement, professionals faced work overload, and there were economic impacts on employment and the physical and emotional health of everyone involved and their families. This underscores the need to evaluate Reanp's strategies to guide SEE-MG's actions and mitigate the effects of the pandemic in various areas of life. The following reports help corroborate the view about these impacts:

> So you have to overlook mistakes and errors; the intention was good [...], but even with that, learning was certainly very compromised, right? [...] So I believe there was a very big gap in these two years, apart from the gap they already had before the pandemic (Teacher A)

> The biggest difficulty was [...] that we couldn't be face to face, right? Face-to-face with students, talking to them, getting to know them, listening, right... these difficulties [...], but I believe that there will be a gap, right? Forever in everyone's lives, not just theirs (Teacher B)

> [...] It is important to understand that the school is much broader and more complex than a computer or material [...], than a spreadsheet, right? So, in the classroom, everything becomes more complex, so it is important to understand this and know this reality in the classroom [...] What happens at school, it happens there, on a daily basis, face to face, right? And it is very different. (Vice-principal A)

> And then, in the first months of returning [to face-to-face activities], it was like this... very difficult, very difficult... and then we have to deal with students every day, right?, with panic attacks, anxiety [...] (Vice-principal A)

> Yes, there was a loss in terms of learning. This is undeniable, and we need to look at it now in the post-pandemic period and regain this loss. But there was also the [school] dropout and evasion, which may have worsened. And, in a certain way, the Secretariat also tried to act to curb this effect of the pandemic. (Manager A)

For synthesis purposes, Table 3 offers a better visualization of the convergences and divergences of perceptions of teachers, principals, vice-principals, and managers about their experiences in the context studied, following some dimensions of analysis.

Table 3 – Summary of the interviewees perception about the strategies and their impact

DIMENSIONS		INTERVIEWS		
		TEACHERS	PRINCIPALS	MANAGERS
Perception of the strategies	General changes regarding the work	Feeling of surprise, and loss of contact with students. Required prompt adaptation	Feeling of novelty, dealing with the unknown, and necessity of reformulation	Faced challenges in engaging in emergency adaptation
	Creation of the Reanp's strategies	No direct participation in Reanp's elaboration	No direct participation in Reanp's elaboration. The process was perceived as top-down.	Perceived as a collective endeavor led by top management, fast, and with quality issues.
	Relationship between actors of the SEE-MG, SREs, and schools	Valid and constant orientation	Guidelines were relevant but inflexible and disconnected from routine tasks	Frequent communication, but excessively centered on data collection
	PETs	Good guidelines, but low material quality and content errors. Content not well connected with actual practice	Good support material for teachers and students. Need to adapt to the social reality of the school	Joint effort to develop and distribute PETs, with recognition of flaws
	"Se Liga na Educação" program	Used as a supplementary strategy	Little monitoring of the program	Effort to expand reach, but with recognized limitations
	App "Conexão Escola"	Perceived that teachers used the app more than students; the app had errors	Perceived that teachers used the app more than students	Good tool for data integration and reliability
	SEE-MG's website "Estude em Casa" and program "Se Liga na Educação".	Perceived as a comprehensive website that gathers essential information for the school community	Perceived that teachers were the primary users	Website with high information centrality and potential for continuity
	Monitoring and evaluation strategies	Local evaluation of strategy development	Local evaluation of strategy development	Planned process involving indicators, but with little connection and dissemination to local stakeholders
	Complementary strategies	Need to adjust and formulate specific strategies to increase direct contact with students	Need to develop specific tools to monitor the activities of both teachers and students	Initiatives to complement the Reanp, such as actively searching for students

(continua)

(conclusão)

Table 3 – Summary of the interviewees perception about the strategies and their impact

| DIMENSIONS | | INTERVIEWS | | |
		TEACHERS	PRINCIPALS	MANAGERS
Perception of the impacts on the school community	Adaptation of the school community to the strategies	Gradual adaptation, but different in each context. The SRE school in Araçuaí faced more difficulties in accessing digital content	Gradual adaptation of the school, emphasizing he efforts of the school community as a whole	Perception that schools adapted to the strategies. This process of adaptation involved actions of incentive and recognition
	Impact on the students' engagement and learning	Present and future impacts, with individual student behavior greatly influencing performance	Strong impacts, with individual student attitudes being decisive for their performance	Recognition of learning losses
	Influence of the family context	Significant and close influence	Strong influence with ongoing consequences	Little direct contact with students and their families
	Aditional impacts	Overload of tasks, loss of socialization and identity with the school space, perception of emotional impacts on teachers and students	Overload of tasks, loss of socialization and identity with the school space, perception of emotional impacts on teachers and students	Increased attributions and demands, impacting individuals' personal lives
	Return of in-person classes, current reflexes, and future perspectives	Perceived that students exhibited learning deficits and behavioral changes	Perceived that students exhibited learning deficits and behavioral changes	Recognition of student learning losses and the need to adjust SEE-MG's actions

Discussion

It is important to emphasize that the extended period of school closures in Brazil, combined with the lack of explicit national guidelines and the Federal Government's lack of commitment to health measures, led to a very low prioritization of education. This resulted in heterogeneous strategies, leaving each education system, school, teacher, and student to adapt on their own (Costa & Brandão, 2022). In Minas Gerais, the SEE-MG attempted to maintain students' connection with state schools through PETs and quickly organized Reanp. Over time, schools assimilated these strategies based on the guidelines from the SEE-MG.

It is also worth noting that the more diverse and interactive the strategies, the greater the chances of effectively monitoring activities. Interaction is crucial for direct guidance and developing multiple skills and learning. However, as noted by the interviewees, Reanp's initiatives were generally not very interactive and were inefficient. The strategies required high autonomy from students, which was problematic since not all students had the ease or family support needed to fully engage with and learn the content.

Furthermore, regional and social disparities between the surveyed schools were evident. In the SRE of Araçuaí, students had less access to digital initiatives compared to the SRE *Metropolitana C*. For example, all PETs were printed for students in Araçuaí due to poor internet access, and the proposed content was perceived as less applicable to their daily lives.

Despite these efforts, the school closures caused learning losses. Younger children likely suffered more from these losses, particularly in terms of socialization. Early literacy phase students may have experienced significant setbacks at the beginning of their school life, increasing the likelihood of cumulative deficits in their educational trajectories. This is primarily due to the greater need for teacher mediation in the initial education levels, emphasizing the importance of physical presence in the school environment (Reimers, 2000; Tarabini, 2020). Research on early childhood education indicates that the development of children in their early school years is crucial to their academic success, and quality education at this stage acts as a protective factor, especially for vulnerable students (Peisner-Feinberg et al., 2001; Sammons et al., 2008; Sylva et al., 2010, as cited in Koslinski & Bartholo, 2021). Thus, the importance of in-person teaching, which facilitates interaction with peers, teachers, and the school environment, is even greater in the early years of schooling.

Moreover, schools had to devise their own complementary strategies to adapt content and reach as many students as possible. In addition to using digital technologies, the Araçuaí SRE school maintained direct contact with students and their families, delivering materials to their homes and talking to students to ensure effective participation in classes and planned activities.

Interviews with managers and principals revealed a lack of student engagement in activities and significant family, economic, and emotional impacts. These included loss of income and employment for families, lack of motivation due to uncertain prospects in studies, changes in behavior, and increased anxiety. The influence of socioeconomic, emotional, and family factors was evident. For example, some students lacked access to quality internet or support at home to complete their activities. Additionally, certain students were more affected by the loss of family employment or by illness and death of close ones due to COVID-19.

Furthermore, the interviews highlighted additional criticisms and challenges, revealing a significant overload of professional and personal tasks. This overload was noted by both the SEE-MG central office and the implementing actors, who observed a large volume of guidelines with limited flexibility regarding the tools available. Another issue was the low inclusion of key actors in the strategy formulation process, such as teachers, principals, and students. This exclusion led to shortcomings in the scope and applicability of the measures, with one manager acknowledging the disconnection between the SEE-MG and the schools' realities.

FINAL CONSIDERATIONS

The research suggested that schools in the state education system of Minas Gerais responded to the pandemic with the emergency strategies of a special regime of online activities (Reanp), which effectively maintained the continuity of educational activities. Consequently, schools

assimilated and refined the proposed strategies over time. Without these initiatives, the pandemic's impact on education could have been significantly worse, likely resulting in greater losses due to a complete interruption of educational activities for the entire school community.

However, these strategies often prioritized the speed of the response over its quality. As a result, individuals had to develop their own strategies and adapt the educational content to their specific contexts, leading to diverse responses and outcomes across different schools. This situation required even more autonomy from students to keep up with their activities, which was not uniformly feasible due to significant socioeconomic inequalities. Moreover, since these strategies could not fully replace in-person classes, impacts on students' learning, engagement, and psychological well-being were observed. These impacts will affect their return to in-person classes and their future educational trajectories.

Some study limitations should be noted, highlighting areas for further investigation. More in-depth analyses could be conducted beyond regular basic education, including comparisons with municipal school systems and private institutions. This could expose the widening gap between public and private education sectors.

Additionally, the limited number of interviews does not represent the entire state of Minas Gerais. Although efforts were made to address various realities, the substantial heterogeneity within Minas Gerais must be considered. Quantitative and qualitative studies, including interviews with students and family members, could be valuable for examining learning, engagement, and socialization losses. Moreover, data on school dropout rates and studies on the transition and ongoing developments from 2022 onwards are essential for better-targeting efforts.

Thus, the complexity of the pandemic remains a fundamental topic to explore, as it is still very recent and has varied significantly across different locations, each with its specific characteristics. The repercussions of this scenario have spilled over into various spheres of life and are expected to have long-term impacts. One can foresee the potential consequences of lower education and qualifications of individuals, leading to lower family incomes in the future. This effect is unlikely to be uniform and may exacerbate existing socioeconomic inequalities.

In this context, it is crucial to consider public policies to minimize and reverse educational, social, economic, and emotional losses. This involves conducting diagnoses and developing recovery plans based on learning assessments, evidence-based decision-making, and stakeholder alignment. Effective management and governance are essential to integrate the necessary factors for learning recovery (Bacalhau & Menezes, 2022).

There is a pressing need for policies focusing on active search and tutoring for students to address school dropout and truancy and mitigate learning losses. Additionally, it is vital to investigate and address the psychological and emotional impacts on the entire school community. To alleviate these impacts, providing spaces for dialogue, emotional support, and mental health care policies is essential (Carrança, 2022; World Bank, 2021). Furthermore, spaces for social participation are important to ensure that action proposals align closely with social realities.

Therefore, it is crucial to ensure that students can learn through interventions that address their overall well-being, including nutrition, health, and family support. Measures

aimed at more effective teaching and better teacher preparation are also important, along with ensuring adequate physical infrastructure in schools. For all these efforts, qualified management and governance are essential to unify the factors necessary for learning recovery, considering the efficiency of teaching and the allocation of resources in schools (Bacalhau & Menezes, 2022).

The results of this research contribute to understanding the context faced by state schools in Minas Gerais, highlighting important points in the field of sociology of education, particularly regarding the deepening of inequalities in opportunities. This study aims to enhance the understanding of different school scenarios and, consequently, support government actors in adopting public policies to overcome educational challenges. This is essential given the still recent nature of the pandemic's effects on teaching, learning, the school environment, and the well-being of those involved.

Therefore, formulating, implementing, and monitoring public policies should aim to minimize not only learning losses but also those related to school attendance, educational quality, and the social, emotional, technological, and economic factors involved. Effective and coordinated measures are urgently needed and require greater prioritization at both the federal level and by SEE-MG and society, focusing on defending the right to quality education for all.

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The authors have no conflicts of interest to declare

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Melissa Dias Queiroz: Data curation. Writing – original draft
Bruno Lazzarotti Diniz Costa: Methodology. Writing – review & editing