Teacher-Student Relationship: Pedagogical Interactions in Digital Environments in Elementary Education in Time of Pandemic

Relação Professor-Aluno: Interações Pedagógicas em Ambientes Digitais no Ensino Fundamental em Tempo de Pandemia

Abstract

In this article, we make a presentation about the path chosen by the São Paulo State Department of Education to carry out school activities in basic education between the months of April and December 2020, using an application and a printed book sent to the student, considering the context of quarantine and social isolation of the city of São Paulo adopted in the period. We have three objectives, namely: (i) to describe the interaction tools adopted by the municipality as a way of training students and teacher-student interaction; (ii) verify whether, in addition to the issue of educational interaction, other measures were instituted with the purpose of assisting families; and (iii) discuss the strategies adopted by the municipality in order to assist students and their families. The methodology used is the documentary research (GIL, 2002). The results achieved confirm that strategies were adopted using a digital platform and sending books to students by the municipal education department. However, it is necessary to think about alternative paths for students and teachers who do not have access to digital technology or live in areas where the book has not been delivered, so that it is possible for teacher-student interaction to mitigate inequalities in access to the education. Thus, we show that digital teaching-learning strategies adopted in basic education, whether in moments of social isolation or in person attendance, must take into account the different social realities for it to be effective.

Keywords: Basic education. Digital interaction. Social isolation.
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Resumo

Neste artigo, faremos uma apresentação sobre o caminho escolhido pela Secretaria de Educação do município de São Paulo para a realização das atividades escolares na educação básica entre os meses de abril e dezembro de 2020, com o uso de aplicativo e livro impresso enviado ao estudante, tendo em vista o contexto de quarentena e isolamento social da cidade de São Paulo adotada no período. Temos três objetivos, a saber: (i) descrever as ferramentas de interação adotadas pelo município como meio de formação dos estudantes e interação professor-aluno; (ii) verificar se, além da questão de interação educacional, outras medidas foram instituídas com a finalidade de atendimento às famílias; e (iii) discutir sobre as estratégias adotadas pelo município a fim de atender aos estudantes e suas famílias. A metodologia utilizada é a pesquisa documental (Gil, 2002). Os resultados alcançados confirmam que foram adotadas estratégias utilizando plataforma digital e envio de livros aos estudantes pela Secretaria Municipal de Educação. No entanto, faz-se necessário pensar em caminhos alternativos para estudantes e docentes que não possuem acesso à tecnologia digital ou residem em áreas onde o livro não foi entregue, para que seja possível a interação entre professor-aluno, de modo a mitigar desigualdades no acesso à educação. Dessa forma, evidenciamos que estratégias digitais de ensino-aprendizagem adotadas na Educação Básica, quer seja em momento de isolamento social ou de atendimento presencial, devem levar em consideração as diferentes realidades sociais para que tenham efetividade.


1. Introduction

The pandemic caused in 2020 by COVID-19 (SARS-CoV-2) brought social changes around the world. One of them was the reconfiguration in the way of living socially. Each individual had to reduce physical contact with each other, especially those outside the walls of their home, in view of the concern to prevent themselves and not to spread the virus. In this context, care has intensified in spaces with large circulation of people, leading schools to abruptly close their doors, seeking to prevent the rapid spread of the virus.

According to information present at the Ministry of Health, the first case of human contamination occurred in the city of Wuhan (China), in December 2019. Subsequently, the dissemination and transmission started to occur person to person. According to the World Health Organization (WHO), as of January 26, 2021, 99,363,697 cases of infected people and 2,135,959 deaths were recorded worldwide as a result of the diagnosis of COVID-19.

In Brazil, the first confirmed case of the disease by the Ministry of Health occurred in the city of São Paulo, on February 26, 2020. A 61-year-old man, with a history of recent travel to Italy, presented the symptoms.
first symptoms\(^4\). The first death by COVID-19 was of a 62-year-old man, also a resident of the city of São Paulo, who had no history of traveling abroad and who, due to the worsening of the disease, died on March 16, 2020\(^5\).

After this history, the governor of the State of São Paulo, João Doria, instituted, through Decree No. 64,881 of March 22, 2020 (SÃO PAULO, 2020a), a quarantine from March 24, 2020, restricting activities as a measure of reduce virus contamination. In turn, the mayor of the city of São Paulo, from Decree No. 59,298 of March 23, 2020 (SÃO PAULO, 2020b), highlighted the emergency situation in the city and decreed changes in the school calendar of all municipal units, with anticipation of the recess period, scheduled for July, for the period from March 23 to April 9, 2020. In addition, after the recess, the learning process would happen remotely, that is, without in-person classes.

In this context of the emergence of a new highly contagious disease, and the establishment of a quarantine, Basic Education needed to modify its teacher-student pedagogical interaction, starting to use means other than in-person. School activities that took place through human contact had to change their form of interaction. This new reality was called the “new normal”.

The term used from the second quarter of the year 2020 can be defined, according to Schirato (2020), as “[...] the proposal of a new standard that can guarantee our survival”. In view of the above, and the impossibility of face-to-face interaction in order to avoid contact with people who might be infected, new ways of teaching and interacting had to be developed.

After the closing of the school units on March 23, 2020, classes began to take place remotely, through a virtual platform, from the end date of the early recess of April 9, 2020.

The city hall of São Paulo made available to students and teachers in its network the Google Sala de Aula platform, for launching activities, conducting non-presential classes and interaction between teacher and student. In addition, two versions of the book entitled “Learning Trails” were sent to students in Kindergarten, Elementary and High School, and EJA (youth and adult education).

This article seeks to present the measures applied in the city of São Paulo during the quarantine period in elementary school units, pointing out the strategies adopted as well as other measures to assist families and students beyond the educational issue, such as providing assistance for student feeding.

This work aims to present the trajectory of the city of São Paulo to implement remote teaching and measures for teacher-student interaction, from March to December 2020.

2. Paths to learning

With the contamination of humans by Coronavirus in the city of São Paulo, after the first death in the city and the subsequent establishment of the State of Emergency and quarantine in the city, the Municipal Department of Education decided to change the school calendar and later suspend in-person activities, as stated:

The school recess that takes place annually in July was brought forward in 2020. In this way, all school units of the Municipal Education Network had service suspended from March 23 to April 9, 2020, for which there will be no need to replacement. The learning process as of 04/13/2020 and for as long as the suspension period of in-person classes lasts, it will be done through printed material that is being delivered by mail to the students’ homes (and, in addition, in a virtual environment) (SME-SP, 2020).
The measure adopted by the municipality so that the teaching-learning process was not interrupted during this period was the preparation and distribution of teaching material for students, sent by mail to their families. In order to send the books, the residential data must necessarily be updated by your family, through a website for this purpose or by request from the school secretary, and only 15% of the families updated this information. Possible delivery of the book, due to non-compliance with this requirement or, even with the update, there was an unsuccessful attempt by the post office, the student's family should pick up the material at the school office, from 10 am to 4 pm.

In addition to supplying the book entitled “Learning Trails”, with volume 1 delivered in April/2020 and volume 2 in August/2020, the city of São Paulo provided teachers and students with access to the Google Sala platform Classroom for posting activities and interaction using the Meet system of the same platform.

There was then a virtualization of classes with synchronous (by Google Meet) and asynchronous (homework with the use of textbook) meetings, at the time of the pandemic, with the use of printed material and digital technologies for classes, meetings, clarifications, communication, posting of activities and other pedagogical practices. What effectively changed in this context was the use of digital technologies by teachers and students so that interaction was possible.

However, as stated by Formosinho, Machado and Mesquita (2015, apud Marques, 2020):

> The emerging changes that occurred in the teaching process in the current context of the pandemic caused by the new coronavirus led to the adoption of methodologies, until then, not adopted by many teachers in their teaching environments. What made the need for innovation arise in the act of teaching, seeking innovative alternatives to bring knowledge to their students, with the aim, above all, of providing autonomy to students in their learning process (FORMOSINHO; MACHADO;MESQUITA, 2015, apud MARQUES, 2020, p. 33).

Platforms were made available to carry out teaching-learning activities, however, there was not enough time to train teachers and students. Nor were the necessary work tools for this new configuration offered to professors and students who did not have access to the necessary technologies.

This is a new moment in elementary school education, not only regionally, but as a possibility of virtualization in education:

> [...] a configuration of the teaching-learning process called Remote Education has been emerging, that is, pedagogical practices mediated by digital platforms, such as applications with content, tasks, notifications and/or synchronous and asynchronous platforms such as Teams (Microsoft), Google Class, Google Meet [...] (ALVES, 2020, p. 352).

Therefore, we have the remote learning modality, which occurs differently from distance education. In the first case, implemented in municipal schools of basic education in São Paulo, education is mediated by digital platforms, seeking a path for training and interaction to take place.

With social distancing and activities being placed on digital platforms, there is sometimes the idea that teaching has become distance learning. However, they are different teaching modalities that are not only configured by physical contact or not. CNE Opinion No. 05/2020, which deals with the reorganization of the school calendar and the use of non-face-to-face activities to comply with the workload, points out that:
[...] in order to guarantee essential school care, it is proposed, exceptionally, the adoption of non-face-to-face pedagogical activities to be developed with students while sanitary restrictions persist for the full presence of students in school environments. These activities may or may not be mediated by digital information and communication technologies, especially when the use of these technologies is not possible (BRASIL, 2020).

This new form of teaching is different from the Distance Education (DE) modality, in which the entire training process and the material to be used, such as video classes and educational processes, are designed and developed for this purpose, and teachers and students already know, in advance, the rules and how the classes will take place.

The legislation, through Decree n. 9,057/2017, conceptualizes Distance Education in its 1st article:

For the purposes of this Decree, Distance Education is considered the educational modality in which didactic-pedagogical mediation in teaching and learning processes occurs with the use of information and communication means and technologies, with qualified personnel, with access policies, with compatible monitoring and evaluation, among others, and develop educational activities by students and education professionals who are in different places and times (BRASIL, 2017).

We then have the definition of what distance education is and how it takes place in Brazil, which is different from what is currently happening with forced virtualization in the pandemic, because, in an atypical situation, any face-to-face interaction between teacher and student was impossible, being necessary the creation of non-face-to-face activities to prevent the school bond from being lost and, as a consequence, to increase dropout.

It is worth mentioning that, with remote learning, some groups suffered more exclusion than others, in addition to the lack of technological resources or difficulty in accessing:

[...] we cannot forget to highlight their exclusion once again, that is, people who have any type of disability [...], they have various difficulties that can compromise their learning many times in face-to-face dynamics, imagine in remote activities (ALVES, 2020, p. 359).

Students who have a disability should be considered. All students should be thinking about this new teaching concept. The materials to be made available should provide for this situation.

The reflection on educational practice, therefore, must consider the situation of students in racial/social vulnerability, and seek measures based on the principle of accessibility, the joint participation of the community and education professionals, in accordance with human rights. The current state of emergency cannot mean reinforcing the necro liberal logic, which requires sacrifices from some so that others can enjoy the material and symbolic benefits provided to hegemonic groups (REIS, 2020, p. 4).
In this topic, we were able to identify how the Municipal Education Secretariat of São Paulo – SME/SP acted in order to guarantee the right to education of elementary school students in 2020: with social isolation, with the supply of books and use of digital platforms as a form of pedagogical interaction between teacher and student.

It was also possible to note that inequalities were evidenced at this time of pandemic, as access to technology and books did not occur in the same way, as we still have students with specific needs who would need specialized care.

In addition to these observations, another question to be answered refers to the other services provided by the school, such as student meals. How did the other services provided by the school unit come to be offered during this period?

2.1 The student does not live by knowledge alone

School plays more than one role in society's life. It is a place of knowledge, training, social interaction, food, care, attention to the rights of children and adolescents, where childhood and adolescence are experienced, the diversity of training, among others.

The public school can present several contradictions. We live with school failure, dropout and several other phenomena that expose our weaknesses, yet this is sometimes the only public space that assists this population (SANCHES; PARDIM, 2020, p. 242).

Sometimes, the student understands the school space as a safe haven, a place where there is a real possibility to explore limits and establish contacts. There is a well-established routine in each school unit, regardless of its physical structure, with times, place for each activity, procedures, guidelines, space for listening and teacher observation.

The provision of food for basic education students is dealt with by Law No. 11,947, of June 16, 2009, and, in its article 3, it states that: “School food is a right for public basic education students and a duty of the State and will be promoted and encouraged with a view to complying with the guidelines established in this Law” (BRASIL, 2009).

On April 7, 2020, the Federal Government published Law No. 13,987, which exceptionally authorizes the distribution of foodstuffs to parents and guardians during periods of social distance and remote school activities.

With the pandemic, quarantine, social isolation and suspension of classes, actions related to the school did not happen in the same way. Aiming to address the issue of feeding children in elementary school, the city of São Paulo sent food baskets to families registered with “Bolsa Família” program, and the “Cartão Merenda” (program card for snacks) was also created and provided, with distribution beginning in April/2020. In late July, the city government extended access to the Merenda Card to all families, after suffering numerous criticisms and legal challenges.²

The City Hall of São Paulo announced an emergency program, which will serve approximately 1/3 of the students in the Network, and consists of distributing a card with a balance for the purchase of foodstuffs

to compensate for the absence of a school lunch offer. In addition to the fact that the value is negligible for the purpose for which it is intended, we have the difficulties of making these cards reach these families, since many do not have the practice of constantly updating addresses to the school, others live in places where the correspondence cannot reach, in addition to those that are in such complex situations of vulnerability that they cannot access the records of social programs. For these families, child labor is already very latent, at this time of pandemic and lack of a more effective policy to serve this segment in socioeconomic terms, we fear that the insertion of boys and girls into work is the only alternative for subsistence for such families. After all, who are these children and teenagers with? (SANCHES; PARDIM, 2020, p. 241).

The monthly amount allocated to each student is different, as it is related to the school stage in which they are inserted (Chart 1). Families with more than one child in the Network will receive the benefit on an accumulated basis, and as disclosed by the Municipal Department of Education, the benefit will continue as long as the Coronavirus pandemic established by Decree No. 59.283/2020 is faced.

**Chart 1: Monthly amount for each student - lunch card**

<table>
<thead>
<tr>
<th>School stage</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Childhood Education Center</td>
<td>R$ 101,00</td>
</tr>
<tr>
<td>Municipal school of early childhood education</td>
<td>R$ 63,00</td>
</tr>
<tr>
<td>Municipal elementary school and/or high school</td>
<td>R$ 55,00</td>
</tr>
</tbody>
</table>

*Source: Prepared by the authors from SME-SP (2019).*

The value in Chart 1 shows what was made available to families in 2020. It should be clarified that during the period of social isolation there was no ready-made food supply in schools in the city of São Paulo.

When the course is offered in person, food is offered to basic education students in the school cafeteria. The cost in 2019 per meal served daily to students, including snack, meal and dessert for elementary school, considering five hours of the student present at school, is shown in Chart 2.

**Chart 2: EMEF food values – São Paulo – 2018/2019 – Per day per student**

<table>
<thead>
<tr>
<th></th>
<th>Snack</th>
<th>Meal</th>
<th>Dessert</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM AMOUNT</td>
<td>R$ 2,06</td>
<td>R$ 1,77</td>
<td>R$ 0,32</td>
<td>R$ 4,15</td>
</tr>
<tr>
<td>MAXIMUM AMOUNT</td>
<td>R$ 2,57</td>
<td>R$ 2,72</td>
<td>R$ 0,81</td>
<td>R$ 6,10</td>
</tr>
</tbody>
</table>

*Source: Prepared by the authors from SME-SP (2019).*

This cost is considered from an outsourced management for school meals, in which a company is selected after a bidding process for the preparation and distribution of school meals. Each educational board has a company responsible for this activity, and the price variation occurs for this reason. The school board with the highest cost per meal is Capela do Socorro (R$ 6.10), and the one with the lowest cost is Guaianazes (R$ 4.59).

Therefore, the average monthly cost per student in the period of April/2018 and March/2019 was BRL 117.59 per month, and this amount is equivalent to more than double the amount sent to families through the lunch card, in the year 2020, due to the closing of schools.
In addition to the reduction in the cost of school meals by the municipality, there were other reductions, such as: school transport, school supplies, water, electricity, various supplements used in everyday school life, etc.

It is noteworthy that the teachers in the city of São Paulo did not receive any allowance related to the use of instruments and electronic equipment to carry out school interactions.

So far, it was possible to note which instruments were used for school interaction, with the use of printed books and digital platforms. Subsequently, we verified other actions carried out by the São Paulo Municipal Department of Education, such as the provision of lunch cards to families, in an attempt to fill this gap by the public authorities during the pandemic period.

However, it is important to know how many students we are talking about when we refer to elementary education in the city of São Paulo. These data will be exposed below.

2.2 Student data from elementary school

Elementary education is part of basic and compulsory education in Brazil; it is the longest educational stage in this formative period (basic education consists of elementary and high school with a total duration of twelve years), consisting of nine years of study, which are called grades according to Law No. 9,394, of 20th of December, 1996, which provides the Guidelines and Foundations of Education.

The city of São Paulo, in 2020, had the following distribution of students in its education network (Chart 3):

<table>
<thead>
<tr>
<th>Level of education</th>
<th>march/2020</th>
<th>june/2020</th>
<th>september/2020</th>
<th>december/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensino fundamental I</td>
<td>222.854</td>
<td>222.667</td>
<td>222.947</td>
<td>222.835</td>
</tr>
<tr>
<td>Ensino fundamental II</td>
<td>195.910</td>
<td>194.893</td>
<td>194.625</td>
<td>194.428</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>418.764</strong></td>
<td><strong>417.560</strong></td>
<td><strong>417.572</strong></td>
<td><strong>417.263</strong></td>
</tr>
</tbody>
</table>

*Source: Prepared by the authors from SME-SP (2019).*

Chart 3 shows the number of students enrolled in the São Paulo city network in elementary school. The numbers already include elementary school students I and II.

It is possible to notice a reduction in enrollments in the second quarter in relation to the data in the first quarter, when schools were closed and remote teaching was introduced. There was a reduction of 1,204 students in that time span.

We still see a small increase compared to data for the quarters ended in June and September. And finally, a drop in data for the last school month. Thus, in 2020 there was a reduction in the number of initial (March) and final (December) enrollments of 1,501 students. Compared to the previous year, which had a total of students enrolled in March of 423,636, and in December with 417,263, there was a decrease of 6,373 students throughout the year, resulting in a fall four times greater than that observed in 2020.

At the moment, it is not possible to say what happened to the students, whether they dropped out, moved to another city or transferred to a private school. There are numerous possibilities for variations to occur in the throughout the school year. It is about lives in the school environment and, therefore, changes occur.
The Open Data portal of the city of São Paulo has little cataloged and updated information. Data for the year 2020 are only those that deal with enrollments and demands in the Municipal Education Network. The other information made available is based on IDEB, and the last available report is for the year 2015.

We seek to verify the changes that have taken place in education, more precisely, in elementary education in the city of São Paulo, which strategies were used, which services were provided and how, as well as for how many students.

The information presented here makes up the path with the purpose of achieving the objectives present in the preparation of this article and answering the motivating question for the development of this research, which was to investigate the instruments, tools and technologies used by teachers and students in the year 2020, school period in which remote learning was introduced without training or prior notice, due to a pandemic that surprised everyone and changed the way of life, albeit perhaps temporarily, of millions of people around the world.

3. Conclusions

The Covid-19 pandemic brought several socio-spatial changes, whether in the flow of mobility in the city, in the forms of relationships between people, in consumption, in their profession of faith, at work and at school. Everyone's routine has changed substantially. The uncertainties became more evident, as well as the inequalities between different characters.

In education it was no different. Without prior training, notice or training, teachers and students had to reinvent themselves. Learn to use new work tools, each according to its possibilities. As it was possible to see in this article, there are professors and students without access or knowledge to use digital tools.

Teachers and students had no prior training related to the technologies that were used in the period. Few educational institutions work with the use of digital technologies, although these are recommended in school curricula. And at that moment, such a situation was evident. The student had precariously used these platforms to carry out some school activity, or a complementary subject, and, without much knowledge, they had to adapt to this new model.

At the moment, it is not possible to assess the impact of such an abrupt change in the teaching-learning process. However, it is already possible to state that remote work will also have an educational bias. The term at hand is remote teaching. With the passage of time and the distance from the analyzed period, considering that we are still involved in events that, for the time being, are not expected to end, we can then bring another look at what happened and the measures taken by the government for the training to occur somehow.

Research and discussions on the current situation must be carried out in order to obtain a diversity of works that may be able to draw an overview of the “new normal” for students and teachers, while the situation is present. Having different perspectives on the time of events will enrich knowledge on the subject.

Therefore, given the data exposed, it is necessary that the public authorities, through their secretariats and education boards, teachers, school administrations, parents and students, educational scientists (re) think and (re)discuss education. School education must promote autonomy and provide possible paths for all, not equally, but in order to meet the specificities of each group that make up the school, so that the right to education, as established in the Federal Constitution, occurs effectively without distinction among those involved.
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