The teaching process in times of COVID-19: between the possible and the idealized

O processo de ensino em tempos de COVID-19: entre o possível e o idealizado
El proceso docente en tiempos de COVID-19: entre lo posible y lo ideal

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Abstract: This article aims to study the development of so-called remote teaching during the closure of Brazilian schools due to the COVID-19 pandemic. Therefore, a research approach was chosen mixed in a convergent way through a case study of the municipal system of Petropolis education. The main objective of the research is to evaluate the existence (or not) of pedagogical theories, such as new school, technician, or socio-critical pedagogy, that have supported the different pedagogical practices carried out during the school closing period. Through questionnaires and semi-structured interviews, conducting a qualitative study on the topic was possible using Content analysis. It is concluded that the adaptation to remote teaching was made suddenly without preparing teachers, students, managers, and families. Little was reflected about existing pedagogical theories to improve the effectiveness of Education during the school closure period.

Keywords: Remote teaching, Pedagogical practices, Digital Technologies, Pedagogical Theories.

Resumo: *Este artigo tem como objetivo estudar o desenvolvimento do chamado ensino remoto durante o fechamento das escolas brasileiras devido à pandemia do COVID-19. Para tanto, optou-se por uma abordagem de pesquisa mista de forma convergente realizada por meio de um estudo de caso da rede municipal de ensino de Petrópolis. O objetivo principal da pesquisa é avaliar a existência (ou não) de teorias pedagógicas, como escolanovismo, tecnicismo ou pedagogia sócio-crítica que tenham sustentado as diferentes práticas pedagógicas realizadas durante o período de fechamento da escola. Por meio de questionários e entrevistas semiestruturadas, foi possível realizar um estudo qualitativo sobre o tema por meio da análise de conteúdo. Conclui-se que a adaptação ao ensino remoto foi feita repentinamente, sem a preparação de professores, alunos, gestores e famílias. Pouco se refletiu sobre as teorias pedagógicas existentes para melhorar a efetividade da Educação durante o período de fechamento escolar.*

Palavras-chave: *Ensino remoto; Práticas pedagógicas; Tecnologias digitais; Teorias pedagógicas.*

Resumen: *Este artículo tiene como objetivo estudiar el desarrollo de la llamada enseñanza remota durante el cierre de las escuelas brasileñas debido a la pandemia de COVID-19. Para ello, optamos por un enfoque de investigación mixta convergente realizado a través de un estudio de caso de la red educativa municipal de Petrópolis. El principal objetivo de la investigación es evaluar la existencia (o no) de teorías pedagógicas, como la nueva escolarización, el tecnicismo o la pedagogía sociocrítica que han sustentado las diferentes prácticas pedagógicas realizadas durante el período de cierre escolar. Mediante cuestionarios y entrevistas semiestructuradas fue posible realizar un estudio cualitativo sobre el tema a través del análisis de contenido. Se concluye que la adaptación a la enseñanza remota se realizó de manera repentina, sin preparación de docentes, estudiantes, directivos y familias. Poco se reflexionó sobre las teorías pedagógicas existentes para mejorar la eficacia de la Educación durante el período de cierre de escuelas.*

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Palabras clave: *Enseñanza remota; Prácticas pedagógicas; Tecnologías digitales; Teorías pedagógicas.*

INTRODUCTION

The COVID-19 pandemic has profoundly marked the world's educational systems by imposing social distancing as a priority strategy to combat the pandemic, a fact that culminated in the closure of educational institutions and abrupt migration to the remote model worldwide (MOLOI; SALAWU, 2022), (AZIZAN et al., 2022), (BAI, 2022), (CHAMORRO-ATALAYA et al., 2021), (RANJAN et al., 2021), (JAMALOVA; BÁLINT, 2022),(OTTS et al., 2021), (BÉCHÉ, 2020), (ADNAN; ANWAR, 2020), (TESAR, 2020), (DHAWAN, 2020), (CHOI; TESSLER; KAO, 2020), (STANISTREET; ELFERT; ATCHOARENA, 2020), (SELWYN; JANDRIĆ, 2020), (ENES, 2021) and (ALGHANMI; NYAZI, 2022). In Brazil, the situation was no different: on March 13, 2020, Brazilian public and private schools and universities closed their activities in person. However, the way each institution dealt with the transposition to remote teaching was different, characterizing a heterogeneous process and, many times, harmful to the Education of children, youth, and adults.

The absence of digital culture in Brazilian schools is a recurring research topic among researchers in digital technologies in the school environment. It is observed that, despite the technological advances driven by the development of the internet, the recent communicational changes. Consequently, the social changes resulting from this process (CASTELLS, 2019), (LEMOS, 2013). The school still preserved pedagogical practices anchored in the physical school environment, often considering the virtual environment as a threat to the role of the school and the teacher. Therefore, Brazilian educational actors regarded digital technologies with suspicion: teachers, students, managers, and family members. It is in this environment of insecurity that digital tools are introduced.

To map how the transposition from face-to-face teaching to remote learning took place in Brazil, it is necessary to understand how the Brazilian educational system is constituted. Brazilian schools and universities are divided between public and private. Public educational institutions are divided into three: federal, State, and municipal.

Private educational institutions, whether these schools, colleges, or universities, migrated almost instantly to remote learning. Each institution generally chose a synchronous meeting platform: Google Meet, Microsoft Teams, Zoom, Skype, or Cisco Webex, and started to link classes synchronously, using material repositories such as Google Classroom or Moodle. For this group, using only printed teaching materials was rare or non-existent. That is, the entire teaching and learning process started to be mediated by digital technologies.

Federal public educational institutions took about six months to start serving students, performing a mixed process between synchronous and asynchronous. After much delay, public notices were issued for assistance with digital technological tools (tablets and cell phone chips) for students in unfavorable financial situations to serve all students. However, public institutions took much longer to organize student care remotely and did so heterogeneously.

State educational institutions were organized heterogeneously, from printed didactic material in the service of students to broadcasting television programs at specific times with the contents of the disciplines (ESTANISLAU; CARIUS, 2020). Each State has published specific legislation for remote assistance to students, and it is observed that the insertion of digital technologies has not been mandatory in all states.

Finally, municipal educational institutions, those that arrive in the most isolated places in the country, suffered the most in this process. With a precarious digital technological infrastructure, in which students and teachers develop few skills to use these digital tools, remote student assistance took place, almost equally, through digital technological tools and printed teaching material (CARIUS, 2022). It is in this universe of precariousness and technological inability that this research is situated. Therefore, the object of this research is remote teaching during the closing of municipal public schools in Petropolis, a Brazilian city.

The research question this work intends to answer is the following: 'Despite the abrupt way that the migration from face-to-face teaching to remote teaching took place, pedagogical theories were incorporated into remote pedagogical practices to make the experience successful for students and teachers?' To answer the research question presented, the general objective of the research is to evaluate the existence (or not) of theories and pedagogical practices that perhaps underpinned the different pedagogical practices carried out during the school closure period. As

specific objectives, we sought to identify the different pedagogical practices that took place in the same school system from the reports of the leading educational actors, as well as evaluate the adoption of pedagogical theories, established or innovative, to mitigate the effects of school closures.

The effectiveness of pedagogical theories frequently used in face-to-face pedagogical practices in the schools surveyed was evaluated when these same pedagogical practices took place in the virtual environment.

This work was structured as follows: a section dedicated to the main pedagogical theories in force in Brazil, aligned with the historical path that gave rise to each one of them; the presentation of the research field chosen for the case study; the methodological procedures used; the results and discussions arising from work in the field of research and, finally, the final considerations that answer the research question and ratify the objectives proposed by the work.

BRAZILIAN EDUCATION AND THE PREDOMINANT PEDAGOGICAL THEORIES

Brazilian Education began with the arrival of Jesuit priests in the Brazilian colony. It was from the Jesuit model based on the *Ratio Studiorum* that Education in Brazil was based until 1759 when the Enlightenment in Portugal began to gain ground, and the Jesuit priests were expelled from the country. As a Portuguese colony, Brazil also had the Jesuit priests expelled from its territory, and Education was discussed within the scope of a public proposal administered by the State, which began to hold competitions for hiring teachers (SAVIANI, 2008).

The *Ratio Studiorum* is a set of 467 rules related to the daily activities involved in daily school life, guiding the pedagogical practices in Jesuit schools in colonial Brazil. Considering this set of rigid rules, over the years, traditional pedagogy has been called any conservative pedagogical practice, in which the teacher is the holder of knowledge, and the student is a mere spectator of the classes. According to this pedagogical practice, this approach should be enough for the student to learn.

This view of Brazilian Education was preserved until the beginning of the 20th century when the New School pedagogy began to be discussed by essential thinkers of the time. In Brazil, the primary reference of the New School pedagogy was the philosopher and educator John Dewey (FILATRO; CAVALCANTI, 2018). Under the principles that the student needs to learn by doing, experiencing the phenomena and concepts learned in the classes, the New School proposal went against the traditional pedagogy, which is still very present in the pedagogical practices in Brazil. It was the first attempt, still in the 1930s, to change Brazilian pedagogy.

The First Law of Directives and Bases for Education in Brazil (Law 4024/61) (BRASIL, 1961) had a significant influence on the New School pedagogy, whose biggest difference concerning traditional pedagogy is the presence of student autonomy, providing the student's protagonist in the construction of your knowledge. However, based on the changes in the Brazilian political scenario from 1964 onwards, two distinct pedagogical currents were observed: technicist and critical pedagogy.

Technicist pedagogy comprises a pedagogical theory centered on means, which it believes are the main responsible for the success of the pedagogical practice. Currently, neither the teacher nor the student is the protagonist in teaching and learning. As Libâneo (2005) points out, technicist pedagogy is established within the rational-technological current, centered on the search for excellence and technological Education, valuing technological tools capable of enabling excellent teaching.

On the other hand, there is critical pedagogy described by Libâneo (2005) in socio-critical pedagogical currents. Its principal representative was the educator Paulo Freire (FREIRE, 2021), who, in his primary work Pedagogy of the Oppressed, questions the traditional teaching model, which he considers irrelevant for the popular classes. They value subjectivity despite the excellence perspective and focus on technicist pedagogy's technological tools (LIBÂNEO, 2005).

The concept of banking education, coined by the Author, refers to the deposit of knowledge performed by the teacher from the perspective of traditional pedagogy, and the lack of dialogue between student and educator impoverishes the current pedagogical process.

Since the country's re-democratization in the mid-1980s, another pedagogical theory has been among the innovative proposals: constructivist pedagogy, firmly anchored in Jean Piaget's research. The union between pedagogy and psychology gained strength at that time, and the perspective of a pedagogical process capable of providing students with tools for constructing their knowledge. Due to changes in the world economic scenario, the change in the work perspective from the Fordist model to the Toyotist model, and the growing need for continuous training of individuals, we arrived at the beginning of the 21st century with an uncertain future. The increasingly rapid social changes began to require different skills and, above all, the ability to learn. According to Pierre Lévy (2010), for the first time in history, the initial training of an individual does not guarantee the possibility of ending their productive life in this profession. From the perspective of Demerval Saviani (2008), other forms of Pedagogical practices began to appear in educational models, such as corporate pedagogy. In this universe, the discussion

of active methodologies also appears to generate an autonomous and independent citizen about technological changes (FILATRO; CAVALCANTI, 2018). In this scenario of pedagogical theories, Brazilian schools closed on March 13, 2020.

UNDERSTANDING THE SEARCH FIELD

The municipality of Petropolis is in the State of Rio de Janeiro and has, according to the Brazilian Institute of Geography and Statistics (BIGS), 295,917 inhabitants. Petropolis' municipal education system comprises 187 school units, 78 of which are Early Childhood Education Centers and 109 schools that serve elementary Education. These units serve around 42,000 students.

The municipal education system of Petropolis cannot be considered, in a certain way, modern. Little investment in infrastructure technology and lack of teacher training contribute to the absence of pedagogical practices involving digital technologies. In this sense, the poor development of skills to deal with digital technologies by teachers and students was crucial for the migration to the remote modality to be traumatic for all the actors involved.

The Petropolis Department of Education managed to migrate students effectively to an online platform, *Educa em Casa*, only at the beginning of September 2020. From March to September 2020, there were no mandatory activities for students, and most students did not attend school during that period. Therefore, the object of this research starts from implementing the *Educa em Casa* platform and how, effectively, the pedagogical practices took place in the schools of the municipal system of Petropolis.

RESEARCH METHODOLOGICAL PATH

APPROACH

Due to the unprecedented nature of the research object, a mixed approach was chosen, with quantitative and qualitative data. According to Creswell et al. (2007), 'it is a design in which the researcher combines quantitative and qualitative data to analyze the research problem comprehensively.' The information collected is integrated to interpret the data.

PROCEDURES

For Mattar and Ramos (2021), it is not easy to define a case study precisely. However, some characteristics of this procedure are crucial to define a given procedure as a case study. These are the presence of field research, the existence of a broader category of which the object of study is a case, and the case is delimited, the investigation of the case is rich and conducted in-depth, the existence of multiple sources of data and triangulated analysis of these multiples of data. For Corrêa (2021), a case study of this research can be considered an institutional case study since the municipal education system of Petropolis is defined as the object of study.

DATA COLLECTION INSTRUMENTS

Once the mixed approach was chosen as the proposal for this research, two data collection instruments were chosen: the questionnaire and the semi-structured interview. All participants did so after completing and signing the Free and Informed Consent Form for participation in the search.

According to Mattar and Ramos (2021), the questionnaire is a research instrument that collects quantitative data from different natures, such as population characteristics, beliefs, preferences, opinions, behaviors, and attitudes. Two questionnaires were developed: one for the teachers and the other for the students. There were closed, open, and dichotomous questions in each questionnaire.

The semi-structured interviews for Mattar and Ramos (2021) make it possible to include the perspective of the actors involved in the research. In this study, managers and educational advisors were interviewed to compare the data obtained in the interviews with the data obtained from the questionnaires with teachers and students.

ANALYSIS AND VALIDATION OF RESULTS

For the set of quantitative data, exploratory data analysis instruments were used. Content Analysis was chosen for the qualitative dataset, which was anchored mainly in the concepts defined by Bardin (2011).

RESULTS AND DISCUSSIONS

QUANTITATIVE ANALYSIS

Once the convergent mixed method was chosen as the analysis proposal for the data set, the quantitative data set was analyzed, and then the qualitative data set was analyzed. In possession of the two analyses, we sought to merge both and carry out a joint discussion of these results.

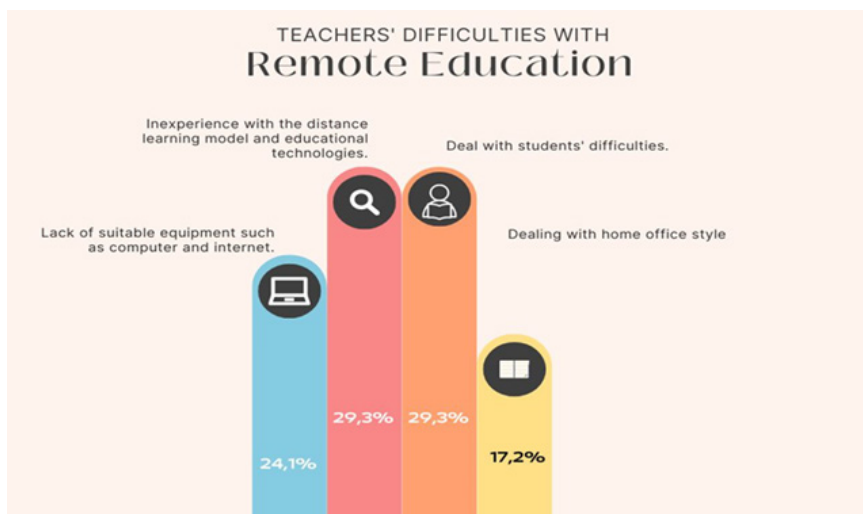## THE RESULTS OF THE QUANTITATIVE DATASET

To obtain a heterogeneous sample of teachers and students, the research was carried out in different schools of the municipal education system of Petropolis (N=5) chosen in the first district, which has 52 schools, that is, 10% of schools located in the chosen region. It is essential to consider two situations that guided the visits to schools and the forwarding of the survey questionnaires. The first is the validity, at the time of the field research, of the so-called hybrid teaching, which was defined as a teaching proposal in which some students attend school face-to-face and the other portion of students attend school remotely. It is important to note that the term "hybrid" is used in the common: part students at school, part students at home. We agree with Martins and Carvalho (2022) on the need for an understanding of the term in Brazilian Education because, during the pandemic, there was no legislative understanding of what hybrid teaching would be. This fact made it difficult to publicize the research proposal since half of the students were not present in person at the school. The second question refers to the problem of the lack of teachers occupying the positions in the city hall of Petropolis. The absence of hiring teachers made many schools have, in their teaching staff, 20% to 30% of the necessary amount of teachers so that all students could have access to all the classes available in the curriculum. The teacher shortage problem in the referred education system is better explored in Carius' work (2021).

Considering these two pieces of information, they answered the questionnaire presented with N=26 teachers and N=110 students.

In the proposed class model, to observe pedagogical proposals based on pedagogical theories established in Brazil. Considering the questionnaires presented to the teachers, the main objective was to map their impressions of remote work, the difficulties encountered in exercising it, and the student's participation. Figure 1 presents the main difficulties listed by teachers in conducting classes remotely.

Figure 1 - Main difficulties of teachers with Remote Learning (Built with authors' data).


TEACHERS' DIFFICULTIES WITH
Remote Education

Inexperience with the distance learning model and educational technologies.

Deal with students' difficulties.

Lack of suitable equipment such as computer and internet.

Dealing with home office style

29,3% 29,3%

24,1%

17,2%

Observing the questionnaire directed to students, the main difficulties they pointed out can be seen in Figure 2.

From the data regarding the difficulty listed by both groups, a similarity can be observed: there seems to be an absence of proper communication between the two groups. While teachers feared they would not be able to respond to the difficulties brought by the students, these same students claimed that they had to solve their doubts on their own.

At this point, making a report based on the observations of the pedagogical practices in the field is necessary. The *Educa em Casa* platform has not established itself as an official mediation channel between teachers and students. Due to students' lack of free internet data, loading the *Educa em Casa* platform was heavy and expensive in most popular classes. In addition, there were many server crashes on which the platform was hosted, making it impossible for teachers and students to access the mediation of classes. Faced with these two problems, the Municipal Secretary of Education of Petropolis informally indicated that schools should adopt the WhatsApp messaging application as a communication tool between teachers and students, anchored in the free access to this application by Brazilian mobile operators (ZUBOFF, 2020).

Figure 2 - Difficulties listed by students regarding Remote Learning (Built with authors' data).
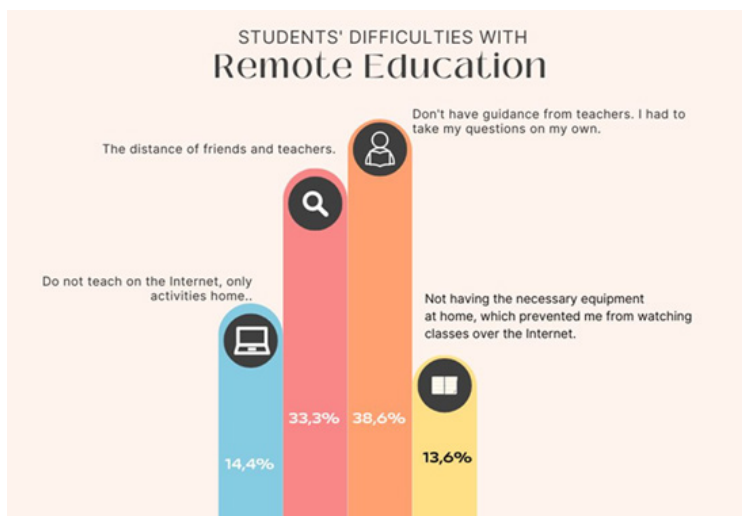
Based on this orientation, the so-called classes mediated by WhatsApp began. With the massive use of an inappropriate application for the mediation of classes, the proposal's failure was set.

It is also important to emphasize that, for teachers, the lack of adequate training to make the most of digital technologies and improve their pedagogical practices was a significant difficulty, followed by the absence of adequate equipment. For students, the second most significant difficulty was the lack of contact with colleagues and teachers, with the issue involving equipment being the last difficulty listed.

The importance of the school as a social environment lies in this aspect, and academic and cognitive activities developed in this space. It is also noteworthy that there was no mention of any pedagogical theory by the teachers; that is, an adequate methodological organization is absent, including the issue of teacher training.

Considering the effectiveness of remote teaching, we observed, from the answers given in the questionnaire sent to the students, their interest in remote classes, as well as the students' concern with their studies in the following years, based on the problems faced in the teaching-learning process during the closing of the schools. Figure 3 summarizes this information.

As for the time dedicated to studies, it is observed that 74.2% of the students made some time available to carry out school activities, with a group of 38.6% of students in the period corresponding to classes. It is worth noting that

22.8% performed the minimum number of activities necessary to be promoted to the grade following. Also, an important observation refers to the activities considered valid to obtain minimum class attendance. It was enough to withdraw the activity in printed form at the School Unit or through the *Educa em Casa* platform or by WhatsApp, deliver some of these activities partially answered, or log in to the *Educa em Casa* platform. As there was no content assessment device, students felt discouraged from studying with the same commitment they do in face-to-face teaching. Consequently, many students concluded that the school closure period did not provide adequate Education, considering that they could not start the next stage of schooling safely.

Figure 3 - Effectiveness of remote teaching by students (Built with authors' data).
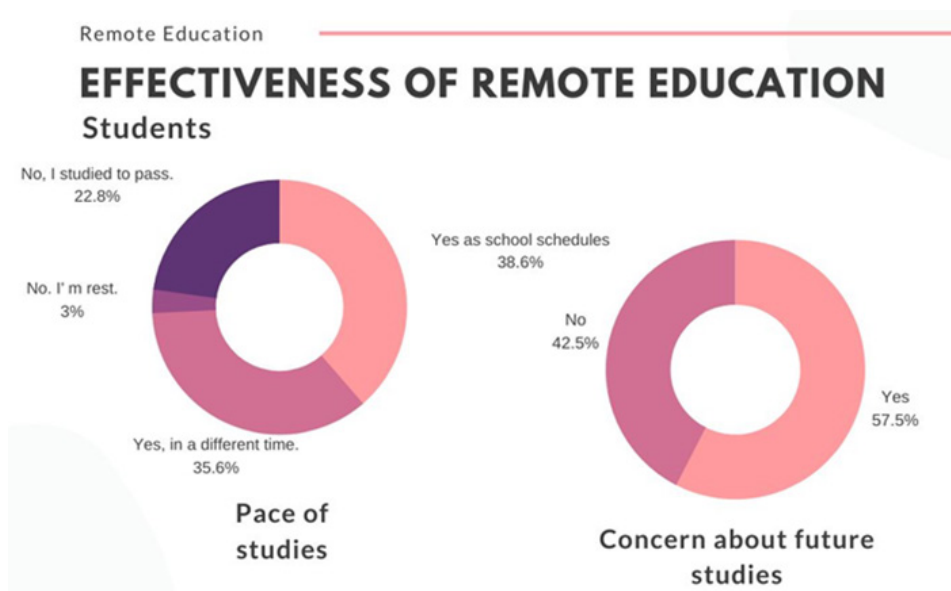
For the teachers, two topics were chosen in the questionnaire related to the observations of the effectiveness of remote teaching. The first question refers to guidelines received by teachers on how to proceed at the time of the outbreak of the COVID-19 pandemic. It is observed that few guidelines were sent since all educational actors, including managers, were surprised by the closing of schools. At the end of the pedagogical work carried out remotely, the teachers were asked to relate what it was like to deal with the students during the period of remote teaching.

For 53.8% of teachers, dealing with students during this period was challenging. For 42.3%, it was challenging at the beginning of the process, but then it improved, and for only 3.8% of the teachers, it was smooth. Figure 4 summarizes this information.

Figure 4 - Effectiveness of remote Education by teachers (Built with authors' data).
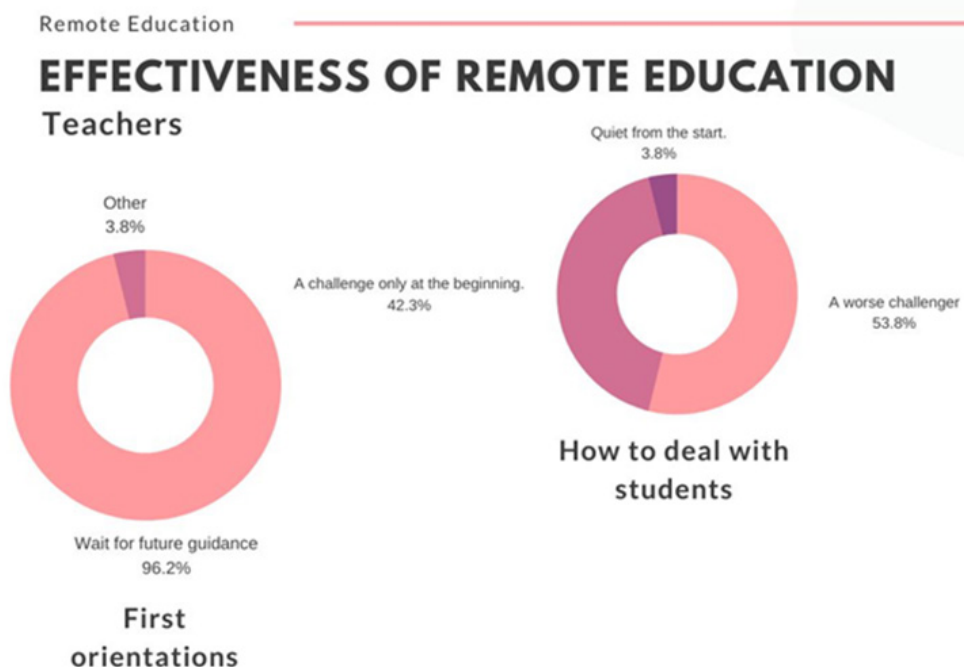
QUALITATIVE ANALYSIS

Three interviews were carried out with teachers from three of the five schools participating in the study. Each interview was conducted individually and in person. For the qualitative analysis, Bardin's Content Analysis (BARDIN, 2011) was chosen as a guide for the analysis of the interviews.

The ATLAS.ti software was used as an aid tool for Content Analysis. The speeches of the three interviewees were recorded and transcribed, categorized into 17 different themes related to the experience with remote teaching. They highlighted the five themes most commented on by the interviewees, with their respective absolute frequency and a transcribed statement about the theme in emphasis. One of the themes is automatic approval, which means promoting the student to the

next stage of schooling without them fulfilling the minimum requirements for classroom hours and assessments necessary to verify their suitability for the next step.

Table 1 - Synthesis of content analysis by themes (Built with authors' data).

Theme	Absolute Frequency	Transcription
Whatsapp	14	'I noticed that the students kept posting a status on Whatsapp. I started posting information in the statuses, which was also a success. Everyone started to see what I needed.' (Mary, School 1) 'Mom's got her cell phone, and she takes her to work. It's prepaid. Sometimes you have wifi at home, and sometimes you don't. The classes are on WhatsApp. Mom comes home from work and sometimes doesn't want to lend her a cell phone. Sometimes there are several children.' (Jane, School 2) 'I didn't have any tech skills. I knew the normal word, email, do, and send the exams to school. But neither WhatsApp. I have this technology in me. So I had to resort to my daughter's help to form links I did not know, install the *Educa em Casa* platform, and download the programs.' (John, School 3)
Technological Tools	12	'We received ten borrowed notebooks from the Department of Education. We already had three computers. Our director had a restructuring to put camera, tables. Many teachers use their own devices, and they don't care.' (Mary, School 1) 'Children have the autonomy to attend classes remotely. They know more about technology than we do. We learned from them. Even though you do not know, learn quickly on Youtube very easily.' (Jane, School 2) 'In the online process, we observe that very few children enter, and we do not know if they do not enter the class due to the lack of internet resource, because you know that for other things they have internet' (John, School 3)
Cost of the internet	10	'The big knot was that educators generally worked by paying for their internet or buying new devices.' (Mary, School 1) 'Smart cell phones all students from seventh onwards have. If they have internet, I don't know. They're playing all day. Very few have a computer.' (Jane, School 2) 'Technology could greatly improve Education if everyone had the internet. Many schools already had platforms. That already existed. But we have to understand that these are different economic realities. Some don't have.' (John, School 3)
Automatic approval (Mary doesn't speak about this theme)	8	'2020 was an automatic promotion because no one learned anything. It went on with the contents of the year they were. They're from sixth to seventh. Continue with the contents of the seventh. And the students were happy because they passed the seventh, and they were ignorant and didn't know. They're unaware of what they don't know but need to know. They will realize much later that they have been deceived. That's what I fight a lot with.' (Jane, School 2) 'Because some have no basis to be in the year they are today. In the two years, the approval was automatic. The student sought the activity at the school, or he had a presence on the platform and was approved. Only approved the students who did not seek any activity and never appeared on the platform.' (John, School 3)
Study time	8	'The remote teaching workload was out of date because we are with an interaction of one hour, against three hours of interaction for face-to-face teaching.' (Mary, School 1) 'We did math workshops. The teachers hugged. It worked super well. We've recovered a lot from the students.' (Jane, School 2) 'For Education in general to improve, it needs to implement counter-shift reinforcements with the teacher. It's no use just diagnosing learning disabilities. The teacher would have to give the reinforcement in turn' (John, School 3)

Still, within the scope of Content Analysis, a sentimental analysis of the speeches of the three interviewees was carried out; 70.8% of the recorded speeches are associated with a negative feeling, 18.8% of the speeches are related to a neutral feeling, and 10.4% are related to a positive feeling.

Still, with the help of the ATLAS.ti software, the construction of the table of co-occurrences between the categories listed in the interviews. The highest co-occurrence was between the pair 'negative feeling' and 'Whatsapp,' followed by the pair 'negative feeling' and 'internet cost' and then 'negative feeling' and 'technological tools.' The co-occurrence of the pair of 'negative feeling' and 'automatic approval' is significantly concluded.

CONVERGENT MIXED DISCUSSION

From the quantitative and qualitative data sets, it was possible to verify some similarities:

• The absence of adequate technological tools, internet access, and training for developing skills in digital technologies.

According to the answers to the questionnaires, there were difficulties in terms of technological-digital infrastructure by teachers and students. The absence of digital technology infrastructure is a point to be considered a hindrance to the effectiveness of the teaching-learning process. The interviewees' statements corroborate this issue, and the co-occurrence analysis relates negative feelings to Whatsapp, the internet's cost, and technological tools.

• Cognitive effectiveness and inadequate compliance with school hours

Another issue that stands out in the quantitative data collection instrument was the perception that the classes were not practical on the part of the professors, and the feeling of absence, on the part of the students, who reported studying alone most of the time. There is also a concern about future school stages since there was a lack of good content in the years 2020 and 2021. These indicators converge with the answers given by the interviewees, who care about students' academic lags and think of different ways to minimize the problem. Finally, this issue is ratified by the significant frequency of co-occurrence between negative sentiment and automatic approval, indicating an evident concern for student's academic future, unprepared and promoted regardless of whether some class took place. In many cases, it was enough to register their presence (through the *Educa em Casa* platform or WhatsApp) for the student to receive the minimum grade for promotion to the next stage of schooling.

FINAL CONSIDERATIONS

The present research aimed to answer the following question 'Despite the abrupt way that the migration from face-to-face teaching to remote teaching took place, pedagogical theories were incorporated into remote pedagogical practices to make the experience successful for students and teachers?' from a case study under the cut of the municipal education system of Petropolis. Mixed research of a convergent nature was conducted, with data collection using the following instruments: questionnaires and semi-structured interviews.

Considering the data analysis in a convergent way, it was observed an absence of any reference to pedagogical theories. The predominant theme in the participants' view was the absence of digital technology infrastructure in the same way that there was also, in many cases, the development of skills related to digital technologies. Another significant issue was inadequate access to the internet, where the cost of data packages suitable for access to classes is often cited, which were often not available to students who are mostly from families with low income.

The teachers' concern with automatic approval shows that there was no concern on the part of the Municipal Department of Education to apply any pedagogical theory in the daily life of the classes. The distribution of printed material, whose objective was banking, that is, depositing tasks for students to return ready, demonstrates a predominant perspective of traditional pedagogy. Socio-critical reflections (critical pedagogy), problem-solving activities that lead the student to a greater interest in the classes and contribute to this student building his knowledge (New School Pedagogy), or classes focused on techniques that improve student performance (technicist pedagogy) were not reported. In short, each teacher tried, in an isolated way, to maintain contact with the students, and the pedagogical concern practically disappeared due to many challenges encountered in communicating between teacher and student. The massive use of the WhatsApp messaging application, even reported as a source of frustration with the pedagogical practices, demonstrates the total unpreparedness of the municipal education system in Petropolis for a school mediated by digital technologies.

It is concluded, therefore, that the transposition to an efficient education mediated by digital technological tools is still a distant goal. Despite the immersive experience of Education in the digital age experienced by teachers and students, the school culture of the board, chalk, and notebook predominates. It is difficult to break with a school culture that generally neglects the digital culture in the world. The challenge, then, is to lead school actors to absorb the digital culture already incorporated by current citizens in the school environment.

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