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# Emergency Remote Education: impacts on the pedagogical practices during COVID-19

Ensino Remoto Emergencial (ERE): impactos na prática pedagógica durante a COVID-19

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#### Abstract:

This article addresses the teaching carried out by teachers in the state of Paraíba during the Covid-19 pandemic and aims to reflect on the impacts of Emergency Remote Education (ERE) on their pedagogical practices. It is a case study whose data were collected through a questionnaire prepared in Google Forms, which was applied through a link to one hundred and five teachers of different subjects who work in municipal, state or federal public and private schools, in high school and / or in the final years of elementary school. The collected data were analyzed in the light of a literature that explores the ERE and its implementation. The results obtained showed a diversity of practices carried out by means of Digital Information and Communication Technologies (DICT), part of which is in line with the *modus operandi* of traditional education and part of which seeks to overcome it. Taken together, these practices can provide students with more autonomy, new forms of communication between educational actors and the acquisition of new learning about the pedagogical use of DICT with the potential to modify the teaching that succeeds the pandemic, when we return to the "new normal" of classroom teaching.

Keywords: Education. Remote teaching. Pedagogical practice.

### Introduction

The health situation resulting from the Covid-19 pandemic led to the implementation of Emergency Remote Education (ERE) on an official basis and demanded from teachers the skills and competences to carry out their activities as educators through Digital Information and Communication Technologies (DICT), not only as indispensable knowledge, but also as a condition for the continuity of classes and students' learning. In this scenario, where few teachers are prepared to act, there is room for self-improvement that culminates with the development of new or unusual teaching practices for teachers and students that, taken together, indicate some renewal in education during and after the pandemic.

It is in the reflection on how new practices were and / or are being incorporated by teachers during the ERE, while observing how traditional practices have acquired a new guise, that this article concentrates its theoretical framework. In the section entitled 'Emergency Remote Education (ERE): context, concepts and applications', we present a literature that explores the theoretical dimension of this teaching model and its most common ways of implementation. Later on, these considerations are confronted with what has been happening in Paraíba. For that, in the 'Methodology', we detail the aspects of our research, which is characterized by an exploratory and descriptive type of case study (BOGDAN; BIKLEN, 1994), whose data were collected through a questionnaire prepared in which was applied through a link to one hundred and five teachers of different subjects who work in municipal, state or federal public and private schools, in high school and / or in the final years of elementary school.

In 'Mirroring the current situation', we present our analyses in order to identify the technological resources and the ways they are being used pedagogically by teachers, emphasizing the speeches they produce about the learning acquired in that period. It was in these speeches that we found enough elements to materialize our objective, which was to reflect on the impacts of Emergency Remote Education (ERE) on their pedagogical practices. In addition, in the section entitled 'What will the post-pandemic be like? For a "becoming teaching", we reflect on the repercussions of the experiences lived in the "new normal" of the face-to-face classes.

## Emergency Remote Teaching: context, concepts, and applications

The Covid-19 pandemic, which began in the city of Wuhan, China, presented us with challenges that went beyond health issues and, abruptly, demanded the acquisition of a new culture of social coexistence and professional practices, if not entirely new, never before used in such a massive or institutionalized way. In this context, perhaps because it is an eminent social act, education was one of the most affected and damaged segments in relation to its traditional ways of being materialized, since it started to be carried out by totally remote means, organizing itself in a set of practices, specific curricular methodologies and guidelines that have been made official and conventionally called Emergency Remote Education.

Due to the peculiarities that constitute it, arising from its emergency nature and the abrupt way in which it was put into practice, the ERE brought several questions to teachers. Uncertainties about the most appropriate planning to act with pedagogical coherence in the model in question, about the pedagogical use of DICT and about how to evaluate students, to name a few, are some of the concerns that, together, are related to the lack of understanding of the teachers about what Emergency Remote Education really is. Such uncertainties are often unfolded in speeches and actions that suggest a certain confusion with other non-classroom teaching modalities already consolidated in Brazilian or in worldwide education, such as Distance Education and Hybrid Education.

An analysis of the definitions given to the ERE reveals a scenario of conceptual construction that, to a certain extent, justifies the uncertainties of teachers working in that period about what it is, in fact, and its differences in relation to other models already pre -settled down. With that in mind, we have created the following chart.

| Modality                         | Concept  |  |
|----------------------------------|--|--|
| Distance Learning                | It presupposes the physical separation of teachers and students. It does not depend on TDIC. It is unidirectional and its evolution has unfolded in the use of tele-educational means and computers to structure itself.                                   |  |
| Online Learning                  | It depends on internet technologies, which include updating, storing, retrieving, distributing and sharing information instantly, collaborative learning, socializing knowledge and overcoming time and space limits and can involve remote and in person. |  |
| Hybrid Education                 | Educational model that combines classroom and distance learning.   |  |
| Homeschooling <sup>1</sup>       | Home education or teaching by parents, guardians or adults who take responsibility for formal learning.  |  |
| $C_{autra a}$ The authors (2020) |  |  |

Table 1 - Non-classroom teaching modalities already consolidated prior to Covid-19

Source: The authors (2020)

Regarding the ERE, one of the aspects that reveals the aforementioned conceptual construction scenario are the definitions that characterize it through the synchronism and the transposition of traditional pedagogical practices to digital and those that already define it as not necessarily traditional models. For Moreira and Schlemmer (2020) remote teaching or remote classroom presupposes the geographical distance between teachers and students due to the restrictions imposed by Covid-19. They also add that,

in this modality, physical classroom teaching (the same courses, curriculum, methodologies and pedagogical practices) is transposed to digital networked media. The process is focused on content, which is taught by the same teacher as the physical classroom. Although there is a geographical distance, the sharing of the time is privileged, that is, the class takes place synchronously, following the principles of the face-to-face class. Communication is predominantly bidirectional, the main kind for many, in which the teacher stars in a video lesson or holds an expository class through web conferencing systems (Ibid., s.p).

For these authors, the focus of remote classes is the information transmitted or its forms of transmission. However, they consider that some of its ways of materializing are made through radio or television, therefore, the ERE presents a facet that resembles in many aspects with the Distance Education of the last century, but disguised as digital technologies.

Other authors corroborate this thought (ARRUDA, 2020; JOYE; MOREIRA; ROCHA, 2020). Hodges *et al.* (2020). However, they claim that ERE should not be understood as a basic approach to traditional instruction, but as a way of reflecting and mapping ways, methods and media to meet the needs and limitations of contexts that require rapid change resources, as in the case of the Covid-19 pandemic, due to which teaching tends to return to being in person or hybrid as the emergency decreases. In this context, prior organization, systematization and planning are not characteristics of this teaching model, whose flexibility and migration to asynchronism are reasonable and probable paths for teachers and students. This thought is also defended by Juliani (2020), who adds that, despite contemplating elements of the distance and online modalities, the lack of previous systematization

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<sup>&</sup>lt;sup>1</sup> Today, Brazil does not have a regulation on home education. Therefore, those who want to teach their children at home need to go to court to obtain authorization, without the certainty that they will obtain it (SEMIS, 2019).

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and planning due to the emergency circumstances distances the ERE from these same teaching modalities.

Temporality, a-systematization and use of DICT are some of the elements that characterize the ERE in its conceptual and practical dimension. On the whole, this reality has required teachers to reflect on their own methodologies, methods, pedagogical knowledge and beliefs, in order to understand the need and the importance of continuous training, digital literacy, pedagogical mastering in TDIC beyond remote teaching, and the limited knowledge acquired in their initial training due to the dynamism of contemporary educational demands.

For Pardo Kuklinski and Cobo (2020), the Covid-19 pandemic has redesigned faceto-face activities and experiences concerning the virtuality of digital platforms, which required teachers and education professionals resistant to digital culture in education or in life either to acquire or deepen their pedagogical skills and abilities on DICT.

The redesign of the means by which remote teaching has been carried out has been accompanied by the need to implement pedagogical practices that motivate or engage students. In the heat of the debates that emerge in this area, especially in social networks, the use of Active Methodologies has been highlighted, which reveals the vacuum of guidance left by official curricula.

In this context, alongside predominantly traditional models, based on instruction and centered on the teacher as a transmitter of knowledge and the patient student (SAVIANI, 2005), there is a search for the realization of practices that privilege action and student activity in the construction knowledge, placing it at the center of educational processes and reserving the role of mediator to the teacher. Thus, many of the ideas of Escola Nova, whose motto was "learning by doing" (DIESEL, BALDEZ, MARTINS, 2017; GUARALDO; BRITO, 2017), today, in remote education, they present themselves in a different guise, aiming to focus the needs, personal experiences and individualities of the student and awaken in them motivation, engagement, critical thinking and rational, emotional and physical integration through practical, concrete and / or daily life mediated by DICT.

This pedagogical intention has been taking shape, mainly in the methodology of the projects, in the use of educational games and gamification; through platforms, applications or digital features, such as the use of QR Code, Google Classroom, Kahoot, Geogebra, Scratch; in debates made by videoconference and games that reproduce real historical and current facts; in the creation of comic books (HQ) and mental or conceptual maps; in the use of the Design Thinking approach applied to education, in scripted classes, among other methodologies supposedly suitable for active teaching.

In Paraíba, the ERE was called, in the state education network, the Special Teaching Regime (STR). In the act of its legal implementation, by Decree nº 418/2020, which was complemented by Decree nº 481/2020, the recommendations were made in order to contemplate synchronous and asynchronous practices and students without any access to the internet through printed materials. These guidelines, in general, from what we perceive, are not exclusive to state schools, since we know that part of municipal schools, and even private ones, make use of this practice. The way we did to find out the details of this implementations in Paraíba education is presented below.

# Methodology

In order to operationalize the objective of this article, we collected responses from teachers from public or private networks, from municipal, state and federal education networks, from all the regions of Paraíba (Zona da Mata, Agreste, Borborema and Sertão). Therefore, our study is characterized as a case study, exploratory and descriptive (BOGDAN; BIKLEN, 1994). To select the sample, we adopted the following criteria: to be a teacher in the final years of elementary school or high school and to be working remotely in schools in the state of Paraíba.

The instrument we used to collect the data was a questionnaire prepared in Google Forms, which was applied via link, through social networks such as WhatsApp, Instagram and Facebook, or e-mails from schools, teachers or a group of teachers. Being a semi-structured type of questionnaire, it consisted of open and closed questions, distributed in three sections: one, in which we present the purpose of the form and the conditions of confidentiality of the teachers' identity; another that explored the teacher's profile; and one that diagnosed the technological tools, the pedagogical practices used during the ERE and their expectations about postpandemic education.

The questionnaire was available for responses for a week and enabled us to obtain one hundred and five participants. Of these, 52% are under 40 years of age; 66 declared themselves men (63.8%), 37, women (35.2%), and one preferred not to say the gender (1%); 46 teach classes in schools in the Sertão (43.8%); 27, from Borborema (25.7%); 17, from Zona da Mata (16.2%); and 15 work in schools in Agreste (14.3%). As for education level, four are doctors (3.8%), 36, masters (34.3%), 65, specialists (61.9%), 82, graduates (78.1%), and 11, bachelors (10.5%), who finished their highest level of education, predominantly, less than 10 years ago (75%).

As far as the administrative sphere to which their schools belong is concerned, 89 are from the State Education Network (84.8%); 36, from the Municipal Network (34.3%); two, from the Federal Network (1.9%); and eight are teachers from private schools (7.6%), <sup>2</sup>who only teach classes in high school (49.5%), in the final years of elementary school (20%), or in these two stages (21.9%). Some teachers gave answers that did not allow us to identify the stage (s) of basic education in which they work (8.6%).

The distribution by curricular components is done as follows: Mathematics, represented by thirty teachers (28.6%); Portuguese, by seventeen (16.2%); Science and Chemistry, fourteen, each (13.3%); and Physics, by thirteen (12.4%). The other curricular components had a total of more or less equal participants. These teachers have smartphones (96.2%), laptops (88.6%), desktop computers (26.7%), tablets (17.1%) and netbooks (9.5%).

In order to understand how these technological devices are being used pedagogically and how the learning acquired in this scenario can impact their practices, we weave our analyzes based on the statements of the research subjects,

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<sup>&</sup>lt;sup>2</sup> The values are over 100% because each teacher can teach classes in more than one school. The same happens in relation to the level of education, the distribution by curricular components and by stages of basic education and the distribution of technological tools by teacher.

who were identified with the letter F, followed by a numeral that varies between 01 and 105 (F01, ..., F105), in reference to the order in which they answered the form so as to preserve their identity.

### Mirroring the current situation

As someone who sees, lives and feels, in practice, the challenges that ERE demands from teachers, the discussions that we present in this section reveal the data and context that were observed and recorded in depth. For this, we are guided by what Kerckhove (1997, p.126) teaches us, when he says that we always need to "see more, hear more and feel more", not only in the literal sense of these terms, but also metaphorically, from which inferences are woven in order to see the lines between the numbers we present.

In this perspective, the profile of the teachers presented in the previous section shows us that they are contemporaries of the DICT, that is to say, they have smartphones, laptops, desktop computers, tablets and netbooks, tools that are indispensable for the implementation of remote education, both with regard to practices traditional pedagogical approaches to active methodologies, in its most modern sense (DIESEL, BALDEZ, MARTINS, 2017; GUARALDO; BRITO, 2017; MORÁN, 2015). Thus, we seek to identify the programs, applications and functionalities that are being used pedagogically during the ERE (Figure 1).



Figure 1: programs, apps, and functionalities used pedagogically by the teachers during ERE

Source: The authors (2020)

When asked about the difficulties and challenges they faced in using these resources in their pedagogical practice, teachers mentioned the lack of good quality Internet (40%) and training that would prepare them for the pedagogical use of the DICT (40%) and the little ability they have to use these technologies (36%). These last two challenges are ingrained in such a way that it is impossible to separate them from each other, which allows us to infer that the training that these professionals went through did not develop the digital literacy and pedagogical skills necessary to handle DICT.

It is quite true that, due to the emergency situation with which remote education was implemented, it was not possible to plan and systematize the ERE in a reasonable way or to configure it as a non-classroom teaching modality similar to others already consolidated before Covid-19, such as Distance Education (HODGES *et al.*, 2020; MOREIRA; SCHLEMMER, 2020), for example. However, the acquisition of knowledge about the pedagogical use of DICT is indispensable for emergency contexts or non-emergency ones.

Other factors were mentioned by teachers, such as obstacles during the ERE: lack of motivation and little participation of students in online classes; precariousness or lack of technological resources necessary for students to access Google Classroom; bureaucratic work overload; the little importance given by the students' family and by the students themselves to remote education and the requirement of the Education Secretariats to work on the Brazilian Common Core Curriculum contents associated with pre-determined axes.

Due to the various aspects aforementioned, the perception of the surveyed teachers is that, on average, only 50% of students are being served remotely by synchronous digital means. The alternatives implemented by schools, according to them, are: 1) awareness campaigns for students, parents or guardians on local radio and social networks about the importance of remote education; 2) weekly delivery of printed materials to students who do not have access to the Internet; 3) sending activities and content via WhatsApp to those who have partial access to the Internet; 4) delivery of portfolios to students who have not participated in any remote activity, whether synchronous or asynchronous, through weekly printed materials or social networks.

Despite all the difficulties presented above, figure 01 points out that teachers are using a reasonable amount of applications, programs, features and digital platforms. But, in what way, didactically and pedagogically speaking? In search of answers to this question, considering the heated debate about the use of active methodologies (AM) that took place during the ERE, the fact that traditional teaching (TT) is still ingrained in education, regardless of the model, and the references of these pedagogical currents that we use (DIESEL, BALDEZ, MARTINS, 2017; GUARALDO; BRITO, 2017; MORÁN, 2015; SAVIANI, 2005), we believe it is crucial to organize the practices mentioned by teachers in two categories: those that are more aligned with the active methodologies (AM) and those that are recognized as being attributed to traditional education (TE) (Table 2).

| Pedagogical approaches | Pedagogical Practices   | Teachers who use<br>them |
|------------------------|---|--------------------------|
| MA                     | Videos produced by the students   | 28%                      |
|                        | Debates among students  | 36%                      |
|                        | Seminars given by the students  | 8%                       |
|                        | Mind maps made by the students  | 24%                      |
|                        | Texts written by the students   | 36%                      |
|                        | Models made by the students   | 8%                       |
|                        | Newspapers made by the students   | 12%                      |
|                        | Experimental practices  | 12%                      |
| ET                     | Learning progress exercises   | 84%                      |
|                        | Learning assessment (tests)   | 24%                      |
|                        | Loud reading  | 68%                      |
|                        | Videos/video lessons to deliver content                                 | 80%                      |
|                        | Lectures through Google Meet  | 48%                      |
|                        | Lives with guest speakers (without active participation of<br>students) | 8%                       |
|                        | Course book   | 44%                      |
|                        | Videos produced by the teacher to deliver content                       | 4%                       |

Table 2 - AM and TE practices carried out by teachers

Source: The authors (2020)

It is important to emphasize that our understanding of active methodology is not based on all the most current assumptions about this theme. We set out from what we consider to be its essence: the student's action / activity as the protagonist of the pedagogical practice as opposed to his passivity, which is a characteristic of traditional teaching (DIESEL, BALDEZ, MARTINS, 2017; GUARALDO; BRITO, 2017; MORÁN, 2015; SAVIANI, 2005). Furthermore, it is necessary to take into consideration that the direction taken by a pedagogical practice depends more on the teacher's posture than on the resources he uses. Having said that, we asked teachers how they usually carry out their remote teaching practices (Figure 2).



Figure 2: Way teachers perform their pedagogical practices during ERE

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Source: The authors (2020)

Regarding Table 2 and Figure 2, we can infer that there is an indisputable supremacy of TE methodologies over AM. This discrepancy could be greater if the test-based learning assessments, the teaching of Common Core contents, the use of the textbook, and classes via Google Meet were mandatory since the beginning of the ERE in all administrative spheres to which the schools where the teachers work belong. surveyed. Thus, despite all the potential of the resources that are available to teachers, it seems, for various reasons which are presented and discussed here, that they continue to teach predominantly in a traditional way. They just changed from analogue to digital.

Despite the temptations to analyze this reality from a negative perspective, it is necessary to understand that most teachers (24%) had never used digital technology pedagogically before ERE, many do not have a good quality Internet (40%), and most thinks that they were not prepared in their training to use DICT (40%), or that they are not able to handle them (36%). From this point of view, in view of the importance of DICT to deliver good quality remote teaching, we can say that teachers are experiencing a moment of self-improvement, from a personal and professional point of view, which can significantly impact their teaching practices. in post-pandemic education. With this in mind, the last question in our questionnaire was the following: How will the experience with the use of Digital Information and Communication Technologies (DICT) during Emergency Remote Teaching (ERE) impact your teaching practices after the Covid-19 pandemic, when we go back to classroom teaching? Below, we present some statements by the teachers about this.

F10: "The experience lived in the pandemic, without a doubt, redefined the way I, and countless other colleagues, live and feel the pedagogical doing. The use of technological tools in the post pandemic will, in my view, be an inseparable extension of teaching planning ".

F25: "It will have a positive impact, as I had to learn to use tools that I never used, such as the Google form and the meet, I believe that I will continue using them, mainly the form, as it facilitates correction".

F30: "The use of DITCs could cause a revolution after the pandemic period. Although it is a new way of working for most teachers, they will be able to continue using this new methodology to make materials available and assign activities in a faster and more dynamic way, which can be an aid for face-to-face classes ".

F40: "Well, despite the good use of technologies, nothing is as effective as the teacher in the classroom".

F50: "I'd always wanted to use more technology in teaching and now, with this experience, I think a door has been opened for teachers and students to continue using this medium as a way of learning. I believe that after this pandemic, education will no longer be only in person, but hybrid ".

F55: "It will totally change the way of doing activities and in classes".

F60: "I learned to explore many DICTs pedagogically, I went deeper into what I already knew and, certainly, when we go back to classroom teaching, I will use whatever is possible!".

F66: "The experience has been traumatic because of the pressure without minimally proportional support. I have been trying to implement something of this kind for

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years, but I still haven't come across with a method that convinces me in terms of efficiency ".

F70: "I believe it will transform positively. The insertion of digital technologies in pedagogical contexts was already expected, the pandemic accelerated this process, with great difficulty. However, both students and teachers are more involved in this environment, which will certainly facilitate the maintenance of these post-pandemic habits. I hope to improve myself even more. I miss studying this in a deeper way".

F71: "The impact will be immense, as both my colleagues and I, as well as the students will be much more skilled with most of the resources, so we will be able to use them more often from now on."

Of the ten statements we transcribe literally, only one can be understood as a negative view of the use of DITC during ERE in post-pandemic education (F66), another has a reservation (F40) and eight consider the impacts of this use on their pedagogical practices post-Covid 19. This reality is representative of the 78 responses that were given to this question. In fact, with the exception of the two statements highlighted above, the other 76 statements - 97% of those who answered the question, or 72% of those who participated in the survey - presented a positive view of the learning acquired through the pedagogical use of DITC during Emergency Remote Teaching in the sense of using them even more, definitively introducing them in their face-to-face practices, deepening what they already did with them before the pandemic and even using them to implement a kind of hybrid teaching on their own. This reality allows us to infer that, when we return to the "new normal" of face-to-face teaching, pedagogical practices will be strongly impacted, since DITC will become more requested and / or used by teachers and students.

# What will the post-pandemic be like? For a future teaching direction

The empirical view of those who experience Emergency Remote Education and the descriptions and analyzes that we have made throughout this article allowed us to conclude that the experience lived, to a greater or lesser degree, has transformed us or will transform us as individual and collective beings, in the human, personal, social, or work dimensions. We portray here a research focused on a reality experienced in public and private schools, encompassing all the regions of Paraíba, from which we started to expose our reflections.

We began by pointing out that ERE has an exclusive aspect, especially with regard to students' access to online activities or through digital platforms, such as Google Classroom, and another traumatic one, for teachers and students who were unable to teach or learn by remote means, even having access to the necessary resources for this. It also presents us, as we have shown, the false impression of innovation through the digital disguise of obsolete practices. However, it also revealed a great effort on the part of families, students and teachers to overcome the obstacles that were presented to them at every moment, whether arising from a weak formation, from discouragement due to the moment in which they lived, or from the lack of infrastructure , among other obstacles.

It was necessary to have a union and a collective work that unfolded in a joint effort capable of making education happen. Despite the harms that have been presented, and already highlighted, we think that this period also brought positive learning, especially with regard to the sense of collectivity, the autonomy of students and the pedagogical use of DITC. For teachers, we emphasize as relevant the understanding that the knowledge we have, from one moment to another, may be insufficient. Apparently, this change in attitude partly stemmed from the difficulties they encountered in mastering DICT pedagogically and from the operational challenges they faced in this process.

The speeches of the teachers brought up in this article accurately portray what we experienced in the emergency educational process: heated debates about the most appropriate methodologies, changes in the attitude of more resistant teachers, perhaps due to "fear" of using these technologies; the collaboration of colleagues who we thought were the most individualistic to help other professional colleagues anguished in this formative process, the development of new forms of communication among the school community, among other things, lead us to believe that post-pandemic education will be more technological, both in pedagogical terms and with regard to administrative and operational issues.

With regard to students, it is a fact that the absence of a teacher in the classroom, to whom they could run to when questions arose, required them to acquire more autonomous and active study habits. Therefore, we believe that ERE will certainly have repercussions in teaching and learning about the post-pandemic.

Considering all these aspects, we emphasize that a future teaching direction has been established which proved to be open, collaborative and dialogued in the school routine. Despite the obstacles experienced, there was an interactive phenomenon, in a movement that opened breaches since every time we experience something new, we overcome fears, we experience individual and collective constructions, we assimilate multiple knowledge in a joint effort of families, students and teachers. This caused an oscillation between fear and creativity, which became significant and certainly valuable. In other words, when we return to classroom teaching, it will not be as it was before.

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