The Challenge of Teaching Amidst COVID-19 in Brazil

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Abstract. This work is a portrait of online education provided to students during the pandemic of COVID-19 in Brazil. This aims to analyze the beginning of the change from presental classes to online classes. This work was completed in the first week of June, which according to the resources of epidemiology is after the peak of contamination. The educational year in Brazil starts between the end of February and the beginning of March, and presental classes were interrupted in the middle of March. With this situation, there was no time to plan how to develop the online classes and this should be solved while the online classes are developed. This work presents a survey answered only by teachers and professors that are teaching in online classes in Brazil. This research aims to highlight the difficulties, reality, and challenges faced by these education professionals, in a country with so many social differences.

Keywords: COVID-19 · Online Teaching · Challenges of Pandemic

1 Introduction

During 2020 the world faced the COVID-19 a pandemic that spread around the world forcing many countries to close any potential way of transmission. The first case of COVID-19 was identified in December 2019, in Wuhan City, and has since spread globally, resulting in the ongoing 2019–20 coronavirus pandemic [1]. COVID-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The clinical spectrum of SARS-CoV-2 infection appears to be wide, encompassing asymptomatic infection, mild upper respiratory tract illness, and severe viral pneumonia with respiratory failure and even death, with many patients being hospitalized with pneumonia in Wuhan [2–4] and it soon became clear that efficient person-to-person transmission was occurring.

Many countries have decided to close schools, colleges, and universities to prevent students to get infected and to spread the disease in the population due to high transmissibility, even if the first information claims that the most affected are the oldest. This happened at the end of the semester in many countries of the North Hemisphere, which facilitated the cancellation of classes with no prejudice to students. The Brazil COVID-19 pandemic started on February 26, when a 61 years old man had tested positive in São Paulo [5]. Therefore, home confinement was initiated in the first half of
March. But in Brazil, the first semester scholars start at the end of February or the beginning of March, which leads to the closure of the universities and schools with less than one month of classes.

Several studies [6–9] show different approaches and practices created to continue their academic lives normally, in an online way. However, many of these studies do not consider some facts that can decrease the efficiency of this novel educational reality, such as social inequality, professor and students’ mental health [10], lack of devices for students and lack of teacher’s skills to develop a class in a virtual environment. Besides that, some countries are having limited technologies and schools are not ready for the complete implementation of online education [11].

Thus, many institutions in Brazil had to adapt the way to provide their online classes during the pandemic. Several educational discussions about how to maintain the same instruction quality with a long-distance and how to create a virtual environment instantly, in a country that has so many social inequalities, were sparked. The transition to online mode has raised questions for the faculty about their capability to deal with the existing technology. Besides that, what to do in a house that has just one computer or laptop and now it is the only way for children, parents, and other relatives who have to work from home? However, some institutions started their activities not taking into account whether the student had or not devices to follow the classes.

With continental proportions, Brazil has several regions that have specific necessities and characteristics [12]. That implies in do not have an only way to teach and learn. Not to mention the existing social differences. For example, research of PNAD [13] shows that 43.4% of houses had a microcomputer and 93.7% had a mobile cellphone. However, only 74.9% access the internet through these devices for many reasons and we can mention that two of the reasons are: internet access service was too expensive (28.7%) and the internet service was not available in the house-hold area (7.5% of interviewed).

Another factor that can impair learning is that 6 or more people are living in the same house in 15,1% of residences and there are more than 3 residents per dorm in 40% of the houses [13]. For these reasons, we observe the necessity for studying how the practices of online education are being developed during the pandemic in Brazil and to empathize difficulties faced by professors and students. This work was finished in the first week of June 2020, where according to epidemiology is before the maximum of the contagion of COVID-19, and aims to be a portrait of the initial understanding and actions to this pandemic in Brazil. This paper studies the challenges of Brazil and its population to continue the education process at the schools in the online form of distance learning.

2 Educational System in Brazil

To understand the challenge to provide online courses in Brazil, during the pandemic, is necessary to understand some characteristics of the country. The area of the country is 8,5 million square kilometers being the fifth-largest country by area. The population is 190 million, that are irregularly distributed, with the majority living in large urban centers. Besides that, in part of the north region of the country is located the Amazon
forest [14]. Figure 1 shows the map of the Brazil regions. With Table 1 and Fig. 1 it is possible to see that the regions have different areas and the distribution of the populations is extremely irregular. Therefore, many cities are only accessible by a river in travels that can take hours or days, in the north region.

![Regions of Brazil](image)

**Fig. 1.** Regions of Brazil.

| Region     | Area (kilometers) | Population | Population/Area |
|------------|-------------------|------------|-----------------|
| Southeast  | 924,608           | 80,364,410 | 86.92           |
| Northeast  | 1,554,291         | 53,081,950 | 34.15           |
| South      | 576,783           | 27,300,000 | 47.33           |
| North      | 3,853,840         | 15,864,454 | 4.12            |
| Midwest    | 1,606,234         | 14,000,000 | 8.72            |

The main educational system in Brazil for K-12 is the public system that should attend all students. The main educational methodologies are: the traditional classroom education, where books, blackboards are used by the teacher as a teaching aid, and; modern classroom education, where the classrooms are equipped with whiteboards, projectors, or audio-visual displays equipment and digital boards. Most of the public schools apply the traditional classroom. Usually, there are 35 to 40 students and 1 teacher per class. The public K-12 educational institutions attend the students with smaller familiar income, where many students do not have a computer or tablet to attend classes and have more limited access to the internet.

The universities are present in every state with at least one Federal institution and most of them have at least one State institution. Private institutions are also present, mainly in bigger cities and in greater quantity. In 2017, Brazil has 296 public universities/institutes and 2.152 private universities. Usually, there are 35 to 40 students and 1 teacher per class [15].
3 Methodology

Several of the approaches existent in a literature review could not be applied in this study due to safety standards suggested by the World Health Organization (WHO). Therefore, we decided to apply a survey only for teachers that were teaching throughout the pandemic. It is important to highlight that some public institutions in the elementary, middle, high school, and universities opted to not continue their classes due to all problems previously mentioned. Each State could realize your real situation and decide if they continue or not.

This survey was created in the Google Form platform and shared in social media like Facebook, Instagram, and forwarded through the WhatsApp messaging app. Because of the largest network in these media, we could achieve several people that could answer it without being identified. We shared in teachers, professors, universities, and different cities groups. Also, we had shared through known people who were interested to respond and helped to get more answers.

The survey intention is to raise data of the change between traditional and online classes that professors had to make and if the institutions that they belong provided the necessary support and infrastructure for this new challenge. Besides that, we asked if the students had conditions to follow this online education. For that, we create objective and multiple-choice questions with simple queries about the situation the interviewee was involved with. All information about this survey and all relational queries are described in the section and subsections that follow.

4 The Survey

The survey is a short questionnaire with only ten questions that should be answered only by educators that are working with online classes during the pandemic of COVID-19. Seven of these questions are multiple-choice and the three remaining are open-ended questions. There are 168 responses from different regions of the country and segments of the educational system. The next subsections are the ten questions and the responses.

4.1 City and State

The first question is about the city and region where the educator works, this is an open question because responders can work in more than one city and even in more than one state because they can work in nearby cities that are located in different states. As was discussed in the introduction of this paper, the epicenter of the COVID-19 was the state of São Paulo, in the Southwest region. Other local epicenters were Pernambuco, in the Northeast region and the city of Manaus, in Amazonas state, located in the North region.

The respondents are: 14 from the North region, 18 from the Northeast, 136 from the Southeast, 1 from the Midwest, and 1 from the South. From these respondents, 111 work in the capital of his state and the remaining 57 in cities far from these capitals and even in rural areas.
4.2 Educational System

The second question is about the public/private system where educators teach. The educators that responded to this survey work in: 107 (63.7%) only in public institutions, 42 (25%) only in private institutions, and 19 (11.3%) in both. The presence of 61 (36.3%) educators that work in the private system can be due to the fact that many private institutions implemented the online classes in less than two weeks, to not lose the monthly payment of the students.

4.3 Educational Segment

The third question is about the segment where the responder actuates, they could choose more than one option. From the responders, 98 teach in elementary and middle education, 108 teach in the high school, 23 in undergraduate courses, and 3 in graduate courses.

The number of students enrolled in elementary and middle education is considerably bigger than the students in elementary and middle education, but many students of the first educational years are too young to change the educational system so suddenly and this is a challenge where some schools are working.

4.4 Online Educational Experience

The fourth question is if the responder has experience with online education or not. Most of the responders never taught online classes before, 147, while only 21 has previous experience with online classes.

With this question is possible to understand the number of responders with experience with online classes, and the following questions evaluate how challenging was to these educators to change the educational system.

4.5 Training Provided

The fifth question is if some training was provided to the educators to the online classes. From the responses, 94 of them did not have training provided by the educational institution, 64 had training provided by the institution during the pandemic and only 10 had previous training provided by the institution because they already work in the online classes offered by the institution.

Comparing the responses of this question with the previous question, only 10 respondents were trained by the educational institution, and 11 was used with online classes because they did this previously. Most of the responders had to learn how to teach online alone, with a big waste of time and effort while they were presenting the classes.

4.6 The Online Environment

The sixth question was if the tools used to online classes are part of a system provided by the institutions or if they are multiple programs, for educational use or not, that was adapted to the online classes. From the responses, 116 did not have a system provided by the institution, while 52 was using a system provided by the institution.
4.7 Attendance of Students in Private Institutions

The seventh question was just for educators that are providing online classes to private institutions, asking the percentage of students that attended the online classes. From the responses, 21 (22.3%) were between 80% to 100%, 26 (27.7%) were between 80% to 60%, 17 (18.1%) were between 60 to 40%, 17 (18.1%) were between 40% to 20% and 13 (13.8%) less than 20%.

With these responses, 30 (31.9%) of these online classes had less than 40% of the attendance of students. The number of students attending online classes is considerably smaller than the students that should be present in the presential classes, with this result, the number of students that fail just because they do not have the mandatory attendance in classes (that is 75%) is close to 77.7%.

4.8 Attendance of Students in Public Institutions

The eighth question was just for educators that are providing online classes to public institutions, asking the percentage of students that attended the online classes. From these responses, only 4 (3.3%) were between 80% to 100%, 7 (5.8%) were between 80% to 60%, 25 (20.8%) were between 60% to 40%, 35 (29.2%) were between 40% to 20% and 49 (40.8%) less than 20%.

With these responses, 84 (70%) of these online classes had less than 40% attendance of students. As in the previous section, the number of students attending online classes is considerably smaller than the students that should be present in the classes, but with this result, the number of students that fail just because they do not have the mandatory attendance in classes (that is 75%) is close to 96.7%.

Comparing the results of attendance of public and private institutions is possible to see that both results are bad, but the public system has a significant number of students that do not attend online classes.

4.9 Main Issues Faced by Educators

The ninth question is an open question where the respondents should explain the main difficulties in online classes. All the educators responded to this question with at least one short comment and many of them explained with more details one or more issues.

The main problems addressed by responders are:

- Internet access: 66 comments, mostly about students in public institutions or rural areas, and some comments are also about access to the teachers.
- Interaction and participation: 29 comments, educators do not know how to interact and evaluate the participation of students.
- Increase of work: 25 comments, some educators report that they have to work much more, some of them prepare and edit videos for classes.
- Platform: 20 comments, educators addressed issues with the platform, as instability and other issues that make this difficult to use.
4.10 Comments Made by Educators

The tenth question is an open non-mandatory question where the respondents can leave a comment about the online meetings with students. A significant number of educators (100 or 59.5%) responded to this question. The comments are about distinct aspects of the online meetings but some subjects are more frequent:

- **Bad participation**: 21 comments, some educators pointed out that the students were not interacting or even participating in the meetings.
- **Bad access**: 15 comments, some students do not have internet access, or very limited access, which prevents them to participate in the meetings.
- **Good interaction**: 10 comments, some educators, mostly from private institutions, reported good interaction with the students at the meetings.
- **Bad solution**: 10 comments, some educators reported that these meetings are bad at all and do not provide conditions for students to learn.
- **Professionally enriching**: 9 comments, some educators reported that these online classes were challenging for them in a good way, because made them rethink teaching and learn how to teach in this new environment.
- **Reasonable**: 8 comments, some educators reported that for this pandemic situation this solution works.

5 Conclusions

The 2020 pandemic of COVID-19 destabilized all countries around the world. All people had to adapt their lives to follow the instructions of WHO, so the economy and education had to seek creative solutions to continue developing their essential roles. Brazil was not different from the other countries, but some Brazilian characteristics must be taken into account to highlight the situation by students and teachers. Online education is a complex endeavor and both academics and students may lack the training needed for quality online learning.

Usually, developing online courses involves a team of experts including professors, instructional designers, programmers, and illustrators and require a large knowledge about the functionalities and tools available in the platform from whom is using it. Furthermore, all users must have internet connecting services to access all the information needed for learning, which is not the case for all Brazilian students due to the low financial situation in which they live.

It is important to set realistic understandings that in this quick transition, academics who have never taught online will be offering courses that have not been devised in this way and it may decrease the quality of learning due to lack of structure. Another point to be emphasized is that the health and safety of students and staff should be the top priority. Nobody can have excellent learning if your mental health is compromised with a pandemic situation and financial problems. Authorities should take the responsibility of ensuring food and pay careful attention to student experiences to make the learning more rich and effective.
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