Pandemic and education: Learning and relearning to teach using new technological tools

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ABSTRACT
This chapter is a theoretical essay with bibliographic research, seeks to reflect on the context of the pandemic and post-pandemic and the impacts on educational processes with the introduction of remote work and new technological tools in educational practices, both in public education networks and universities. With the implementation of social distancing or isolation occurred the suspension of face-to-face classes arising the need for school management, along with teachers, to renew the way of teaching and educational processes, through resources that contributed so that the student did not suffer deficit in the teaching and learning process. These new ways caused an estrangement and the need to adapt to the new demands. With this, technology was used as an alternative to bring people together, for marketing, work at home (home office), psychosocial care and for teaching and learning through online classes, something atypical and controversial in current times. However, in this new way of teaching and learning, university students also experience challenges that are not known or little known. We can not fail to highlight that it is an exhausting time, there is a physical and mental exhaustion, a psychological shock, anxieties and anguish, uncertainties for both teachers and students.

Keywords: Pandemic and education, New tools, Reinvent, Students.

1 INTRODUCTION

In December 2019, thousands of people were impacted by the news of the emergence of a highly contagious and lethal virus, first detected in China and that at maximum speed crossed the continents leaving a trail of fear, anguish and death wherever it went. Therefore, to contain the spread of Sars-Cov-2, the coronavirus, the World Health Organization after declaring a state of pandemic, warned about the need for action to do so.

In this scenario, authorities around the world have taken measures to prevent and try to contain the spread of the virus that causes the Covid-19 disease. Thus, among the main measures were the use of masks, hand hygiene with alcohol gel, social isolation and closure of establishments that did not provide essential services, such measures were taken to minimize the risks to the population, given that because it is a new virus, there was no proven scientific treatment for the treatment of Covid 19.

Therefore, it was essential that the population adopt the measures imposed by the competent authorities in each country, because it would be necessary social isolation along with the closure of several establishments, this fact brought enormous impacts on the various sectors that underpin society, that is, the economic sector was impacted, health lived chaotic days, as well as the education sector needed to be reinvented to meet the Brazilian educational demand.

In addition, with regard to the pandemic scenario it is important to say that in Brazil the first case of Covid-19 was identified at the end of February 2020, and from that moment the government actions began to be planned and put into practice, thus arising several changes in the daily life of the population in all fields and in education was no different, so, as Costa explains,

> With these changes occurring worldwide in health, it had repercussions in all social sectors, especially in education. With the pandemic in everyone, life that was considered normal, had to be changed, and social relationships were modified and people had to take a new social behavior, so they modified behaviors, the way of learning and interpersonal relationships, consequently reflecting teaching strategies. (COAST *et al.,* 2021, p. 14).

With the implementation of social distancing or isolation occurred the suspension of face-to-face classes arising the need for school management, along with teachers, to renew the way of teaching and educational processes, through resources that contributed so that the student did not suffer deficit in the teaching and learning process. In relation to this aspect, emergency remote teaching was implemented, which evidenced the importance of the management team to know in a more in-depth way the reality of the school community (CRUZ *et al*., 2020).

When resuming what has already been done, it seemed that this would be the ideal path to be followed, in this way, planning and executing strategies and activities that would generate results, "[...], however, those responsible for formulating the measures for the continuation of educational activities did not have the necessary preparation to manage the crisis established by the new coronavirus" (CASTRO, 2020, p. 73).

In this scenario, new ways of teaching and learning emerge when replacing face-to-face classes with remote classes. These new ways caused an estrangement and the need to adapt to the new demands. Some students have facilities in this new way of learning, others have difficulties in the transition to remote work, they need to be prepared, because entering a university was a dream come true, their training is very important to get a job in the area and not give up. With this, technology was used as an alternative to bring people together, for marketing, work at home (home office), psychosocial care and for teaching and learning through online classes, something atypical and controversial in current times.

Linked to the lack of preparation of the professionals, are the lack of structure in most of the schools of the public education networks, since, several times, they lacked the basics such as books, sheets and ink for printing, which became indispensable items to bring printed explanatory contents

and activities to students who do not have access to the network and that, For this reason, they have no way to attend online classes evidencing the **digital divide**, a reality of most children and adolescents.

In this step, as evidenced in general lines, hybrid education emerged as a possibility amid the transformations caused by the pandemic, however, despite being an attractive tool it was fundamental to analyze the context in which this teaching will be employed, this means that it is crucial to ascertain the entire social and cultural panorama of the school and its students, in addition to the faculty, so as not to lead to the precariousness of the teaching work and to boost a teaching without many meanings for the students. After all, these innovations need a planning that focuses on the totality of actions, because the implementation of technology by technology does not account for revolutionizing the methods and quality of the teaching and learning process.

In this sense, when thinking about the use of technological tools it is crucial to reflect on the best way to insert such technology in the educational field. After all, as Borges et al (2015) explains, the educational space in recent years and, mainly, in the context of the pandemic has been transforming itself through technological advancement, previously education was offered in physical spaces, such as libraries and laboratories, in addition to the student having to move to these environments to continue their studies.

In consonance, the author Borges *et al., (2015,* p. 05) points out that: "in the digital age knowledge has no borders, no matter where the student is, because through the availability of information in the networks, he continues his learning". Finally, when we talk about innovation and technology in the educational field, there is soon an association with new services, technologies, processes, and competencies by educational institutions that lead to the improvement of learning, being fundamental to think about equity and efficiency, contributing to the constitutional guarantee that is the right to education.

1.1 HOPE AND TRANSCEND: THE EDUCATIONAL SCENARIO THROUGH THE USE OF NEW TOOLS AND NEW TEACHING STRATEGIES

Paulo Freire in his works highlights the importance of an education that comes out of traditionalism and that allows the teacher to reinvent their practices, providing students to build knowledge on a certain subject. Likewise, it is crucial to hope as pointed out by Freire (1992, s/p), because according to him "it is necessary to have hope of the verb to hope and not verb to hope, it is necessary to hope and get up, to hope is to go after, to hope is to build, to hope is not to give up! To hope is to carry on, to hope is to join with others to do otherwise."

The scenario of the pandemic has highlighted the need to hope in the educational time-space in search of new ways of teaching. Thus, with the implementation of remote teaching many factors

needed to be reviewed, both with regard to the performance of education professionals, as in relation to the educational practices of the educational system, involving students, managers, employees, etc., since a new reality was imposed and teachers needed to reinvent their practices and become familiar with technologies to be able to continue the school period. Regarding students, it was evidenced how the digital divide is a reality in Brazilian schools and homes, since many students did not have access to the internet network and equipment to participate in online classes.

Therefore, it is relevant to promote discussions about technology in education coupled with discussions about public policies that aim to create strategies that contemplate this portion of students who do not have access to the internet network and equipment, ensuring the possibility of accessing technological educational tools in an efficient and egalitarian way. In this way, it is also important to highlight the gaps evidenced by the pandemic in the educational field, but, at the same time, it is worth thinking about the transformations that are occurring in the post-pandemic in all educational sectors, that is, basic and higher education are undergoing several changes resulting from the pandemic.

In relation to higher education, among the changes it is possible to mention that the acquisition of knowledge has now also become independent and active. And it does not depend only on what is transmitted in the classroom, but what has been transmitted through various tools that resultsRAM in new pedagogical strategies in home office.

 Of course, this depends on the facilities of the internet, whether on the personal computer or on the smartphone, the student can search for information in real time. What helps the university to broaden the discussions, however, we are not unaware that many university students are also not having access because they do not have the appropriate resources for both and other motivations that we want to know.

With regard to the tools or applications there are many available, but online videos, according to Borges et al (2015, p. 06), have become increasingly popular, via sites such as Youtube and Google Videos, seducing new adherents day by day. The author explains that this new communication space has contributed to educational activities, "and should be seen not only as a tool to support classes, but also as a means of communication as a teaching and learning strategy."

Sassaki (2020, p 15) draws attention to the greater use of technology in times of pandemic with distance learning, this author believes that we will see, in the world without Covid-19, a greater number of schools adopting Hybrid Learning. This refers to educational practices that are already adopted by some universities and that integrate, according to Sassaki, the best educational practices offline and online. In English, it is even recognized by the term blended learning – in free translation, to mix the process of learning. In this new way of learning there are times when the student studies alone, taking advantage of online tools; in others, learning happens in person, appreciating the interaction between students and with the teacher and the teacher.

According to this author, these digital tools in the learning process of the student are more coherent with the state of the art of education. The students of this century, called by him digital natives, are immersed in the virtual world, although "not always with the skills and knowledge necessary to identify their risks and their opportunities." In this way, "Hybrid Teaching" brings to the classroom the reality of this new generation. This type of teaching would be a modality that merges face-to-face teaching with virtual, relevant trends in twenty-first century education (SASSAKI, 2020, ditto).

It should be noted that in this text when we mention the term youth/young university students is discussed through theories, concepts, reflections brought by authors such as Sposito (2005), Melucci (1997, 2005), Carrano (2000), Pochmann (2004), Pais (2005) and others. The authors argue the need for diversity and heterogeneity about young people, because they are inserted in different spaces, live distinct and similar expectations at the same time, lifestyles, gender, social class, ethnicity etc. In addition, they are seen as historical-sociocultural subjects, overcoming a deterministic view that sees young people in their homogeneity or unity, classifying them by chronology or only issues related to age group and reductionist views (biologizing and psychological).

In summary, it is relevant to point out that for the accomplishment of this study it was necessary a pre-survey on the theme, which observed in the literature review many gaps, due to the rarity of investigations on the educational context, remote classes and new tools and applications/platforms, especially in the areas of the humanities and social sciences, economic, philosophical, and technological, in times of the COVID-19 pandemic. There are discussions being engendered and produced, but few still published, being a new situation and the reflections still very recent.

Importantly, the digital economy has a before and after the pandemic with a major impact on the labor market. With the internet we also know that there is the possibility of doing university home office, that is, forms of work that can be done in free time, without leaving home and that guarantee an extra income during the course. Most people who are now in university are part of the generation that grew up with the internet and this naturally makes these people know how to mess with social networks.

2 NEW DYNAMICS IN EDUCATIONAL PRACTICES

Therefore, also in these new demands such as remote classes with educational platforms have emerged to face the process of teaching and learning in these times of pandemic. According to El País Brasil (3/06/2020), during a pandemic that has isolated a third of humanity at home, new dynamics of affective relationships and virtual professionals have been created, at a distance. In this way, the work of teachers/educators has become one of the most dealing with profound transformations. It can be said that never have these work instruments become so essential for these professionals as now, with

their own body and voice, these tools are becoming indispensable, cell phones, computers, and social networks.

In an environment of adaptation to this new way of working, it cannot be denied that they face greater responsibilities and demands in their tasks. However, in this new way of teaching and learning, university students also experience challenges that are not known or little known. We can not fail to highlight that it is an exhausting time, there is a physical and mental exhaustion, a psychological shock, anxieties and anguish, uncertainties for both teachers and students.

In this sense, in the era dominated by smartphones, tablets and applications, professions linked to information technology, such as Internet of Things (IoT) analyst, Big Data specialist (data sets that need to be processed and stored), are configuring themselves into something with intense references. In the digital world, information security is one of the biggest concerns of business owners and consumers. That is why the professional of the future needs to be curious, exploratory, and constantly update, study without depending only on academic training, these characteristics that lead a little to be self-taught become important, including to be able to share these new tools and new ways of learning.

Of course, due to the current quarantine and social distancing situation, these terms home office, remote classes and remote work have been leveraged and are becoming common as well. It is known that several companies and professionals who had never applied the work-at-home model are harmonizing in daily life to ensure health, safety, and work in this period. In this new dynamic there are advantages, facilities such as practicality, flexibility, and balance between personal and professional life. But we also cannot fail to consider new challenges, such as difficulty concentrating, lack of routine, loneliness, economic resources, learning difficulties, etc., etc. Therefore, the importance of knowing through the perceptions of university students these challenges and facilities.

Not only in Brazil, but several affected countries were gradually forced to implement different strategies of social isolation in the intranational space, which undoubtedly impacted on the closure of school units (kindergartens, schools, colleges, colleges, and universities). This scenario demanded alternative ways to enable the continuity of the teaching-learning processes, the predominant form was the remote use of Information and Communication Technologies - ICTs - EaD (LADIES; PEACE, 2019).

It is known that the pandemic cycle has affected teachers and students of different levels and age groups differently, and consequently many pre-existing educational asymmetries have been accentuated in these months. A fact that depends on each specificity due to the lack of alternative distance learning trails, as well as the accessibility gaps of teachers and students to Information and Communication Technologies (ICTs) for the promotion of Distance Learning (EaD) (PALAVRAS, 2020).

3 FINAL REFLECTIONS

At the end, we outlined reflections that directed us to the challenges of remote work and new technological tools in the learning process and training in times of pandemic. Remote work / home office was already coming even before covid19 emerging as a trend, now after 3 years of confrontations through isolation and social distancing, the modality has gained an even greater space in the various segments and economic sectors of the country and the world.

Many workers were forced to adapt to a new way of performing their work activities. In the universities it was possible to verify the large contingent of young university students facing their studies under strong pressure aggravated by the pandemic, but these same students showed great strength, focus and determination to continue learning and fighting for the future even in the face of all the faces and challenges revealed in this context. In the richness of the learnings built, In these years of pandemic, we observed the need for new studies that value students as producers of knowledge in their daily experiences, allowing us to rethink the pedagogical experiences and strategies of permanence of these young people in the University and in the public schools of the country post-pandemic.

Just as it was also observed great challenges experienced by education professionals who had to reinvent themselves in their teaching process, new strategies were necessary, being constant the orientation processes with some formations that were carried out by the educational institutions themselves, with the objective of streamlining and improving the classes offered in this context.

However, we also cannot fail to reflect that among the teachers there were difficulties in dealing with the learning and handling of digital technologies generating psychoemotional suffering, since they had to produce, many times, under the pressure of the double working day. The challenges were characterized in a scenario in which routines changed and new models of organizing work became evidence, increasing stress, causing physical and mental overload for professionals, which was aggravated by the need to reconcile work and domestic tasks, especially for women, professionals in higher education.

By Finally, we cannot forget in the face of the multiple reflections on the theme in question is the need after the return of the pandemic to carry out a diagnostic evaluation before starting the activities of the school year to elaborate the pedagogical strategies and structure the work, but certainly many tools and strategies continued to be used, even for the verification during this period of what were the difficulties and how to remedy them.

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