

Brazilian Education for Youth and Adults: A Reflective Report of an Emergency Remote Biology Teaching Context

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ABSTRACT: Education in Brazil for Youth and Adults has a specific teaching modality for this audience, called EJA. In the context of face-to-face biology teaching, EJA was already characterized as challenging and ineffective in reports from schools, teachers, and students of this modality. As a complicating factor, in 2019/2020 there was a global pandemic onset due to SARS-CoV-2, coronavirus, the virus that causes the disease COVID-19. In this context, the absence of social interaction in schools, teaching through digital platforms, and the need for autonomy on the part of students, directly affected EJA, both in teaching and learning. The teacher used active methodologies during classes with interactive resources, to remotely overcome challenges faced in this teaching modality. Thus, despite a pandemic moment harmful to Brazilian education.

KEYWORDS: SARS-CoV2 pandemic; Remote Learning; Education for Youth and Adults; Biology teaching; brazilian education.

I. INTRODUCTION

Currently, Brazilian education has shown itself to be average in many formal teaching spaces and, upon closer inspection, it can be seen that it is not being fully effective in providing quality basic education. Still, as an aggravating factor, there is a historical world pandemic moment that started in 2020, which directly affects basic education, both in teaching and learning and in the lack of social interaction provided by schools (OLIVEIRA; ANTUNES; ITAMAR, 2020).

Based on this, when analyzing public institutions, especially municipal and state schools, there is a more unfavorable situation, mainly due to the sometimes insufficient funds for the students' families, as well as an inefficient investment by the government (GIL e PESSONI, 2020). In this sense, free education in the EJA modality - Education for

Youth and Adults, is a factor that needs further attention, because in addition to adverse factors, there are still students of different ages, including elderly people who are not yet adept at using educational technologies communication (USHER, HERSHKOVITZ e FORKOSH- BARUCH, 2021).

In this case, the development of learning in EJA can still be considered relatively superficial, lacking professional interventions aimed at improving the learning process of these students, taking into account the entire social situation they experience. (MARASCHIN; FERREIRA, 2020). Therefore, the use of information and communication technology needs to be more interactive and contextualized, in order to provide possible contributions to the improvement of teaching in EJA by Emergency Remote Teaching (ERE) (LUCIANE; ARMANDO; ARTUR; ALEXANDRE, 2020).

In this context, professionals in the teaching area have been studying, analyzing and reflecting on ways to intervene and improve ERE (ALBÓ et al., 2020; MISIRLI e ERGULEC, 2021). Thus, both for Regular Education and for Teaching at EJA, educators research this scenario, with the aim of intervening with relevant contributions for the effective training of critical and political citizens, even at such a challenging time.

Based on this, this work aims to identify perspectives and challenges related to remote teaching, in cell biology classes taught to EJA students. In addition, it is also intended to expose criticisms and reflections of this teaching scenario through the vision of a teacher active in Regular Education and in Education for Young People and Adults.

II. LITERATURE REVIEW

EJA, Youth and Adult Education, is a teaching model developed from the need to provide opportunities for people who have not completed

elementary and/or high school at the appropriate age, for some reason. It is an action to encourage young people and adults (VENTURA, CRUZ e MARQUES, 2020). Thus, this approach respects the characteristics of these students and provides educational opportunities suited to their interests, living and working conditions through courses and exams for this teaching, differentiating them from Regular Education, mainly, in the case of remote teaching. (ARTUZI, DA FONSECA & BERTOLOTO, 2021; BEARDSLEY et al., 2021).

According to data released by the Brazilian Institute of Geography and Statistics (2018), it is estimated that there are 11.3 million illiterates in Brazil, corresponding to 6.8% of the population, who over 15 years of age cannot read or write. Despite this, almost half, 48.1% of the Brazilian population (aged 25 or over) did not complete elementary school. The rate is higher in rural areas, and 79.6% of Brazilians in this age group have not completed elementary school. Still, 27% of the population has completed high school at least and only 16.5% of the population has completed higher education, making it necessary to intervene in government measures and encourage education for this population that had its study interrupted.

EJA's objective is to offer high school completion services to young people and adults who drop out of school and wish to resume their studies, proposing the democratization of education and providing basic education opportunities for everyone in Brazil (DA SILVA, FREITAS, DE ALMEIDA, 2021). Thus, working with EJA implies training new skills, preparing students to deal with different languages and technologies, and to deal with new dynamics and challenges of educational processes (PEREIRA; ESPINDOLA; COSTA, 2020).

Generally, it can be considered more tiring to exercise a teaching role with high school students in the EJA model. This is because, in many cases, EJA students have greater difficulty in building concepts, so they are disappointed, as they cannot learn different contents, making it a challenging teaching and learning environment (LUCIAN; ARMANDO; ARTUR; ALEXANDRE, 2020).

In addition, in 2020 there was an aggravating phenomenon in the country's educational context, including in the EJA modality. Due to the current global context in relation to the COVID-19 pandemic, social separation has become a basic method to slow down the disease transmission curve (GOLINELLI, et al., 2020; DA SILVA TUPAN, 2021; ESPÍRITO SANTO, 2021). Although this action has reduced the transmission of the virus, it has also promoted a transformation of

all sectors and activities, reaching even the educational environment (DA SILVA, et al., 2020).

In this way, Emergency Remote Learning became the most viable way to maintain social distance and promote education for different students. However, EJA students who already had difficulties with the subjects with a face-to-face pedagogical monitoring, now face a teaching model in which they themselves need autonomy to learn, causing many an increase in insecurity and a feeling of incapacity to apprenticeship (LUCIANE; ARMANDO; ARTUR; ALEXANDRE, 2020).

Based on this, teachers from different disciplines need to develop teaching strategies to facilitate this teaching and learning process (NETO et al., 2020; TOQUERO e TALIDONG, 2020). The most common ways of developing remote classes are through videos and slides, which in many moments, are unable to hold the student's attention, especially considering that most EJA students study at night and have an exhausting work routine during all day long.

Thus, in order to develop new Emergency Remote Teaching practices suitable for EJA, educators need to understand the reality of students, take into account the peculiarities of students related to their age groups and propose stimulating and dialogic content related to reality (LELLIS, FLORENTINO e COSTA, 2021). This strategy seeks to break with the usual dispersion of the abstract content of the discipline, and contributes to the effective construction of knowledge (NORBERTO; FRANCISCA; GISELY; NASCIMENTO, 2021).

For this, it is essential that educators learn to teach with new digital learning resources, the use of Digital Information and Communication Technologies (ICT) being relevant (RAFAEL; RODRIGUES, 2021). Thus, the process of treating the subject as part of the students' daily life, together with interactive technological resources, makes them more involved with the concepts, causing greater interest in learning, even for Emergency Remote Teaching, providing students with the modality EJA a basic training that prepares them for different social contexts (DE OLIVEIRA LIMA e NASSER, 2020; POLUSHKINA, TAREVA, 2021; SHIN e HICKEY, 2021)).

IV. METHODOLOGY

For the development of this research, it was based on classes whose theme is Cells: basic unit of the body of all living beings, this thematic unit being proposed for three classes. Thus, this class can be taught to first-year students of Education in the

EJA modality, in the discipline of Biology, which deals with Physiology and cellular configuration, without the need for conceptual prerequisites.

Despite being a syllabus for Elementary Education, it is commonly taught in the 1st of the EJA modality, in order to remind some students and teach to others who are not yet familiar with the content. Thus, in relation to skills and knowledge construction, the aim is to understand the basic organization of cells and their role as a structural and functional unit of living beings. Furthermore, we intend to distinguish eukaryotic from prokaryotic cells and conclude, based on the analysis of cell model presentations, that organisms are a complex arrangement of systems with different levels of organization. For this, this methodology lacks support materials, starting with: computers and electronic devices for teachers and students; Internet access through these electronic devices;

The classes were taught to a class of 28 first-year EJA students at a state school, located in the south of Minas Gerais. With a focus on research, students were questioned in order to express their opinions regarding teaching in EJA in this pandemic scenario. The identification of the perspectives and challenges faced during the classes were carried out by the teacher who authored the work, in reflections to improve his own training, who for this purpose recorded all classes in video format, respecting the integrity of the students.

For the development of classes in this thematic unit, which covers classes on physiology and cell configuration, it was necessary to use digital dialogue platforms, such as Zoom, Google Meeting, Skype, among others. Thus, it is necessary that the teacher has a computer with internet access and that students have electronic devices with internet access, such as computers or cell phones (SCHLESSELMAN, 2020).

For this, it is suggested that the teacher has knowledge of relevant digital tools, such as the Real Laboratory Simulator Virtual Environment, the Amino Interactive Social Network, Use of the function of creating groups on the Facebook social network for discussions and curiosities. In addition, there are Virtual Memory Games using cell organelles, word search with cell organelle functions, Virtual Cell Drawing, which provides the percentage of similarity of the drawing and the real cell, and also a 3D cell simulator, which allows the visualization and simulation of the cell configuration.

V. DISCUSSIONS

In this context, when analyzing the opinion of students in relation to EJA, it could be noted that

many students are optimistic about this type of teaching. For many of them, EJA is the only opportunity to complete their studies, mainly because they work during the day. Some people enjoy EJA because they can complete these steps in less time compared to Regular Education. In addition, although most students claim that EJA has quality education, teachers confirm that there are many factors that need to be improved for EJA to have a more effective quality in teaching.

Therefore, the researcher professor of this work found that one of the difficulties of teaching in EJA for Emergency Remote Teaching is related to the fact that most students are already working and their daily lives are very exhausting, resulting in less learning time. Lack of motivation is also a factor that hinders the development of teaching activity in teaching through online platforms. This negative aspect may be related to the feeling of incapacity and shame on the part of EJA students, for not having completed their studies in a previous opportunity, resulting in low self-esteem. Another aspect that affects the quality of classes is the difficulty of use and lack of familiarity of some students of advanced age, enrolled in EJA, with the use of technologies (FERRI, GRIFONI, GUZZO, 2021).

In addition, in a class of 28 students enrolled, typically, approximately ten students attended classes. This fact may be due to the low income of some students who did not have good digital resources to attend classes, such as old cell phone holders that are incompatible with access to rooms created online. Another justifiable fact is the limited internet access and poor quality internet, severely affecting the possibility of access to remote classes for all students enrolled in Education for Youth and Adults.

Despite the adversities presented, frequent students were satisfied with the lessons developed remotely (FHLOINN e FITZMAURICE, 2021). This is possibly due to the technological interactive resources used during the teaching of the classes, combining with inquiries from the students' previous knowledge and contextualizing the cell physiology class related to daily life, regarding the observable differences between plant cells and animal cells.

To simulate the microscopic observation of cells, the professor used virtual environments in which simulations and representations of real laboratories are carried out, through a website, namely [the virtuallab.pearson.com.br/Laboratorios/Biology](http://virtuallab.pearson.com.br/Laboratorios/Biology) and the PhET Interactive Simulation simulator. With this resource, students were able to experience and visualize different simulated cells, enhancing

student interaction, as a way of facilitating the teaching of cell biology. In addition, the use of online games and simulation used made students involved in the concepts of cells, exposing and relating cell physiology with important social applications, such as the role of chlorophyll in plant cells, which, by providing photosynthesis, captures carbon dioxide and release oxygen gas (WHALEN, 2020).

Another interactive class that proved to be relevant is the use of applications and websites that encourage writing and discussions, through social networks, these being Amino and Groups created on Facebook. Thus, the method consisted of using social networks in their high potential to facilitate the teaching environment, using the mobile phone for personal use by EJA students remotely (WHITTLE, 2020; POLUSHKINA, TAREVA, 2021; SHIN e HICKEY, 2021).

In this sense, the aim is to find ways to stimulate the production of texts and discussions about cells, with a socialization among students, contributing to the critical formation of opinion-forming students (PEREIRA; ESPINDOLA; COSTA, 2020). Thus, despite the considerable negative aspects caused by the pandemic, it is still possible to develop interactive classes that encourage the quality of teaching and learning of physiology and cell configuration through the ERE in EJA.

VI. FINAL CONSIDERATIONS

Currently, education in the EJA modality in Brazil needs more attention so that there is effective teaching in quality basic education. However, as an aggravating factor, 2020 causes an amazing moment of global pandemic, which directly affects Education for Youth and Adults, both in teaching and learning, as well as in the absence of social interaction in schools.

Therefore, the most recommended and most adept way of teaching at this time was teaching classes remotely. However, this teaching model has negative aspects as it does not cover accessibility to all EJA students, either due to the lack of electronic devices or the limited use of the internet by some students of the EJA mode. Another harmful factor is that some students of older age were unable to become familiar with the use of electronic devices to access the teaching of classes. In addition, the exhausting routine of EJA students causes demotivation and lack of interest on the part of some students of this modality.

Despite this, in order to overcome some of these negative aspects, the professor used active methodologies while teaching classes remotely with

interactive resources, such as virtual simulation of a real laboratory, 3D simulation of a cell, use of virtual games and social networks, that contributed to the increase of interest and interactivity of students during classes. Thus, it is relevant to infer that despite an extremely harmful pandemic moment for Brazilian education, it is still possible to have teaching methodologies that provide an improvement in the quality of teaching physiology and cell configuration together with students enrolled in the Education for Education modality. Youth and Adults.

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