

International Journal of Human Sciences Research

THE USE OF EVERYDAY PRODUCTS IN TEACHING ELECTRICITY FOR YOUTH AND ADULT EDUCATION

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Abstract: This article addresses the teaching modality Youth and Adult Education (EJA), which is where those citizens who had their right to education in regular time denied by various factors and that this denial was reaffirmed during the pandemic where many of the students did not have an electronic device suitable for following remote classes, even with all these difficulties, these students are looking for a new chance to complete their studies and continue fighting for improvements in their lives. The research addressed the theme “electricity” focused on everyday objects for these people, so that they could understand and identify substances that could conduct electrical charges and eventually cause an accident. The study was divided into two stages, the first was a questionnaire so that we could draw a profile of these students along with the level of education they have, their motivations and reasons for leaving school in the past, later experiments were carried out in the classroom. with domestic products that aimed to demonstrate that simple everyday things can conduct electricity and test the knowledge they carry with them (common sense). Finally, those who are older or who work or have worked in heavy work or civil construction have a certain amount of knowledge that enabled them to interact and risk answers that were sometimes correct. It is concluded that the pandemic caused a setback in the educational process of these students, but the everyday knowledge that they acquired throughout their lives is extremely valuable, being able to answer the questions listed during the research, even if they did not know the scientific answer.

Keywords: Youth and Adult Education, Science Teaching, Alternative teaching methodologies.

INTRODUCTION

Youth and adult education (EJA) in Brazil followed the history of struggle and construction of the right to education in our country. Since the period of colonization, marked by the presence of the religious pedagogical practices of the Jesuits (SAVIANI, 2007), the education of young people and adults has assumed political functions for the colonizing project of catechizing the native peoples who lived here and training people for economic and cultural subjection.

Over the centuries, the logic of a colonized and slave society produced exclusions in all spheres, including education, which became more acute with the consolidation of capitalism as a hegemonic mode of production on a planetary scale. In this context, illiteracy rates in Brazil have always been very high among the most impoverished as a reflection of the economic inequality provided by the accumulation system (MOURA, 2017, p.07).

In this context, the agenda for adult education was belatedly adopted by the State as a way of alleviating the high levels of illiteracy in Brazil, being further developed from the 1940s onwards through pedagogical missions. However, during this process of building an education aimed at these people who had their right to education denied on a regular basis, the EJA teaching modality faced numerous objections to its implementation. The education of these people gained notoriety and incorporated two paths of praxis in Brazil. A path followed when it became necessary to have literate workers during the country's industrialization process, more strongly in the 1950s, and was embraced by the State with its developmental and welfare appeal. On the other hand, this concern focused on mass education created possibilities for confrontation with the popular experiences proposed by Freire, claiming the idea that education is a means of transforming society

and collective liberation (BRANDÃO, 1994).

In order to educate this audience with different ages and conceptions, the teacher needs a different perspective, a specific way of approaching content, for this to develop in a fluid way, training is necessary during his/her undergraduate period that points him/her to with good eyes towards the education of young people and adults, so that this is ensured by the LDB “the training of teachers to work in basic education far

it will be at higher level, in undergraduate and full undergraduate courses, in universities and higher education institutes” (BRASIL, 1996). Therefore, the EJA teacher needs to be aware that this is a different teaching modality from the others. Paiva (2003), characterizes EJA as a teaching modality for all those who did not have the opportunity to complete their studies on a regular basis.

To discuss this subject, it is extremely important that we understand the purpose of Education for young people and adults, as it is seen as a new educational opportunity provided to those people who, for various reasons, did not complete their studies. In this context, Gadotti states that:

Young people and adults struggle to overcome their precarious living conditions (housing, health, food, transport and employment, etc.) challenges that are at the root of the problem of illiteracy, unemployment and low wages, together with

Poor living conditions compromise the literacy process of young people and adults (GADOTTI, 2007, p. 64).

From this perspective, the student brings with him the baggage of a painful life full of obstacles in his path, along with a rooted vision of school arising from his previous experience, in which he was unable to complete his studies. Silva, Queiroz and Monteiro (2014, p. 07) consolidate this thought by stating that: “to assist this audience, the school must

present itself as diverse and attractive, as these students can bring with them a concept of traditional school”.

Based on these statements, a dissimilar approach to the subjects covered in the classroom becomes evident, so Gadotti (2007) it is not possible for educators to only think about teaching procedures and content in a traditional way, as the content itself cannot be completely foreign to that everyday life. In other words, it is the duty of the teacher working in popular education to look for ways to insert the content brought to that student’s reality, making a connection between the two, providing a perspective that encompasses both worlds, this way Bernardino corroborates with Gadotti saying that: “The education of Young People, Adults and Elderly, due to its specificity, it is a teaching modality that must be thought of differently from other educational modalities” (BERNARDINO, 2013, p. 02). Approaches to EJA must seek to follow a simpler teaching method and always refer to the daily lives of these students.

This way, the ability to see common situations in their daily lives and relate them to the teaching presented in the classroom is questioned. The study of the article aimed to establish these connections between systematized knowledge and common sense.

METHODOLOGY

The following study was carried out at Escola Municipal Gilson Firmino da Silva, this research is characterized as a descriptive study. Raupp and Beuren (2006) characterize them as: research that seeks to explain and identify factors that contribute to a given phenomenon, it also follows a logical script of notes to interpret and understand all the factors involved.

To begin the research, a questionnaire was carried out with the EJA students of the aforementioned school institution, which

covered several topics, including their motivations for leaving school on time, what motivated them to return to school and what their motivations were. expectations regarding the school. And for the specific nature of the experimental part of the research, they were asked whether they were aware of which materials that were used during their daily lives had the ability to conduct electricity.

During the process, three meetings were held with the students, the first for researchers' presentations, the second for questionnaire responses and finally the experimental part of the research in which tests were carried out to find out which materials had the capacity conduction of electrical charges.

THEORETICAL REFERENCE

To begin this discussion about teaching in the post-pandemic period, it is necessary to understand that the country went through an educational transition in which students who were previously enrolled in a face-to-face modality and were later taken to remote learning due to COVID- 19 and have now returned to in-person teaching after a period of approximately two years at home with virtual classes.

After the return of in-person teaching, problems already rooted in the educational system continued to reassert themselves. Therefore, to understand the current challenges, we had to look at the past during remote teaching, where many EJA students did not have continuous attendance and were unmotivated to study during this period. Nicodemus and Barbosa corroborate the following:

Accompanied by digital absenteeism, we have low interaction and adherence, with little effective participation from students.

The State's inefficiency in meeting the access needs of the public demanding EJA resulted in a process of

greater dropout rates, little adherence and minimal learning for those willing to make the effort to complete their educational trajectory during the pandemic context. NICODEMOS and BARBOSA, 2022, p.60.

Even with the end of remote teaching, the ghosts of discouragement and abstinence continued to amplify issues that are the pillars of EJA's difficulties, such as the sociocultural axis described below by Oliveira:

The education of young people and adults has a sociocultural specificity, in that it focuses its educational activities predominantly on certain groups of people from a certain social and cultural class, that is, young people, adults and elderly people from an economically low class. In general, they are salaried workers, from the informal market or the countryside, who fight for survival in the city or in the countryside, showing distrust towards school, because they have not had access to school or have already dropped out. Young people, adults and elderly people marginalized by the economic and social system, seen as illiterate and often considered incapable of learning. OLIVEIRA, 2004, P.02

After remote teaching, these issues were reaffirmed, causing students who returned to in-person teaching to become unmotivated to study. Thus, the number of students in the classroom fell drastically, as they did not feel motivated to study due to the disappointment of the remote period. NICODEMOS and CASSAB, 2022, p.04 reinforce that:

The Remote Education offered, with its light nature, without guaranteed access to the internet and equipment and without responsible pedagogical intention, resulted in yet another historical mark of denial of rights that these subjects experience.

Therefore, based on the points and questions raised, it became evident that these teachers had to rethink their teaching method and look for more attractive alternatives for these students who were so far from the school

environment, therefore Lima et al. (2021 p.1309) “adds that Science Teaching must be contextualized with the daily lives of EJA students, with the purpose of bringing Science closer to the students’ reality in favor of their scientific training”. This way, the content to be taught cannot be completely foreign to the students, it is necessary to make a connection with the environment in which the students are inserted. with the aim of getting them back into the rhythm of learning even though the level of difficulty is high due to the remote period and absence from classes. In short, the abyss of challenges facing Youth and Adult Education is great and ended up becoming even greater due to the COVID-19 pandemic that denied the right to education for this public, bringing old difficulties and further weakening the EJA teaching modality.

RESULTS AND DISCUSSION

At the first meeting, they were presented with the project and the researchers and what the itinerary for the next meetings would be like. During this meeting, some questions were asked to characterize the class. In a way, the students interacted well with the interview, at first, they were a little introverted but with the confidence gained they were able to talk openly about which subject they have the most difficulty with. For them, remote teaching was challenging for socio-economic reasons, students did not have the necessary resources and tools to follow the online meetings and to avoid major losses, the activities were delivered in printed form monthly.

And also regarding the first day, 13 students were present and only 10 students answered the questionnaire, the class is diverse, in which 02 students have a high degree of autism, others are illiterate and have been entering literacy classes for a short time, the majority have already come with some knowledge, as they already knew how to read and write and

had participated in regular education at some point in their lives.

However, in the second meeting we sought to understand the reasons and reasons that led those students to abandon their studies during the regular period and we obtained the following answers.

Man: because I took advantage of “playing life”, that nonsense that kids like to do, I went along with it and ended up ruining myself. But I’m here trying to catch up on my studies.

Man: at that time, I was young and I wanted to go clubbing, I wanted to enjoy myself and I wanted to work to earn a living and help around the house, today I regret it.

Woman: I felt very unmotivated, I had colleagues who “put me down”, I was bullied and also at the time most teachers didn’t pay much attention.

Woman: I had to mature early, due to pregnancy at 17 years old, as a result, time passed and studying was no longer interesting

The answers from these four interviewees truly represent their colleagues as they are in line with their ideas, these answers portray well the Brazilian educational scenario, which unfortunately cannot win over all young people nor provide the necessary support to avoid issues such as bullying and prevention with education. sexual activity so that young people become pregnant at inopportune times. For Queiroz (2009 p.1) that “social aspects considered as determinants of school dropout, among them, family disruption, government policies, unemployment, malnutrition, school [...]”. Among the factors mentioned by the students, the most mentioned was the need for the student to work to support themselves.

Consequently, with the passage of time and financial situations having a slight improvement in relation to the past, these adults end up returning to school this way, they were asked about the reason that made

them return to study, the following was obtained:

Man: perspectives for a better future.

Woman: the future dreams that I am bringing back to my life

Despite having left school early, these students maintained their dreams of being able to finish their studies, more than that, it is being able to seek and have a better future and go after better prospects, this way it appears that the popular saying that the “Brazilian never gives up” is really reliable, because even after some time away from school, these students still see a better perspective of life following the path of studies and for those who have children, they certainly want their descendants to have a better future.

However, all these desires suffered a setback due to the Covid-19 pandemic and remote teaching that took everyone by surprise without exception and unfortunately EJA suffered a lot due to the lack of concrete public policies and combining these factors with covid 19 which arrived suddenly caused a setback, and for this realization of the educational loss he was asked about online classes and his process was obtained:

Man: it was a bit strange, the teaching was via cell phone and the activities were printed.

Man: I really wanted to, but at the time I had a really bad cell phone and couldn't participate, but I had the opportunity to take part in the monthly activities.

During remote teaching, students were once again denied the right to study due to the lack of appropriate electronic devices. It must be noted that the Gilson Firmino school is an institution in a peripheral neighborhood and its EJA audience is in situations of food fragility. and social, therefore many were unable to attend classes, and only returned to studying after the pandemic, Mattos points out that:

With regard to public schools, it is very noticeable that the COVID-19 pandemic has promoted the excessive use of technologies aimed at replacing the physical presence of the teacher with a virtual presence. This exacerbated old problems already known in education in Rio Grande do Norte, such as: the lack of structure in schools regarding the use of technology; the difficulty students have in accessing technologies with quality internet (MATTOS et al., 2020, p. 114).

The problem that was discussed among them was the difficulty of having a cell phone that had the minimum so they could attend classes, along with the difficulty in using applications for broadcasting classes and others who did not even have a cell phone. Silva, Freitas and Almeida (2021 p.2) add that “there have been many challenges and the need to reinvent new ways of making teaching and learning situations happen”. However, many students did not have the financial conditions to engage in technologies that have a great tendency to become the main tool for studies in times of adversity faced on a global scale and the use of cell phones is the most economical and basic way, even so for most students, it is almost impossible to acquire a device that enables good learning in these students' lives.

In the third meeting, the topic “electricity” was addressed, so we asked what types of conductors (materials) in their daily lives conduct electricity? The answers were based on common sense, that is, “metals” (iron, copper, steel, gold and aluminum) in addition, they questioned whether rainwater and whether we (human beings) are conductors of electricity. Soon after the first moment of dialogue, experiments were carried out in which students were able to see and determine which everyday objects and products conduct electricity.

At first the materials were placed on top of the bureau, then the electrical wiring was

prepared that would pass inside a beaker with the reagents and at the end of the wire there was a lamp that would light up if the liquid inside the beaker was a liquid. good electrical conductor. Later, distilled water purchased from a local store was inserted, it must not turn on the light as it was pure water, however it contained a small number of ions that made the light turn on weakly, then we added a little NaCl, which in its ionized form remains: Na^+ and Cl^- , causing an increase in ions, consequently increasing the intensity of the light. For each experiment we asked the students whether the material would conduct electricity or not, some still persisted in remaining silent and others tried to answer.

The following experiments were used with the following products: alcohol, detergent, vinegar, bleach and orange juice

All the materials we use are electrical conductors, all with the exception of detergents, are acids that Bronsted and Lowry characterize as chemical species that release H^+ , while detergent is a basic species that Arrhenius characterizes as an electron pair acceptor. It is important to highlight that some reactants have an easier time than others to conduct electricity due to their ability to ionize, i.e. release their charges. After the explanations, students began to understand the electron exchange process.

During the experiments we asked students which materials could or could not conduct electricity. They used their knowledge of the world, that is, common sense, to identify which could be drivers. It is understood that each person's common sense is different, due to their life experiences and the knowledge acquired throughout their lives, some work in constructions or segments that involve electricity and thus could respond using common sense knowledge.

FINAL CONSIDERATIONS

The purpose of the research was to investigate the difficulties in teaching young people and adults at the Gilson Firmino da Silva school when returning to face-to-face classes after the pandemic and to understand the relationship that students have with the science subject. Which for regular education is already highly abstract, and when this subject is in Youth and Adult Education it ends up becoming even more distant from the reality of those students, therefore the purpose was to create a little connection between everyday life and the subjects covered in classroom. Unfortunately, the discontinuity in the training path is an aggravating factor for these young people and adults, so that they had to give up their studies for various reasons, whether financial, personal or even problems with the educational institution itself. Therefore, the EJA modality provides these young people and adults with a new opportunity to resume the path of studies, what often happens is that after a long period of absence from school, they are at a totally different pace, tired of the day race in search of survival and to make subjects more attractive, good teaching followed by visual resources can become the right tool to captivate and win over these students. For science teaching, the experimental part is essential, this way students could establish a direct relationship between theoretical content in the classroom linked to practice and their daily lives, therefore forcing teaching professionals to seek a new form of teaching methodology that would bring the content seen in the classroom closer to the reality they face, thus making the class more attractive and inviting to students, once again stimulating their enjoyment of studies. Finally, the consequences left by the pandemic will last for a long period, but with the resilience of teachers and teaching strategies it is possible to overcome the obstacles left by remote teaching.

THANKS

We first thank God for giving us the strength to continue pursuing our goals, we also thank the management of the Gilson Firmino da Silva School for always opening its doors so that we researchers can put our ideas into practice and we can always continue building scientific knowledge and disseminating it throughout of our lives.

REFERENCES

BERNARDINO, Adair José. **Exigências na formação de professores do EJA**. VIII Seminário de, 2013.

BRANDÃO, Carlos Rodrigues. Os caminhos cruzados: formas de pensar e realizar a educação na América Latina. In: GADOTTI, M.; TORRES, C. A (Orgs). **Educação popular: utopia latino-americana**. São Paulo: Cortez, 1994.

BRASIL, **Lei de diretrizes e bases da educação nacional e legislação complementar**. São Paulo, Edipro, 1996.

GADOTTI, Moacir. ROMÃO, José, E. **Educação de jovens e adultos: teoria, prática e proposta**. 9.ed.- São Paulo: Cortez: Instituto Paulo Freire, 2007. - (guia cidadão; v.5)

MATTOS, Edison Antônio de et al. As professoras de ciências naturais e o ensino remoto na pandemia de COVID-19. **Cadernos de Estágio**, v. 2, n. 2, p. 105-118, 2020. Disponível em: <https://periodicos.ufrn.br/cadernosestagio/article/view/24974>. Acesso em: 17/02/2023

NICODEMOS, Alessandra; BARBOSA, Breno Ventura. **EDUCAÇÃO DE JOVENS E ADULTOS NA REDE ESTADUAL DO RIO DE JANEIRO: DESAFIOS PARA A PRÁTICA DOCENTE EM CONTEXTO PÓS COVID-19**. **Revista Ciências & Ideias** ISSN: 2176-1477, v. 13, n. 3, p. 54-66, 2022.

NICODEMOS, Alessandra; CASSAB, Mariana. A Educação de Jovens e Adultos no tempo presente: entre silenciamentos, invisibilidades, retrocessos e resistências: The Education of Youth and Adults in the present time: between silences, invisibilities, setbacks, and resistance. **Revista Cocar**, v. 11, 2022.

OLIVEIRA, Ivanilde Apoluceno. Princípios pedagógicos na educação de jovens e adultos. **Revista da Alfabetização Solidária, São Paulo**, v. 4, n. 4, p. 59-74, 2004.

PAIVA, Vanilda Pereira. **História da educação popular no Brasil: educação popular e educação de adultos**. Edições Loyola, 2003.

RAUPP, Fabiano Maury; BEUREN, Ilse Maria. Metodologia da pesquisa aplicável às ciências. **Como elaborar trabalhos monográficos em contabilidade: teoria e prática**. São Paulo: Atlas, p. 76-97, 2006.

SAVIANI, Demerval. **História das idéias pedagógicas no Brasil**. Campinas: Autores Associados, 2007. 473p.

SILVA, Simone Pereira da; QUEIROZ, Adriana Matias; MONTEIRO, Vitória Barreto. O papel dos professores da EJA: perspectivas e desafios. 2014.

SILVA, C. R. da. FREITAS, A. C. S.; ALMEIDA, N. R. O. de. A EJA e o ensino remoto emergencial: um olhar discente. **Ensino em Perspectivas**, [S. l.], v. 2, n. 4, p. 1-10, 2021. Disponível em: <https://revistas.uece.br/index.php/ensinoemperspectivas/article/view/6626>. Acesso em: 19 dez. 2022.

YAREMA, Denise. O Ensino de Ciências na Educação de Jovens e Adultos: a prática de Laboratório.2009.Disponível em: <http://www.diaadiaeducacao.pr.gov.br> Acesso em: 05/04/2022.