


The teaching of mathematics in EJA: The limits and challenges in pedagogical practice

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ABSTRACT

This study addresses Adult and Youth Education (AYE) as a form of education aimed at social inclusion and the comprehensive development of individuals who did not complete their basic education at the appropriate age. AYE faces challenges such as school dropout rates and lack of resources, necessitating the strengthening of educational policies in this area. The aim of this study is to analyze the challenges and opportunities of AYE in the development of literacy, with a focus on mathematics education, through a literature review. The methodology involved a comprehensive literature review, seeking theoretical and conceptual insights. The role of the teacher in AYE is emphasized, with a focus on the importance of the affective aspect in learning. The paper also discusses literacy and numeracy, highlighting their relationship and relevance in education. Mathematical literacy is introduced as fundamental for understanding everyday situations.

Keywords: Adult and Youth Education (AYE), Mathematical Literacy and Numeracy, Social inclusion.

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INTRODUCTION

Youth and Adult Education (EJA) is a teaching modality aimed at people who have not had the opportunity to complete their basic education at the appropriate age. It aims to provide social inclusion and comprehensive education for young people and adults, allowing them to develop their cognitive, social and cultural skills.

EJA covers different age groups and student profiles, including those who interrupted their studies for various reasons, such as work, motherhood or lack of access to education in their childhood. The EJA audience is made up of people with diverse life experiences, which makes this teaching modality challenging and enriching at the same time (GOMES, 2016).

The role of the teacher in EJA is of fundamental importance, as he acts as a mediator of knowledge, stimulating the active participation of students and creating an environment of acceptance and mutual respect. In addition, the teacher in EJA must be prepared to deal with the specificities of this public, understanding their needs and offering pedagogical strategies appropriate to each context (QUINQUIOLO, 2017).

However, EJA also faces challenges, such as school dropout and the lack of adequate resources to meet the specific demands of this audience. Therefore, it is essential that public policies and investments are directed to strengthen and expand the provision of quality education for young people and adults (GOMES, 2016).

In this context, this work is justified by the need to understand and address the challenges faced by EJA, in order to contribute to the improvement of educational policies and practices in this area. EJA plays a vital role in educational and social inclusion, but it faces issues such as school dropout and the demand for pedagogical strategies for a diverse audience.

The objective of this study is to analyze and present the challenges and opportunities of Youth and Adult Education in the development of literacy and literacy, focusing on the teaching of mathematics, through a literature review.

DEVELOPMENT

METHODOLOGY

This topic presents the methodology used to carry out the bibliographic survey on EJA. The bibliographic survey consists of a research carried out through the search and analysis of works, articles, documents and other relevant bibliographic sources on the topic in question.

To carry out the bibliographic survey, several resources were used, such as:

1. Databases: Academic databases, such as Google Scholar, Scopus and the Brazilian Digital Library of Theses and Dissertations (BDTD), were accessed to search for scientific articles, theses and dissertations related to the subject.



2. Library Catalogues: The catalogues of the libraries of the University and other educational institutions, as well as digital libraries, were consulted in search of books, monographs and bibliographic materials relevant to the research.
3. Scientific Journals: Scientific journals specialized in Education, Pedagogy and related areas were examined, in order to find articles related to the theme of EJA.
4. Books and Specialized Publications: Books and publications specialized in EJA were selected, by renowned authors and references in the area.
5. Legislation and Official Documents: Official documents, such as laws, resolutions and guidelines related to EJA, issued by the Federal Government and competent educational agencies, were consulted.
6. Theses and Dissertations: Theses and dissertations that address specific aspects of EJA were analyzed, seeking to obtain detailed and updated information on the subject.

The selection of bibliographic sources was carried out with criteria of relevance and timeliness, aiming to obtain reliable and grounded information about EJA. The selected works were analyzed in search of information that supports the discussions presented in this work.

Through this methodology, it was possible to carry out a comprehensive bibliographic survey, presenting a broad view of the educational modality, its characteristics, challenges, social importance and the fundamental role of the teacher in this context. The information obtained through this research contributed to the development of this work, offering theoretical and conceptual subsidies that enrich the discussion about EJA.

YOUTH AND ADULT EDUCATION

Definition

EJA, popularly known as supplementary education, is an education program created by the Federal Government, aimed at young people, adults and the elderly who, for whatever reasons, could not have access to education at the appropriate age. Such a program allows full or partial literacy of people in a shorter time than conventional literacy, providing better conditions to remain in the labor market.

This educational modality values the students' prior knowledge, recognizing the cultural and social baggage that each one brings with them. Thus, the learning process in EJA is based on the exchange of knowledge, dialogue and the collective construction of knowledge.

Youth and Adult Education plays a significant role in promoting citizenship and social transformation. By enabling young people and adults to resume their studies, this educational modality contributes to the formation of critical individuals, aware of their rights and duties as citizens.



History in Brazil

EJA is a challenging teaching modality, since it encompasses individuals who already have a social background and bring with them a variety of experiences lived in society. Therefore, it is crucial to seek educational approaches that are different from those used for children and adolescents. It is necessary to recognize that these students have specific needs and characteristics, such as different levels of knowledge and skills acquired throughout life. Additionally, it is important to consider your personal, professional, and family responsibilities, as well as your individual motivations and interests. Adapting teaching methods to meet these particularities is essential to promote effective and meaningful learning in EJA.

In the Brazilian historical context, EJA has played a fundamental role in promoting educational and social inclusion. Over the years, Brazil has sought to expand access to education for people who, for various reasons, did not have the opportunity to complete their studies at the appropriate age. EJA emerged as a response to this demand, offering a chance for learning and personal development for young people and adults who wish to obtain their educational training. Since its implementation, EJA has evolved in terms of public policies and pedagogical practices, with the aim of meeting the needs of students and promoting quality education, aiming to overcome educational inequalities in the country. This historical path highlights the importance of EJA as an inclusive educational strategy, capable of providing lifelong learning opportunities, valuing diversity and strengthening the citizen participation of the subjects involved.

From the enactment of Law No. 9,394 on December 20, 1996, known as the Law of Guidelines and Bases of National Education (LDB), the rights related to Youth and Adult Education (EJA) in Brazil were established. Title III of the LDB, entitled "On the Right to Education and the Duty to Educate", guaranteed the right to the provision of regular school education for young people and adults, adapted to their needs and availability. This law ensured access to and permanence in school for workers (BRASIL, 1996).

According to the LDB (BRASIL, 1996), Youth and Adult Education is intended for those who did not have access to or continuity of studies in primary and secondary education at the appropriate age, and serves as an instrument for education and lifelong learning.

Subsequently, Article 37 of Law No. 9,394 was replaced by Law No. 13,632 on March 6, 2018. This new legislation addresses the importance of "education and lifelong learning" (BRASIL, 2018). It is worth mentioning that EJA is not only a means of complying with the law, but also a way of integrating the individual into society in a cultural and formal way, guaranteeing him the right to an adequate education, which provides qualification for a dignified job.

According to Article 205 of the Federal Constitution of 1988, education is a right of all and a duty of the State and of the family, and should be promoted and encouraged with the collaboration of



society, aiming at the full development of the person, his preparation for the exercise of citizenship and his qualification for work.

In addition, Resolution No. 3, of June 15, 2010, established the Operational Guidelines for Youth and Adult Education, covering aspects such as the duration of the courses, minimum age for admission and certification in the EJA exams, as well as the possibility of developing Youth and Adult Education through Distance Education (BRASIL, 2010). Over the years, EJA has undergone several transformations, as mentioned earlier. It is evident, therefore, that the trajectory of this form of education has made significant advances, although there is still much progress to be made. Youth and Adult Education in Brazil goes beyond a matter of work and dignity, it is also a search for educational progress.

An important achievement for Youth and Adult Education was its inclusion in the Fund for the Maintenance and Development of Basic Education (FUNDEB) from 2007 to 2020. FUNDEB is the main source of funding for basic education in the country and encompasses all modalities and stages of regular education, including EJA (DIEESE, 2020, p. 3). Although the contribution to EJA is lower compared to other modalities, this funding helps to maintain the education networks in state and municipal schools, where the education of these individuals takes place.

Despite the progress mentioned, the EJA still needs a project totally focused on it, without the interference of political intentions of the elites. An educational reform is needed that benefits this form of education equally in relation to other modalities.

Youth and Adult Education and the role of the teacher

EJA is an important teaching modality that seeks to promote educational and social inclusion by providing learning opportunities for those who did not complete their studies at the appropriate age. However, to ensure quality education in this modality, it is essential to understand the fundamental role that the teacher plays. The teacher at EJA faces unique challenges as they deal with adult students who have diverse life experiences and specific educational needs.

In the context of EJA, it is essential to consider that the affective aspect plays a crucial role, acting as a driving force to overcome the difficulties faced, such as work, cultural, social and age diversity, access to information and the development of critical thinking to intervene and transform society. It is essential that EJA students feel included, capable and able to learn, in order to reduce the school dropout rate.

Considering that the trajectory of youth and adult education is marked by traits of socioeconomic and cultural exclusion, many EJA students experience problems of prejudice, exclusion, shame, racial discrimination, criticism and other situations that can be experienced both in the family and in the community (LEAL, 2017). The search for a job also becomes challenging for



these students, even if they have the capacity to perform it, because in contemporary society there is a scarcity of space and time, leaving only jobs that require more physical strength than reasoning. As Soares (2002, p. 32) states, "The education of young people and adults represents an unrepaired social debt to those who did not have access to and mastery of writing and reading as social goods, whether in school or outside of it, and who have been the labor force, employed in the construction of wealth and in the execution of public works. To be deprived of this access is, in fact, the loss of an essential instrument for a meaningful presence in contemporary social coexistence."

In this context, the role of the teacher becomes of fundamental importance in the process of the student's reintegration into the school environment and in his/her permanence in school. When the student is away from the classroom for some time, it is natural that feelings of insecurity, anxiety or even distrust regarding their potential may arise. It is up to the teacher to identify the student's emotional state, providing a welcoming and safe environment, creating conditions conducive to the teaching and learning process. The teacher must act with understanding and attention, encouraging the student to keep going, despite the difficulties that may arise along the way.

Affectivity plays a crucial role in human development and, consequently, in facilitating the learning process. As noted by Mahoney (2003), emotions exert an influence on all individuals and shape their reactions and behaviors. In this context, it is essential that students feel welcomed and integrated into the educational environment, as this sense of belonging and acceptance is a motivating factor for them to continue on their training journey. It is important to emphasize that the educator, instead of assuming a central role and monopolizing the activities, should adopt pedagogical approaches that encourage the student to express his ideas and reflect on them.

In this way, the teacher becomes a facilitator of the teaching and learning process, creating a space conducive to dialogue and the exchange of knowledge. In this sense, Maturana (2004) emphasizes the relevance of the affective relationship established by the teacher as an adjunct element in the educational process. Through affectionate communication, the teacher has the opportunity to assess the student's prior knowledge on a given subject, identifying gaps and specific needs that must be filled. Thus, the construction of a positive affective relationship between teacher and student is an essential component to promote a meaningful and effective education, which values the integral development of the student.

Paulo Freire (1921-1997), one of the most renowned educators nationally and internationally recognized, played a key role in EJA, especially in the literacy of those who had not previously had opportunities to study. More than just reading and writing skills, Freire's pedagogy was focused on "reading the world", aiming to transform it and emancipate the individual as a citizen. In his works, Freire emphasized the importance of affective aspects in teaching practice as a triggering factor for



learning, emphasizing that educational practice encompasses affectivity, joy and technical mastery at the service of change (FREIRE, 1996, p. 161).

For Freire (1996), it is essential to value the subject as an integral and important part of society, capable of promoting changes in favor of the common good. In addition to systematized knowledge, it is equally relevant to recognize the knowledge that students bring from their own lived experiences, since formal knowledge acquires importance when it contributes to the formation of critical citizens capable of acting in society and improving living conditions in social, economic, political and human spheres. However, the teacher will only have access to this rich knowledge related to the student's cultural, social, and political identity through their mediation, providing an affective environment that is open to dialogue.

In line with this perspective, the EJA Guideline establishes the need to value the different cultural knowledge present in Youth and Adult Education, prioritizing them in the construction of educational guidelines (BRASIL, 2006). This approach recognizes and respects the cultural and social diversity of EJA students, strengthening their identity and contributing to a more inclusive and meaningful education (LEITE, 2016).

Thus, the pedagogical approach inspired by Paulo Freire, which emphasizes the appreciation of affective aspects, dialogue and the recognition of students' previous knowledge, is supported by EJA's educational guidelines. This approach seeks to promote an education that is capable of transforming not only the individual, but also society as a whole, providing a critical and conscious formation of students, enabling them to act in their realities in an empowered and engaged way.

Literacy and Literacy

There are several conceptions about the terms Literacy and Literacy. Many people believe that literacy would be the teaching method adopted by teachers in the classroom to insert the knowledge of written language, while others see literacy as the use of speech and writing in the social environment by the individual. There are still those who understand the two terms as synonymous. Thus, at first, it is worth highlighting the meaning of the terms literacy and literacy in education, as they are not interchangeable terms, but are related to each other (BONAMINO; COSCARELLI; FRANCO, 2002; SOARES, 2011).

Soares (2004, p.14) points out that literacy and literacy "are not independent processes, but interdependent and inseparable", and adds:

Dissociating literacy and literacy is a mistake because, within the framework of the current psychological, linguistic and psycholinguistic conceptions of reading and writing, the entry of the child (and also of the illiterate adult) into the world of writing occurs simultaneously through these two processes: by the acquisition of the conventional writing system – literacy – and by the development of skills to use this system in reading and writing activities, in the social practices that involve the written language – literacy (SOARES, 2004, p.14)



- Literacy

The term literacy conquers space when education, through research and analysis, has found that the individual's knowledge about the written language, acquired at school, which allows him to read and write anything, does not guarantee his understanding. Thus, literacy is defined, according to Soares (2004), as the relationship that people have with written culture, in such a way that non-literacy would be an incorrect term, because anyone is in contact with the written culture in society, but at different levels of literacy that oscillate with the cultural reality of each one.

It is important to highlight that literacy and literacy are not synonymous, as already mentioned, but different, inseparable and simultaneous processes. Soares (2004, p.11) reports:

However, what unfortunately seems to be happening today is that the perception that is beginning to be had, that if children are being, in a certain way, literate in school, they are not being literate, seems to be leading to the solution of a return to literacy as an autonomous process, independent of literacy and prior to it. (SOARES, 2004, p.11).

- Literacy

Literacy in Brazil gained ground after the Proclamation of the Republic, in 1889, where schools were institutionalized and with the purpose of allowing the new generations to adapt to the new political and social order. Thus, schooling, especially literacy, was an instrument for the acquisition of knowledge, progress and modernization of the country (MORTATTI, 2006).

With the passage of time and all the evolution in the field of education, the importance of the institutionalization of schools, the importance of literacy accompanied by literacy for the complete formation of the student has been reached. Therefore, the term literacy means to lead the student to the knowledge of the alphabet, teaching him to learn to read and write, that is, to acquire the alphabetic and orthographic code, through the development of reading and writing skills (SOARES, 2007).

The Perspective of Literacy and Mathematical Literacy

Literacy and literacy are not only characterized by the knowledge of letters of the alphabet, as well as the reading and interpretation of texts. When referring to the knowledge and reading of numbers and mathematical codes, it refers to literacy and mathematical literacy, which has been in force since the dawn of civilization and accompanies the individual from the beginning of life.

The learning of mathematics inserts the knowledge of numbers, signs of operations and how to do them, sentences, graphs and their properties, being characterized by mathematical literacy. The ability and techniques of interpreting literacy knowledge is called mathematical literacy.

In line with the Programme for International Student Assessment Matrix (PISA, 2012, p. 1), "Mathematical literacy is the individual ability to formulate, employ and interpret mathematics in a



variety of contexts." In this way, the student would be able to use mathematical concepts and procedures that would help him understand everyday facts and situations through mathematical reasoning.

In view of the above, the importance of mathematics in the daily life of citizens is notorious, since its use is present in simple situations such as going to the supermarket and adding up the price of the products you intend to buy to prevent the total amount from exceeding the money available to pay the bill. Still, check if the change delivered to the cashier was correct or not. Thus, literacy and mathematical literacy should direct the student to the needs of everyday life, contextualizing the problems presented so that the use of basic operations such as dividing, multiplying and adding can arouse their interest and enjoyment.

When analyzing literacy and mathematical literacy within the scope of EJA, it is necessary to consider the reality in which the student is inserted and their difficulties. Seeking literacy is essential, but not sufficient. In this teaching modality, literacy is extremely relevant to arouse the student's interest, since by contextualizing mathematical situations, elements of literacy can be applied and provide a critical and reflective look.

In this context, mathematical literacy should seek to include the student in the social environment, in view of the development of the skills of reasoning, representing, communicating and arguing safely in everyday situations. It is also worth noting that mathematics contributes to the development of the citizen, since it covers all the major areas of knowledge divided by the BNCC: languages, natural sciences, human sciences and religious education.

CONCLUSION

Youth and Adult Education plays a crucial role in educational and social inclusion, enabling citizens who have had their trajectories interrupted to resume their studies and achieve the necessary training for a full and participatory life in society.

The literacy and mathematical literacy of young people and adults ends up becoming a greater challenge, since the teacher must awaken the interest in mathematics in the student, so that everyday situations can be brought into class for reflection and critical thinking about the use of mathematics.

Despite the fact that, throughout history, legislation has sought to act to guarantee the right of inclusion of young people and adults through EJA, it is still necessary that there are projects totally directed to it, seeking to act in an educational reform to make it equal in relation to the others.



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