INITIAL TRAINING OF TEACHERS FOR THE DEVELOPMENT OF ENVIRONMENTAL PRACTICES IN BASIC EDUCATION: A FIELD RESEARCH

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ABSTRACT

Objective: Diagnose the perception of education professionals, members of an education research group, about the initial training of teachers for the development of environmental practices in basic education.

Method: This study is qualitative and descriptive in nature and constitutes a field research; having as a data collection instrument the use of a semi-structured questionnaire, containing 10 closed questions, guaranteeing the ethical anonymity of the responding subjects (15 responding teachers). In view of this, qualitative analysis was adopted as a method of scientific articulation between data and foundations of scientific-academic literature.

Results and conclusion: The results point to the value of guiding environmental practices in the initial training of teachers, since this is a contemporary cross-sectional theme, subject to a plurality of interdisciplinary knowledge to be worked on in the school context, which provides opportunities for the link between different educators and areas of knowledge, elucidating the appreciation of the environment.

Research implications: In this perspective, the respondents consider the value of including the environmental theme in the initial training of teachers, contributing to the rise of environmental education in basic education.

Keywords: Environmental Education, Science Teaching, Interdisciplinary Projects.

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1 INTRODUCTION

The initial training of educators is an extremely important/relevant stage, as its effects directly impact Basic Education. As this is initial training focused on the development of environmental pedagogical practices, Environmental Education, allowing the awareness of subjects. Carneiro (2013) demonstrates his concern with the initial and continued training of teachers in the light of Environmental Education, highlighting the need for new perspectives and (re)conception of the curriculum, since the results of environmental practices are intertwined in human daily life.

According to Machado Filho et al. (2023) the articulation of the themes of environment and health has been neglected in Basic Education. The authors declare this insurgency based on teaching that does not relate environmental issues to public health and that these areas are not addressed in a single link, but in a fragmented and disconnected manner, including in the guiding documents. In another article, Machado Filho et al. (2022) carried out an investigation into teachers’ conceptions of this topic; The data revealed that these themes need to be contextualized and worked on in their transversal nature.

One of the strategies to address environmental issues is the approach to Brazilian biomes. When science teaching adopts a local, regional and contextualized pedagogy, students are attracted to the learning context, that is, to the construction of knowledge, based on social and regional factors. From this perspective, the teaching of Brazilian biomes has been limited in contextualization, interdisciplinarity, including discrepancies in textbooks (CASTRO et al., 2023a; CASTRO et al., 2023b; DE SOUZA et al., 2022; DE SOUZA; CUNHA; DINARDI , 2023).

From the perspective of Soares Pereira, Gouveia and Dinis (2022), active methodologies are important allies when the subject in question is environmental education. These methods
are considered to promote interactive and thought-provoking learning, centered on the use of technological devices, media, games and other digital resources; The result is an interesting and innovative pedagogical practice, capable of raising awareness of the region's environmental problems through the use of games and games, contributing to creative learning and encouraging a new perspective on the world/environment (BARRETO et al., 2021; CUNHA et al., 2022).

The National Common Curricular Base (BNCC) presents some topics that encourage the approach to information and communication technologies; dealing with general Basic Education skills, but few insertions regarding environmental issues. It is valid to measure the Specific Competences of Religious Education for Elementary Education I, as it presents some terms that can become ways to provide opportunities for Environmental Education in the Early Years (BRASIL, 2018, p. 437):

1. Know the structuring aspects of different religious traditions/movements and philosophies of life, based on scientific, philosophical, aesthetic and ethical assumptions.
2. Understand, value and respect religious manifestations and philosophies of life, their experiences and knowledge, in different times, spaces and territories.
3. Recognize and care for yourself, others, the community and nature, as an expression of the value of life.
4. Living with diversity of beliefs, thoughts, convictions, ways of being and living.
5. Analyze the relationships between religious traditions and the fields of culture, politics, economics, health, science, technology and the environment.
6. Debate, discuss and take a stand against discourses and practices of intolerance, discrimination and violence of a religious nature, in order to ensure human rights in the constant exercise of citizenship and a culture of peace.

To this end, the document does not present any specific topic aimed at Environmental Education, with the exception of these small insertions in the field of Religious Education, which harms the approach to this topic in the final years of Elementary School. In light of this problem, this work aims to diagnose the perception of education professionals, members of an education research group, regarding the initial training of teachers for the development of environmental practices in basic education.

2 METHOD

This work is considered field research, as it focuses on investigating data from a specific group. According to Gonçalves (2001) this research model is linked to the search for information/data directly related to the researched population. Therefore, the researcher investigates the phenomenon based on data obtained from the researched population, which in this study is an education research group (15 responding teachers).

Field research can be developed as qualitative research and, according to Prodanov and Freitas (2013, p. 70) this research has a direct relationship between the real world and the subject:

[... that is, an inseparable link between the objective world and the subjectivity of the subject that cannot be translated into numbers. The interpretation of phenomena and the attribution of meanings are basic in the qualitative research process. This does not require the use of statistical methods and techniques. The natural environment is the direct source for data collection and the researcher is the key instrument. Such research is descriptive. Researchers tend to analyze their data inductively. The process and its meaning are the main focus of the approach.
In terms of character, this study is descriptive, as the data collected in the research are described in an empirical way. “Descriptive research has as its primary objective the description of the characteristics of a given population or phenomenon or, alternatively, the establishment of relationships between variables” (GIL, 2007, p. 42). In the conception of Tonetto, Brust-Renck and Stein (2014), the descriptive character in research is related to the mapping of data and display of this data in the form of a portrait of reality.

Regarding descriptive research:

It is one that aims only to observe, record and describe the characteristics of a certain phenomenon occurring in a sample or population, without, however, analyzing the merit of its content. Generally, in descriptive quantitative research, the design chosen by the researcher does not allow the data to be used for hypothesis testing, although hypotheses can be formulated a posteriori, since the objective of the study is only to describe the fact itself (FONTELLES et al., 2009, p. 6).

Furthermore, bibliographic foundations were used to articulate theoretical foundations from other authors, elucidating new perspectives on the subject studied. As Gil (2007, p. 44) measures, bibliographic research is “[…] developed based on material already prepared, consisting mainly of books and scientific articles. Although almost all studies require some type of work of this nature, there is research developed exclusively from bibliographical sources”.

As a research and data collection instrument, a semi-structured questionnaire with 10 closed questions was used. No type of personal information was requested, guaranteeing the anonymity of the responding subjects, in order to guarantee the ethical standards in scientific research in education, established by the National Association of Postgraduate Studies and Research in Education (ANPED, 2019).

Regarding the use of the questionnaire as a scientific research technique, the authors Chaer, Diniz and Ribeiro (2011, p. 261) highlight that an extremely relevant point in the use of the questionnaire “[…] among the positive aspects, it is, without a doubt, the low cost of the questionnaire, since its users are members of the public who already have significant expenses with studies and certainly could not afford high amounts to carry out their research”.

The semi-structured questionnaire was developed based on the following questions:

1) What is your teaching experience?
2) What is your training area?
3) Do you believe that environmental practices are important in initial teacher training?
4) In your opinion, do environmental practices in the initial training of educators contribute to environmental education in basic education?
5) Evaluate the role of Stricto Sensu in the development of environmental practices:
6) In your perspective, can the extension curriculum improve the potential development of environmental practices?
7) Do the curricular components of pedagogical practices contribute to encouraging new environmental trends?
8) As a teacher, do you feel supported by the guiding documents for the development of interdisciplinary projects focused on environmental education?
9) Can active methodologies and digital resources contribute to the development of environmental practices?
10) Assess your level of knowledge to develop interdisciplinary projects aimed at environmental education in your school context:

The analysis of qualitative data occurred based on the analysis of responses, associating the thematic insurgencies with the foundations of literature. Researcher Minayo (2001) points out that in qualitative research, data are treated in light of subjectivities and values that cannot be quantified. According to Gerhardt and Silveira (2009, p. 31), qualitative research “[…] is not
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concerned with numerical representation, but rather with deepening the understanding of a social group, an organization, etc.”, being a important tool for composing experience reports, case studies and field research in education and teaching.

3 RESULTS AND DISCUSSION

The first research question sought to investigate the length of experience as Basic Education teachers in relation to the general profile of the responding teachers. The results show that: 33.3% have up to 5 years of teaching, 6.7% of respondents have up to 10 years of teaching experience, 26.7% of respondents have more than 15 years of experience and 33.3% have 20 years or more in the classroom.

**Figure 1** - Data obtained with question no. 1
**Source:** Research data, 2023.

The second research question sought to investigate the area of concentration in which teachers work in teaching, these being: Languages, Human and Social Sciences, Languages and Natural Sciences. The data revealed that 13.3% of those interviewed have training and work in the area of Exact Sciences, just as 20% are in the area of Natural Sciences. Thus, 20% work in the area of Languages and 46.7% work in the area of Human and Social Sciences, being the area that leads the training of the responding teachers.

**Figure 2** - Data obtained with question no. 2
**Source:** Research data, 2023.
The third research question is based on the following prerogative: Do you believe that environmental practices are important in initial teacher training? In addition, 33.3% of teachers consider these practices to be important in initial training, just as 60% of respondents consider them very important and 6.7%, the minority of respondents, believe they are important at a partial level.

**Figure 3** - Data obtained with question no. 3  
**Source:** Research data, 2023.

The fourth question seeks to identify whether environmental practices in initial teacher training add value to the development of Environmental Education in Basic Education. In the meantime, 20% of teachers claim that environmental practices in initial training partially contribute to the development of Environmental Education in Basic Education. From another perspective, 80% of participants believe that the inclusion of these practices in initial training potentially contributes to teaching focused on environmental issues.

**Figure 4** - Data obtained with question no. 4  
**Source:** Research data, 2023.
Figure 5 presents a graph that resulted from the fifth research question, where the responding professors were asked to evaluate the role of Stricto Sensu Postgraduate Programs in relation to the development of environmental practices. On a scale that goes from 1 to 5, where 1 corresponds to the partial contribution and 5 to the potential contribution of Stricto sensu, the curve of the graph is directed towards concept 5, highlighting that most participants recognize the value of Stricto Sensu for the promotion of Environmental Education.

![Graph showing evaluation of Stricto Sensu in environmental practices](image)

**Figure 5** - Data obtained with question no. 5  
**Source:** Research data, 2023.

The sixth question came from the following structure: From your perspective, can extension curricularization improve the potential development of environmental practices? To this end, 53.3% of respondents point out that the curricularization of extension will be a good alternative for advancing environmental practices. From another perspective, 40% point out that such curricularization can partially improve the development of these practices and 6.7% of teachers claim “maybe”.

![Pie chart showing views on extension curricularization](image)

**Figure 6** - Data obtained with question no. 6  
**Source:** Research data, 2023.

The seventh research question was based on the following structure: Do the curricular components of pedagogical practices contribute to encouraging new environmental trends?
Therefore, 66.7% of teachers indicate that they contribute in full, 26.7% claim that they contribute partially and 6.7% believe that they “maybe” can contribute.

The eighth research question arises from the relationship between guiding documents, interdisciplinary projects and Environmental Education, based on the following prerogative: As a teacher, do you feel supported by the guiding documents for the development of interdisciplinary projects aimed at environmental education? Therefore, 53.3% of those interviewed feel little support in the documents to develop environmental practices, so that 13.3% point out that they have little support in the documents to develop such practices. Accordingly, 13.3% do not feel supported to develop environmental practices, however, 20% claim “maybe”.

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Figure 7 - Data obtained with question no. 7  
**Source:** Research data, 2023.

Figure 8 - Data obtained with question no. 8  
**Source:** Research data, 2023.
Question 9 was structured as follows: Can active methodologies and digital resources contribute to the development of environmental practices? Therefore, 13.3% of teachers believe that “maybe” these resources can contribute; 20% believe that they contribute partially and 66.7% believe that active methodologies and digital resources contribute fully to the process of developing environmental practices.

![Figure 9 - Data obtained with question no. 9](image)


The last question was developed in the form of classification, where teachers were asked to evaluate their levels of knowledge to develop interdisciplinary projects aimed at environmental education in their school context. On a scale that goes from 1 to 5, where 1 corresponds to little knowledge and 5 to good knowledge of environmental knowledge, only 13.3% of participants declare that they have complete knowledge, that is, level 5. On the other hand, 60% of respondents indicate level 4, 13.3% indicate level 3 and 6.7% indicate levels 1 and 2.

![Figure 10 - Data obtained with question no. 10](image)


Several authors who disseminate scientific knowledge in the literature point out new trends when it comes to the development of environmental practices, innovations in energy and management, however, these trends need to be the subject of discussions in Higher Education.
in order to compose new perspectives and strengthen referrals for the interface between socio-environmental factors. Therefore, it is necessary for environmental factors to permeate Basic Education for the formation of critical and reflective subjects, contributing to a better world, and one of these paths is to strengthen the initial training of teachers with discussions based on the weaknesses of guiding documents, interdisciplinary and transversal projects that can be implemented, since the Environment is a contemporary transversal theme and can be developed by all educators (MARIN et al., 2018; STETTINER, C. F. et al., 2018; JUNGER et al., 2018; MARIN et al., 2019a; MOURA et al., 2019; MARIN et al., 2019b; THIMÔTEO et al., 2022; JUNGER et al., 2023a; JUNGER et al., 2023b; HULTEN et al., 2023).

4 FINAL CONSIDERATIONS

This research aimed to diagnose the perception of education professionals, members of an education research group, regarding the initial training of teachers for the development of environmental practices in basic education. It was possible to identify in the perception of the responding teachers that initial training focused on the development of environmental practices contributes to Environmental Education in Basic Education. Furthermore, one of the strategies for this development is to develop this approach, through interdisciplinary and transversal foundations, which allows the articulation of different educators in favor of the conservation of the environmental environment in the face of the survey of problems in the region.

Even though teachers declared that these practices are important in education and in the teaching and learning process in general, they point out that there is no support for the development of such practices, which makes their implementation in Basic Education difficult. An interesting fact is that 66.7% of responding teachers claim to have sufficient knowledge to develop Environmental Education projects and activities; highlighting that the problem is not in teaching performance, but in didactic-pedagogical articulations that can be encouraged by education departments, school management, continuing education and teacher training programs.

It is noteworthy that there is no specific model or trend for working with themes that permeate the environment, including the BNCC as a guiding document for the national curriculum is poor in mentioning this topic, demonstrating that new incentives need to be offered for this to occur. Cunha, Souza and Dinardi (2022) developed an important tool for teaching botany and science, through the use of the QR Code to structure a trail, which was the target of continued training; other proposals should be promoted by the In the strict sense, in order to establish new perspectives, in the different regions of Brazil, innovating Environmental Education.

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