

## Student actions in the school routine: a look from the macrotrends of environmental education

### ABSTRACT

The objective of this work is to present results of a research in which the possibilities of student actions in Environmental Education proposals, elaborated by teachers in continuing education in the Educational Development Program, were analyzed. From the perspective of Political-Pedagogical Macrotrends, 238 didactic-pedagogical productions from the years 2013, 2014 and 2016, located on the Day to Day Education Portal of the State Secretariat of State for Education of Paraná State, were analyzed. The research's methodological procedures allow delineating it as qualitative, interpretative, exploratory, bibliographical and associated with quantitative elements. For the analysis, the first and second stages of Systematic Mapping were used for planning, classification and systematization, and the third stage of Content Analysis for the treatment of data, results, inference and interpretation. The analyzed productions showed the different perspectives and speeches of the professors in relation to the implementation of the proposals and the different possibilities of student actions to work on environmental themes, plus the importance of participation and collaboration of the different areas of knowledge and their availability of time and space, through the curricular components, for the insertion of cross-cutting themes. Initially, in an individualized perspective, such productions were categorized into Conservationist, Pragmatic and Critical macrotrends, and also, from the fields of disputes and coexistence into Conservationist and Critical; Conservationist and Pragmatic; Conservationist, Pragmatic and Critical; Pragmatics and Critical. The relevance of teachers and teaching institutions in creating new educational strategies and practices, such as the pedagogical intervention projects in this Program, can directly reflect on the appreciation and involvement of students, on proposals for new practical attitudes related to intentions and actions, and the respect to learning objectives. Research involving Environmental Education is extremely important in the sense of publicizing the treatment that this education has received in Basic Education and how much can be done to improve this relationship.

**KEYWORDS:** Teacher Training. Macrotrends. Learning by Projects. Critical Environmental Education.

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## INTRODUCTION

Environmental issues are present in society's daily life and can significantly interfere in the lives of the population. In this sense, Environmental Education (EE) gets more and more space and time in these discussions between subject contents, reinforcing its mission to bring environmental knowledge closer to students' learning needs and to raise awareness in this society.

To conduct the research, data were collected from the Day to Day Education Portal of the State Secretariat of Paraná State (SEED/PR). The productions of teachers from the state network who participated in the Educational Development Program (EDP) in the years 2013, 2014 and 2016 were listed. The EDP is established by Complementary Law n° 103/2004, which provides for the Career Plan of Teachers and regulated by Complementary Law n° 130/2010. This Program aims to provide continuing education of teachers in the Public Education Network of Paraná State (PARANÁ, 2004; 2010).

In this way, this Program presents itself as a law and as a reality for the creation and development of political-pedagogical projects and curricular proposals for Basic Education, in an important partnership between Higher Education Institutions (HEIs) and schools; corroborating as a strategy for the implementation of EE in the State of Paraná.

Due to EE being multidimensional and complex, it can receive different looks and point out different ways to “conceive and carry out the means and ends” for the teaching-learning process of environmental issues (LAYRARGUES; LIMA, 2011, p. 6). From this diversity of perspectives, different ways and possibilities for the teacher to work with environmental themes can emerge.

In this sense, the objective of this work is to present the results of a research in which the possibilities of student actions in the didactic-pedagogical productions, created by teachers in continuing education in the EDP in the years 2013, 2014 and 2016 were analyzed from the perspective of the Conservationist, Pragmatic and Critical Political-Pedagogical Macrotrends of EE (HEGLER, 2021). In order to collaborate with the preparation of students to face the challenges of the 21st century and citizenship training for solutions to socio-environmental problems in an increasingly globalized world (UNESCO, 2015).

## POLITICAL-PEDAGOGICAL MACROTENDENCIES OF ENVIRONMENTAL EDUCATION

EE needs to constantly seek to adapt to the new historical, economic, political, cultural and environmental contexts in which society is inserted, however, for a long time, including in Brazil, attempts were made to attribute a single meaning to this education, as if she investigated only one object. There is no precise date for the establishment of an EE with new adjectives and immersed in different political-pedagogical trends and currents in Brazil, some authors mention it from the 1990s, while others point to the beginning of the 21st century (LAYRARGUES; LIMA, 2014).

In this perspective, due to the diversity of actors and visions involving a multidimensional and dynamic EE, this education sought to follow the evolution of interrelationships: human-nature; subject-object, seeking to differentiate this “universe of knowledge, practices and pedagogical, epistemological and political

positions that interpreted the relationships between education, society, natural and built environment and sustainability” (LAYRARGUES; LIMA, 2014, p. 26).

Layrargues and Lima (2014) differentiate these perspectives on EE into three Political-Pedagogical Macrotrends: Conservationist, Pragmatic and Critical.

Observing the multiplicity of actors, conceptions, practices and political-pedagogical positions and the dynamism that articulates these elements, the reflection identifies three macro trends coexisting and disputing the symbolic and objective hegemony of the field of Environmental Education in Brazil (LAYRARGUES; LIMA, 2014, p. 34).

The conservative option composed by Conservationist and Pragmatics is considered limited, because in this view, educational practices tend to be “content-oriented”, without considering historical and political aspects, favoring postures and behaviors aimed at changing individual behavior, treating human beings only as the cause of environmental problems without considering the social aspects involved (LAYRARGUES; LIMA, 2014).

In the Conservationist perspective, the natural environment is romanticized, the educational practice is inserted in an affective dimension in relation to the preservation of nature, to love and preserve. Environmental problems resulting from modernization can be corrected through education and information focused on the environment, plus adaptation to technological changes (LAYRARGUES; LIMA, 2014).

Chart 1 presents a summary of some central characteristics of the Conservationist Macrotrend:

Chart 1 – Central characteristics of EE's Conservationist Political-Pedagogical Macrotrend

| Nº | FEATURES OF CONSERVATIONIST EE  |
|----|---|
| 1  | It does not question the current social structure in its entirety, it only pleads for sectoral reforms                            |
| 2  | Awakening a new human awareness of nature “knowing to love, loving to preserve”   |
| 3  | Correct the environmental problems resulting from the modernization   |
| 4  | Links EE to the “green agenda”, such as: biodiversity, conservation units, some biomes, ecotourism and agroecological experiences |
| 5  | Romanticized; “love to preserve”  |
| 6  | Behavioral change aimed at nature preservation  |

Source: Hegler (2021), based on Layrargues and Lima (2014) and Oliveira (2019).

This perspective linked to the “green agenda”, according to Chart 1, when dealing with themes related to Conservation Units and some biomes, biodiversity, agroecological issues and ecotourism, has lost its hegemony today because it does not consider the “social and political dynamics and their respective conflicts” and just claim sectoral reforms of social structures, forgetting their totality (LAYRARGUES; LIMA, 2014, p. 30).

The Conservationist Macrotrend branched out, as it was no longer so present, emerging the Pragmatic strand characterized in Chart 2, a strand that is concerned

“initially with the problem of urban-industrial waste in cities, as one of the themes increasingly used in practices pedagogical” (LAYRARGUES; LIMA, 2014, p. 28).

For the Pragmatic aspect of EE, each individual needs to do their part to face environmental problems, reflected in their consumption habits; sharing the attention of educators that previously focused on issues of garbage, selective collection and recycling with concerns involving “Education for Sustainable Development and Sustainable Consumption” (LAYRARGUES; LIMA, 2011, p. 9).

Chart 2 - Central characteristics of the Pragmatic Political-Pedagogical Macrotrend of EE

| Nº | FEATURES OF EA PRAGMATICS  |
|----|--|
| 7  | Behavioralist and individualist (behavior change)  |
| 8  | Individual responsibility in the environmental issue "each one doing their part" to face the environmental crisis  |
| 9  | Characterized by the dominance of market logic over other social spheres, the ideology of consumption as utopia (EE is defined by market capitalism)   |
| 10 | It acts to correct the imperfections of the productive system based on consumerism, planned obsolescence and the disposability of consumer goods. Recommend recycling to maintain viability                              |
| 11 | It is nourished by the problem of urban and industrial waste in cities. Responds to the “brown agenda”, essentially urban-industrial, converging with the notion of Sustainable Consumption (saving energy and/or water) |
| 12 | It covers the currents of Education for Sustainable Development and for Sustainable Consumption. Seek a sustainable future   |

Source: Heggler (2021), based on Layrargues and Lima (2014) and Oliveira (2019).

This EE Macrotrend works with issues involving the “brown agenda”, waste production, planned obsolescence and product disposal, recycling as a sustainable and industrial alternative, and energy and water savings. Perceives society as distant from the environment and does not fully question the causes and consequences of environmental problems. It argues that the economic market imposes its logic on other social spheres (LAYRARGUES; LIMA, 2014, p. 31).

The Critical perspective presents itself, as shown in Chart 3, as an alternative and with the potential to oppose these two conservative strands. Because among the three macrotrends, it is the one that makes possible the problematization of socio-environmental, political and cultural issues; in addition to proposing the confrontation of social inequalities and able to criticize development and society models. In the understanding of Layrargues and Lima (2011, p. 8) “[...] the relationship between human beings and nature is mediated by sociocultural relations and historically constructed classes”.

Chart 3 - Central characteristics of the Critical Political-Pedagogical Macrotrend of EE

| Nº | FEATURES OF EA CRITICISM   |
|----|--|
| 13 | Incorporate cultural, individual and subjective issues that emerge from the transformations of contemporary society  |
| 14 | Emphasis on the critical review of the fundamentals that provide human domination and the mechanisms of capital accumulation, seeking the political confrontation of social inequalities                           |
| 15 | The political and social dimensions of education and human life do not exist apart from individuals, their values, beliefs and subjectivities, there is a strong environmentalist, sociological and political bias |
| 16 | Questioning the contradictions of development and society models   |
| 17 | Maturity of a socio-environmental awareness and culture that articulates development and the environment   |
| 18 | Related to Freirean thought, the principles of Popular Education, Critical Theory and Political Ecology  |
| 19 | Social and/or environmental transform  |
| 20 | Citizenship  |
| 21 | Centrality in the collective   |
| 22 | Reflects on the causes and consequences of environmental problems  |
| 23 | Key concepts: democracy, participation, emancipation, conflict, environmental justice  |
| 24 | Human beings, nature and their natural, social and cultural interrelationships   |
| 25 | Awareness for cultural, social and political transformation  |
| 26 | It contests, criticizes and wants to transform the established social order  |
| 27 | It combines with the thought of complexity (does not accept reductionist solutions). Allows openness, inclusion, dialogue and ability to see the new and to formulate responses beyond the known                   |

Source: Heggler (2021), based on Layrargues and Lima (2014) and Oliveira (2019).

The Critical Macrotrend of EE tries to gather forces in the educational and political field to carry out the tasks: disrupting attempts to exploit human beings by economic groups, proposing a critical confrontation of injustices and social inequalities; encourage the creation of transformative proposals, strategies, methodologies and practices aimed at finding solutions to environmental degradation. In this education, dialogue is extremely important, one must be willing to try something new and accept the necessary changes (LAYRARGUES; LIMA, 2011, 2014).

In addition to this political concern, Critical Environmental Education tends to combine with the thought of complexity when realizing that contemporary issues, such as the environmental issue, do not find answers in reductionist solutions (LAYRARGUES; LIMA, 2014, p. 33).

This critical perspective constantly seeks its hegemony and its central place in the discussions, because currently and at certain times it is occupied and disputed by conservationism and pragmatism. That is why it is inevitable to verify the

coexistence, convergence, coexistence and fields of disputes between the Macrotrends of EE (LAYRARGUES; LIMA, 2011, 2014).

## METHODOLOGY

The research's methodological procedures allow delineating it as qualitative, interpretative, exploratory, bibliographical and associated with quantitative elements. "In qualitative research an important role is given to interpretation" (GIL, 2008, p. 177). As analysis methodologies, the first and second stages of the Systematic Mapping (MS) were used, consisting of: Planning, objectives, definition of the research question to be answered and search descriptor, inclusion and exclusion criteria of the research, screening and classification of documents; and the third stage of Content Analysis for treatment of data and results, inference and interpretation (PETERSEN *et al.*, 2008; BARDIN, 2011).

The data were constituted from the collection of information taken from the Day to Day Education Portal of the State Secretariat of Paraná State (SEED-PR). Publications by state school teachers who participated in the SEED/PR Educational Development Program in 2013, 2014 and 2016 were searched. -pedagogical for analyzing student actions in Environmental Education proposals and answering the question: *What is expected of the student due to the analyzed works dealing with EE practices proposed in the EDP in the perspective of Conservationist, Pragmatic and Critical Macrotrends?*

For the selection of materials, according to Chart 4, inclusion and exclusion criteria were established in order to identify them for analysis and, consequently, answer the research question, in addition to excluding those materials that are not suitable for the investigation.

Chart 4 - Research inclusion and exclusion criteria

| INCLUSION CRITERIA                      | EXCLUSION CRITERIA                              |
|---|---|
| SEED/PR Portal                          | Does not meet the inclusion criteria            |
| Search Result "Environmental Education" | Do not answer the research question             |
| Years: 2013; 2014 and 2016              | That do not contain EE activities and practices |
| Environmental issues                    | Texts not consistent with the research          |
| Projects inserted in the PDE            | Incomplete works                                |
| All subjects                            | Mainly statistical texts                        |

Source: Adapted from Aguiar *et al.* (2014) and Petersen *et al.* (2008).

According to Chart 5, with the objective of identifying the works, some codifications were adopted for the disciplines, in order to differentiate the Macrotrends and their fields of dispute and to reference the works without specifying and identifying the names of the authors, to the to know:

Chart 5 - Coding for identification of data in the works

| SUBJECT ABBREVIATIONS   |                       | EA MACRO TRENDS AND DISPUTES  |            |
|---|-----------------------|---|------------|
| Art (Ar); Biology (Bi); Sciences (Sc); Technical Subjects (TS); School Management (SM); Geography (Ge); Chemistry (Ch). |                       | Conservationist – Co<br>Pragmatics – Pr<br>Critical – Cr<br>Conservationist and Critical – CC<br>Conservationist and Pragmatic - CP<br>Conservationist and Pragmatic and Critical - CPC<br>Pragmatics and Critical – PC |            |
| IDENTIFICATION OF WORKS (EXAMPLE)   |                       |   |            |
| 2013  | Bi                    | 13  | Pr         |
| Year in the PDE   | Discipline of Biology | Sequence of analysis in the year of the EDP   | Pragmatics |

Source: Heggler (2021).

The examples that will be presented only provide a representative sample of the total productions in the EDP, which make it possible to contextualize the student's participation in terms of the teachers' proposals and their respective speeches, moments in which EE is required to mediate the existing conflicts due to the socio-environmental, political, economic, cultural and ethical interrelationships; in addition to them, they also present an overview of the possibilities of combining thoughts, ideas, methodologies, epistemologies, educational practices and learning objectives.

## RESULTS ANALYSIS AND DISCUSSION

After using the descriptor “Environmental Education” as a search expression, 360 productions in the PDE referring to the years 2013, 2014 and 2016 were preliminarily selected. After applying the inclusion and exclusion criteria, as shown in Chart 4, 238 projects were analyzed, equivalent to 66.1% of the total, according to the characteristics of the Political-Pedagogical Macrotrends of the Conservationist, Pragmatic and Critical EE shown in Tables 1, 2 and 3 and used to categorize them.

The characteristics organized in Table 1 were found through the interpretation and inference proposed by Bardin (2011), pointing out a certain prevalence of some of them in the speeches presented in the projects by the teachers. We noticed in the Conservationist strand a more expressive amount of ideas related to the “green agenda”, with 56.3% and behavioral aspects of the individual focused on the preservation of nature, with 21.8%.

In the case of the Pragmatic perspective, EE acting to correct the imperfections of the productive system comprises 31.2%, issues related to garbage, “brown agenda”, sustainable consumption, water and energy savings with 35.1% and characteristics related to approximations of Sustainability concepts with 28.3%. Regarding the Critical Macrotrend, aspects related to citizenship 29.7%, human interrelationships with the natural, social and cultural dimensions with 9.5%, problematization of development and society models, 7.3%.

Table 1 - Quantities of the characteristics found for the categorization of EE Macrotrends according to tables 1, 2 and 3

| Conservationist |          |      | Criticism |          |      |
|-----------------|----------|------|-----------|----------|------|
| nº              | Features | %    | nº        | Features | %    |
| 1               | 1        | 1,8  | 13        | 5        | 1,6  |
| 2               | 5        | 9,1  | 14        | 11       | 3,5  |
| 3               | 4        | 7,3  | 15        | 1        | 0,3  |
| 4               | 31       | 56,3 | 16        | 23       | 7,3  |
| 5               | 2        | 3,7  | 17        | 21       | 6,6  |
| 6               | 12       | 21,8 | 18        | 6        | 1,9  |
| Total           | 55       | 100% | 19        | 41       | 13   |
| Pragmatic       |          |      | 20        | 94       | 29,7 |
| nº              | Features | %    | 21        | 9        | 2,8  |
| 7               | 14       | 4,2  | 22        | 11       | 3,5  |
| 8               | 3        | 0,9  | 23        | 9        | 2,9  |
| 9               | 1        | 0,3  | 24        | 30       | 9,5  |
| 10              | 104      | 31,2 | 25        | 18       | 5,7  |
| 11              | 117      | 35,1 | 26        | 19       | 6    |
| 12              | 94       | 28,3 | 27        | 18       | 5,7  |
| Total           | 333      | 100% | Total     | 316      | 100% |

Source: Heggler (2021), based on Layrargues and Lima (2014) and Oliveira (2019).

The total amount of 704 characteristics found in the analysis of the teachers' projects in the EDP, concomitant or not, may represent their speech in relation to EE. By disputing the same field of discussion, the coexistence of these characteristics can prevent the existence of an alleged hegemony between the Macrotrends and thus, share educational objectives and mix different perspectives for this education.

Through the presentation of excerpts, in some works we perceive fine lines demarcating certain characteristics, as the mention of an expression or critical thought is enough to avoid a conservative prominence, despite pragmatism still trying to remain at the center of the discourses.

In this sense, it cannot be denied:

[...] that critical forces have conquered a significant space within the field, but these forces are constantly eroded by the dominant pragmatism that tends to convert and shift educational intentions to the pragmatic sense of the market (LAYRARGUES; LIMA, 2014, p. 35).

Table 2 presents the result of applying the characteristics mentioned in Tables 1, 2 and 3, highlighting the significant amount of works classified as belonging to the Pragmatic and Critical strands, in a total of 118 productions, 49.6% of the total.



In this sense, students can be invited to seek critical and transformative solutions involving themes that are suited to pragmatism.

Table 2 - Classification of EE's Macrotrends in Productions in the EDP and their coexistence and disputes

| Categories | Works/Total | % Of Total |
|------------|-------------|------------|
| Co         | 12          | 5,0        |
| Pr         | 29          | 12,2       |
| Cr         | 53          | 22,3       |
| CC         | 11          | 4,6        |
| CP         | 07          | 2,9        |
| CPC        | 08          | 3,4        |
| PC         | 118         | 49,6       |
| TOTAL      | 238         | 100,0      |

Source: Heggler (2021).

Regarding the 12 works, representing 5% of the total, belonging to the Conservationist perspective of EE, in addition to the recurrence of the characteristic related to the “green agenda”, the proposed activities instigate the student to change attitudes aimed at preserving the natural environment, as can be seen in the projects:

The exploitation of nature must be done in a controlled manner. We need to preserve natural environments that are home to great biodiversity, otherwise many species will not survive. In Brazil, several species are threatened with extinction (2014Ci25Co, p. 21).

[...] central idea of the Didactic Unit that contemplates the study, the recognition of vegetation, as well as the conservation and preservation of natural resources, striving for the quality of life on the planet (2014Ci38Co, p. 10).

Establishing a new approach to soil study contents and relating them in a more practical way to the student's daily life may provide greater interest and, consequently, greater awareness of the importance of its preservation (2014Ci50Co, p. 6).

The development of activities on these concepts is necessary (sic) because ecology is one of the terms that directly reminds of the environment, especially in matters of its preservation (2016Ci14Co, p. 6).

According to Layrargues and Lima (2014), this behavioral and individualist approach does not consider socio-environmental interrelations, in this sense, the proposals contained in these excerpts related to the need for environmental preservation may encounter barriers if only individual student participation is considered, having little effect or long-term results in terms of a possible solution to global environmental damage.

Analyzing the learning and EE proposals of these conservationist works, one can see: the appreciation of students' prior knowledge; contextualization of the contents of the classes with the daily life of the students; stimulus for an affective

approximation of students to nature through field activities; awareness of students in relation to the preservation of environmental resources.

With regard to the Pragmatic aspect of EE, 29 productions equivalent to 12.2% of the total, according to their characteristics shown in figure 2, where themes related to garbage/solid waste, product disposal, consumerism, recycling, economy of water and electricity and the search for an Education focused on Consumption and Sustainable Development, several projects propose activities for students referring to the idea of doing, that is, actions in the sense of creating or producing something, performing some practical activity or awareness-raising activities that result in satisfactory solutions and/or aimed at problem solving.

Regarding the actions, here are some excerpts taken from the works and adapted:

Construction of composters, garbage cans, vegetable gardens, terrariums. Consultations and experiments in the computer lab. Active participation of students during field trips and field trips. Creation of posters for dissemination to society. Analysis of consumption in the school's water and electricity bills. Direct contact with the local community. Collaboration for the selective collection of cooking oil. Student activist actions in the search for solutions to environmental problems. Encouraging healthy eating and maintaining the quality of life of students. Correct separation and disposal of waste. Environmental responsibility in relation to consumerism. Analysis of the physical structure of schools and possible waste. Environmentally correct use of school spaces (EDP-SEED/PR).

The presence of students in these activities and practices proposed by teachers in the PDE confirms the objectives of this Macrotrend, as EE presents itself in these cases with actions aimed at correcting problems arising from the productive sector, plus the intensification of environmental debates involving consumerism the "alpha brown" linked to the problem of garbage, concerns associated with water waste and pollution and the consumption of electricity, in addition to the need for Education aimed at Sustainable Consumption and Sustainable Development (LAYRARGUES; LIMA, 2014, p. 31), according to the following excerpts:

With the application of this project, it is hoped that the participants understand the need to preserve water and not waste it by using it correctly and that they can pass on precious information about water to the community (2013Bi09Pr, p. 18).

The consumerism of today's society is causing negative impacts to the environment. The need to change man's behavior in relation to his environment is fundamental to promote a sustainable development that aims to guarantee life for future generations (2013Bi34Pr, p. 5).

The general objective of this work is to increase the percentage in the separation and correct destination of recyclable garbage in the school space and in the community through actions based on the knowledge of Environmental Education that lead the student to reflect on the reality of environmental degradation, the incessant search for quality of life and the responsibility to promote sustainable development in the present to preserve the future (2014Bi01Pr, p. 4).

The objective is to provide the student with a reflection on the exaggerated consumption of products and the consequences of their inappropriate

disposal. Knowledge of chemistry as a science present in everyday life can sensitize students to changes in attitudes and, consequently, make them more responsible for their actions in the environment that surrounds them (2016Qu77Pr, p. 2).

This Pragmatism when isolated in the proposals, without disputes with the critical perspective, limits the possibility for the student to experience moments of criticism in relation to the directions that environmental problems take due to the dominating presence of the economic market over the social and political spheres and the lack of problematization of reality (LAYRARGUES; LIMA, 2014).

As for the 53 projects, 22.3% of the total categorized as part of the Critical Macrotrend of EE, the teachers were concerned with emphasizing proposals related to issues involving political and social transformations to the students; environmental and cultural; fostering collective initiatives; alerting to the need for environmental awareness and criticism of development and society models; a strong presence of aspects related to citizenship and the importance of students understanding the complex interrelationships between man and nature.

As per the following excerpts:

The proposals of this project aim to sensitize and make students aware of the importance and role of art in the formation of human beings and their intervention in the environment in which they are inserted, proposing social and cultural transformations. And thus promoting the improvement of the artistic and aesthetic dimension, always adding ethical values (2013Ar08Cr, p. 8).

Society and science are still in their infancy in understanding the complexity of the environmental issue; [...], forgets the environmental issue and its respective problems; and it is humanity that pays for this serious problem, suffering violent spasms, the result of society's lack of knowledge on how to treat nature (2013Ge31Cr, p. 6).

At first, we seek to investigate what these students understand by Environmental Education and Citizenship and what relationships there are between this theme and the teaching of Chemistry. The chemical content addressed will be Hydrocarbons, fossil fuels (gasoline) and environmental pollution, seeking to reflect on the harm that some substances can cause humanity and nature (2014Qu07Cr, p. 4).

The reality of the municipality of Castro shows that the population growth rate is higher than the country's rate, necessarily resulting in greater public spending, greater human needs and aggravated environmental problems. The axis of family planning is part of Environmental Geography, as a way to prevent high rates of violence, poverty, urban sanitation problems and social problems linked to urban segregation (2016Ge43Cr, p. 6).

Teaching for the environment in formal education goes further, it is necessary to contribute to the exercise of citizenship, encourage transforming and mobilizing action by students, promoting the deepening of environmental and technological knowledge (2016GE62Cr, p. 19).

This sample of works confirms the presence of an EE concerned with the need for a critical position on the interrelationships between man and nature, as environmental issues need to be problematized in the search for solutions. The student needs to be aware that he has a fundamental role in the whole process of achieving a better future for all, in which dialogue, collective participation, political

and economic confrontation of injustices, socio-environmental transformation, respect to culture and the appreciation of ethical principles, among other aspects.

So far, some discussions have been presented about the Macrotrends: Conservationist, Pragmatic and Critical, treating them according to their classification in the projects, that is, individually, without disputes between them, with clearly demarcated learning objectives individually, despite Layrargues and Lima (2014) mention the possibility of coexistence and interaction between them.

In this sense, in the investigation and analysis of the works in the EDP, the presence of two or three associated Macrotrends in the same project was also verified, according to Table 3, where it is possible to perceive fields of dispute between the perspectives: Conservationist and Critical; Conservationist and Pragmatic; Conservationist, Pragmatic and Critical; Pragmatics and Critical.

The disputes between the Conservationist strand and the Critical EE strand found in 11 projects, 4.6% of the total, may seem challenging, if you imagine that the student can have an affection and romanticism in relation to the natural environment, love and preserve and the at the same time be encouraged in the same proposal to plead for critical transformations and appreciation of socio-environmental aspects.

These possibilities of coexistence become fully possible in relation to this education, as it can be deduced that most teachers were not concerned with making a distinction between them, because they probably did not know them, since only one work mentioned Macrotrends in its text.

Here are two examples of these unconscious disputes:

[...] look at the beauties of natural resources, in order to favor the perception of the importance of contact with nature and develop an interest in environmental preservation. [...] exercising active citizenship, in its collective and political aspects, which can be transformed by acting collectively in the transformation of reality, is the first step towards reducing the environmental problem that arises (2014Bi02CC, p. 4, 8).

Smelling the plants and checking which ones can be touched. [...]. The knowledge of the strategy, Aula de Campo, is significant for the formation of new individual citizens, teaching them to observe and respect the world they live in, instead of destroying or violating it (2016Ci11CC, p. 13, 19).

This coexistence makes it possible to infer a convergence of two seemingly antagonistic political-pedagogical trends towards the same object, proposing to respond to the same problem, without the intention of establishing conceptual and/or theoretical conflicts, a disinterested dispute from the point of view of a supposed search for hegemony between them.

Therefore, it can be deduced that the main objectives of these projects are: the student, the teaching-learning process of EE and to present suggestions for activities and practices in the classroom so that the student can relate them to his daily life, regardless of the affirmation of this or that Macrotrend.

Regarding a possible justification for the categorization of the 07 works, 2.9% of the projects as belonging to the Conservationist and Pragmatics Macrotrends, Layrargues and Lima (2014, p. 32) mention the evolution of the Conservationist tendency, branching into Pragmatics, "The conservationist and pragmatic

macrotrends represent two trends and two moments of the same lineage of thought [...]”. As an example of this coexistence:

The construction of a sensory garden will rely on partnerships outside the school, and will have the effective participation of those involved from the choice of companies whose criterion is to be involved with sustainability practices and protection of the environment, materials for making the shelves, vases and flowerbeds, even in the types of plants. (2016GE64CP, p. 8).

This simultaneity of educational thoughts in the same work allows the student to be encouraged to study subjects related to the “green agenda”, the preservation of the environment and at the same time envision a “sustainable future” for the Planet, in addition to pleading for the correction of problems arising from the production and disposal of waste. All this, fully possible from the teaching-learning point of view because they do not find barriers in the PDE to work on these two thoughts concomitantly (LAYRARGUES; LIMA, 2011, p. 9, 10).

According to Layrargues and Lima (2014, 29), the Conservationist and Pragmatic aspects as conservative EE options tend to value and defend “ahistorical, apolitical, content and normative” educational positions, however, of these 07 works, a good part propose group work, debates and lectures and 03 of these projects intersperse these collective interactions with expository classes, which demonstrates a curiosity in conceptual matters, as these collective and interactive proposals contradict what was expected in these works regarding a mostly behavioralist conceptual position, individualistic and conservative in the classroom.

For the 08 works, 3.4% of the total disputing the thoughts of the Macrotrends of the Conservationist, Pragmatic and Critical EE, the examples below only confirm the idea that different learning objectives are perfectly possible in the same teaching plan, concrete possibilities of coexistence without any intention of establishing a certain hegemony between them.

The 3rd part will develop the opening of the trail, floristic survey and identification of its components, aiming to make it a material for study and contemplative leisure [...] Sustainable development is simply impossible if environmental degradation is allowed to continue. [...] we seek to contribute to the formation of critical and aware citizens regarding the riparian forest and environmental preservation (2013DT44CPC, p. 4, 5, 12).

The future of our young people and their children depends on a clean river preserved in nature [...] In addition to pesticide contamination, we also have sewage and garbage pollution along the length of the Iguazu River [...]. The school is a privileged space to establish connections and information, as one of the possibilities to create conditions and alternatives that encourage students to have citizenship conceptions and attitudes, aware of their responsibilities and, above all, to perceive themselves as members of the environment (2016Ci12CPC, p. 6, 10).

In this sense, the student is provoked to relate and contextualize the contents and concepts related to nature with aspects involving the development and production of garbage and the possibility of developing a critical and citizen attitude; all of this following a sequence of thoughts apparently possible from an educational point of view, without explicit conflicts, without excluding each other, but complementary ideas. And also, to provide discussions so that the student can

establish his learning in reason of what he understands to be ideal for his daily social life.

Below are some excerpts from the 118 works, 49.6% of the total as a representative sample of the 118 projects concerning eventual coexistences, convergences and unconscious disputes between pragmatism and critical forces, represented by the Macrotrends of Pragmatic and Critical EE.

Currently, society lives in terms of consumption that grows every day, presenting a behavior that is shown to be random due to the large accumulation of garbage generated [...] it must use creativity and different strategies that awaken a search for this student for the new, for discoveries that change to improve their experience as a critical citizen [...] (2013Ci01PC, p. 3, 51).

Environmental Education with students in the 6th year of Elementary School, with the aim of encouraging new postures of habits to protect the environment, through recycling and reuse of garbage and the development of new behaviors in relation to consumption [...] EA must be present in every social space, where the individual can have guidance and appropriate new knowledge and knowledge to be able to build a better quality of life (2013Ci11PC, p. 2, 9).

Cooking Oil Residue – A problem that needs a solution. [...] This project also intends to help in the formation of critical citizens who can act properly in society, with possibilities to make it better (2014Qu09PC, p. 2, 8).

The material will allow a reflection on the water crisis, providing subsidies for the target audience to seek alternatives to conserve and preserve water resources. [...] In this way, the discipline of Biology is allied in the mediation of concepts that collaborate to reduce environmental impacts, enhancing students' critical sense, triggering transformations and instigating behavior change, making them active in society (2016Bi02PC, p. 5, 62).

Of the general total, 90 papers, 37.8% discuss issues related to garbage/solid waste, recycling and water/water resources that tend towards pragmatism. The preference for these subjects can confirm society's great concern to critically solve these problems today, reaffirming the role of the student and EE as promoters of this activism throughout this process.

This concern can justify the presence of critical forces trying to oppose conservatism, even if unconsciously in these cases; in addition to not being possible to discuss the production, separation and disposal of waste; the economy and water pollution without proposing critical transformations in development and society models (LAYRARGUES; LIMA, 2014).

The investigation of the insertion and presence of students in the projects was based only on the proposals (projects) of the teachers in the EDP according to the problem of this work, the verification of their effective participation in the development and implementation of activities, classes and application results of the productions could only be confirmed by analyzing the articles developed at the end by the teachers as a criterion for obtaining certification in this Program, however, they were not objects of analysis in the research.

## FINAL CONSIDERATIONS

The classification made of the EE Macrotrends in an individualized perspective in: Conservationist, Pragmatic and Critical and in fields of disputes and coexistence: Conservationist and Critical; Conservationist and Pragmatic; Conservationist, Pragmatic and Critical; Pragmatics and Critical could present conceptual and practical possibilities of this education as a mediator of conflicts that emerge from historical contexts and models of development and society (LAYRARGUES; LIMA, 2014).

By analyzing the projects, the professors in the EDP were probably not concerned with establishing a prevalence and hegemony of a certain Macrotrend of EE, since most of them did not mention them in their texts or were unaware of them, it was also noticed that, in some cases, the teachers' theoretical discourse is part of a conservative perspective and some of their practices have a critical bias, demonstrating a certain contradiction and difficulty for them to assume a mostly critical conception (HEGGLER, 2021).

The EDP can contribute to the implementation of EE in Basic Education and consolidate the partnership between HEIs and schools, reinforcing the role of advisors for the qualitative improvement of teaching. Due to the fact that this education cannot be part of formal education as an isolated discipline, it serves as an instrument for inserting environmental themes together with specific disciplinary contents through transversality and interdisciplinarity, bringing students closer to possible solutions to the socio-environmental problems that arise in their daily.

The investigation of the productions in the EDP allowed presenting the different views and discourses of the teachers in relation to the implementation of EE and the different possibilities of approaching environmental themes, plus the importance of the participation and collaboration of the other areas of knowledge and of them providing time and space for the insertion of cross-cutting themes.

The relevance of teachers and teaching institutions in creating new educational strategies and practices, such as the pedagogical intervention projects in this Program, can directly reflect on the appreciation and involvement of students in proposals for new practical attitudes related to intentions and actions, and respect to learning objectives. In this way, we understand that proposals such as those elaborated by EDP professors in the process of continuing education, during implementations, enable the involvement of students in facing socio-environmental problems, contributing to their citizenship training (UNESCO, 2015).

Research on Environmental Education is extremely important in terms of publicizing the treatment that this education has received in Basic Education and how much can be done to improve this relationship. The EDP needs to continue.



# AÇÕES DISCENTES NO COTIDIANO ESCOLAR: UM OLHAR A PARTIR DAS MACROTENDÊNCIAS DE EDUCAÇÃO AMBIENTAL

## RESUMO

O objetivo deste trabalho é apresentar resultados de uma pesquisa em que foram analisadas as possibilidades de ações discentes nas propostas de Educação Ambiental, elaboradas por professores em formação continuada no Programa de Desenvolvimento Educacional. Na perspectiva das Macrotendências Político-Pedagógicas, foram analisadas 238 produções didático-pedagógicas dos anos 2013, 2014 e 2016, localizadas no Portal do Dia a Dia da Educação, da Secretaria de Estado da Educação do Estado do Paraná. Os procedimentos metodológicos da pesquisa permitem delinear a como qualitativa, interpretativa, exploratória, bibliográfica e associada a elementos quantitativos. Para a análise foram utilizadas a primeira e segunda etapas do Mapeamento Sistemático para o planejamento, a classificação e sistematização, e a terceira etapa da Análise de Conteúdo para o tratamento dos dados, dos resultados, inferência e interpretação. As produções analisadas evidenciaram os diferentes olhares e discursos dos professores em relação à implementação das propostas e as diversas possibilidades de ações discentes para se trabalhar os temas ambientais, mais a importância da participação e colaboração das diferentes áreas do conhecimento e delas disponibilizarem tempo e espaço, por meio dos componentes curriculares, para a inserção de temas transversais. Inicialmente, em uma perspectiva individualizada, categorizaram-se tais produções nas macrotendências Conservacionista, Pragmática e Crítica, e também, a partir dos campos de disputas e convivências em Conservacionista e Crítica; Conservacionista e Pragmática; Conservacionista, Pragmática e Crítica; Pragmática e Crítica. A relevância dos professores e Instituições de Ensino em criar novas estratégias e práticas educativas, a exemplo dos projetos de intervenção pedagógica nesse Programa, podem refletir diretamente na valorização e envolvimento dos alunos, nas propostas de novas atitudes práticas relacionadas as intenções e ações, e o respeito aos objetivos de aprendizagem. As pesquisas envolvendo a Educação Ambiental são extremamente importantes no sentido de divulgarem o tratamento que essa educação tem recebido na Educação Básica e o quanto pode ser feito para melhorar essa relação.

**PALAVRAS-CHAVE:** Formação de Professores. Macrotendências. Aprendizagem por Projetos. Educação Ambiental Crítica.



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