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SciELO

Environmental education in the public teaching network in western Paraná State

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Abstract: The present study is an analysis of the environmental education insertion in state schools, in Toledo regional Center. A matrix of indicators comprising four dimensions (Democratic and Participatory Management, Discipline Matrix, Physical Space and Community) were applied in 59 schools; it corresponds to 64.13% of the registered institutions. Results have shown that schools report to develop actions in environmental education. However, financial and human resources destined to this field, as well as schools' proximity to surrounding communities, are weak. The herein used instrument provided an overview of how schools perceive, and act in, environmental education. However, broader studies remain essential to help better understanding environmental education insertion in this study field, in a deeper way.

Keywords: Public policy; Policy cycle; Formal education; Sustainable schools; matrix of indicators.

São Paulo. Vol. 26, 2023

Original Article

DOI: http://dx.doi.org/10.1590/1809-4422asoc2022037r2vu2023L4OA

Introduction

The study carried out in 2006 - "What do schools that report to provide environmental education do?" - investigated 418 schools in all 5 Brazilian regions. Based on this study, the authors have observed updates in school environmental education consolidation, since it showed the need of enhancing and consolidating strategical priorities in current public policies focused on schools (LOUREIRO; COSSIO, 2007). Based on this report, environmental education in Brazil was provided through special projects and disciplines, as well as through the insertion of the environmental topic in school disciplines. Between 2001 and 2004, the rates of special projects and disciplines were higher (approximately 90%), whereas the insertion of the environmental topic in school disciplines only reached 17% (TRAJBER; MENDONÇA, 2007).

In order to implement a public policy capable of turning schools into incubators for change, the Ministry of Education (MEC) launched the Sustainable School Handbook, in 2013, to encourage three integrated dimensions: physical space, management and discipline matrix (BRASIL, 2013). The Money Straight to School Program, also known as PDDE / Sustainable Schools, was a structuring action by MEC to ensure budgets to school initiatives.

The insertion of environmental education in schools, over the years, has been triggering important discussions (CARVALHO, 2020; FRIZZO; CARVALHO, 2018; LAMOSA; LOUREIRO, 2011; SOUZA et al., 2020; SPAZZIANI; MACEDO, 2018). Thus, one can understand that difficulties faced to its insertion in school environment are plenty, mainly when it comes to cross-sectional factors. According to Carvalho (2020), this concept has consolidated the environmental education as punctual and occasional practice, without any continuity. The reinforced idea lies on the fact that environmental education, *per se*, when it is approached in a cross-sectional way, do not reach the necessary complexity in addressed discussions, as well as hierarchizes the knowledge fields (BARBOSA; OLIVEIRA, 2020).

Furthermore, it is possible witnessing setbacks in documents that guide the Brazilian environmental education, such as the case of the Common National Discipline Matrix Basis, also known as BNCC. This document excluded environmental education from its last version. It dealt with the environmental issue in an instrumental and dissociated way, and lacked critical approaches (BARBOSA; OLIVEIRA, 2020; SILVA; LOUREIRO, 2020). According to Silva and Loureiro (2020), it has legitimated negligence with socio-environmental issues and downgraded the qualification of individuals working in this field.

This scenario reinforces the relevance of indicators that enable analyzing actions aimed at environmental education and sustainability in schools. Indicators are proposed to assess socio-educational actions and to allow visualizing environmental education development in individuals' daily lives; since it enables collective decision-making focused on finding new and better scenarios (VIEIRA; CAMPOS; MORAIS, 2016; VIEZZER, 2019). When it comes to the public-policy field, dialogue among government, managers, schools and civil society is essential, because sustainability at school regards individual and collective actions; moreover, public policies are strategic for society's transformation (BRITO et al.,

2019; D'AVILA et al., 2020). However, it is imperative for environmental education actions to be assessed and to use indicators as other possibilities to accomplish such an analysis.

Theoretical framework: policy cycle

Public policies are subsidies, either from the viewpoint of promoting resources or of defining and confirming concepts specific to environmental education in the State, in civil society and in the public-private relationship, since it allows getting to know how they have been put in place in spaces they are worked in (D'AVILA et al., 2020). In order to insert environmental education in schools' public policies, it is necessary thinking about dimensions aimed at building schools as reference education spaces for the community, based on collective action manners, schools would be the places where the environmental matter could be inserted and empowered (BRITO et al., 2019; LOUREIRO, 2007).

The matrix of school environmental education indicators suggested by Vieira (2021), which is herein adopted, heads towards the school scope, and is collectively used to diagnose, plan and assess public-policy pedagogical actions focused on environmental education. According to the aforementioned author, participatory processes are essential to reinforce the environmental education field; it is paramount for actions taken in school environment to be assessed, so one can get to know the current situation about it and to guide future actions in this field. The core idea lies on the sense that these indicators must be found in daily life actions, at moments prior to pedagogical planning, since they can translate reality, the best way possible, based on descriptors (VIEIRA; CAMPOS; MORAIS, 2019).

The matrix was elaborated according to the theoretical fundamentals of the Cycle of Policies suggested by Stephen Ball and Richard Bowe (1992). The analysis applied to public polices through the cycle of policies is a research and analysis method applied to education policies that take place within a continuous cycle. It provides efficient instruments for the critical analysis of the trajectory taken by education policies (SILVA, 2020). As for Mainardes (2006), the cycle of policies conceives the analysis that starts in the political-agenda formation and goes all the way to outcomes' elaboration, implementation and assessment. With respect to environmental-education public policies, there is concern with the different mega/macro/meso/micro-formulation, implementation and experience level addressed by Payne (2022), and Pitton and McKenzie (2020). Payne (2022) argues that Tbilisi Recommendations remain vulnerable to the overlap of recent and poorly qualified political agendas.

Accordingly, we are aligned to the Environmental Education Treaty for Sustainable Societies and Global Responsibility (BRASIL, 1992) which, according to Vieira, Morais and Torales-Campos (2020), has been guiding different discussion topics in political agendas in Brazil. Among them, one finds the formulation of the national Environmental Education Policy, also known as PNEA.

Methodological paths

Data collection followed the matrix developed by Vieira, Campos and Morais (2016,

adapted by VIEIRA, 2021). The matrix was adjusted by the aforementioned authors to the electric-form format because of the Covid-19 pandemic. It is now available for free access in the Google Forms platform and shared with the state school network in Paraná State, Toledo region. The outspread of this form took place through contact with Toledo Regional Education Center, also known as NRE, after it was approved by the Ethics Committee and by the research authorization issued by the State Secretariat of Education and Sports (SEED)[1]. Participation invitations were sent by e-mail to the schools; they requested one representative from each school (principal, employees, councilor or teacher) to answer the form, based on its reality in school environment.

The questionnaire was available from November 19 to December 18, 2020, and it demanded from 7 to 12 minutes to be filled out. Toledo NRE comprises 92 state education institutions in its network, and these institutions are the objects of study of the current research, as available in SEED's website[2].

Descriptive information was requested in the first stage of the form, namely: e-mail address for replay, administrative teaching network, education sector/region, school name and position of the one in charge of the register. It was done to feature the empirical field of the present research. Subsequently, 50 questions were made; they referred to indicators, themselves, and were based on binary answers (yes/no); they were split into four dimensions: Democratic and Participatory Management; Discipline Matrix; Physical Space; and Community. Total score recorded for the questions corresponded to 100 points, and the 'yes' answers corresponded to 2 points and were not equal to zero (0).

After filling out the form, each school got a response with the evaluation of answers in it; both affirmative and negative answers were taken into account. One automatic and pre-defined sub-question was sent back to each answer; it was done to encourage further reflections. The aim of it was to provide a mechanism for schools to be autonomous at the time to identify their own potential and weaknesses, as well as to guide their planning about environmental education practices. The back response was automatic and sent by e-mail, through the Google Forms platform.

The Microsoft Excel software was used for the analysis and to tabulate data, plot graphics and tables, and to carry out the analyses (means and mode). At first, the number of participating schools in comparison to the total number of schools registered in each city linked to Toledo NRE was quantified and analyzed, as well as the participation degree recorded for the school community.

Subsequently, indicators were analyzed based on each proposed dimension. In order to do so, the affirmative answers given to each question were analyzed to identify potentials and weaknesses in each indicator and to have an overview on how the environmental subject has been inserted into school environment. Answers to the open questions found in indicator 7 of the 'discipline matrix' dimension were grouped and categorized based on the following criterion: number of repetitions of identified keywords.

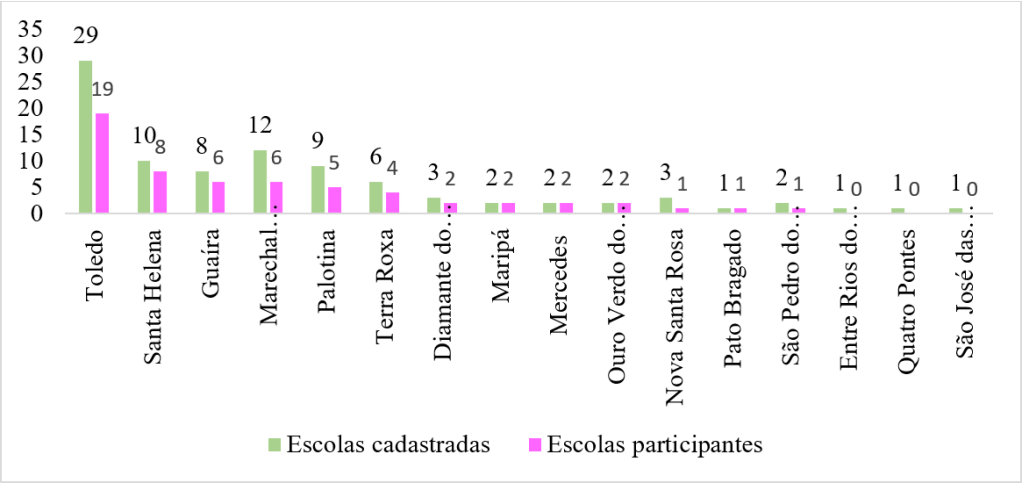
1 - Protocol n. 29721620.1.0000.0102

2 - Available at http://www.consultaescolas.pr.gov.br/consultaescolas-java/pages/templates/initial2.jsf?windowId=8db

Results

In total, 59 individuals answered the questionnaire in 16 municipalities, and this number corresponded to 64.13% of institutions registered in Toledo NRE. Graphic 1 shows the participation degree based on the number of registered schools in each municipality.

Graphic 1 – Registered schools and participant schools



Source: Elaborated by the authors, 2022.

There was dissonance in the numbers, and it was assumingly related to the number of schools in each city, since some of them had all their schools joining the survey, and some cities, did not. Still, NRE participation rate was significant, so the study allowed the understanding of the environmental education actions in schools in the herein assessed region.

Overall, the recorded answers brought along the perspective of school managers, because most respondents were school principals and school assistant principals (79.66% and 10.17%, respectively).

Dimension 'democratic and participatory management'

This dimension comprises 19 descriptive questions (questions 1 to 19), which are split into four indicators: democratic management (I1), planning, management and communication instruments (I2), collegiate instances (I3) and financial and human efficiency (I4). Scores distribution mode in this dimension ranged from 27 to 30 points, and 38 was the highest score; it corresponded to 28.81% of the answers. Furthermore, the recorded mean was equal to 28 points; 62.71% of the schools recorded scores above the average.

Table 1 allows an in-depth analysis of questions in this dimension; it corresponds to 62.71% of the affirmative answers.

Table 1 – Individual analysis of questions in the democratic and participatory management dimension.

DEMOCRATIC AND PARTICIPATORY MANAGEMENT DIMENSION	
Indicator **Democratic management (I1)**	**Affirmative answers**
1. Does the school promote participatory events (meetings, fairs, gymkhanas, lectures or similar activities) for the school community?	59
2. Does the school community take part in continuous qualification linked to Environmental Education?	37
3. Does the direction board promote democratic management in the school?	59
4. Do the direction board, pedagogical body and students use dialogue to mediate conflicts?	59
5. Does the school share its propositions with the school community?	59
Planning, management and communication instrument (I2)	
6. Is the Political, pedagogical project updated in a participatory way, along with the school community?	57
7. Does the school use any participatory planning instrument?	55
8. Does the school use communication tools to make information available to the school community?	58
9. Are educational and/or social communication processes (production of communication materials) used in the school?	40
10. Does the school seek partnership with other institutions to develop joint Environmental Education actions in order to turn the school into a sustainable education space?	47
Collegiate instances (I3)	
11. Does the parents, teachers and employees' association act in Environmental Education actions?	48
12. Do students take part in the school's Environmental Education actions?	55

13. Does the school council contribute to the school's Environmental Education actions?	47
14. Are the School Committee/Team in Environmental Education or the Environmental and Quality of Life Commission (COM-VIDA) proactive and fulfill their responsibility?	28
Financial and human efficiency (I4)	
15. Are the financial resources sent to the school enough for the proper maintenance (building maintenance, to cover costs with pedagogical and cleaning materials, with didactic materials, with programmed extracurricular activities)?	21
16. Does the school seek financing from non-governmental organizations aimed at Environmental Education or from the UN to develop the Environmental Education proposition?	16
17. Does the school have teachers qualified to the development of Environmental Education at school?	41
18. Does the school have a staff big enough for its proper functioning, with emphasis on environmental management?	20
19. Does the school have a professional for pedagogical support, with emphasis on Environmental Education actions?	27

Source: Elaborated by the author, 2022.

With respect to I2, question 8 was the one recording the highest potential, with 98.31% affirmative answers, whereas question 9 was the one recording the highest weakness rate (67.80%). It was possible observing that students' participation in environmental education actions, in I3, was the question accounting for the highest potential (93.22% affirmative answers). On the other hand, question 14 showed the highest weakness rate identified by the indicator, with 47.46% affirmative answers.

Finally, I4 showed that question 17 presented the highest potential, with 69.49% affirmative answers. The point accounting for the highest identified weakness regarded seeking financing, with 27.12% affirmative answers.

Dimension 'discipline matrix'

The discipline matrix dimension comprised 13 descriptive questions (questions 20 to 33), which were split into 3 indicators: discipline matrix organization (I5), pedagogical activities and practices (I6) and programs and projects (I7). Overall, schools recorded high scores in this dimension, since 62.71% of questions got scores ranging from 21 to 26 points; 26 was the highest score. Mean total score was equal to 20; it corresponded to

62.71% schools recording scores above the average.

Based on the isolated analysis applied to the questions, as shown in Table 2, it is possible to observe that I5 presented the following questions as potentials: 20 (94.92%), 21 (98.35%) and 23 (91.53% of affirmative answers). Weakness was identified in question 23, with 72.88% affirmative answers.

Table 2 – Individual analysis of discipline matrix dimension questions

DISCIPLINE MATRIX DIMENSION	
Indicator	**Affirmative answers**
Discipline matrix organization (I5)	
20. Does the school include Environmental Education in its Political Pedagogical Project (PPP)?	56
21. Do teachers provide content regarding Environmental Education topics in their planning (Discipline Matrix Pedagogical Proposition and Teachers' Work Plan)?	58
22. Do teachers share the same view of Environmental Education aims?	54
23. Does the school put in place a joint plan by teachers aimed at inserting Environmental Education knowledge in the discipline matrix, in an integrated way?	43
24. Does the school suggest spaces for the environmental contents selected through planning/projects to emerge from students themselves, based on environmental issues in their context, of their interest?	48
Pedagogical activities and practices (I6)	
25. Do the pedagogical practices developed in the school allow the inclusion of different knowledge (traditional and cultural diversity), diversified topics (gender and ethnic/racial issues) and of students with disabilities?	58
26. Does the school take actions to value multi-culturalism, urban/rural sub-cultures, such as gastronomic fests, typical dances, traditional storytelling, and exposition of local artists, among others?	55
27. Does the school develop curricular activities that involve the surrounding community (community leaders) in community and local environmental issues?	42
28. Do pedagogical practices use or produce technological and audiovisual resources to facilitate the understanding of the local and global socio-environmental reality?	49

29. Do students have field classes or make technical visitations in order to work with socio-environmental issues?	35
Programs and projects (I7)	
30. Does the school develop environment and Environmental Education governmental Projects or Programs?	36
31. Does the school develop its own projects focused on socio-environmental sustainability?	42
32. Does the school develop Environmental Education research projects along with the community, with emphasis on potentials/values to reinforce the sense of identity and belonging?	32

Source: Elaborated by the authors, 2022.

The analysis applied to I6 showed that questions 25 and 26 presented potential, with 98.31% and 93.22% positive answers, respectively. With regard to weakness, question 29 pointed out vulnerability (58.32%). As for I7, question 31 recorded the highest score, with 71.17%; it rose as potential in school taking part in the study. Question 32, in its turn, had 54.24% affirmative answers, and it was identified as a weak aspect.

With respect to the box of answers inserted in this dimension, 59 schools recorded 40 answers, and it corresponded to 67.80% of schools. The word Projects was among the most frequent ones in schools' reports; it showed up just as much as vegetable gardens, planting and composting. Other testimonies included reforestation/riparian forest, reuse and recycling water.

Dimension 'physical space'

his dimension comprised 14 questions (28 points, in total) split into 3 indicators, namely: school territory and surrounding areas (I8), education infrastructure and environment (I9), eco-efficiency (I10). It was possible to observe that 52.54% of schools scored from 20 to 24 points, and it corresponded to the dimensions' mode. With respect to the mean, it was equal to 23 points; 54.23% of schools recorded scores higher than the average.

Based on the isolated analysis of questions in each indicator (Table 3), question 34, in I8, had potential, with 93.22% affirmative answers. The highest weakness identified to this same indicator was observed in question 36, with 66.10% positive answers.

Table 3 – Individual analysis of physical space dimension questions

PHYSICAL SPACE DIMENSION	
Indicator	**Affirmative answers**
School territory and surrounding areas (I8)	
33. Are the physical spaces in the school (garden, other green areas, patio, local ecosystems, biome, squares, and public parks) territory used as environment for Environmental Education learning?	50
34. Does the school community promote environmental care and preservation?	55
35. Do teachers perform study activities around the school with the students so they can get to know and learn about the environment?	49
36. Does the school develop practices to identify changes caused by local climate change effects (such as water-quality monitoring, previous warnings about drought periods or floods, among others)?	39
Education infrastructure and environment (I9)	
37. Does the school provide accessibility conditions (ramps, bathrooms adjusted to wheel chairs or to gender, equipment, among others)?	50
38. Is the sports court used for cooperative activity practices (sports, games and for playing)?	55
39. Do employees, students and teachers use sustainable transportation means (bike, walking, skate board, bus, solidary lift, ecological fuel, among others)?	52
40. Does the school have a library of some space for reading, to study and capable of helping research about the Environmental Education topic?	50
41. Does the school have a computer/ innovation lab accessible to students, with emphasis on pedagogical orientation to websites about research, activities and sciences focused on sustainability?	41
Eco-efficiency (I10)	
42. Does the school suggest measures for the critical analysis of consumption and to promote the proper reduction, separation and discharge of its own solid waste (recyclables and organic waste)?	51

43. Are the consumption practices and/or energy production in laboratory environment encouraged in the school (photovoltaics, gas from waste, solar panels, among others)?	27
44. Does the school encourage healthy eating based on tasting and observation (vegetable garden, biology, botany, ecology, agroecology, hunger, malnutrition)?	52
45. Are measures to reduce water use in school and to preserve water resources adopted?	54
46. Are measures to avoid the waste of stationary material (paper, ink, among others) employed?	59

Source: Elaborated by the author, 2022.

Question 39, in I9, recorded the highest potential, with 93.22% positive answers, whereas question 41 recorded the most vulnerable aspect (69.49%). Finally, question 46, in I10, recorded 100% positive answers. Question 43, in its turn, recorded 45.76%; it was identified as the weakest point of this indicator.

Dimension 'community'

The community dimension presented 4 questions split into only one indicator (I11): school/community relationship. It was observed that the most frequent score recorded for this dimension was 2, which is the lowest one for this indicator; it was represented by 33.90% of schools. Furthermore, it recorded mean of 4 points; 66.10% of school recorded scores above the average.

The analysis of Table 4 has shown question 47 as potential, with 98.31% affirmative answers. Question 48 emerged as the most vulnerable one, with 20.34%. Although a significant number of schools have stated to provide the conditions to get closer to the community, the analysis of other questions of this indicator has shown how 'delicate' this dimension is.

Table 4 – Individual analysis of community dimension questions

COMMUNITY DIMENSION	
Indicator	**Affirmative answers**
School/community relationship (I11)	
47. Does the school create the conditions to reinforce bonds with the community?	58

48. Does the school take part in some local or collective hydrographic basin group?	12
49. Does the school promote sustainability actions along with the community?	38
50. Is there any community action to prevent the emergence or risk of socio-environmental issue?	18

Source: Elaborated by the authors, 2022.

DISCUSSIONS

Given the multi-dimensional profile of the herein adopted matrix of indicators (VIEIRA, 2021; VIEIRA; CAMPOS; MORAIS, 2019), and the inseparability of the approached aspects, we opted for the integrated analysis of dimensions.

The Discipline Matrix dimension presented the highest score in comparison to the other dimensions, and this finding points towards a positive scenario about participation of environmental education approaches in school discipline matrices. This is an important action, since valuing students' daily experiences allows building a broader understanding about real situations of social, cultural and economic relevance, and about the disciplines in the matrix, themselves, because it enables integrating different knowledge and enriching the debate (BOFF et al., 2011).

However, community involvement in activities' development did not stand out. Actually, the Community dimension was identified as the most delicate one in the present study. Other studies based on applying the same matrix of indicators have found similar results for this dimension, such as the case of Nadai, Campos and Vieira (2022), and Andreoli and Ferreira (2022). With respect to the present study, this distancing is reinforced by the weaknesses found in indicators that relate the other dimensions to community, such as the case of indicator 3, in the Community dimension, and indicators 7 and 8, in the Discipline Matrix dimension.

According to Payne (2005), the involvement of families concerned with environmental issues brings along reflections about the need of schools to get closer to communities and families, as commitment to environmental and social justice. At this point, the rhetoric joins reality; in other words, it is set in a community, cooperative, solidary and democratic way.

In order to encourage such an articulation between school and community, MEC developed the COM-VIDA proposition and the Sustainable School Program, which were identified by Grohe (2014) as essential to reinforce the policy for sustainable schools. The weakness identified through low scoring points out the distancing felt in these relationships.

Accordingly, the collegiate stances, including the COM-VIDA proposition and the participation in Hydrographic Basin Committees, are important actions in decision-making and in school development. It is so, because turning responsibility collective helps building a democratic space. Based on Machado and Dalla Corte (2020), management decentraliza-

tion and autonomous projects help consolidate democratic bonds and collectivity by reinforcing the actions taken by school councils. These authors point out that community participation in school management is essential to broad education policies.

Furthermore, it is possible to learn that political participation regards the construction of shared bonds with the location or with commitment to nature. Thus, the political profile of environmental education is committed to ensure processes to sociability and to develop relationships with society and nature, as well as with different human beings (CARVALHO, 2006).

When it comes to effective influence, the enthusiasm and commitment of these authors with leadership positions can reinforce positive effective dispositions towards nature by other social actors (PITTON; MCKENZIE, 2020). Therefore, COM-VIDA reinforcement is essential to reinforce the participatory and political profile of environmental education.

It is possible to observe that the articulation between school and community was always valued in the environmental education field, with emphasis on families' participation in school as beneficial action, given their education role and contribution to the construction of concepts aiming at sustainability (LOUV, 2010; PAYNE, 2005). The dialogue and inclusion of different cultures in knowledge construction and in the formation of human beings lead to a new life in human societies, as well as to ecological and cultural diversity (SANTOS et al., 2019).

Schools are inserted in the process to deepen the Discipline Matrix dimension, and they described their environmental education programs and projects. Data have shown that the development of environmental education projects consists in implementing school practices in compliance with the literature (TRAJBER; MENDONÇA, 2007; LAMOSA; LOUREIRO, 2011). Such data are also related to the discussion on the eco-efficiency proposed in the school Physical Space dimension (I10). It is so, because measures to reduce waste and to encourage healthy eating recorded high scores, either in this dimension or in those regarding topics like projects and programs described by schools.

Thus, it is important to make an analysis that exceeds the numbers, so that it can be possible to investigate how these measures are adopted and encouraged in schools, from the environmental education perspective. According to Carvalho (2020), insertion as cross-sectional topic ended up displacing environmental education to a non-place, in the form of an object, of punctual, sporadic and discontinuous activities, within discipline matrices and institutions. Therefore, it is necessary taking into account environmental education as a discipline matrix component. This author also points out that the division between formal and non-formal education has been little productive for environmental education, because it stops the process to integrate and understand the several forms of learning, since they are not defined by the learning environment, but by mobilization forms (CARVALHO, 2020).

Accordingly, Charlot (2020) argues about the anthropological silence of environmental education, because the current pedagogical models turn schools into places of competition, based on tests, on students' fail or approval; this process ends up being

more important than student's formation, itself. Thus, it is not coherent to approach an environmental education that addresses fundamental questions about human beings, nature and our future, when it is substantiated by a competition model that reinforces the economic and social model accountable for nature degradation, itself. According to this author, education plays a key role, but the anthropological bases of education, and of life and teaching practices, must be rethought.

Nevertheless, although schools present significant results about participatory actions with the school community, other herein observed weakness aspects lie i n continuous qualification. According to Hofstatter and Machado (2021), some challenges regard setbacks in discipline matrix aspects observed in documents that have been guiding education in Brazil, in the last few years. Among them, one finds the need of adequate materials and the importance of teachers' continuous qualification for environmental education, the hard time inserting contents in a dense discipline matrix structure, which leads to teachers' overload and to lack of legal bases to guide how it must be done.

The 'environmentalization' process is one of the intrinsic goals of sustainable school policies; it aims at contributing to the construction of sustainable education spaces by encouraging the 'environmentalization' of the discipline matrix, the democratic management and the physical space (GROHE, 2014; TRAJBER; SATO, 2013). However, Silva and Santana (2018) observed that the implementation of the Sustainable School project was impaired at schools, because the conditions provided to the school community did not favor an integrated and continuous work capable of actually allowing to integrate the three suggested dimensions.

These aspects are related to professional qualification and to the need of financial resources; they are linked to dimensions, such as Democratic and Participatory Management (I1 and I4), Discipline Matrix (I5) and Physical Space (I9). We understand that the environmental dimension is essential and must be inserted in all Brazilian education levels. However, based on Carvalho (2020) and Torres (2007), the school and the discipline matrix did not change much over the years, just as the professional formation courses and public policies focused on environmental education insertion; they became limiting given the diversity of contexts in Brazilian schools.

With respect to physical space, the need for financial resources also emerged when it came to encouraging the adoption of more sustainable energy consumption, to the use of sports courts and library, to accessibility by students with disabilities and to urban mobility. Based on data, indicator 4 recorded the highest weakness in comparison to the other indicators.

Yet, based on the financing context, the veto applied to Article 18 of PNEA caused losses for environmental education, mainly when it comes to financing NGOs, and state and municipal projects (SOTERO, 2008). According to this author, other mechanisms are now financing environmental education in Brazil; however, although significant, these efforts are not enough, since several actions are disconnected and discontinuous. Therefore, we faced the need of creating a specific fund for this purpose and the importance of acting within networks. Thus, the Brazilian Fund for Environmental Education (FunBEA) was

created in 2012, as a non-state public fund, of national cover, to gather resources from different sources, other than governmental institutions. This fund must make it possible creating differentiated mechanisms to access these resources, which must comply with the reality observed in many institutions acting in this field (FUNBEA, 2021; SOTERO, 2008;).

Furthermore, the Money Straight to School Program (PDDE) / Sustainable Schools was created by Resolution CD/FNDE n. 18, from 2013. This program defines the Sustainable School Handbook and emphasizes resources for actions aimed at educating for sustainability. These resources are destined for one or more actions related to physical space, management and discipline matrix (BRASIL, 2013). However, Silva and Santana (2018) analyzed the implementation of the National Sustainable School Program in four municipal schools in João Pessoa City/PB, and observed a lack of articulation by the Ministry of Education as founding institution.

Environmental education is understood as public policy that needs to transpose punctual and discontinuous measures into an educational process that approaches conflicts and includes society (BIASOLI; SORRENTINO, 2018). Despite the creation of financing funds and the advancements in this field, the need of financial and human resources remains a barrier to be overcome. Moreover, we must reinforce that environmental education has been facing a silencing process due to nowadays' public policies (FRIZZO; CARVALHO, 2018; VIEIRA; MORAIS; CAMPOS, 2020). Due to this distancing, the environmental agenda is now drawn as punctual projects and actions, and it represents the loss of articulation skills, as well as the loss of human and financial resources (VIEIRA; MORAIS; CAMPOS, 2020).

Final considerations

We have identified challenges to be faced by environmental education at school scope, mainly those related to financial and human resources destined to this field and to schools' approximation to the communities surrounding them. Given the wide range of Toledo NRE, the application of the matrix of indicators in online format has made it easier to get in contact with schools, mainly because of locomotion issues. On the other hand, school community participation was focused on managers, so the answers have reflected the perception of a specific group of people.

By going back to the beginning of the herein introduced issue, results have shown that the number of schools that have declared to follow the environmental agenda is quite significant. Results in the current study have shown that state schools in Toledo NRE develop environmental education actions and fulfill the needs of the 4 dimensions proposed by the matrix of indicators, which are in compliance with the very pillars of the National Sustainable Schools Program (physical space, management and discipline matrix).

Nevertheless, there is a limitation regarding the herein used instrument, which did not absorb the complexity of initiatives or the integration among dimensions proposed for Sustainable Schools. In order to state that the idea of implementing the Sustainable Schools as public policy has been actually made concrete, we must carry out a new research,

in loco. However, the validation of an instrument to help the analysis of processes focused on implementing environmental-education public policies is an advancement for this research field, despite the theoretical references about the cycle of policies.

The present study was just a first approach to schools in Toledo NRE and the matrix of indicators drew an overview of how schools perceive and act in environmental education. That said, we suggest further in-depth analyses including different actors and data production techniques, in order to deepen the understanding of the environmental education that has been developed in Toledo NRE schools.

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Submitted in: 16/03/2022
Accepted in: 14/06/2023
Localizer: 2023;26:e0037

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AMBIENTE & SOCIEDADE 25 anos 25 años 25 years

SciELO

Educação ambiental na rede pública de ensino do oeste do Paraná

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Resumo: O estudo analisou a inserção da educação ambiental nas escolas estaduais do Paraná, situadas no Núcleo Regional de Toledo. Aplicou-se uma matriz de indicadores, composta por quatro dimensões (Gestão Democrática e Participativa, Currículo, Espaço Físico e Comunidade) em 59 escolas, correspondendo a 64,13% das instituições cadastradas. Os resultados indicaram que as escolas relatam o desenvolvimento de ações em educação ambiental. No entanto, os recursos financeiros e humanos destinados a este campo e a aproximação das escolas com as comunidades do entorno apresentaram fragilidade. O instrumento utilizado permitiu traçar um panorama de como as escolas percebem e atuam com educação ambiental. Todavia, estudos mais amplos são necessários para compreender a inserção da educação ambiental na área de estudo de forma mais aprofundada.

Palavras-chave: Políticas públicas; Ciclo de políticas; Educação formal; Escolas sustentáveis; Matriz de indicadores.

São Paulo. Vol. 26, 2023

Artigo Original

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SciELO

Educación ambiental en la red de educación pública del oeste Paraná

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Resumen: El estudio analizó la inserción de la educación ambiental en las escuelas públicas de Paraná ubicadas en el Centro Regional de Toledo. Se aplicó una matriz de indicadores, compuesta por cuatro dimensiones (Gestión Democrática y Participativa, Currículo, Espacio Físico y Comunidad) en 59 escuelas, correspondientes al 64,13% de las instituciones registradas. Los resultados indicaron que las escuelas relatan el desarrollo de acciones en educación ambiental. Sin embargo, los recursos financieros y humanos asignados a este campo y la aproximación de las escuelas con las comunidades aledañas eran frágiles. El instrumento utilizado permitió tener una visión general de cómo las escuelas perciben y actúan con la educación ambiental. Sin embargo, se necesitan estudios más amplios para comprender de manera más profunda la inserción de la educación ambiental en el área de estudio.

Palabras-clave: Políticas públicas; Ciclo de póliza; Educación formal; Escuelas sostenibles; Matriz de indicadores.

São Paulo. Vol. 26, 2023
Artículo Original