

**(RE)PENSANDO O CASO DA LAGOA DOCE ATRAVÉS DA ANÁLISE CARTOGRÁFICA NO BAIRRO JABOTIANA, ARACAJU-SE****ARIEL DANTAS NUNES<sup>1</sup>, JAILTON DE JESUS COSTA<sup>2</sup>, GÊNISON LIMA DE ALMEIDA<sup>3</sup>**

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**RESUMO:** A Educação Ambiental (EA) surge como forma de aproximar a sociedade dos problemas ambientais. É importante contextualizar a EA no ambiente escolar, além de trazer análises das concepções dos alunos sobre o crescimento imobiliário e os impactos causados ao meio ambiente. Sendo assim, refletindo sobre um problema relacionado ao aterramento da Lagoa Doce, no bairro Jabotiana foi que surgiu a motivação dessa pesquisa. O objetivo foi sensibilizar os alunos do 8º A do Colégio Estadual Joaquim Vieira Sobral sobre a importância da Lagoa Doce para a comunidade. Trata-se de uma pesquisa exploratória, qualitativa e ocorreu mediante as seguintes etapas: revisão bibliográfica, elaboração de desenhos cartográficos pelos alunos com suas concepções prévias sobre a Lagoa Doce, estudo das concepções posterior ao estudo do meio. A análise cartográfica com o enquadramento das concepções foi dividida em três categorias: meio ambiente-natureza, meio ambiente-problema, meio ambiente-lugar em que se vive. Dessa maneira, foi possível identificar maior presença da relação com o meio ambiente ser algo externo ao lugar de moradia e uma concepção mais romântica de natureza intocável. Nesse sentido, ressalta-se a importância da integração da EA com a cartografia, como campo de intervenção educativa.

**Palavras-chave:** Cartografia ambiental, sensibilização, expansão desordenada.

**(RE)THINKING THE CASE OF LAGOA DOCE THROUGH CARTOGRAPHIC ANALYSIS IN THE JABOTIANA NEIGHBORHOOD, ARACAJU-SE**

**ABSTRACT:** Environmental education (EE) has emerged as a way of bringing society closer to environmental problems. It is important to contextualize environmental education in the school environment and analyze students' conceptions of real estate growth and the impacts it has on the environment. Thus, reflecting on a problem related to the landfill of Lagoa Doce in the neighborhood of Jabotiana gave rise to the motivation for this research. The aim was to sensitize 8th-grade students at Joaquim Vieira Sobral State School to the importance of the Lagoa Doce for the community. This exploratory, qualitative study took place in the following stages: a literature review, the creation of cartographic drawings by the students showing their previous conceptions of the Sweet Lagoon, and a study of these conceptions after the environmental study. The cartographic analysis of conceptions was divided into three categories: environment-nature, environment-problem, and environment-place. In this way, it was possible to identify a greater presence of the relationship with the environment being something external to the place of residence and a more romantic conception of untouchable nature. This highlights the importance of integrating environmental education with cartography as a field of educational intervention.

**Keywords:** Environmental cartographic, awareness, disordered expansion.

## 1 INTRODUCTION

Research that emphasizes the importance of EA in schools is necessary to show that accelerated population growth together with disorderly urbanization has caused the loss of natural environments such as lagoons, mangroves and river courses, generating direct consequences for the balance of the environment and the loss of fauna and flora.

The Jabotiana neighborhood has been experiencing constant flooding due to unplanned urbanization, a lack of drainage and river dredging, and improper solid waste disposal, which ultimately generates a cycle of widespread impacts on the neighborhood. Therefore, it is extremely important to integrate environmental mapping with environmental education in the school environment, given the distance from the environment in which they live, in addition to local environmental issues (Luz et al., 2018).

In the socioenvironmental context, community engagement with educators has demonstrated more effective representation in addressing neighborhood issues, such as the filling of Lagoa Doce in the Jabotiana neighborhood for the construction of a sewage treatment plant. The loss of part of the lagoon sparked mobilization and participation among students, teachers, and the surrounding community.

From this perspective, collective participation becomes representative, demanding, monitoring, and demanding action from governments. In this context, environmental conservation becomes transformative, as popular participation ensures a change in individual conceptions and reflects the development of pathways that lead to socioenvironmental awareness. From this perspective, it is important to emphasize that environmental concepts related to environmental conservation can be established through the development of methodological strategies that promote critical thinking and present the consequences of environmental

impacts related to disorderly expansion (Estevam; Mello, 2017).

According to Arruda (2021), environmental cartography emerges as a supporting tool in conjunction with EE, enabling an interdisciplinary approach to knowledge encompassing geography, science, and the arts. Furthermore, cartography facilitates local experiences within the school environment, coupled with a socioenvironmental perspective.

In this sense, when integrated, EA and cartography provide reflective thinking about environmental issues, as they help educators intervene through actions, dialogs and participation, which demonstrates the concern that one must have with the spatial dimension that we occupy, whether through any means of dissemination, environmental studies, conversation circles, or cartographic drawings based on Sauvé's categorization (2005).

## 2 MATERIALS AND METHODS

Lagoa Doce is located south of the Santa Lúcia complex, in the Jabotiana neighborhood of Aracaju, Sergipe. The area surrounding this body of water features vegetation, mangroves, and a river. The mangrove areas, with their corresponding fauna and flora, highlight the importance of conservation.

This exploratory research uses a qualitative approach that aims to analyze the perceptions of a specific group of people, namely, students at a school located in the Jabotiana neighborhood. The chosen research method was the case study as a way to evaluate the changes resulting from socioenvironmental conflicts in the Jabotiana neighborhood.

The research sample consisted of students (Figure 1) from the morning 8th grade of the Joaquim Vieira Sobral State School (CEJS), as it was the only class available for this research, since the other classes were participating in another study. The class had a total of 31 students, 22 of whom chose to participate in the research. The research was submitted to the Ethics Committee under CAAE number 21001019.0.0000.5546.

This research took place from September 2019 to February 2020 and was developed through the following stages: a survey of students' preconceptions, an environmental study, a discussion group, and a survey of their postenvironmental conceptions regarding the socioenvironmental issues surrounding the Lagoa Doce landfill. The stages were conducted over three days, during the months of September and December 2019.

In the first stage, blank recycled sheets of paper were distributed so that students could draw and represent the Lagoa Doce area, which lasted 50 minutes. In the second stage, an environmental study was conducted, which

sought to engage students in dialog about their lived experience. In the third stage, a discussion circle was held to discuss the completion of the Lagoa Doce, which lasted 30 minutes. In the final stage, blank sheets of paper and colored pencils were distributed so that the students could represent the region after the environmental study of Lagoa Doce, which lasted 50 minutes.

Therefore, this is a nonprobabilistic, intentional sample. The criteria used to select the sample were as follows: must reside in the Jabotiana neighborhood, attend a school located closest to the study site, and have completed the final years of elementary school.

**Figure 1.** Visit to Lagoa Doce, in the Jabotiana neighborhood with CEJVS students.



**Source:** Personal archive (2019).

The discussion circle allowed students to ask questions and listen to the importance of the Lagoa Doce region, as well as to understand their position regarding the landfilling that was taking place *there*. The dialog allowed for a closer relationship with each student and provided several insights into the region.

### 3 RESULTS AND DISCUSSION

The categorization process occurred on the basis of the identity and relationship of the cartographic drawing with the environment and on the representation of the environment,

according to the investigation-action-participation triad proposed by Sauv   (2005). The three categories adopted a posteriori, that is, found in the drawings, were *environment-nature*, *environment-problem* and *environment-place, where one lives*.

The conceptions evaluated according to the authors of Matos and Jardimino (2016) followed from representations that involve the process of concept formation and ideas and can be the way in which people perceive, evaluate and act in relation to a given phenomenon.

Drawings 1 through 5 were created on the basis of the students' preconceptions before



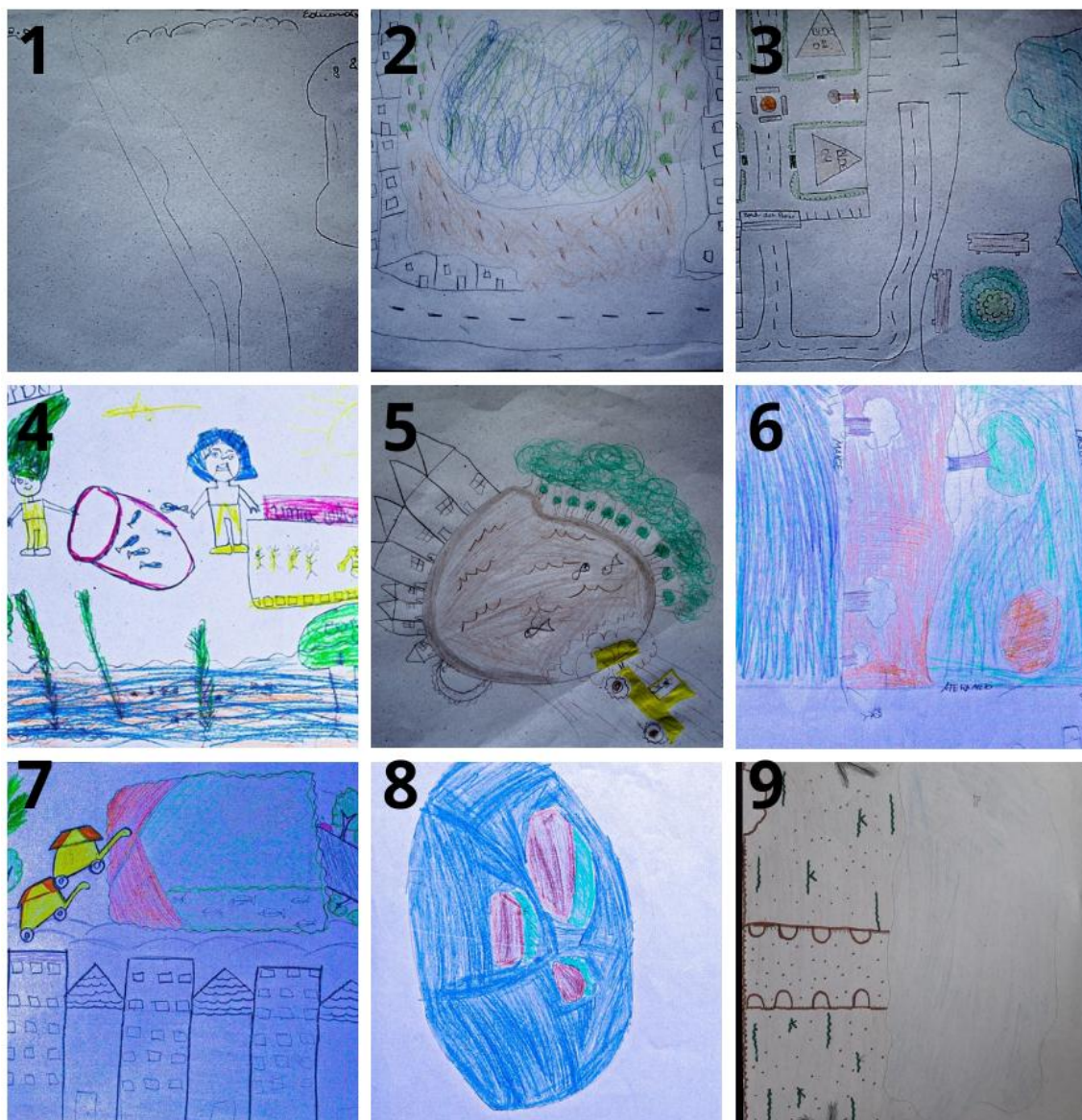
their visit to Lagoa Doce, and drawings 6 through 9 were created after their visit to the region. Of the 18 drawings produced on the basis of the students' preconceptions, 15 were related to the *environment-nature category*.

In this sense, the dichotomous relationship between human beings and nature is notable because the conceptions associated with socioenvironmental problems are not perceptible, and there is still a feeling ingrained in society of inexhaustible resources and human

domination over nature (Santos; Rodrigues, 2021).

Only one drawing fell into the *environment category*—a place where one lives. In Figure 2, drawing 3, the student depicts the lagoon as being much smaller in size, and around it, he draws streets with condominiums divided into blocks and benches in front. In other words, the lagoon region is a small area, and what stands out is the appearance of condominiums around it, streets, a square with benches, and a garden.

**Figure 2.** Cartographic drawings before and after the study of the environment.



Source: Personal archive (2019).

In the postvisit assessment of the drawings, eight of the 22 drawings were related to the *environment-nature category*. Notably, even after the *onsite visit* and discussion group,

some students still view nature as something untouchable and distant from humans. Some drawings also illustrated the other categories, such as drawing seven, which illustrates the

*environment-problem and environment-place in which one lives*, with the machine filling in the lagoon and representing progress as an impediment to the visualization of nature.

Progress has consequences such as a significant increase in soil impermeability, which leads to a reduction in infiltration related to the amount of water in the soil, resulting in increased flooding (Smith; Silva; Biagioni, 2019). These consequences were also addressed during the environmental study with the participants.

Thus, the presence of residences around Lagoa Doce allows a reflective look at the disorderly growth of properties, in addition to the reduction in the natural environment. Consequently, it diverges from the concept of a harmonious nature but instead highlights social and environmental problems. However, the demonstration of trees, pollution, and streets allows individuals to understand that the place is part of their reality (Luz et al., 2018).

#### 4 CONCLUSIONS

The importance of environmental education in schools is linked to the development of environmental awareness, particularly focused on socioenvironmental issues, which often go unnoticed in neighborhoods. This perspective highlights the lack of information on socioenvironmental issues, which are rarely discussed in schools due to the lack of inclusion of this topic in the curriculum. Environmental mapping represents the reality of many students and was highlighted as a current problem in this study, which corresponds to the filling of one of the last lagoons located in the Jabotiana neighborhood.

Through environmental mapping, it was possible to assess and understand how students view socioenvironmental issues in the Jabotiana neighborhood. Furthermore, conducting the environmental study in conjunction with the discussion group was a valuable pedagogical strategy focused on developing critical citizens regarding the specificities underlying environmental issues, the neighborhood itself, where most students live, and the Lagoa Doce region, which also

provided important insights into their experiences.

#### 5 ACKNOWLEDGMENTS

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