




Social representations of a school community regarding the Morros Municipal Natural Park

Daniela Frigotto^a 
Leonardo Dalla Porta^b 
Thais Scotti do Canto-Dorow^a 

^aPrograma de Pós-graduação em Ensino de Ciências e Matemática,
Universidade Franciscana, Santa Maria, BR

^bSecretaria de Educação, Prefeitura Municipal de Santa Maria, BR

ABSTRACT

Context: The research is based on the need to understand how school communities perceive and relate to urban Conservation Units, considering that the lack of knowledge about these spaces reduces community engagement, weakens preservation actions and limits the development of Environmental Education. The Morros Municipal Natural Park (PNMM), despite having high educational and environmental potential, remains little known by the school population in its surroundings. **Objectives:** To investigate the Social Representations of a school community about the PNMM, analyzing how such perceptions influence their understanding of the park as a Common Good and its implications for teaching and environmental awareness actions. **Design:** Quali-quantitative study structured based on Implicative Statistical Analysis (ASI), articulated with the CHIC software to identify implicative relationships between variables. **Environment and participants:** It was developed in a Municipal Elementary School in the buffer zone of the PNMM, involving 160 students from the final years, 21 teachers, seven employees and legal guardians, selected to represent different segments of the school community. **Data collection and analysis:** Data were obtained through a structured questionnaire; later organized in spreadsheets and analyzed via ASI, with generation of implicative graphs for interpretation of relationships. **Results:** There was a broad lack of knowledge about the PNMM, especially among students, associated with low perception of relevance and reduced sense of belonging. Despite this, representations emerge that recognize the Park as a space of preservation and educational potential. **Conclusions:** There is a need to integrate the PNMM into school practices, strengthening Environmental Education and stimulating pedagogical actions that expand the community-territory bond.

Keywords: Common Good. Science Education. Environmental Education. Basic Education.

Corresponding author: Daniela Frigotto
E-mail: danielafrigotto78@gmail.com

RESUMO

Contexto: A pesquisa decorre da necessidade de compreender como comunidades escolares percebem e se relacionam com Unidades de Conservação urbanas, considerando que o desconhecimento sobre esses espaços reduz o engajamento comunitário, enfraquece ações de preservação e limita o desenvolvimento da Educação Ambiental. O Parque Natural Municipal dos Morros (PNMM), apesar de possuir elevado potencial educativo e ambiental, permanece pouco conhecido pela população escolar de seu entorno. **Objetivos:** Investigar as Representações Sociais de uma comunidade escolar sobre o PNMM, analisando como tais percepções influenciam sua compreensão do Parque como Bem Comum e suas implicações para o ensino e para ações de sensibilização ambiental. **Design:** Estudo quali-quantitativo estruturado com base na Análise Estatística Implicativa (ASI), articulada ao software CHIC para identificação de relações implicativas entre variáveis. **Ambiente e participantes:** Foi desenvolvida em uma Escola Municipal de Ensino Fundamental na zona de amortecimento do PNMM, envolvendo 160 estudantes dos anos finais, 21 docentes, sete funcionários e responsáveis legais, selecionados para representar diferentes segmentos da comunidade escolar. **Coleta e análise de dados:** Os dados foram obtidos por meio de questionário estruturado; posteriormente organizados em planilhas e analisados via ASI, com geração de grafos implicativos para interpretação das relações. **Resultados:** Constatou-se amplo desconhecimento sobre o PNMM, especialmente entre estudantes, associado à baixa percepção de relevância e reduzido sentimento de pertencimento. Apesar disso, emergem representações que reconhecem o Parque como espaço de preservação e potencial educativo. **Conclusões:** Necessidade de integrar o PNMM às práticas escolares, fortalecendo a Educação Ambiental e estimulando ações pedagógicas que ampliem o vínculo comunidade–território.

Palavras-chave: Bem Comum. Ensino de Ciências. Educação Ambiental. Educação Básica.

INTRODUÇÃO

The Parque Natural Municipal dos Morros (PNMM) was created by executive decree no 74 of 6 September 2016 (Santa Maria, 2016), with the following objectives:

Preserve the forest remnants of the Atlantic Forest Biome present in the urban area of Santa Maria, as well as important water resources, allowing recreation in contact with nature, scenic contemplation of the city, development of educational activities, the conduct of scientific research and environmental interpretation (Santa Maria, 2016, p. 4).

The PNMM belongs to the northern administrative region of the municipality of Santa Maria, with approximately 151.58 ha, and is located

partly in the rural area (Santo Antônio District), but almost entirely in the urban area, neighborhood of Nossa Senhora Perpétuo Socorro.

The PNMM is inserted in a geomorphological and phytoecological transition zone, where in the northern region it is characterized by the Atlantic Forest biome and, to the south, it has characteristics of the Pampa biome (Figure 1).

Figure 1

Scenes in the Parque Natural Municipal dos Morros (Santa Maria, RS, Brazil)
<https://www.facebook.com/parquedosmorros?mibextid=ZbWKwL>.



The Figure 2 illustrates the Park, which is inserted in the Core Zone of the Biosphere Reserve of the Atlantic Forest and, for this reason, is configured as a priority area of preservation of the biological diversity of the Atlantic Forest Biome, with the potential to acquire visibility and notoriety at national and international level, attracting greater investments and mobilization of public

power, which can culminate in a greater ease of exchange with other protected areas (Geoprospec, 2013).

Figure 2

General view of the Parque Natural Municipal dos Morros (Santa Maria, Rio Grande do Sul, Brazil) (Geoprospec, 2013)

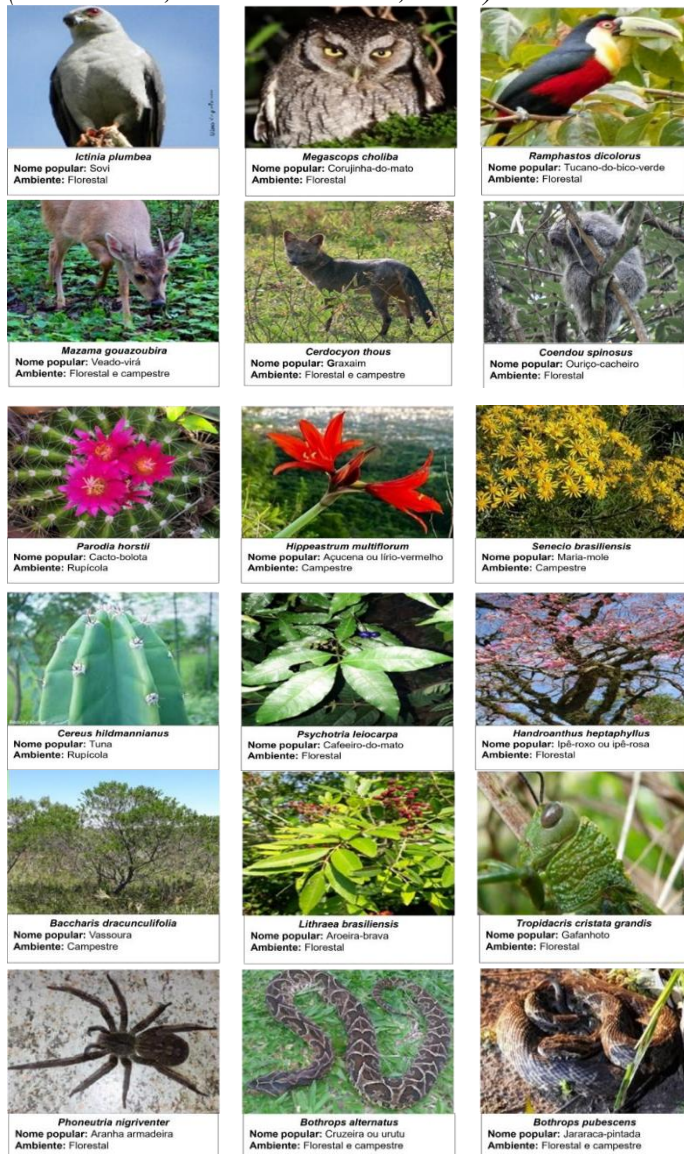


Borgias, Ferrarese and Canto-Dorow (2023) illustrate, in figure 3, some representatives of fauna and flora occurring in the PNMM.

Silva and Sammarco (2004) believe that the squares, parks and public spaces can serve as a contribution to work on Environmental Education in schools. These sites have the potential to spark interest in environmental issues and natural environments. Outdoor activities, when combined with theory, help promote environmental awareness and should be done in a simple and enjoyable way. The authors highlight, among outdoor activities, walks and ecological leisure, which provide people with interaction with the environment where they live, rescuing values and bringing reflections about their behaviors.

Figure 3

Plant and animal species found in the Parque Natural Municipal dos Morros (Santa Maria, Rio Grande do Sul, Brazil)



Silva et al. (2004) suggest that the teacher strive to understand the local reality, through the Social Representations that the individual has about his environment, based on the knowledge that the student has, and not what the teacher believes he has. From this dialogue, the teacher must choose the most significant contents for the transformation of this reality.

According to Farias (2007), Social Representations make it possible to understand the set of ideas shared by a community. For the author, a community living in the surroundings of a Conservation Unit holds many representations about that territory; however, for this knowledge to be shared, it is necessary to promote dialogue between scientific knowledge and common sense.

Farias (2007) sees in Social Representations opportunities to investigate the dynamic relationship between society and nature, thereby gathering the basic elements for studies on these interactions. Based on such studies, it becomes possible to define actions within the management plans of Conservation Units, aiming at the well-being of the local community. This is grounded in the understanding that human beings are not self-sufficient; they depend on the natural resources provided by the space in which they live and must move toward the interests of the community in the pursuit of the Common Good.

The term “Common Good” refers to natural, cultural, and social resources. Among these goods are parks, squares, and other public spaces, which may be used individually but must be considered collectively in terms of actions and their impacts on the well-being of the larger community (Soares, 2016).

Among the goods considered public and common are Conservation Units (CU), territories designated to safeguard natural resources. According to Vallejo (2009), they are portions of nature—spaces over which a given society claims and ensures for its members the rights of access, control, and use, with respect for the resources. In this sense, Conservation Units are territories that must be jointly cared for by public authorities and the community, ensuring their functionality and effectiveness in preserving species and natural resources.

The study presented here is an excerpt from a master’s dissertation developed in the Graduate Program in Science and Mathematics Education at Universidade Franciscana, entitled *Social Representations of the Morros Municipal Natural Park: a pathway for teaching the Common Good*. The main objective of this research was to investigate the Social Representations held by a school community regarding the Morros Municipal Natural Park, with a view

to promoting both the teaching and the conservation of this territory as a Common Good.

STUDY ELEMENTS AND METHODS

The research was conducted at the Nossa Senhora do Perpétuo Socorro Municipal Elementary School, located in the urban area of the municipality of Santa Maria, neighborhood of Nossa Senhora Perpétuo Socorro. The choice of this institution was because it is located 4.6 kilometers from the Morros Municipal Natural Park (PNMM) and lies within its buffer zone.

The school has 322 students and 21 teachers. For the purposes of the study, it was decided to include the 160 students in the final years of elementary school, the 21 teachers, seven staff members, as well as the students' legal guardians, thus ensuring broad representativeness of the school community. This diversity provides a heterogeneous sample, allowing for an in-depth analysis of the perceptions and experiences originating from the community.

For data collection, a questionnaire with structured, open-ended, and closed-ended questions was used, including items for word evocation. This choice is grounded in the ideas of Gil (1999), as it is a tool capable of exploring different aspects of reality—such as attitudes, feelings, patterns, and actions—while addressing, in a transversal manner, issues that permeate the research, thus providing a broader understanding of participants' behavior. The same data collection instrument was used for the different groups within the school community and was applied in two stages: first, during a Science Fair, where a significant number of parents/guardians were present, and later, on a date pre-arranged by the school, with students and teachers.

After the questionnaire was administered, the data were entered into a spreadsheet (Dalla Porta, 2019; Régnier; Andrade, 2020). Data analysis was conducted using Implicative Statistical Analysis (ASI), with support from the CHIC software (Hierarchical, Implicative, and Cohesive Classification). According to Di Paola (2015), the combination of these resources helps provide the researcher with a broader view of the phenomenon under study, enabling a deeper understanding of the process and the elements that comprise it.

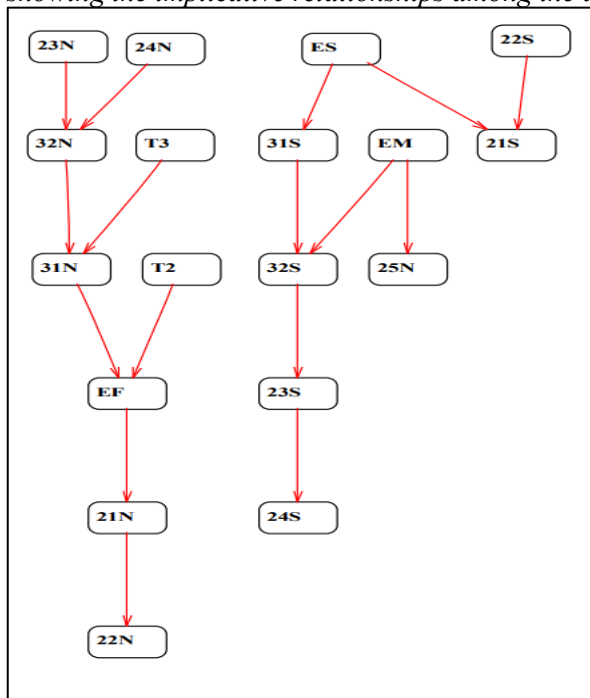
This study was approved by the Research Ethics Committee (CEP) of Universidade Franciscana (UFN), under approval number 7.083.291 and CAAE 82296424.7.0000.5306.

RESULTS AND DISCUSSION

This section aims to present the results and discussion derived from the research conducted. Implicative Statistical Analysis (ASI), supported by the CHIC software (Hierarchical, Implicative, and Cohesive Classification), made it possible to identify implicative relationships among the different variables analyzed, which were organized in the implicative graph shown in Figure 4. The implicative graph presents an implication intensity of 0.9, which, according to Régnier and Andrade (2020), is considered statistically relevant from an inferential standpoint.

Figure 4

Implicative graph generated by ASI with support from the CHIC software, showing the implicative relationships among the different variables analyzed

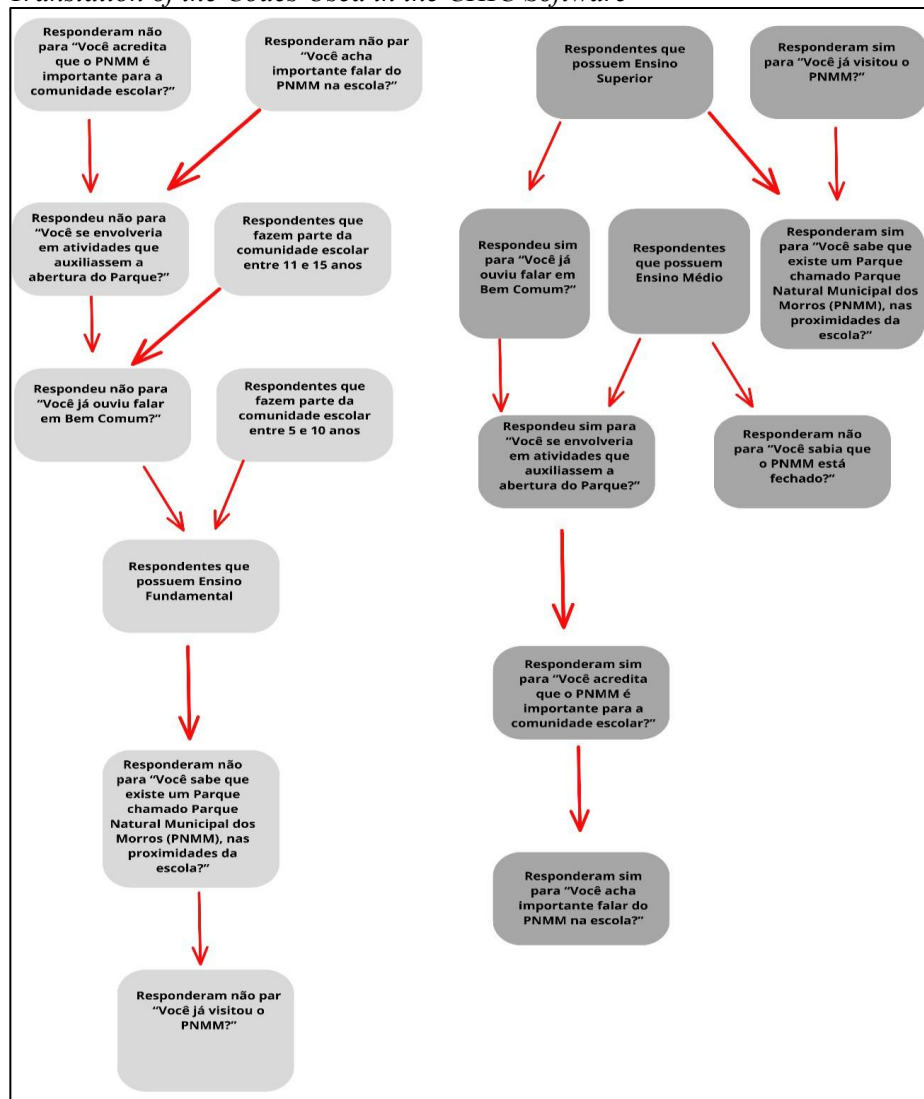


In the data analysis performed using the CHIC software, codes were used to identify the different questions posed to the participants.

The Figure 5 presents the translation of the codes in order to assist the reader.

Figure 5

Translation of the Codes Used in the CHIC Software



When analyzing the graph, it is observed that a significant portion of respondents are unaware of the existence of the PNMM. This lack of knowledge is more evident among elementary school students, who make up the segment of the school community with a length of attendance between 5 and 10 years at the institution. This finding suggests a lack of dissemination of information about the Park within the school environment, which may negatively impact future actions related to its preservation and use. This result also indicates that the teaching practices in the school are not aligned with the normative documents of Brazilian education. The National Education Plan (PNE) aims to ensure the quality of basic education (BRASIL, 2014), while the BNCC states that, during elementary school, students should be exposed to the characteristics of Conservation Units located in their municipality of residence, as well as in other regions of Brazil, and be able to compare them (BRASIL, 2018). The relatively long period of attendance within the school community is not sufficient to overcome the absence of initiatives that promote knowledge about the PNMM, highlighting a weakness in local education.

Another important point highlighted by the graph is that respondents who are unfamiliar with the PNMM tend not to consider it relevant to discuss the topic at school and, consequently, do not show willingness to participate in activities that could support the reopening of the area, which is currently closed. This response pattern indicates that a lack of information may lead to distancing from environmental and community issues, hindering the sense of belonging and the understanding of the PNMM as a Common Good.

In contrast, respondents with secondary or higher education showed a greater level of knowledge about the Park and demonstrated a higher willingness to engage in activities aimed at its reopening. Within this group, a stronger recognition of the importance of the PNMM for the school community was observed. The concept of the Common Good was also more familiar to participants in this segment, which may be related to their greater exposure to socio-environmental themes throughout their educational trajectories.

This result suggests that the educational level plays an important role in access to and assimilation of information about public spaces and topics related to the environment and citizenship. Individuals with higher education generally have greater exposure to discussions and content that broaden their understanding of collective goods and community resources, such as the PNMM. This association may also indicate that higher education contributes to the development of a broader perception of the role of spaces like the PNMM

within the community and educational context. However, the fact that this knowledge is linked to educational level points to possible informational gaps at other levels of schooling, especially in basic education, where topics such as the PNMM could be addressed more extensively.

Evangelista and Vital (2013) highlight the need for public policies that emphasize the importance of environmental themes starting in basic education, enabling students to develop a critical and reflective stance toward local and global issues.

Given this scenario, several actions can be suggested to increase the school community's engagement with the PNMM. The first is to expand the dissemination of information about the Park within the school environment, especially among elementary school students, through educational activities, guided visits, and interdisciplinary projects. In addition, aligning the study of the Park with the competencies outlined in the BNCC can help ensure that the content is addressed within the local context.

Another relevant aspect is the use of concepts such as the Common Good to raise students' awareness of the importance of the PNMM for the collective. The fact that this concept is more familiar to high school and higher education students indicates that it can be explored as a tool to strengthen the sense of environmental responsibility within the school community.

According to Sorrentino (2020, p. 56), protected areas are public-use common goods; moreover, the author emphasizes that “the Planet as a whole is a Common Good and must be cared for with affection so that it becomes our paradise, our nirvana, and our possibility for integral human development,” which requires active participation in its preservation and appreciation. This willingness of participants to take action can be interpreted as an expression of the internalization of the concept of the “Common Good,” reinforcing the relationship between education and community engagement.

The data analyzed here point to the need for greater integration between the school and the PNMM, highlighting the importance of educational initiatives that broaden knowledge about the Park and promote greater community involvement in its appreciation and preservation.

FINAL CONSIDERATIONS

Throughout this study, the aim was to understand the Social Representations of a school community regarding the Morros Municipal Natural Park as a Common Good.

The data analysis showed that, although the Morros Municipal Natural Park (PNMM) is a Conservation Unit with great educational and environmental potential, there is an educational gap that results in the school community's lack of knowledge about the site. It was observed that the research participants were unaware of the Park's existence as well as the fact that it is currently closed. This lack of connection with the Park meant that its closure did not generate an apparent impact on the local community, since the space is not part of the participants' daily lives, thus hindering their sense of commitment and engagement with the area.

Even so, the Social Representations identified throughout the study indicate that, despite this knowledge gap, participants recognize the Park as a space for biodiversity conservation that should be addressed within the school setting, strengthening the community's connection with the PNMM. In this context, the school is seen as a privileged space for fostering reflection on attitudes and values, reinforcing environmental preservation and reaffirming the exercise of citizenship.

Environmental Education, both in formal and informal learning contexts, has a transformative potential in shaping the collective's ways of thinking and acting. The research showed that participants believe that pedagogical actions connecting theory to practice—such as field visits, interdisciplinary projects, and discussions on environmental issues—are important tools for understanding the PNMM as a Common Good. Moreover, the study reinforces the importance of Conservation Units as spaces capable of connecting the community to the natural environment. The PNMM is a space that transcends educational boundaries, also serving as an area for recreation and quality of life. Its location within the urban area represents an opportunity to integrate school activities with environmental preservation practices, enriching students' school curriculum.

However, the lack of infrastructure and the closure of the Park make the implementation of these actions unfeasible, weakening the community's ties with the PNMM. Raising students' awareness solely through photos, videos, and images becomes a challenge, as it does not generate the same level of engagement nor foster the appreciation of the Park as a Common Good. In this

sense, more effective attention from public authorities is essential, as well as community initiatives that mobilize and advocate for the reopening of the Park, ensuring that this space fulfills its educational, cultural, and socioenvironmental role.

From a theoretical perspective, the research sought to understand the connections between Social Representations and the use of Environmental Education in fostering the understanding of the PNMM Conservation Unit as a Common Good. In this regard, understanding the community's Social Representations is essential for defining educational and social strategies that contribute to this appreciation.

Another aspect that deserves attention is the management of the Park, which could be carried out as a public–community policy that enables shared governance between the community and public authorities. The reopening of the PNMM, accompanied by a participatory management plan, may represent an important step toward promoting its sustainable use, strengthening the community's connection to the space, and expanding opportunities for learning and recreation. To achieve this, it is essential to develop actions that prioritize environmental conservation and access to the Park, fostering active community involvement in its management.

The importance of this research extends beyond the investigated school context, as its results may serve as a foundation for expanding knowledge and promoting the appreciation of the Parque Natural Municipal dos Morros in eight additional schools (seven public and one private) located within the PNMM's buffer zone. In this sense, the collected data will be shared with these educational institutions, as well as with public authorities, enabling the development of strategies aimed at environmental awareness and at strengthening students' sense of belonging, as well as their collective commitment to the conservation of the PNMM. It is expected that the research will encourage initiatives that promote Environmental Education and, consequently, foster sustainable actions.

This research highlights the PNMM as a Common Good that must be cared for and enjoyed by all. However, for this to become possible, it is necessary to disseminate the importance of this area within the community. The most effective way to achieve this is through Environmental Education,

fostering critical and reflective individuals who can act and, above all, interacting with the environment in which they live.

ACKNOWLEDGMENTS

To CAPES (Coordination for the Improvement of Higher Education Personnel), for granting the doctoral scholarship to the first author.

REFERENCES

- Borgias, E. M. da S., Ferrarese, M. D., & Canto-Dorow, T. S. do. (2023). Percepção ambiental de estudantes do ensino fundamental sobre o Parque Natural Municipal dos Morros (Santa Maria, RS, Brasil). *RIS – Revista Insignare Scientia*, 6(6), 1–21.
- Brasil. (2000). *Lei nº 9.985, de 18 de julho de 2000: Institui o Sistema Nacional de Unidades de Conservação da Natureza*. Diário Oficial da União.
- Brasil. (2014). *Lei nº 13.005, de 25 de junho de 2014: Aprova o Plano Nacional de Educação (PNE)*. Diário Oficial da União.
- Brasil. (2017). *Lei nº 13.415, de 16 de fevereiro de 2017*. Diário Oficial da União.
- Dalla Porta, L. (2019). Formação do raciocínio estatístico na conceptualização da estimação estatística: Estudo exploratório de um dispositivo pedagógico no ensino superior (Tese de Doutorado, Universidade Franciscana/Université Lumière Lyon 2).
- Di Paola, B. (2015). VIII Colloque International – A.S.I. Analyse Statistique Implicative – Statistical Implicative Analysis.
- Evangelista, M. A. A., & Vital, A. F. M. (2013). Visão dos professores da rede pública estadual de Sumé (PB) sobre as dificuldades na condução de ações em Educação Ambiental. *Revista Brasileira de Educação Ambiental*, 8(2), 150–163.

- Farias, R. L. de. (2007). As Representações Sociais do Parque Municipal da Boa Esperança, em Ilhéus, Bahia (Dissertação de Mestrado, Prodeima).
- Geoprospec. (2013). *Resumo executivo: Plano de manejo do Parque dos Morros*. http://www.geoprospec.com.br/plano_de_manejo.pdf
- Gil, A. C. (1999). Métodos e técnicas de pesquisa social (6ª ed.). Atlas.
- Régnier, J.-C., & Andrade, V. L. V. X. de. (2020). Análise estatística implicativa e análise de similaridade no quadro teórico e metodológico das pesquisas em ensino de ciências e matemática com a utilização do software CHIC. EDUFRPE.
- Santa Maria. (2016). Decreto Executivo nº 74, de 6 de setembro de 2016: Cria o Parque Natural Municipal dos Morros – PNMM. Prefeitura Municipal de Santa Maria.
- Santos, L. M. W. D. (2022). Investigação do nível de proximidade da natureza dos educandos das escolas situadas na zona de amortecimento do Parque Natural Municipal dos Morros em Santa Maria–RS (Dissertação de Mestrado, Universidade Federal de Santa Maria).
- Silva, F. W. da, & Sammarco, Y. M. (2004). O lazer e a Arte-Educação Ambiental. In E. A. Kindel, F. W. da Silva, & Y. M. Sammarco (Orgs.), *Educação Ambiental: Vários olhares e várias práticas* (2ª ed.). Mediação.
- Silva, E. S. da, Rodrigues, K. A., Souza, K. R. de, & Esmélio, M. (2004). Políticas públicas de educação ambiental da Secretaria de Estado da Educação do Rio Grande do Sul. In E. A. Kindel, F. W. da Silva, & Y. M. Sammarco (Orgs.), *Educação Ambiental: Vários olhares e várias práticas* (2ª ed.). Mediação.
- Soares, M. J. (2016). O conceito de bem público na teoria da ação coletiva de Mancur Olson (Manuscrito não publicado).
- Sorrentino, M. (2020). Educação ambiental e unidades de conservação. In D. G. Sansolo (Org.), *Uso público em áreas protegidas: Contribuições*

para gestão de unidades de conservação (pp. 53–70). Editora Unesp.
<https://doi.org/10.7476/9786557140123.0004>

Vallejo, L. R. (2009). Unidade de Conservação: Uma discussão teórica à luz dos conceitos de território e políticas públicas. *Geographia*, 4(8), 57–58.