

Environmental education and social responsibility for the historical and natural heritage of Cabo Frio, RJ, Brazil

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1. Introduction

- ✓ The city of Cabo Frio, located in the State of Rio de Janeiro, Brazil, stands out for presenting tourism as one of the pillars of the economy;
- ✓ Has historical and natural heritage;
- ✓ Encourage of a critical environmental education that provides sustainable tourism for the knowledge, dissemination and preservation of the historical and natural heritage.

2. Goal

- ✓ Sensitize students about the importance of socio-environmental preservation of the historical and natural heritage of the city of Cabo Frio, RJ, Brazil, through sustainable pedagogical actions.

3. Scenario

- ✓ This research was developed at the Federal Fluminense Institute - Campus Cabo Frio, Rio de Janeiro, Brazil.
- ✓ Visit to the historical and natural heritage of Cabo Frio, RJ, Brazil.

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4. Target audience

- ✓ Formed by 33 students enrolled in the 1st year of FFI-CF.

5. Problem

- ✓ Develop sustainable tourism, to maintain a balance between the economic and social axes;
- ✓ Elaborate systemic management that integrates social responsibility and sustainability.

6. Pedagogical actions and the objectives of sustainable development

- ✓ It should promote actions to achieve sustainability among the social, economic and environmental in Brazil.
- ✓ Encourage sustainable tourism, job creation and the promotion of local culture and strengthening the means to protect the world's cultural and natural heritage.

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7. *Methodology*

- ✓ *Qualitative research, exploratory-descriptive methodology, with an ethnographic approach.*
- ✓ *The execution phase was carried out in three stages:*

Step 1. Interactive lecture.

Step 2. Technical visit by nautical route to Historical and Natural Heritage:

Step 3. Kahoot app was used as a teaching resource.

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7. Methodology

Step 2.1 The historical heritage of Cabo Frio, RJ, Brazil

- ✓ *São Matheus Fort - built in the 17th century to defend the city;*



Source: author

São Matheus Fort



Source: author



Source: author

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7. Methodology

Step 2.1 The historical heritage of Cabo Frio, RJ, Brazil

- ✓ *Charitas - known as “Casa da Roda” or “Roda dos Exostos” to welcome abandoned children;*
- ✓ *Itajuru Fountain - only source of water supply for settlers and supply of vessels;*



Source: author

Itajuru Fountain



Source: author

Charitas

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7. Methodology

Step 2.1 The historical heritage of Cabo Frio, RJ, Brazil

- ✓ *Church of São Bento - built and used by slaves for the manifestations of African culture and fishermen;*
- ✓ *Convent of Nossa Senhora dos Anjos - constituted in monastery for the priests of the order of the Franciscans.*

Source: author



Church of São Bento

Convent of Nossa Senhora dos Anjos



Source: author

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7. *Methodology*

Step 2.2 The natural heritage of Cabo Frio, RJ, Brazil

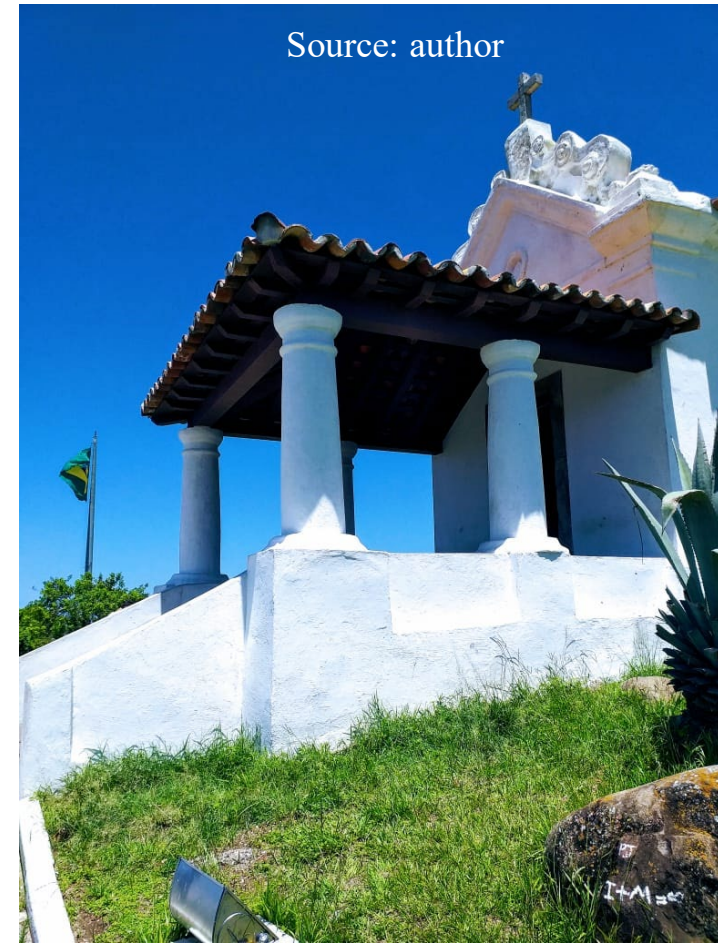
- ✓ *Morro da Guia - preserve the memory of indigenous ancestors, through so-called "ridged stones";*
- ✓ *Araruama Lagoon - the largest hypersaline lagoon in the world.*

Source: author



Araruama Lagoon

Source: author



Morro da Guia

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7. *Methodology*

Step 2.2 The natural heritage of Cabo Frio, RJ, Brazil

- ✓ *The dunes of “Sambaqui do Forte” - are found one of the main archaeological parks of the prehistoric period;*

The dunes of “Sambaqui do Forte”



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7. *Methodology*

Step 3. Kahoot app was used as a teaching resource.

- ✓ *Kahoot is a free online platform with an instant feedback system that allows teachers to create a fun environment that involves competitive games;*
- ✓ *The use of digital technologies as a pedagogical resource improves new ways of looking and interacting with the world and the environment.*

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8. Results and Discussion

The game was realised with the participation of 33 students. However, the final sample totalled $n = 15$ students, due to the difficulty of internet access presented during the study.

Question number (Q)	Question content
Q1	What characterises the Sambaquis?
Q2	Where can we find the Sambaquis in Cabo Frio?
Q3	Was the city of Cabo Frio inhabited by Indians of the tribe?
Q4	Where in Cabo Frio is it possible to find Sulcadas stones?
Q5	What is the place created for the rejected children, known as "Wheels of the Exposed"?
Q6	Was it created in 1696 to be a Franciscan monastery?
Q7	An essential source of water created since the first indigenous tribes of Cabo Frio?
Q8	What was used in ancient times to transport water from one point to another?
Q9	Was it used to illuminate old houses and lodgings?
Q10	The church of São Bento in Cabo Frio was built by whom?

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8. Results and Discussion

Number of correct questions versus number of students	
Correct questions n (%)	students n (%)
10 (100)	3/15 (20)
9 (90)	5/15 (33)
8 (80)	3/15 (20)
7 (70)	3/15 (20)
6 (60)	1/15 (7)

- ✓ Through the Kahoot app, the teacher can review students together as difficulties, so that the assessment is a moment of constructive feedback.
- ✓ Student involvement and motivation was observed, mainly due to the characteristics of the activity, developed with a standard response time of 20 s / question.

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9. *Conclusions*

- ✓ This study found that the combination of different pedagogical resources such as the interactive lecture, technical visit by nautical route and the application of a questionnaire in the Kahoot application allowed students to have access to a playful, practical and reflective learning, directed to the socio-environmental context of the city Cabo Frio.
- ✓ It revealed the importance of developing pedagogical work with sustainable practices related to social responsibility that the IFF-CF employs in the defense of the environment, and of the cultural heritage of the region.
- ✓ It was perceived that students were more aware of the preservation of the city's historical and natural heritage.
- ✓ It stimulated critical reflections on the importance of developing sustainable tourism.

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Authors Biography

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Ivaní Nadir Carlotto holds a PhD in Ecology and Environmental Health from University Fernando Pessoa, Porto, Portugal. She obtained her doctorate in July 2019, where she researched the perception of university professors about the concepts involving health promotion and sustainability, using the bioethical approach as a tool. His principal areas of research are bioethics, health promotion, sustainable development and higher education.

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