



**Sílvia Dotta**

**Antarctic or Antarctica: How to introduce the polar sciences in the primary school curriculum?**

**Polar Educators International Workshop – Rovereto – Italy –  
april/2017**



# Antarctica Project

**Distance Education**  
**Videogames**  
**Webconferences**  
**Videoclasses**  
**Digital TV**  
**Learning Objects**

**More than 200 Brazilian Researchers Across  
the Country.**



## Antarctic Project Goals

- To investigate ICTs uses, processes, methodologies for scientific education and popularization of science.
- To develop guidelines for communicative competences formation in actions to popularize science
- To enable teachers and researchers to act in a dialogic and collaborative way by forming learning networks.

Intelligence in Educational  
Technologies and  
Accessible Resources



# Distance Learning Course

## Motivation

- the polar theme is rarely explored in the Brazilian primary education.
- lack of teaching materials in Portuguese

## Goals

- To Introduce polar science themes in the primary school curriculum
- To Popularize Antarctica Sciences to different audiences
- To produce teaching materials in Portuguese





*[Vygotsky]*  
*[Bakhtin]*

**Dialogic Learning**

**Colaborative Learning**

**Theoretical Foundations**  
Socio-interactionism, Verbal interaction,  
Dialogism



# Methodology

Distance learning course for  
Primary school teachers

### Vida

Cara(o) cursista,  
Este módulo tem como objetivo apresentar a vida animal na Antártica. Você irá aprender um pouco sobre as aves, mamíferos, invertebrados e outros animais marinhos. Para isso, estude os materiais a seguir e realize as atividades.

**Texto**

- A vida animal na Antártica: exuberância selvagem por trás do gelo, por Elaine Alves Testoni e Sílvia Dotta

**Videoaulas**

A vida na Antártica...

A vida na Antártica...

A vida na Antártica...

Bentos

### 3 Mamíferos

por Elaine Alves Testoni e Sílvia Dotta

No panorama espetacular que a natureza gelada oferece também há espaço para os mamíferos-marinhos. Apesar da sua pobre representação em variedade de espécies, alguns destes animais ocupam as porções de terras livres que não ultrapassam 2% da área total do território antártico.

Na terra, visitantes como elefantes-marinhos, lobos-marinhos, leões-marinhos e focas revelam a graça e o modo desajeitado de driblar as suas contidas perspectivas. Apesar de visitarem a terra e nela fazerem longos descansos, esses animais não são considerados terrestres. No mar, suas destrezas são incomparáveis, os elefantes-marinhos não perdem a chance de fazer mergulhos sistemáticos a profundidades de até 1.5 mil metros, assim como também gostam de esbanjar talento quando navegam por regiões de difícil circulação.

Você sabe qual a diferença entre lobos, leões marinhos e focas? Lobos e leões-marinhos possuem orelhas e os movimentos em terra são mais eficientes devido a grande força nas nadadeiras peitorais, as focas não possuem orelhas e rastejam para se locomover. Essas espécies concebem apenas um filhote por vez e a expectativa de vida é de aproximadamente vinte e cinco anos.

Elefante-marinho

Lobo-marinho

### SUMÁRIO

- 1 A vida animal na Antártica: exuberância selvagem por trás do gelo
- 2 Aves
- 3 Mamíferos
- 4 Bentos, Nécton e Plâncton
- 5 Krill
- 6 Referências bibliográficas

### ATALHOS DO CURSO

- Módulos: bússola : destino : vida : gelo : ambiente : convergência
- Atividades: wiki : 1º fórum : 2º fórum : rede social : Sequência Didática 1 : Sequência Didática 2
- Comunicação: avisos : ice break : dúvidas : tutoriais
- Recursos: videoaulas : texto completo : sequências didáticas : atividades para alunos

### MENSAGENS

Eduardo Eduardo

SOLANGE MARIA DORNELAS

Mensagens

### MEU PROGRESSO

Progresso: 40%

AGORA

Videoleçons  
Course

# Antártica ou Antártida? (PROEC-ABC)

## Course Structure

**40 hours**

**1 face-to-face class**

**Moodle**

**10 weeks**

**4 Modules**

**Teaching material: texts,  
videoclasses, puzzles, learning  
objects**

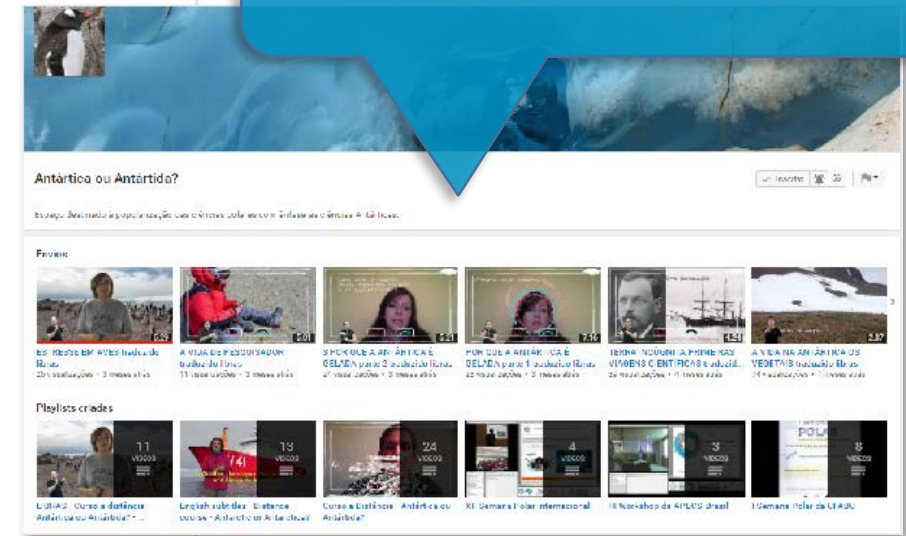
## Teaching methodology

**Learning by research**

**Project pedagogy**

**Collaborative learning**

**24 Videoclasses in Portuguese,  
English, Spanish, LIBRAS**



## Learning Activities

**Discussion Forum**

**Social Media (Facebook)**

**Didactical sequences**

**Polar Project at School**

**Experience report**



# Results and Discussion





# Polar Project



Students up to **four years** old discovering the feeling of the Antarctic coldness.



Adaptation of the Antarctic scenario for children up to **two years** old.

**Adult** students from the Education program of Youth and Adults took part of the activities

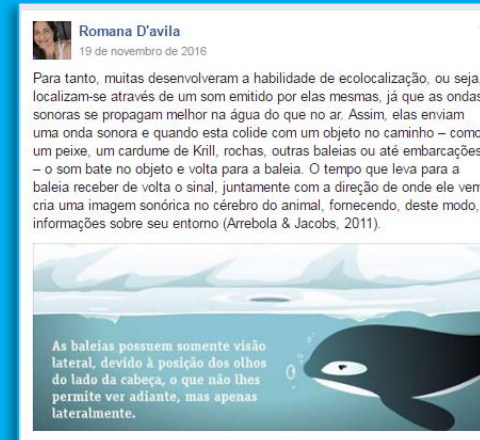


Students up to **Nine years** old listen stories

More than 300 students had classes or activities about Antarctica



# Shearing information on Facebook



More than 20,000 people reached by the facebook group members sharing



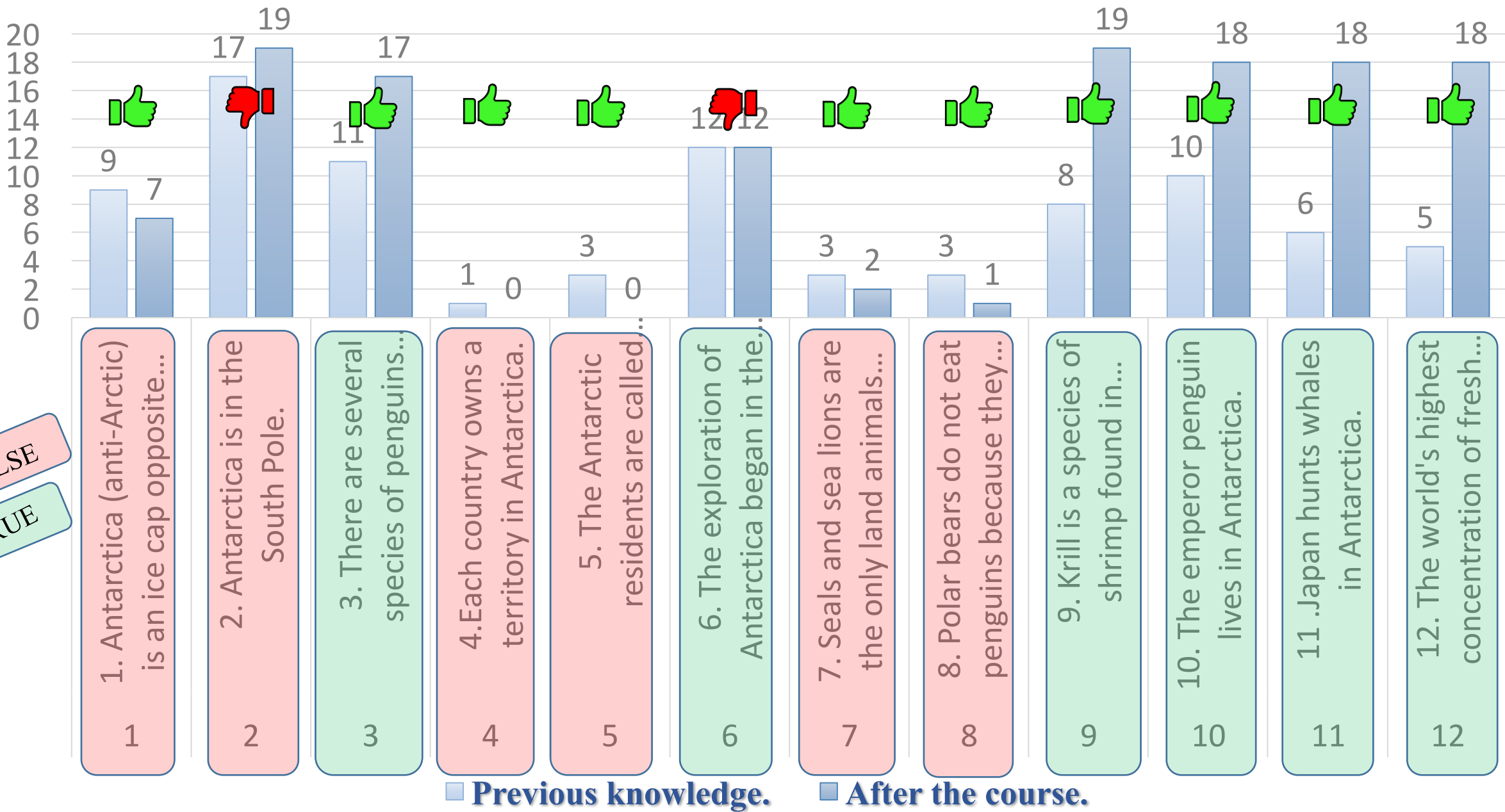


## Which of the following statements are true?

1. Antarctica (anti-Arctic) is an ice cap opposite to the Arctic.
2. Antarctica is in the South Pole.
3. There are several species of penguins and other birds resident in Antarctica.
4. Each country owns a territory in Antarctica.
5. The Antarctic residents are called Eskimos.
6. The exploration of Antarctica began in the nineteenth century.
7. Seals and sea lions are the only land animals in Antarctica.
8. Polar bears do not eat penguins because they prefer fish.
9. Krill is a species of shrimp found in Antarctica.
10. The emperor penguin lives in Antarctica.
11. Japan hunts whales in Antarctica.
12. The world's highest concentration of fresh water is in Antarctica.



# Which of the following statements are true?



FALSE  
TRUE



- **The course helped participants to understand the importance of teaching about the continent in primary schools**
- **There was significant learning about basic knowledge of Antarctica**
- **Participants were able to contextualise that knowledge in their classes**
- **Producing Portuguese teaching material is crucial to introduce Antarctica in Brazilian curriculum**
- **a multidisciplinary team is necessary to have better results in science popularization actions**



# Conclusion



# Thank you!

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