

CONNECT

Inclusive open schooling
with engaging and
future-oriented science

GOOD PRACTICES

Description for the site:

Title: " A journey into evolution with the help of elephants' tusks "

This good practice presents an open schooling education initiative for Connect, developed by Protypo High School of Heraklion and teacher Maria Eleftheriou from 19/11/2021 to 23/05/2022. Two scientists participated in the activities, Dr. Anastasios Pavlopoulos Biologist from the Biology Department of FORTH (Foundation of Research and Technology) and Dr. Iasmi Stathi Biologist from the Biology Department of the University of Crete and the Natural History Museum of Crete. It was supported by Dr. Giorgos Panselinas, coordinator of the Connect program of the Regional Directorate of Crete and school counselor. This practice was previously presented in:

https://connect-eu.exus.co.uk/?attachment=106&document_type=folder&download_document_file=1&document_file=106

Care: The students were interested in a real problem, which is how elephants lose their tusks and cannot attack or defend themselves in the environment they live in. This problem was said among others and the students voted it as the most interesting for further study and research. Twenty two students participated in the activities. The students were 13-14 years old and attend 2nd grade of High School.

Know: The students used knowledge of Biology and in particular topics of natural selection and evolution. The skills students practiced were collaboration and communication, critical thinking, question processing, discussion, digital literacy, creativity and reasoning.

Do: At the end, the students prepared a game, presentations, interviews, interactive map, experiments and a storymap. They completed the activities as a group or individually, supported by their families.

Conclusions on Open Schooling: The activity was integrated into the curriculum. The activity was innovative because for the first time the students were asked what problems they have heard or experienced and really want to deal with. For this reason, the students discussed in plenary after they had also discussed with their families and voted for what they considered the most interesting topic. Open schooling can be useful but also challenging for teachers and teachers because they are usually involved in problems outside the standard curriculum such as climate change etc.

The change/innovation was supported by: School management school association/network Local government Other: _____

Student results: The students were participative, interested from the beginning to the end of the project. They got in touch with their parents and relatives to ask them questions and get interviews. They worked as a team and through communication they achieved tangible results. They played a game that they created themselves and that was related to the topic of the project. They made presentations on various related





topics. A group of students presented the work of all the students at a student conference organized by the Regional Directorate of Crete.

This practice contributed to the increase of:

engaging families with sciences involving girls in science raising awareness among students about careers in the natural sciences

Please specify: A seemingly "innocent" and "irrelevant" observation a student had about a population of elephants raised many questions for the students to investigate and discuss with the appropriate scientists. The families were interviewed at the beginning of the project but also during it in order to give their own opinions and some due to profession were interviewed through an interview by the students themselves. Students became aware of the environment and climate change.

Select the most relevant photo related to your initiative (which will be public and published under an open license) to represent the practice.



Elefant without teeth





ABOUT THE CONNECT PARTNER that supported the school

ORGANISATION	Regional Directorate of Primary and Secondary Education of Crete (RDE)
COUNTRY	Greece
Όνομα συνεργάτη	Georgios Panselinas
Implementation period	Starting date: 19/ 11/2021 Ending date: 23/05/2022

ABOUT THE TEACHERS PARTICIPATED

SCHOOLS	Protypo High School of Heraklion
TEACHERS names (for Good Practices' Certificates)	Ms. Maria Eleftheriou
Gender	Female
SUBJECT (Natural Sciences, Physics, Chemistry, Biology...)	Biology, Natural Sciences
How many subjects were used in open schooling?	8
Title of open school education resource used	www.biointeractive.org
Type of learning scenario of science activities (structured or open scenario)	Open Scenario
Curriculum modules	Biology, natural selection, evolution

ABOUT THE STUDENTS PARTICIPATED

Class	Second grade of High School
Age (average)	13 years old
Number of students participated that concluded the educational scenario	22
Number of students who completed the educational scenario of scientific activities	22

SCIENTISTS PARTICIPATED:

Name	Dr. Anastasios Pavlopoulos, Dr. Iasmi Stathi
Field	Biology





QUESTIONNAIRE

01. How have you (teachers) used open educational resources? Could you describe what you did in your lessons?

Student activities with scientists:

The students first emailed their questions to Dr. A. Pavlopoulos and dealt with the issues to which he answered. After understanding various aspects of the problem the students met with Dr. I. Stathis (by teleconference) so that they can get directions for their further study and research.

Student activities with their families:

The students before deciding on their research topic (by voting) had already discussed with their families to decide which problem they consider important. These issues were brought to the plenary session of the class and voted on. Also several students have biologists, physicists and chemists in their families and they were asked through an interview about natural selection and climate change. In fact, a parent helped to conduct experiments in the laboratory.

02. How have your students used the CONNECT resources? Do you have (or could describe) samples of better scientific actions (for our site/rewards)?

Any examples of what the students prepared?

Students used Connect's open scenario template.

Slide? Poster? Video?

(Add an image if possible)

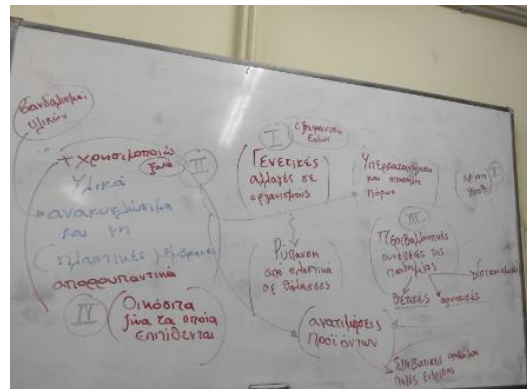
KNOW

1st hour (19/11/2021)

We discussed which problems are of interest to us and which we think are most important

We listed the topics on the board and voted on what we most want to study.

In the photo, you can see the board in the school showing the different topics that the students initially wanted to work on. They voted no I (genetic changes in organisms) as the best.





03. How well did the science action learning scenario resources meet your needs?

Example related to the school curriculum:

We used the open scenario template which helped us a lot to follow the right steps and get it done within the school year.

Students involvement:

Student involvement was universal. All students participated in discussions, research and group work.

Student interest and confidence in science:

The students showed interest in the topic they chose and confidence in the scientists they came into contact with.

04. How easy or difficult it was to use the science action learning scenario resources?

Issues related to materials, procedures, pressure from the interaction with the curriculum:

It was quite easy to use the open scenario resources. The students did not face any pressure.

05. What were the benefits of implementing the science action learning scenario for your students?

Describe the results of the students in their scientific actions related to:

KNOWLEDGE	Natural selection, evolution, species extinction, climate change
SKILLS	Communication, collaboration, critical thinking, digital literacy, creativity
ATTITUDES	Interest in the sciences, awareness of the environment

06. What have been the challenges of using educational science activity scenarios for your students?

Main challenges faced by students (Please select all that apply):

- Difficult...
- Long duration...
- Boring...
- Other (Please specify): The students did not face any challenge.





07. What activities worked well with the curriculum?

What helped the children achieve the learning objectives:

The students were respectful and were able to achieve the goals we had set.

08. What activities did not work well with the curriculum;

Anything that could be done differently or avoided:

There is nothing.

09. The school Principal's opinion about CONNECT:

The students of our school actively participate in the CONNECT program and become aware of real problems with a social dimension. Through the program, the professors promote and support sustainable and open education.

10. Parents' opinion about CONNECT:

"My daughter and I talked about various problems we face here in Greece and the next day she went to class and discussed them with her classmates. He told me that they voted and that's how they decided what to do. She was very happy about it."

Submission:

1. Please save the file in the following format: **YEAR MONTH DATE COUNTRY SCHOOL** (e.g. 20220326GR1stPrimarySchoolHeraklion. docx)
2. Please send this form to CONNECT Panel: <https://tinyurl.com/Connectbestpractices2022>

