

STS Education models to transmit to society the challenge of global change in the ocean

EDUCO2CEAN

Teacher Training Course in Poland – Katowice – 6-10 November 2017

1st day

9.00 – 13.00: Opening lectures:

Climate change. It's the oceans, stupid!

- the role of oceans in the carbon cycle
- what happens when a lot of CO₂ is emitted quickly
- past hyperthermal events: PETM, Permian and Triassic
- forecast for the future

Marcin Popkiewicz - writer, researcher, manager, translator, lecturer and author of hundreds of articles on climate change, resources and energy

Neurobiology of interest, or what makes us curious?

Marek Kaczmarzyk, Ph.D. - University of Silesia, Faculty of Biology and Environmental Protection, biologist, educator

The lecture concerns explaining the biological background for the mechanisms of motivation, empathy and acquisition of knowledge. It describes rules for constructing didactic environments which are more natural and better accommodate our students' brains."

15.00 – 19.00: Ecology and the mystery of life on Earth

Prof. Piotr Skubała, Ph.D. - University of Silesia, Faculty of Biology and Environmental Protection, ecologist, acarologist, environmental activist and educator

Ecology, a term derived from Greek *oikos* "house," and *logos* "study," is the science about the structure and functioning of Nature. In its attempt to understand the mystery of life in the biosphere, ecology investigates numerous relationships between organisms and between them and the environment. Thus, it describes life on Earth as a spider web in which everything is connected to everything else; each species is necessary, each is as important as others, and each plays its unique role. In this way ecology, as a science, provides a view of nature which is holistic and symbiotic. How and why this perspective is crucial for our education was made clear by many modern authors in numerous novels. At the same time ecology, although not a fledgling, is a discipline which calls for intellectual and scholarly humility; some ecologists stress that we might never actually be able to fully understand the functioning of our living system, the Earth. One of the most compelling aspects of ecology is its discovery, or rather rediscovery, of the laws by which living systems have developed and functioned. Unfortunately, Darwinian ideas, among which the concepts of cutthroat competition and the survival of the fittest have been most spectacularly influential, are still cornerstones of contemporary popular thinking about nature. Bludgeoned into the minds of several generations, they still make us regard competition and struggle as major driving forces of "cruel" nature.

Didactic exercises

- Discovery of the basic laws of nature
- What do plants need to live? Our thinking about nature
- What does a man need to live? The relationship between man and nature
- What objects have moral standing? The ethical experiment.
- What is Earth for me?
- Ecological quotations. Who said this about nature?
- Are we aware of the environment? Bioregional thinking
- What do I basically need? What can I reduce in my life? What do not I need in my life?

2nd day

9.00 – 13.00: Overconsumption as a key factor in climate change (I part)

Ryszard Kulik, Ph.D. - Council of All Beings, psychologist, environmental activist and educator

We are part of life on Earth. We are connected with all beings. Our way of life, our daily behavior affects other beings, nature, climate, oceans, the world around us. Every step of ours matters. The way we produce goods, we use them and we recycle them leads to specified ecological footprint. Today we are able to measure how big is this trace for individual people, events organized by us, and even entire states and humanity. Can our impact be smaller? Are we condemned for consumption that degrades the environment?

Didactic exercises

- Circle of life. Connection and dependence.
- Our responsibility for biosphere
- Overconsumption – conditions, mechanisms and consequences
- Ecological footprint – personal impact on environment

15.00 – 19.00: Psychological work with the movies (I part)

Agnieszka Skorupa, Ph.D. - University of Silesia, Institute of Psychology, psychologist, educator

How do people gain knowledge about the world? Through social observation of their parents and members of the closest society, through school and extracurricular education, and through mass media. People are under the influence of the media whether they are aware of that or not. What is important, we should not neglect the role of media in our lives but people should be taught how to be reflective and how to apply critical thinking to the silver screen.

The workshop will be concentrated on the feature films and their utility to rising awareness of climate changes. Workshops basing on the plot of popular movies enable simultaneous emotional and intellectual reflection of participants. However, not every movie can be used to the ecological education, there are certain criteria which productions should fulfil to enable change of viewers attitude. There is also huge difference between feature films and

documental, is empirically verified, those two types of the movies influence on viewers differently.

Didactic exercises

In the first part of the workshops we will:

- analyse the role of the feature films in crating viewers vision of the environment,
- make the list of movies which crate realistic and false image of the environment,
- learn criteria of choosing movies in order to apply them to the environmental workshops.

3rd day

9.00 – 13.00: **Visit in the Botanical Garden in Mikołów-Mokre**

15.00 – 19.00: **Psychological work with the movies (II part)**

How do people gain knowledge about the word? Through social observation of their parents and members of the closest society, through school and extracurricular education, and through mass media. People are under the influence of the media whether they are aware of that or not. What is important, we should not neglect the role of media in our lives but people should be taught how to be reflective and how to apply critical thinking to the silver screen.

The workshop will be concentrated on the feature films and their utility to rising awareness of climate changes. Workshops basing on the plot of popular movies enable simultaneous emotional and intellectual reflection of participants. However, not every movie can be used to the ecological education, there are certain criteria which productions should fulfil to enable change of viewers attitude. There is also huge difference between feature films and documental, is empirically verified, those two types of the movies influence on viewers differently.

Didactic exercises

In the second part of the workshops we will:

- do the case study of one movie which can be applied to environmental education,
- crate the scenario of workshops with the use of analysed movie,
- do the brainstorming session about the future actions and movies which can be used to the environmental workshops.

4th day

9.00 – 13.00: **Visit in Euro-Centrum Science and Technology Park, Katowice**

15.00 – 19.00: **Overconsumption as a key factor in climate change (II part)**

Ryszard Kulik, Ph.D. - Council of All Beings, psychologist, environmental activist and educator

Our overconsumption has its roots in the belief that the path to happiness leads by having things. Does happiness really depend on having goods? Positive psychology deals with this issue and proves that happiness is unconditioned. Overconsumption leads to dependence on prosperity and wellbeing, which is destructive to nature and complicates and deprives our lives of true depth and fulfillment. To live long and happily we do not need material wealth. This regularity is shown in the so-called happy planet index. How can we live well while taking care of the environment?

Didactic exercises

- Happiness and overconsumption
- How many things have I got? Necessarily and unnecessarily
- Happy Planet Index
- Longings and resolutions

5th day

9.00 – 13.00: Climate and oceans - new alternative methods of environmental education

Prof. Piotr Skubała, Ph.D. - University of Silesia, Faculty of Biology and Environmental Protection, ecologist, acarologist, environmental activist and educator

Aldous Huxley once asked what it means to educate children, he said: “Never give children a chance of imagining that anything exists in isolation. Make it plain from the very first that all living is relationship. Show them relationships in the woods, in the fields, in the ponds and streams, in the village and the country around it. Rub it in.” The deep truth of the functioning of the Earth’s ecosystem is contained in Baden Powell’s phrase: “This is us, Earth. We realize it sooner or later, but there is no getting around it. If we do not learn to live in harmony with the food chains, with the ecosystems, then gradually they will come out of balance, and then they will die. It is all a circle and we are in it; we cannot escape”. During the workshop, a whole range of various games and educational games will be presented to help shape the environmental awareness of the audience.

Didactic exercises

- The Tragedy of the Commons – Scientific experiment
- 365 steps to save our planet and mitigate climate change - Interactive game
- Life in oceans and climate change – Eco-bingo
- Ecology in our life – Cross and circle
- Why do I act the way I do? The basis for a decision to act – Roleplay
- Marine animals – Pantomime
- My knowledge on oceans – Pyramid
- Sixth extinction - Ecological clock
- Am I a friend of earth? – Carbon footprint
- The home in which we would like to live – Common drawing
- Letters from inhabitants of the oceans

15.00 – 19.00: Visit in the Silesia Park, Chorzów