# SELF-REGULATION OF ATTITUDES IN EDUCATION FOR SUSTAINABLE DEVELOPMENT

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Egunon, good morning, we are members of the Pedagogical Team of the **Research And Environmental Centre of Sukarrieta** and on behalf of our school and of the Department of Education of the Basque Autonomous Government we would like to present you our system of educational intervention in programs of Environmental Education.
Our centre is the result of the agreement made between the Bilbao Bizkaia Kutxa Bank, a non profit welfare financial institution and the Department of Education of the Basque Government.
We are located in the Urdaibai Biosphere Reserve and it is here where we develop our Programs of Environmental Education connected to real environmental issues.

The programs are sustained in the development of:

- **Ethical, conceptual and methodological principles of Environmental Education**

  - Working on real environmental issues, dealing with the complexity those issues contain and dealing with the ethical standard, a layer beneath the attitudes and human behaviour;
  - In the environment, about the environment and for the environment;

- **the Psycho-pedagogical Principles of Constructivism**

  - building new knowledge on previous experiences and prior knowledge of students,
  - functional and meaningful learning and with authentic material
  - interaction with the natural, cultural, social,…. environment),
  - dealing with diversity (race, ethnic group, cultural and socio-economical means… )
  - considering the regulation of the teaching-learning process, in order to acquire awareness and autonomy.
- and **assessment** being the engine of the educational practice, understood as support of the teaching-learning process, as a self-regulating element of the students' learning process, and as an element of control of the teaching process designed by teachers. ( outline set by ***N. Sanmartí*** and ***J. Jorba***).

Our educational offer is aimed at the school community of the region of Bizkaia where 3.500 student, 100 schools and 200 teachers distributed in weekly stays during the school year have this possibility. Students take part in one of our 5 projects (Earth, Water, River, Forest, Green Planet) and in this setting, teachers receive training on our three main columns: Constructivism, Assessment and Environmental Education.

We are a centre of Investigation-action that promotes favourable attitudes towards the environment in schools that contribute to the Sustainable Development, from a design proposed to teachers and students. It is based on reflective practice, contrasting different realities and issues, and offering a teaching-learning process, taking place in and for the environment.

## Teaching-learning modes

Next, we will briefly describe the outlines of the educational intervention or the teaching –learning mode in programs of environmental education that we propose.

## Initial stage

In this **1ª stage, Initial Diagnostics**, we take into account the students´ prior knowledge about different Environmental Issues in order to sensitise and to cause enough permeability and complicity that makes sharing a program possible. We are speaking then, of an immersion in a program of Environmental Education..

We explore that prior knowledge of the students to detect the **Zone of Proximal Development (*Vigosky*),** this is where we will intervene. The steps of Environmental Education will act as a thermometer in such a way that it will allow us to move closer to the students' needs by making sure that this will be the outcome of an all-around treatment, without neither falling into the consecration of the concepts, nor falling into activism as a consequence of overrating the procedures, nor falling in the alignment of a frivolous indoctrinated conception of the attitudinal change.

## Procedural stage

**2ª Stage: Procedural** : In this stage we will undertake the development of the program itself emphasizing the following phases:

- **Planning-action.**

Making use of Gowin's V *(adapted)* as a starting point, the objectives shared between students and teacher revolve around three questions:

- What are we going to do? ( Searching for prior knowledge and the objectives of the activity)
- How are we going to do it? (searching for the attitudinal and methodological component)
- What are we going to do it for? ( searching for the meaning and the purpose of the activity)

This way we will foster:

- The attention to diversity, welcoming all contributions that come from the group
- The representation of the objectives of the activity and the anticipation of the action making sure therefore, of a scaffolding that will allow the acquisition of commitments, a fundamental component in a program of Environmental Education

- **Investigation-reflection**

Through interaction with the environment we guarantee the meaningfulness of the material, understanding the environment as a complex and dynamic system where a mountain of interrelations take place among all its components, that are in constant evolution whether they are physical-chemical or social, cultural, economical... . To that effect, a field trip to the environment is our main resource so, The Urdaibai Biosphere Reserve becomes the ideal scenario to do field trips to the Swamp, Forest, Port, River, Coast, Garbage dump... (on- sight view)

We implement this with activities that include data analysis, reflections, group discussion, contrasting views, role play... that will expand the environmental perspective and its issues, as much as the in-depth knowledge as its location in this globalized world. (overall view)

As we advance in the development of the program we begin the joint process of a Content Network (based on Novak´s conceptual maps) where the group incorporates new meanings into their prior knowledge, in the shape of a map, with multiple connections. A graphic representation will emerge that will help with personal and collective construction of knowledge. The teacher will guide with his/her questions the map constructing process, putting in ideas conveyed by students, opening a space for learning among equals and the attention to diversity. Beyond the graphic outcome, what is most important is that a space is offered that will allow the self-regulation and co-regulation of the students, therefore, this will clear the way for building an individual and collective awareness of knowledge (meta-learning).

**Final stage**

Among the elements that provide meaning to the accomplishment of activities and learning, the need students have of explaining what they have learnt always turns up, specially the causes and consequences of the issue under consideration and the open practice that will help resolve it. This entails arranging a sensitising campaign whose preparation and staging will serve simultaneously to enhance the meaningfulness of the learning process, assess the achievements and non-achievements and thus, close the cycle.
All in all, to have caused the sensitive, affective and cognitive impact that is directed to induce the attitudinal conflict that stimulates the desired attitudinal change, in this way facilitates or, at least, helps fulfil our dream..., which is, to advance towards a desired future scenario, as an alternative to the current one.

From our experience during these years ,we do believe that its possible to change (As Mª Novo, an authority concerning environmental education, states).

**To finish, why Environmental Education - Constructivism- Assessment?**

Because we understand that constructivism and assessment must bear the weight of Environmental Education and only from the contextualization of the constructivist approach of our programs and the educational intervention (in other words, dealing with prior knowledge, announcement of objectives, foreseeing the action, learning among equals...) and of the regulating mechanisms that assure the conscious knowledge, students will be provided with Responsibility, Commitment, Cooperation, Solidarity, Freedom, Justice, Critical thinking skills... basic values to achieve the final purpose of Environmental Education that we think is:

TO EDUCATE PEOPLE THAT WILL HAVE A CAPACITY TO GIVE AN INDIVIDUAL AND JOINT RESPONSE TO CURRENT OR FUTURE ENVIRONMENTAL ISSUES, RATHER THAN BEING CONFINED TO THE APPLICATION OF A SET OF PRESCRIPTIONS.

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