

## 1.2. Improving learning in technological-advanced societies

### SP - (18557) - WHAT IS THE ROLE OF UNIVERSITIES IN SUSTAINABLE DEVELOPMENT AND GLOBAL CITIZENSHIP LITERACY?

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#### Short Abstract

#### Introduction

Citizens should be capable of decision making and adapting to a scientific-technological world in an environmental crisis. Scientific knowledge helps us to position ourselves in the world with a critical eye. In recent times, several anti-science movements have emerged, including "flat-earthers" and climate change deniers. Such developments reinforce the need for an adequate level of science education, including environmental awareness. But an education that ignores the affective dimension of learners is also unsustainable. Nowadays, the association between the affective and cognitive dimensions in human beings is undeniable. Emotions influence pupils' learning results as they help to direct attention, which is a requirement for learning. Events associated with emotions are easier to recall and last longer in one's memory (Mora, 2017). Higher Education should provide not only professional training or knowledge but also personal development, enabling one to cope with complex situations and teaching how to act upon reflection and make decisions accordingly (Hernández-Barco, et al. 2020).

#### Research Goal.

The main aim of this work is to describe a project-based learning methodology with STEAM approach and to introduce this as a potential resource for the emotional and cognitive improvement of prospective primary teachers enrolled in scientific subjects

#### Methodology

This is a qualitative study in the context of a research line focused on higher education for sustainable development. A questionnaire was designed and filled in by students at two different stages, before and after implementation of the activity.

#### Results

The results show the emotional improvement of prospective teachers after implementation of the activity. It is concluded that a good science education, with implementation of sustainable approaches is necessary during the training of teachers, taking into account their emotional dimensions and social repercussions as a consequence of future transmission.

#### Final considerations

Traditionally, science lessons have been taught through passive methodologies, in which the lecture has the main role and students only receive information. Learning is a constructivist progress, not just receptive. Science teaching has abused a positivist approach, based on the transmission of hermetic, closed knowledge, ... excluding (because they are unscientific) attitudinal or affective factors. They are, however, essential for science teaching: considering the affective domain in the students' classroom will bring them closer to and favour the learning of scientific contents and attitudes. Consequently, alternative methods of teaching (and different ways of learning) are needed in order to promote integral education for students.

**Conclusion.**

Higher Education play a key role in the citizenship scientific literacy. It is necessary to consider the emotional dimension of our students. Education should be improved through methodologies that motivate and turn on the emotions of students and that help to produce a meaningful learning and to enable them to lead healthy, sustainable and fulfilled lives.

**References**

Mora, F. 2016. *Neuroeducación. Sólo se Puede Aprender Aquello que se Ama*; Alianza Editorial: Madrid, Spain; ISBN 8420675334.

Hernández-Barco, M., Sánchez-Martín, J., Corbacho-Cuello, I., Cañada-Cañada, F. 2021. Emotional Performance of a Low-Cost Eco-Friendly Project Based Learning Methodology for Science Education: An Approach in Prospective Teachers. *Sustainability*, 13, 3385.