

Sustainability Education in the School of Education of Polytechnic Institute of Santarém

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Introduction

The School of Education of Polytechnic Institute of Santarém (PISantarém) is a teacher education institution with more than 40 years of experience, dedicated to the training of kindergarten educators (0 to 5 years old children) and elementary school teachers (6 to 12 years old students).

Sustainability Education (SE) and Sustainability are strongly embedded in the programs and activities of the institution. In fact, we recognize that our goal is to achieve the development of our students' sustainability competences through SE, following the goals of this educational process as presented by Bianchi et al. (2022): "provide learners with sustainability competences in order to reflect and embrace sustainability in their daily lives as students, consumers, producers, professionals, activists, policymakers, neighbours, employees, teachers and trainers, organisations, communities, and society at large." (p. 13).

Some examples of how the institution carries out sustainability education are presented in the next sections.

Sustainability in the curriculum

Sustainability is present in some goals of several courses of the teacher education programs or other related programs at School of Education of PISantarém, as follows:

Basic Education Degree	<p>Ecology Aims to develop students' knowledge about environmental concepts and processes so that they can contribute to sustainable development.</p> <p>Human Biology and Health Aims to explore the promotion of human health and the understanding of the connections between human health and planetary health.</p> <p>Earth and Life Sciences Aims to explore the main geological and biological processes and the reflection about the impact of climatic change in the future of life.</p> <p>Introduction to Didactics of Environmental Studies Aims to develop systems thinking and critical thinking about the impact of science and technology in solving human and environmental problems.</p>
Master in Primary School and Science and Mathematics Elementary School Teaching	<p>Environment and Geological Heritage Aims that future teachers understand the complexity and the urgent need of the protection of the environment and Geoconservation.</p> <p>Science Education Aims to capacitate future teachers with pedagogical content knowledge to create, implement and evaluate science activities, with a focus on sustainable development goals.</p>
Environmental Education and Ecotourism Degree	<p>Environmental Education Pedagogy Aims that future environmental educators are equipped with pedagogical knowledge to foster sustainability and sustainable development.</p> <p>Education Health and Environment Aims that future environmental educators understand the human influence on environment and its impacts on human health.</p>

Sustainability education activities

Some educational activities developed in the School of Education of Polytechnic Institute of Santarém are framed by the sustainable development goals (UN, 2015). In the following example we present some of those activities.

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Title: Bad Plastics (Linhares & Cavadas, 2018)

Programme: Master in Primary School and Science and Mathematics Elementary School Teaching

Course: Science Education

Main activities: Outdoor activity whose aim is that initial teacher education students collect plastic waste in a beach (Figure 1), identify the type and quantity of the plastics collected and calculate the clean coast index, as proposed by Alkalay et al. (2007).

In a second moment, the student teachers had the opportunity to identify, count and observe microplastics in the innovative learning environment CreativeLab_Sci&Math.





Figure 1. Teachers and students collecting plastics in a Portuguese beach.

References

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Linhares, E., & Cavadas, B. (2018). *CreativeLab_Sci&Math | Bad Plastics: Oceanos livres de plástico: Participar na mudança*. Publicado no portal da Casa das Ciências. <https://www.casadasciencias.org/recurso/8684>

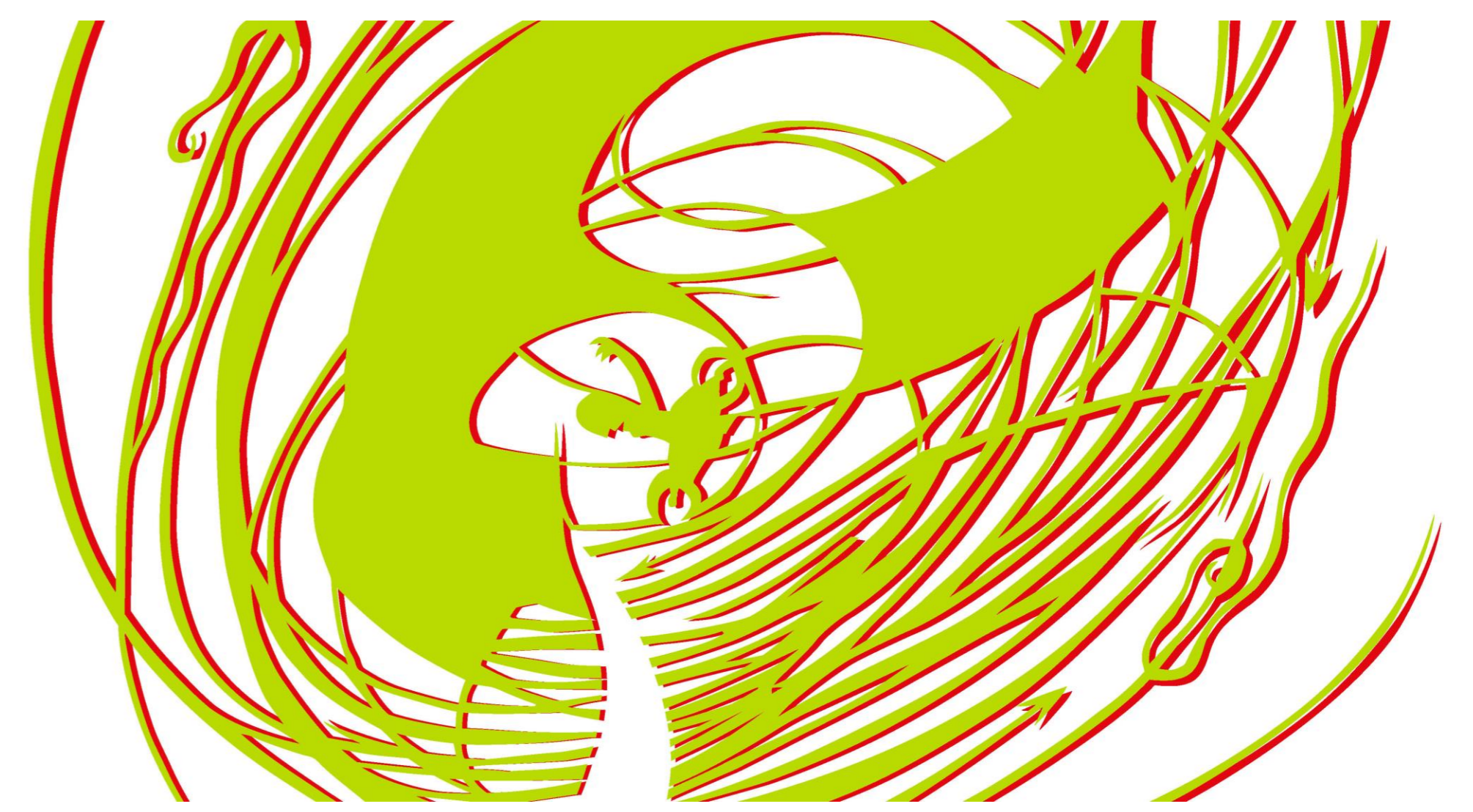
Linhares, E., & Cavadas, B. (2021). 'Bad Plastics – Oceans Free of Plastic': the role of education. In W. L. Filho, A. L. Salvia, & F. Frankenberger (Eds.), *Handbook on teaching and learning for sustainable development* (pp. 62-74). Edward Elger Publishing. https://doi.org/10.4337/9781839104657_00011

Teacher Academy project – Teaching Sustainability. <https://tao-ts.eu/>

United Nations (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. A/RES/70/1. United Nations. <https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981f>

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Research on sustainability & environmental education



Linhares, E., & Cavadas, B. (2021). 'Bad Plastics – Oceans Free of Plastic': the role of education. In W. L. Filho, A. L. Salvia, & F. Frankenberger (Eds.), *Handbook on teaching and learning for sustainable development* (pp. 62-74). Edward Elger Publishing. https://doi.org/10.4337/9781839104657_00011

This chapter addresses plastic pollution through education for sustainable development and presents an educational activity, named Bad Plastics, created to raise the awareness of higher education students about the causes, consequences and solutions for plastic pollution.

Sustainability outreach

Acting in the community: Interactive scientific exhibition

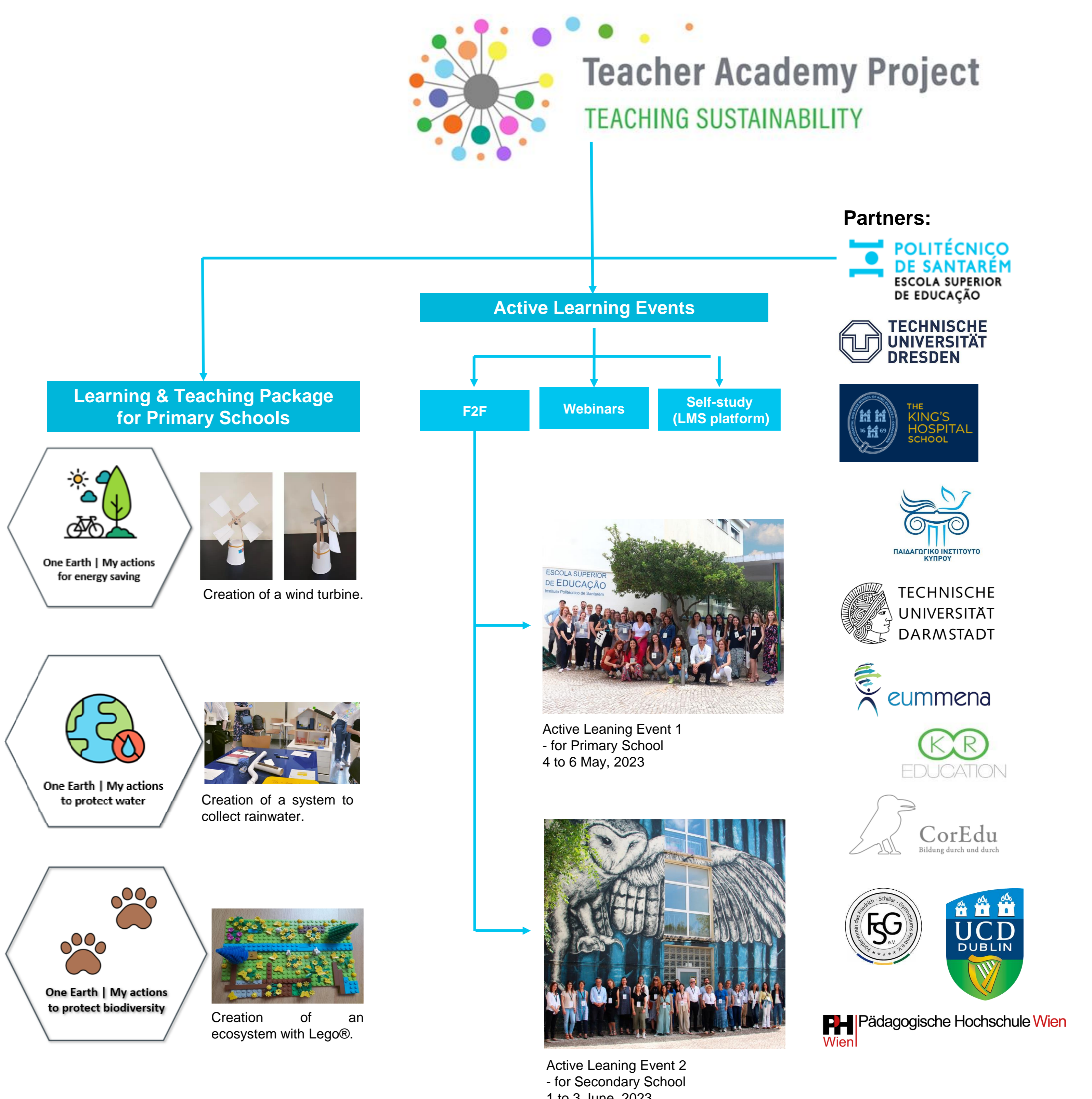


Figure 2. Exhibition – "Save the Ocean", settled in the School of Education by the students of the Environmental Education and Ecotourism programs, and attended by elementary school students.

Teacher Academy Project – Teaching sustainability

The School of Education of PISantarém is a partner of the Teacher Academy Project – Teaching Sustainability (TAP-TS).

The TAP-TS aims to involve future teachers, teachers, and teacher educators in the co-creation of professional learning communities on sustainability education through their participation in an international network. The next visual shows the partners and the main activities carried out by the School of Education of PISantarém during the 1st year of the TAP-TS, concerning the piloting of Learning and Teaching Packages (LTP).



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