A framework to teach cultural competency and social justice in science courses

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Solving many of the critical issues facing our world requires a broader perspective, which may be supported by incorporating social and cultural elements into science lessons. By considering how science helps or harms individuals with different identities and experiences, our aim is to change the way we engage in the scientific enterprise. We have developed a framework for teaching lessons relating to social justice and cultural competence in chemistry labs. We have developed three labs, where our framework informs student learning around in-, during-, and post-lab activities. The curriculum is designed for easy adoption to allow for broad dissemination. It further encourages the building of local, sustainable relationships with cultural partners to build upon our current efforts.

Formal and informal education: Italian experiences to promote content knowledge and ethics in the perspective of sustainability

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Science Education at High School level is increasingly approached to foster both students' Science Content Knowledge and their capability to use it critically. In Italy we had several projects, both international like IRRESISTIBLE and Raw MatTERS Ambassadors at schools, and national like Research Language, which focused on active learning and formal and informal education. Those projects involved several disciplines using the Responsible Research and Innovation (RRI) approach. Science, chemistry, sustainability, ethics, peer education and dissemination were some of the relevant aspects. Some reflection about students' outcomes and teacher training will be discussed.

ADAPT TO IT?! Transformative education in a sustainable geography lesson

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From the perspective of state-of-the-art geography education, the potentials and problems of a transformative education in ESD (Education for Sustainable Development) is discussed. Reference is made to current geographical and subject-relevant concepts and models in Germany as well as possibilities of interdisciplinary education. Finally, the project "ADAPT TO IT! - Students develop adaptation strategies to climate change" as a concrete example for the promotion of ESD aiming at a transformative education is presented.

The Austrian Ecologisation of Schools Network (ECOLOG): Participation for Transformative Education

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ECOLOG is based upon a participatory school development approach: Schools analyse the ecological, technical, social and economical conditions of their environment and define objectives, targets and concrete activities and quality criteria, to be implemented, reflected and evaluated. Teachers, students as well as other stakeholders of a school should be involved in a participatory way.