



Research goes to School: understanding the content and the procedures of Science through a new dialogue among students, teachers and scientists

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The Education system is increasingly interested in a more interactive dialogue with scientists in order to make science taught at school more aware of the models and the ways in which knowledge is produced, revised and discussed within the scientific community. Not always, in fact, the ministerial programs, the media, and the textbooks adopted by schools seem to be able to grasp the content and the procedures of the scientific knowledge as it is today being developed, sometimes spreading the idea of a monolithic and static science, with no reference to revisions, uncertainties, errors and disputes that, on the opposite, characterize the debate about science.

On the other side, scientists, that in several surveys define students and teachers as one of the key groups that are most important to communicate with, often do not seem to be aware that scientific knowledge is continuously revised by the school and its protagonists. Science teaching, in all classes, has a highly educational role, as it offers the opportunity to value individual differences, to make students acquire specific tools and methods that enable them understand the world and critically interact with it. In this process of conscious learning, in which teachers play the role of tutors, the student participates actively bringing his tacit knowledge and beliefs.

In this context, an educational proposal has recently been developed by the Italian National Research Council (CNR), aimed at starting a new dialogue between Education and Research. It's a way to encourage the technical and scientific culture among young people and a mutual exchange between the two main actors of the scientific production and promotion, considering weaknesses and strengths of the relationship between these two systems.

In this proposal, students and teachers follow side by side a group of CNR scientists involved in an ongoing research project based on the use of innovative methodologies of aerospace Earth Observation (EO) for supporting the agricultural sector in Italy. A research project has its own planning and timing in which objectives, activities, tools and results are scheduled, monitored and evaluated; following its steps means understanding the content and the procedures of applied research, that has to face not only with scientific and technological but also with administrative, financial, communication aspects. In this process, scientists interact with several actors in addition to the scientific community, such as private and public stakeholders, users, policy makers, media and the general public.

The proposal involves for 2 years 10 teachers and 160 high school students in several activities: an opening participative workshop in which students and scientists exchange ideas and expectations on Research and Education and try to delineate the possible relationship between the two systems; personalized laboratories during which every School, according to its field of study, deepens one of the 3 specific research areas of the project, i.e. Earth Observation, use of UAV/drones, VGI and smart technologies for acquisition and distribution of field data through a Geoportal. In the last step, students and researchers plan and implement together some of the projects' task and a final event.

At EGU the first results and further developments of the proposal will be highlighted.