A problem-based learning approach to increase the awareness of students towards natural risks and hazards: a case analysis

Susanna Occhipinti
ANISN, Valle D'Aosta, Italy (s.occhipinti@mail.scuole.vda.it)

The teaching learning of Earth science, particularly the Italian schools, where the research has been developed in the last ten years, has highlighted a widespread lack of knowledge among students, which corresponds to a lack of sensitivity in the common thought towards geological and environmental issues, to its territory, moreover often characterized by widespread disruption phenomena and natural hazards.

As a consequence, too often the culture of geosciences is understood as a culture of emergencies and not of prevention. It is a priority to promote a widespread culture of natural hazards, the knowledge of natural phenomena, the danger inherent in the geological evolution of the territory, the responsible use of the environment, the perception of phenomenon as part of the dynamics of the Earth. This research presents a path, defined with disciplinary objectives and specific skills to be developed and monitored, with the aim to contribute in spreading a greater awareness of the dangers derived from natural phenomena. The training of students must pass through more effective methodological and educational approaches, active teaching, inquiry and investigation, promoting competences and skills. Since it is experienced that the usual transmissive approach of this content is not proving effective, a PBL approach was experimented. The different steps are to raise awareness of the territory in which one lives, through a geological and historical analysis of the context, the understanding of the natural and inevitable evolution of the territory, the speed and frequency with can occur, the surface that can be affected by different natural phenomena and the transformations into risks factors. Finally, awareness that their knowledge is the basis for preventing and vulnerable contexts is needed.

The research has highlighted the need of new and more effectives educational tools and paths, that has product a widespread awareness towards the need of a repertory of practical activities. These applied, investigative and hands-on activities have shown growth of skills and competences in the involved students. The double result of a greater awareness of environmental dynamics and risks and of greater skills, technical, such as knowing how recognize relationships, and of citizenship, seem to have been achieved.

The experience has also discoved new needs: the development of a unique and more consistent epistemology of the discipline, that is capable of giving links and coherence to phenomena, materials and processes, closely interconnected, but too often not recognized as a disciplinary unicum.