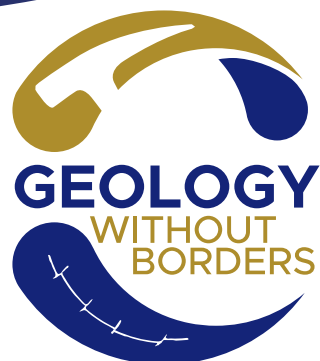




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# ABSTRACT BOOK

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## Evaluating the effectiveness of geoscience education in the field: the *Tourinstones* experience

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Teaching the Geosciences in the high school is often a complex task and teachers tend to minimize the time dedicated to the Geosciences and/or fail to arouse passion in their students and their appreciation of the importance of the Geosciences for our everyday life. Geoscience teaching is hard also because the basic understanding of the processes active on the planet involve temporal and spatial scales often not perceptible from human experience. In the frame of the PLS project, we designed a field activity to overcome these difficulties and to show the students how, acting like an explorer, may prove fascinating and how the collected data can inform on the main geodynamic processes involved in mountain building and on the time elapsing during these events. The activity is designed on the app *TourinStone*, created by the Earth Sciences Dep. of Turin with the aim of enhancing the ornamental stone heritage of the city of Turin and consisting of several itineraries through the city centre linking the ornamental stones and their provenance from different units of the Alpine chain, and describing the geological history of the Piemonte region. The itineraries were proposed to students from the last three years of the secondary school. Students were asked to describe and identify the main lithotypes occurring in the city centre with the help of a flowchart, a hand lens, and tutors dedicated to the project. A short introduction on how to describe and classify rocks preceded the activity; at the end of the day the students were also invited to hypothesize rock-forming geological processes starting from the basic knowledge gathered from rock observations (e.g. marine fossil content: sedimentary rock originating from the lithification of marine sediments of known age). Moreover, basic discussion on the exploitation of lithic raw material and their sustainability was also addressed during the final part of the activity.

We designed simple questionnaires with 5 Likert-type items to be administered to pupils and teachers before and after the field laboratory. The questionnaires were designed to assess the success of the educational field activity and its effectiveness in stimulating emotional engagement and cognitive improvement in geoscience literacy of the pupils and, their satisfaction with this geoscience activity. Teachers' questionnaires were designed to evaluate the quality and the achievement of the field laboratories, in terms of pupils' disciplinary and soft skill improvement.

The data obtained highlighted how the experience in the field had a positive influence on the perception and interest that students have for the Geoscience and that several misconceptions were solved. Furthermore, the results showed that the students developed soft skills such as observation and judgment as a result of experience. They were able to apply the knowledge and personal skills developed during the activities to respond to the questions in the ex-post questionnaire.