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# Climbing walls as multitasking sites of geo(morpho)logical interests: Italian examples from the Western Alps and Sardinia

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Geosites and in particular geomorphosites have been recently more and more used as base for educational activities in Earth Sciences and to enhance the geodiversity of a territory. Their attributes acquire a greater value and become especially appreciable when associated with field and outdoor activities. Frequently rock walls represent key sites for geological and gemorphological researches due to the wide outcrops of rocks where mineralogical composition and structures are very evident as well as landforms deriving from the modeling of outcrops surfaces. Where the rock walls are equipped for climbing activities they may be considered open-air laboratories useful to get in touch with the different features of rocks that condition progression on climbing routes. Due to these two aspects, geohistorical importance and educational exemplarity contribute to the increase of the scientific value and, as a consequence, of the global value of these sites as geosites. Geomorphosites from climbing sites allow to realize educational projects with different goals: 1) Recent researches in the Western Italian Alps have been conducted to make a census of climbing rock cliffs along the Ossola Valley (Verbanio-Cusio-Ossola Province, Italy) and to operate a choice of the ones characterized by high educational value (considering easy accessibility, grades for experts and beginners and the good exposition of rock features), representativeness, geohistorical importance, high cultural and socio-economic values, in order to propose an educational project addressed to students of an Italian secondary school aimed at introducing the three great families of rocks (magmatic, metamorphic and sedimentary); 2) The Eclogitic Micaschist Complex of the Austroalpine Domain (Montestrutto climbing wall, Turin Province, Italy) has been investigated in order to i) reconstruct the deformation stages at local scales along the sport climbing wall and the relationships between geological elements and physical elements necessary for vertical progression ii) elaborate an educational proposal; 3) Risk assessment and education has been approached through the analysis of site hazard on climbing routes, linked with both geomorphological processes, and to the variable meteorological conditions, at Monteleone Rocca Doria (Sardinia, Italy), a site sensitive to both the needs of the climbers and the environment. Here a particular attention was given to potential geomorphologically-related risks for climbers, the impacts linked to human presence and the specific features of the geomorphosite. In order to assess the possible risk situations related to the active geomorphological processes in a specific climbing site, a method for collecting data and information has been also proposed.