



# NEW CHALLENGES WITH GEOTOURISM

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## EDUCATION IN EARTH SCIENCES AND GEOPARKS A RELATIONSHIP OF MUTUAL IMPORTANCE

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Without the educational foundation it is not possible the interaction between economical and cultural development and the environment conservation, necessary in the creation of a geopark, according to UNESCO's concept.

It is understood that for constituting a multidisciplinary field, the Earth Sciences enables the teaching of science in a contextualized and globalized way, in which information and knowledge can awake, beyond a bigger interest in learning, values and competences for citizenship (Piranha, 2006).

In consonance with programmes of international institutions (UN, UNESCO, IYPE) for scientific education and for popularization of knowledge on the planet Earth for a sustainable culture, the teaching of Earth Sciences allows the understanding of natural processes as well as the evolution of landscapes and environments, with time.

Scientific education is then recognized for the benefits it brings to individuals, families and communities; among such benefits are: self-esteem development, the notion of individual and group empowerment development and responsibilities, the development of competences of creativity and critical thinking, the increase of the capacity to participate politically and consequently to participate in the democratic process. It contributes, therefore, for a culture that facilitates the sharing and transformation of values, attitudes and behaviour, through critical reflexion and the development of relevant social and ethical values (UNESCO, 2003, 2004, 2006).

Thus, making use of the holistic, historical and systemic condition which the Science of the Earth aggregates, the educational process can get new and wide resources, facing the conception, preparation and application of innovative teaching practices, which promote the differentiated and pertinent teaching of Science.

The United Nations Education Decade (Literacy), 2003-2012 shows a collective wish of the international community in promoting a literate environment for all, not only in developed but also in developing countries. In order to reach the aims and purposes of the Education Decade, UNESCO created, as a global strategy and operational mechanism, a 10-year campaign of cooperative work – the *Literacy Initiative for Empowerment (LIFE)* (UNESCO 2006). Among other strategies the campaign highlights the importance of *innovating*. The educational practices and policies imply the support to existing qualities as well as the access to information and construction of knowledge.

It depends on education the role of extreme relevance as the revitalizer of the social-cultural memory and promoter of innovations legitimated by the communities, which constitute the immaterial heritage of geoparks.

Despite the fundamental role that geodiversity plays, a geopark gets richer as it aggregates more and more of other kinds of heritage, either in biodiversity, or cultural (Pereira *et al*, 2008). On the other hand, while the geopark promotes the heritage conservation it not only uses and implements educational strategies to involve and value communities, but it also enables new possibilities for local development.

In educational terms, the primary and secondary education syllabuses in Brazil do not cover satisfactorily geoscientific concepts in forming individuals, what may explain a great difficulty of citizens in understanding how the planet where they live works (Carneiro *et al.*, 2004). This lack of information reflects directly on the low value concerning the geological and natural heritage of the country and on the destruction of it in general terms (Reys *et al.*, 2007).

Thus, it is considered that, in order to change this picture and to have a fair valuing of the natural heritage, it is necessary to address appropriately the concepts related to the Science of the Earth in the syllabuses. Beside schools, geoparks are adequate sites in order to promote the heritage education and popularization of geological knowledge. Over the last years, universities, aware of these questions, have created graduation courses to graduate professionals able to teach geoscientific questions in formal and non-formal education (Bacci, 2009).

Education focused on Geosciences can constitute the best form of preserving cultural and environmental heritage, contributing effectively to sustainability. Given its importance, while one of the dimensions related to geoparks themes, it deserves and needs to be better and thoroughly thought over and considered.

Zouros (2004) points that European geoparks have an active function in the organizing of activities of education and training in all educational levels in Earth Sciences, in valuing the natural environment and in the sustainable development policies.

An important differential between geoparks and North American parks in that they constitute important means for education in Geosciences (Nowlan *et al.*, 2004).

In such context education understood, above all, as an element of transformation and promotion of quality to development, desirably sustainable, shows that the strategies of geological heritage protection enable the conservation of unique elements of geodiversity, at the same time that allow the creation of new cultural and developmental paradigms, which contribute to the quality and sustainability of life on the planet.

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