

## THE DEVELOPMENT OF EARTH-SCIENCES EDUCATION IN PORTUGAL

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The main purpose of this paper is to present the guidelines of the development of Earth-sciences in Portugal. This development has been carried out into two dimensions: on the one hand the amelioration of the staffs of both Universities and secondary schools; on the other hand the starting of several areas of research which altogether converge for a better understanding of the difficulties related to the teaching and the learning process of Earth-sciences. From these lines of research, one should stress the following points: (i) Comprehension of the construction of the scientific knowledge; (ii) Understanding of the relevance of history of science; (iii) Recognition of the role played by the movement of alternative conceptions; (iv) Re-thinkng the nature of practical work and the way it has been carried out;(v) Re-defining the meaning and the implementation of fieldwork activities. It should be stressed that the research work which has been done is based on activities and strategies taking place in the classroom rather than with issues missing the context of science classes. The relevance of post-graduate courses specifically orientated for Earth-sciences teachers seems to be an important tool. Firstly, because it is supposed that the courses help to improve the level of performance of practices carried out by the teachers at the school and secondly, because they are better prepared to participate in the research projects which strenghted the several lines of research previously referred to above. \*This work has the financial support of the Project PRAXIS XXI and the Research Unit Didáctica e Tecnologia na Formação de Formadores.