

Earth-Sciences Education in Secondary School. Materials for Teaching and Learning About Drifting Continents & Plates

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This paper, based on work in Portuguese schools, reveals the importance of writing, trialing and using curriculum materials which incorporate an historical dimension. An example is illustrated with reference to the teaching and learning of what is recognised as a recent revolution in scientific knowledge. Continental Drift and Sea-Floor Spreading, leading what it is known in academia, and even the media, as Plate Tectonic Theory provide good examples of topics which can be taught in a historical context. The approach suggested well illustrates the sequence of steps recognised more generally as a khunian revolution in science. Hence the teachers and students are afforded the opportunity of understanding a significant way in which scientific knowledge has been slowly and painfully constructed in the context of its original discovery. Curriculum materials designed for pupils aged 13-17 in the context of the Portuguese National Science Curriculum were designed and implemented in an alternative way to those involving traditional procedures. The designing of these materials helped teachers to self-reflect about their own difficulties in relation to organizing the teaching of earth-science topics in an innovative curriculum and perspective. The introduction of these experiences should be understood within the overall framework of world-wide development in science education. Students' and teachers' evaluations of both the effectiveness and the difficulties of the experiences are presented. Most participants were highly satisfied.

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