

# **INQUIRY-BASED SCIENCE EDUCATION AND CONTINUOUS PROFESSIONAL DEVELOPMENT WITHIN A EUROPEAN PROJECT: SOME CONSIDERATIONS ABOUT ITS DEVELOPMENT IN PORTUGAL**

**C. Morais, J. Paiva, J. Barros**

*Faculty of Sciences of University of Porto (PORTUGAL)*

*carlamorais@emultimedia.com.pt, jcpaiva@fc.up.pt, josebarros@ptdeveloper.net*

It has been outlined the need of science teachers to print a more modern approach to teaching, based on effective and relevant context. Thus, the European Project PROFILES - Professional Reflection-Oriented Focus on Inquiry Learning through Science and Education - embraced by twenty participating countries, including Portugal, arises from the urgent need to invest in further continuous professional development. The aim of the project is to stimulate the skills in teaching students that may increase, through a more motivative form, their scientific literacy. In this sense, the teacher is oriented in order to experience four stages of development - the teacher as i) learner ii) teacher; iii) reflective practitioner; iv) leader - and is invited to implement with their students, new approaches based on Inquiry-Based Science Education (IBSE). Inquiry-based learning is a process where students are involved in their learning, formulate questions, investigate widely and then build new understandings, meanings and knowledge. PROFILES, and its guidelines regarding teacher training, shows great complicity with the, already completed, European Project PARSEL - Popularity And Relevance of Science Education for scientific Literacy - in which modules were developed as a set of teaching strategies for a new science approach through the discussion of social and ethical problems. The objective of the PARSEL modules is to increase the relevance and popularity of science teaching in the eyes of students, but at the same time guarantee solid student learning headed for enhancing scientific literacy.

PROFILES teacher training in Portugal, lasted 50 hours and included classroom work, independent study, participation in synchronous sessions, asynchronous forums via Moodle and project implementation in their respective schools. On this last component teachers began their training by selecting and adapting a PARSEL module followed by its application with the students, bearing in mind three key stages. At the first stage, the PARSEL module was introduced to the students through relevant and interesting social issue. The relevance was achieved when the students concluded that there was a link between the title and an ordinary society situation, rather than a formal presentation of a series of scientific terms. At the moment students noted that there was a lack of scientific ideas that need to be introduced in order to elaborate a solution for the presented problem, it was the fulcral moment to start the second stage of implementation. Teachers certificated that at this stage, all the students had clearly established the relevance of the problem. Then, teachers could apply the IBSE strategy in order to guide and involve the students in the process of obtaining the formal learning. Because it was at this stage that the students acquire the so called scientific ideas, teachers took the majority of the teaching time to explore this phase. Third stage closed the circle of the learning module. This last stage was a consolidation phase of the science learning. This was made by transferring the learning achieved to the initial social issue proposed.

All PARSEL modules were evaluated using the «Questionnaires for the Assessment of "motivational Learning Environment" (MoLE)» and the results pointing to an increase in student motivation.

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