



International Doctoral Program in Science Position

New Challenges for Teaching and Learning Science in Primary School

Background and motivation

A basic understanding of Science is considered mandatory for every modern European citizen. Many international reports identify the lack of human resources, above all women, in key Scientific professions and call for modernising Science teaching in school and achieving gender balance. The recommendation of the European Parliament and of the Council of December 18th 2006, upgraded in May 2018, focused on key competences for lifelong learning, highlights the Mathematical competence and the basic competences in Science, Technology and Engineering: «Competence in science refers to the ability and willingness to explain the natural world by making use of the body of knowledge and methodology employed, including observation and experimentation, in order to identify questions and to draw evidence-based conclusions. [...] Competence in science, technology and engineering involves an understanding of the changes caused by human activity and responsibility as an individual citizen» [1]. In order to develop these competences, every European State has to carry out different educational policies, plans and practices.

This project concerns an in-depth exploration of Science Education with particular attention to the Primary School context. Major issues are: 1) to provide a mapping of the policies and strategies in place across Europe to improve and foster Science teaching and learning in education systems, starting from the last OCSE-PISA results; 2) to focus on the Italian school system in order to create materials and methods to support Science teachers to raise the motivation of pupils, to increase their interest in the subject, and at the same time, to enhance attainment levels. The project aims to develop scientific ways of thinking through investigation, laboratory, modelling, argumentation, applying information and communication technologies and innovative teaching strategies. We are therefore trying to build in-service teacher education materials that will support primary teachers when faced with teaching of the Science content and method of the National Curriculum and to validate some instruments directly into the classroom. The final aim is to mentor Elementary Science teachers with a systematic, ongoing collaboration with a research group made up by members of KU Leuven and Università Cattolica.

[1] Council of the European Union (2018). Council Recommendation of 22 May 2018 on key competences for lifelong learning (2018/C 189/01). *Official Journal of the European Union*, C 189/1-13.

Profile

- Master's degree or similar qualification in Physics, Biology, Chemistry or adjacent fields.
- A solid background in Physics, Biology, Chemistry is required.
- Experience in Science teaching.
- Good knowledge of the English language, both spoken and written, is essential.
- Strong commitment, ability to work in a team, and eager for international mobility is desired.



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Opportunities

Experimental research participating to the international collaboration between research groups in Belgium and Italy. Double degree opportunity.

Please note that this position is NOT supported by a fellowship.

Contacts

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