

## A decorative graphic consisting of several overlapping, wavy, horizontal bands of blue. The bands vary in shades of blue, from light sky blue to deep navy blue. The lines are fluid and organic, resembling stylized waves or flowing ribbons. Some lines are solid, while others are dashed, adding a sense of movement and depth. The overall effect is a dynamic, modern, and artistic background element.

Faculty of Sciences, University of Porto, Portugal



Fifth International Conference of Education, Research and Innovation / 19th, 20th &amp; 21st of November, 2012 / Madrid, Spain



A decorative graphic at the top of the slide consisting of several overlapping, wavy, blue lines that create a sense of motion and depth. The lines vary in opacity and color, ranging from light blue to a deeper blue.

# PROFILES

- European Project PROFILES - Professional Reflection-Oriented Focus on Inquiry Learning through Science and Education;
- CPD based on basic principles of self-efficiency and, *a posteriori*, of teacher ownership.
- The self-efficiency is based on two main principles:
  - Stimulate and promote the skill, in teachers, to teach students with motivation, in order to increase their scientific literacy.
  - Enable the teachers with trust, so that they will be able to undertake a motivating teaching, despite possible restrictions, inherent to the teaching-learning process.





# PROFILES

- PROFILES centers its attention is teacher ownership;
- PROFILES aims at boosting a dialogue consciousness and interaction between teachers, developing teacher networks;
- PROFILES promotes approaches based on Inquiry-Based Science Education (IBSE);
- <http://www.profiles-project.eu>
- <http://www.profiles.org.pt>





# PROFILES

- **Professional**, clearly indicates a compromise to professionally develop educators;
- **Reflection-Oriented Focus**, summarize the importance that the project gives to teacher orientation, in order to reflect on their own teaching;
- **Inquiry Learning** conveys the teaching strategy to be developed with teachers and comprehends student-centered learning;
- **Education through Science**, obviously reflects the type of methodological approach that needs implementing with the students





# The PARSEL project

- PARSEL literally means *Popularity And Relevance of Science Education for scientific Literacy*
- The PARSEL modules, developed in this project, are a set of pedagogical strategies used to approach science through social and ethical problems;





# The PARSEL project

- The PARSEL modules are conceived in three stages:
- **Stage 1:** The relevance for the student is reinforced connecting the title to a social situation;
- **Stage 2:** Scientific ideas, scientific problems to be solved, associated process skills, social and personal attributes, are, at this stage, embedded as teaching strategies;
- **Stage 3:** Students consolidate their science learning through content transference of the formal contents retained for the socio-scientific question and reach a socio-scientific decision;






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# PROFILES and teachers' continuous training

- PROFILES tries to motivate teachers to find ways to increase student motivation in science learning.
- This motivation may be intrinsic or extrinsic:
  - The intrinsic motivation lies on the relevance, the meaning and the importance science has for the youth.
  - The extrinsic motivation comprehends encouraging and reinforcement of students learning, in a classroom context






# PROFILES and teachers' continuous training

- Teachers' professional development is divided by PROFILES in four main development areas:
  - **Teacher as a learner** - teachers should search for the development of skills that allow observing their activity in a learning process dynamic
  - **Teacher as a teacher** - the teacher should see his/her activity exactly as as teacher.
  - **Teacher as a reflective practitioner** - a reflexive professional is a teacher willing to reflect about his/her intervention in the classroom and discuss it with other PROFILES teachers, in a collective reflection dynamic.
  - **Teacher as a leader** - the PROFILES teacher should see him/herself as a leader.






# Portugal and PROFILES teacher training

- 25 teachers of different parts of the country were invited to form the “PROFILES teachers” group in Portugal;
- The first task of the work plan was to select, translate and adapt the PARSEL modules;
- There were synchronous discussion sessions and asynchronous discussion forums about IBSE, teaching and science history;






# Portugal and PROFILES teacher training

- PARSEL modules were then applied with the students, in a classroom context, bearing in mind three main stages:
  - First stage - the PARSEL module was presented through a social relevant and potentially interesting question.
  - Second stage - the teachers, continued applying the IBSE strategy.
  - Third stage - consolidation of the science learning process.





# Portugal and PROFILES teacher training

- Benefits for professional development arising from the PARSEL modules and their adaptation task highlighted by teachers:
  - The emphasis on contextualized teaching, present in the modules.
  - The professional development inherent to the knowledge of these teaching strategies.
  - To know or improve IBSE techniques.
- The results of the «Questionnaires for the Assessment of “motivational Learning Environment” (MoLE)» point to an increase in science study motivation on students.





# Final considerations and future plans

- The effective and sustainable improvement of the teaching process through the promotion of self-efficiency and teacher ownership may be strengthened by means of collaborative interactions and self-evaluation procedures centered on teachers' reflexive practices, as well as through qualitative and quantitative assessment of the students' cognitive and emotional learning.
- The PROFILES project arose from this principle and from the urgent need to apply it in all Europe.





# Final considerations and future plans

- PROFILES has been implemented in Portugal, under the presumption of that each PROFILES teacher contributes actively for the promotion of student motivation in science learning.
- At present, teachers are motivated implementing the PARSEL modules in their schools, with their students, and the impact of this will be evaluated in the future.





# Thank you for your attention.

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