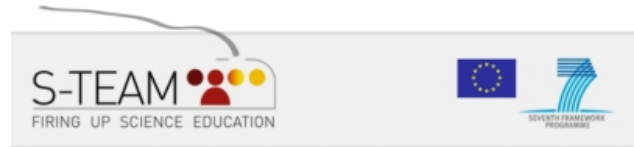


Research Briefing No. 7

Science Teaching: Advanced methods (S-TEAM)

Key findings

- Action research informed by research on scientific inquiry and argumentation can lead to changes in teachers' performance at the level of the science classroom;
- Science teachers' perception of scientific argumentation can be enhanced by coordinated professional development that places teachers at the centre of research;
- Innovative assessments can be embedded in traditionally unfamiliar pedagogical strategies such as argumentation to promote the implementation of scientific inquiry in science classrooms.

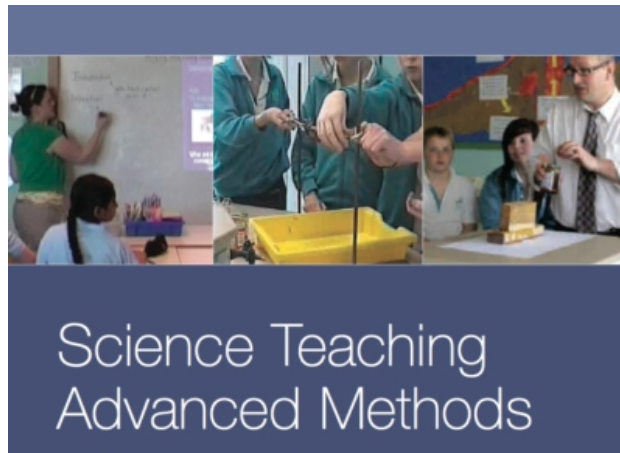


The research

The Research

The teaching and learning of scientific inquiry, particularly in the context of scientific argumentation, has been the focus of a research and professional development project based in the Graduate School of Education and funded by the European Union FP7 Programme. The STEAM (Science Teaching Advanced Methods) project brought together 25 institutions from across Europe investigating and disseminating effective practices in inquiry-based approaches in science teaching.

The Bristol team, led by Professor Sibel Erduran included Wan Ching Yee and Dr Neil Ingram along with a group of science teachers from local schools.



STEAM Project

Research design

Research Design

The project involved science teachers from 6 schools across the Bristol area to conduct action research in their classrooms. Data were collected from their teaching as well as the professional development workshops conducted at the Graduate School of Education.

Further information

The Bristol project has produced several resources. The first is entitled *Assessment and Practical Inquiry in Scientific Argumentation: A Professional Development Programme for Secondary School Science Teachers*. It is designed to support teacher educators in the training of science teachers in acquiring skills and knowledge of teaching argumentation in science.

The second resource is called *Science Teaching Advanced Methods: Frameworks for supporting argumentation in Science Teaching and Learning*. It was co-produced with colleagues in France and Spain, and includes a set of policy statements for teacher education, outlining an indicative set of vignettes for the teaching of argumentation based on inquiry approaches in science.

Website

<http://www.apisa.co.uk>

Contact

Professor Sibel Erduran, Dr Neil Ingram, Wan Ching Yee.
Email: sibel.erduran@bristol.ac.uk **Phone:** 01173314340.