



PROFILES is funded by the FP7 programme from the European Commission. It comprises a consortium of 21 partner institutions from 19 different countries and is coordinated by the Department of Chemistry Education of the Freie Universität Berlin (FUB).

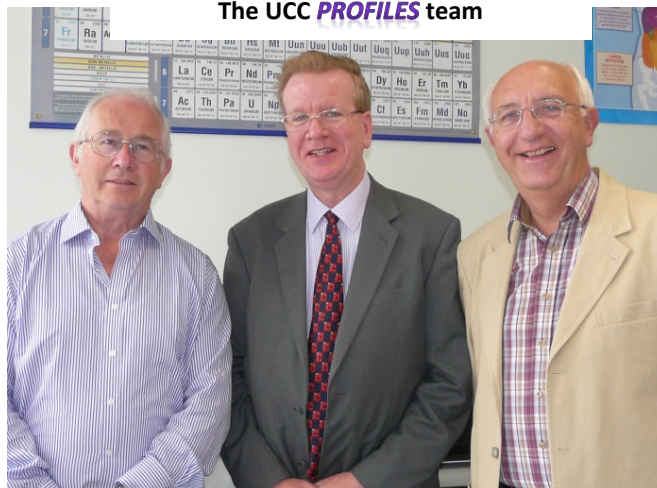
Noel Brett (on left) is the UCC coordinator of the Eureka Centre for Inquiry Based Education in Science and Mathematics. He is a former external examiner in Physics for the European Schools and is currently the Chief Advising Examiner in Physics with the State Examinations Commission.

Dr. Declan Kennedy (centre) is a senior lecturer in the Department of Education in UCC. He is the international representative of the Irish Science Teachers' Association and is also the European representative for ICASE.

John Lucey (on right) is a former Deputy Director of Second Level Support Services in Ireland. Prior to that, John was Co-ordinator of the National Biology Support Service and Education Officer for Senior Biology in the National Council for Curriculum and Assessment. John is currently a part-time lecturer, supervisor and tutor in the School of Education, University College Cork.

PROFILES ... the acronym for "Professional Reflection-Oriented Focus on Inquiry-based Learning and Education through Science".

The UCC **PROFILES** team



Ploughing a Furrow of Excellence in Science Education Across

PROFILES promotes Inquiry Based Science Education (IBSE) by means of raising the competence of science teachers in taking ownership of more effective ways of teaching students. The project focuses on open inquiry approaches as a major teaching target and emphasises both intrinsic and extrinsic motivation of students in the learning of science. The intended outcome is that science teaching

becomes more meaningful and relevant to 21st century science and that it incorporates interdisciplinary socio-scientific issues and IBSE related teaching methodologies. The degree of success of the project will be gauged by evaluating not only the self-efficacy of science teachers in developing fulfilling science teaching methods but also in the attitude of students to this more student-involved approach.

Cooperation and support

The research strategy at UCC is to create Centres of Excellence in targeted areas of world-class research output where ground-breaking research is conducted in an interdisciplinary manner.

The UCC Profiles team embraces this endeavour for excellence and has enlisted the help of a wide range of educationalists in developing the many features intrinsic to Profiles. These features include the MoLE questionnaire, the Delphi Round 1 and Round 2 questionnaires and the Profiles teaching modules.



A group of teachers participating in the **PROFILES** project are seen here at a briefing meeting with Dr. Declan Kennedy and John Lucey.



<http://ec.europa.eu/>



<http://ec.europa.eu/research/fp7>



IRELAND AND ROMANIA: COLLABORATION



The Profiles team members from Bucharest, led by Gabriel Gorghiu (on left), seen here with their Irish colleagues.

Scoala Generala 80, Bucuresti-- visit as a guest and leave as a friend

- ◆ State school.
- ◆ 1,100 boys and girls.
- ◆ 65 teachers.
- ◆ Romanian, English, French, Italian.
- ◆ Exceptional parental involvement.



Irish Profiles team member, Noel Brett, being greeted by students to their school in Bucharest during a Comenius Project visit in 2001.

Inquiry-based learning (IBL)

Educationalist Rory Geoghegan, a part-time lecturer in UCC, assigned the following sample IBL exercise to teachers who were studying for an M.Ed and were linked with the Profiles project.

The tasks required the integration of:

- mathematics
- spatial visualisation
- manual dexterity
- cooperation

Task 1

Make an octagonal prism, closed at one end, decorated on the outside
Dimensions: 12 cm 'short' diameter and 3 cm in height

Task 2

Make a cone, 12 cm in diameter and 3 cm in height and open at the base.
The cone should be divided into 8 equal sectors and coloured on the outside

Task 3

Make an octagonal prism, open at both ends, and decorated on the outside.
Dimensions: 3 cm in 'short' diameter and 12 cm in height

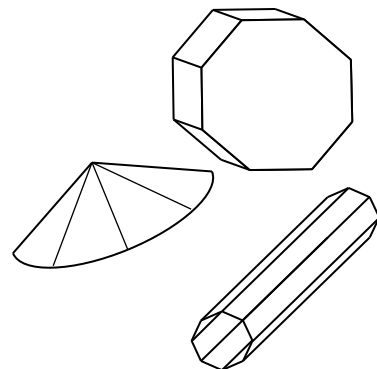
Task 4

Set up a geared motor, battery pack and reversing switch so that the motor can be started, stopped and reversed. The switch should be remote from the motor (> 50 cm).

Fix a cardboard disc (4 to 6 cm in diameter) to the motor axle.

Task 4 was not accomplished by the teachers. Task 2 and 1 proved most difficult; task 3 was the only one that was completed without substantial prompting.

Rory believes that demanding inquiry-based tasks should be preceded by many smaller tasks that can be completed in a relatively short time (ranging from 15 minutes to a few hours). Otherwise IBL becomes associated with 'special' projects and does not become a habitual way of thinking.



SHARED AIMS

On the European front, **PROFILES**, **ICASE** and **PARSEL** share many similarities. All are committed to promoting Inquiry Based Science Education and so it is not surprising that many progressive educationalists are affiliated to all three organisations (reference picture on the right).

In Ireland, bodies such as Discovers Sensors and the Professional Development Service for Teachers (PDST) are engaged in similar work.

Equally, Coursework B in the Junior Certificate Examination has IBSE as its focus.



Picture above right: At the International PARSEL Conference in Berlin, March 2009, Johannes Klumpers, Head of the Unit “Scientific Culture and Gender Questions”, European Commission, presented a paper:

Science Education in Europe - Trends and perspectives for funding of future projects.

Wolfgang Graber, Rachel Mamluk-Naaman, Johannes Klumpers, Noel Brett, Jack Holbrook, Declan Kennedy.

Ireland, PROFILES and “Inquiry-based Learning and Education through Science”.

The **PROFILES** team in Ireland is totally committed to supporting the aims and aspirations of this European Project. The workload to date – the Delphi and MoLE questionnaires in addition to the highly structured **PROFILES** modules -- has been phenomenal but all those

involved at the UCC base have responded unequivocally. The following photos give some indication of the variety of work undertaken by the UCC Profile Partners. The activities are directed at students and teachers and all share an IBSE theme.



Dr. Bob O'Brien from the Connecticut State Crime Lab, has delivered a number of forensic science workshops to teachers in UCC. Here Bob demonstrates ‘blood splatter analysis’.

Below. students at a workshop in the Eureka Centre UCC.



The Pasco SPARK hand-held datalogger in picture is an invaluable tool in investigative science in the Physical and Biological Sciences for both student and teacher alike.

Below, teachers use a weather sensor linked to a SPARK.

