

New workgroup on education

Scientific education and research are often perceived as sequential stages in a scientist's career, but both should be considered as inseparable. There are many examples of brilliant ideas that were first born in the mind of students: it is important to recognize and to nurture real talent at an early stage during the education process.

Issues surrounding the education of scientists should therefore figure prominently on the agenda of every active association of scientists, such as EUROSCIENCE, and that is why we have decided to create a new Work Group on Education within EUROSCIENCE*, specifically to address the kind of issues relating to higher education such as those being actively discussed within the framework of the so-called Bologna process (see Table below). But it is also important that we tackle some of the problems related to high school education.

Here are some of the issues we propose to address in the WG Education:

- 1** Participation of students in real research work at an early stage of their studies. This might involve changes in course structure and teaching methods.
- 2** Aspects of multidisciplinary, a feature of contemporary science that should figure within educational programmes.
- 3** Strengthening of pan-European exchanges of information and experience relating to the introduction of new approaches to scientific education (e.g., distance learning).
- 4** Spreading examples of good practice in teaching. For example, brilliant university courses, such as Richard Feynman's Lectures in Physics, need to be identified and widely disseminated.
- 5** The introduction of good courses on the history of science

to help students understand the logic of scientific development.

6 The problem of balancing standards in science education with diversity, a complex issue that is particularly stressed in the Bologna recommendations.

7 The support of cooperative interactions amongst European universities.

8 The economics of higher education. The tendency of treating universities as commercial units for the delivery of educational services poses real problems that need to be debated.

9 Collaboration with various European bodies concerned with higher education to discuss issues that specifically concern science education. For example, with the European University Association (EUA); the National Unions of Students in Europe, coordinated by ESIB (European Student Information Bureau); the European Association of Institutions in Higher Education (EURASHE), which comprises National Associations of Colleges and Polytechnics, and Individual Institutions.

10 Advice to government higher education bodies, UNESCO-related structures, and European structures such as the CDESR (Steering Committee for Higher Education and Research, Council of Europe), of which one of us (RMD) is a member.

The initial task of the EUROSCIENCE WG on Education should be to gather and collate relevant information on such issues and to establish contacts with the most active and effective actors in the field. It is planned to post the activities of the Working Group EUROSCIENCE website. We ask all interested colleagues to join this Working Group, or at least to contact with us their advice and suggestions.

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* The creation of the Work Group on Education was approved by the EUROSCIENCE Board at its meeting in Geneva on 30th of January, 2005.

The Bologna Process (see www.bologna-bergen2005.no)

The Bologna Process is in fact a part of the process of European integration concerned with higher education. The main idea is to create a European Higher Education Area based on a series of principles shared by most or all European countries. The problems addressed, as extracted from the Communiqué of the last Ministerial Conference in Berlin (September 2003), were as follows:

- Quality Assurance of higher education;
- Degree structure: Adoption of a system essentially based on two main cycles;
- Promotion of mobility of students and academic and administrative staff;
- Establishment of a system of credits to facilitate student mobility and international curriculum development;
- Recognition of degrees: Adoption of a system of easily readable and comparable degrees;
- Involvement in the process of higher education institutions and students;
- Promotion of the European dimension in higher education – development of integrated study programmes and joint degrees;
- Promoting the attractiveness of the European Higher Education Area;
- Lifelong learning.

Milestones of Bologna process

May 1998 Joint declaration on harmonization of the architecture of the European higher education system by the four Ministers in charge for France, Germany, Italy and the United Kingdom (the Sorbonne, Paris, France)

June 1999 The Bologna Declaration: Joint declaration of the European Ministers of Education (signed by Ministers from 29 countries, Bologna, Italy)

March 2001 Students' Göteborg Declaration (Göteborg, Sweden)

March 2001 "Shaping the European Higher Education Area", Message from the Convention of European higher education institutions (Salamanca, Spain)

May 2001 "Towards the European Higher Education Area", Communiqué of the meeting of European Ministers in charge of Higher Education (Prague, Czech Republic)

May 2003 "Forward from Berlin: the Role of the Universities", from the 2nd Convention of European Higher Education Institutions, formally adopted by the Council of the European University Association (Graz, Austria)

September, 2003 "Realizing the European Higher Education Area", Communiqué of the Conference of Ministers responsible for Higher Education (Berlin, Germany)

May 2005 Ministers responsible for higher education in 40 European countries meet to take stock of the progress of the Bologna Process since the Berlin meeting in September 2003 and to set directions for the further development towards the European Higher Education Area to be realised by 2010 (Bergen, Norway)