

ECTN – Links with Schools: Examples of good practice, Part I

Starting from ECTN-Newsletter 1/2005 the Links with Schools-Group within the ECTN will regularly provide examples of how to cooperate between HE institutions and schools. The first two examples are about partnerships between the universities of Turin (Italy) resp. Bremen (Germany) and schools in their region.

University-High School Partnership in Turin (Italy)

by M.A. Floriano (Italy)

This report summarizes a very interesting and effective link established in Turin between the Faculty of Sciences, the public school board and local high schools.

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Starting with the school year 2000/01, the Faculty of Sciences of the University of Turin has been asking to local school deans to sign an agreement, under the auspices of the Ministry of Education and other local authorities, in order to establish a stable connection between the two educational Institutions to help students in the transition from high school to University. Currently, over 50 schools have signed the agreement. The different activities are planned and managed by a committee formed by the school dean, university teachers, a representative from the local school board and one from the School of Secondary Instruction (SSIS).

Different working groups, so far, have organized activities in the following topics:

- Group 1: Set-up and administration of TARM (Test for Assessing Minimum Requirements) for university admission.
- Group 2 Set-up of standards for activities in different areas of science for which university credits can be obtained according to rules set by the individual degree programs.
- Group 3 Set-up of cooperative education programs to assist teachers and students.

In area 3, in addition to lectures, labs, and other usual activities, are worth mentioning the “Prize of the Faculty” for the best projects prepared by students in each of six thematic scientific areas, “Science alive” (www.scienzemfn.unito.it/orientamento/documenti), a booklet published in cooperation with elementary schools (a similar initiative is currently under way involving junior-high schools).

Several other innovative projects are being developed, within the framework of the above agreement, such as the “Elite” project, directed to “excellent” students in order to orient them towards scientific disciplines.

Rating according to ECTN criteria

Is the link personal, reliable, and cooperative?

YES. The link between the university and each institution relies on a committee formally representing both sides in addition to supporting institutions such as the school board.

Is the link acknowledged, networked, and is support available?

YES. The link is established through an official agreement/partnership in which the head of the school is directly involved. As a consequence, (partial) support is available also through official Institutions such as, for example, the provincial government.

Is the link visible?

YES. The link is extensively advertised through the many activities that are organized and the web sites (see, for example, www.scienzemfn.unito.it/orientamento/accordo.htm).

Is the link attractive and helpful for the students?

YES. The link is certainly attractive to students for several reasons. By interacting with university staff, for example, they can become acquainted with a different educational environment thus facilitating their transition from high school to university. They are told what is expected from them and they receive assistance in meeting entry requirements. By attending different kinds of activities, the students can also earn credits that can be used in their university curriculum.

Is the link structured and evaluated?

YES. Different activities within the partnership are directed to obtaining official recognition of the students' work. As a consequence, objectives are clearly set and teacher's role from both sides is clearly specified.

Chemical and Waste Management System for Schools in Bremen (Germany)

By Doris Soevejarto-Wigbers and Ingo Eilks

This paper reports an initiative networking
all schools of the country of Bremen in Germany,
the Ministry of Education and Science in Bremen,
the Institute for Schools and In-service Teacher Training in Bremen (LIS),
the University of Bremen,
the Centre of Environmental Research and Technology (UFT),
the Public Service of Waste Treatment in Bremen, and
the Public Accident Insurance of Bremen.

The network was founded in autumn 2003. It is organized by the group of Bernd Jastorff from the Centre of Environmental Research and Technology (UFT) at the University of Bremen.

The initiative aims on supporting experimental chemistry teaching in schools. This should be achieved by assisting teachers in the handling of chemicals, managing risks, and treating chemical waste from experimental classes in schools as well as in offers of lesson plans, experiments and teacher training.

Single activities are

- To offer risk assessment advice for schools and to train teachers in risk assessment in experimental school chemistry.
- To create a logistical system for schools. This system includes an order/deliver-service for gases, chemicals and special experimental boxed-sets. In this way, a lot of hazardous, poisonous and toxic substances can be removed from schools and stored in a special part of the central chemical stock in the university. Only few toxic and harmful chemicals, which are used often, will be left in schools. This will vastly reduce the need of schools to conduct their own risk management in regard to chemical storage.
- To take care of all chemical wastes from the schools. The waste is periodically collected from the schools and transported to the central waste treatment facilities of the university. The university has a local register of chemicals and their hazard management ("Gefahrstoffkataster" and "Chemikalienbörse"). These have also been made available to schools.
- To develop teaching materials and lesson plans with reduced risks and to deal with risks as a topic in school chemistry. This part aims on the support of teachers in

making the classes more attractive to their pupils by increasing the number of experiments performed by the pupils. Thus, experiments are developed in cooperation with teachers and the science education institute of the university. These experiments are developed with special respect to aspects of risk assessment, sustainability, and modern ways of learning (e.g., context-orientation, student-activity, cooperative learning environments). The experiments will be offered in prefabricated boxed set provided by the UFT, including teaching materials, equipment and chemicals. This also effectively reduces the number of toxics, and dangerous chemicals in the school, as the number of the substances stored in schools can be reduced. The boxed-sets for example will include experiments like LC-chromatography, distillations, or other micro-scale experiments. These boxed-sets can be ordered via an internet service.

- To offer one day experimental courses for students in the university. In these courses the principle of structure-activity-relationships, the behaviour of dangerous substances and their risks for human beings and the environment should be taught. There is hope that this also helps to increase the awareness of teachers and pupils for dealing with chemicals in their everyday life.

The University of Bremen and the UFT are placing personnel and technical facilities to this project.

Rating according to ECTN criteria

Is the link personal, reliable, and cooperative?

YES. The link relies on a working group covering members of all stakeholder groups, university, schools, teacher training institute, school administration. Members of the UFT are personally reliable for all activities within the link.

Is the link acknowledged, networked, and is support available?

YES. The link itself is a network of different parts of the university and within the schooling system. The link is networked to the EU-projects CHLASTS and supported by the Ministry of Education in Bremen. The network is highly acknowledged by the Ministry of Education and the head of the university.

Is the link visible?

YES. The link is visible in local newspapers and university brochures.

Is the link attractive and helpful for the students?

YES. The link is more helpful for teachers. Indirectly, it is helpful to foster experimental chemistry teaching in schools and thus to students. Within the frame of the network projects of curriculum development are carried out and experimental exercises for students in the university are offered.

Is the link structured and evaluated?

YES. The link is structured by contracts between the university and local school authorities. Evaluation is accompanying the phase of implementation.