

AimATLAS  
(Education for a sustainable future)

Pre-proposal Deadline: 1st November 2003

ABSTRACT  
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Sustainability is vital to the future of the human and economic development of our planet. Under no circumstances can present growth jeopardize future generations' chances of growth. Equal attention must be paid to economic, social and environmental considerations in policy working-out and decision-making processes.

Among the strategic areas of knowledge which contribute to the "collective future" is the knowledge stemming from biotechnology – meant as a "case study" by which the project can focus on the theme of sustainability – to be shared through the forming of critical awareness based on the understanding of the scientific data and their margins of uncertainty in order to avoid the risks originating from distorted applications without giving up the benefits (public understanding of science).

AIMS

To realise didactic support with the contribution of research centres, universities, teachers and students in order to spread sensibility to the theme of sustainability among the younger generations. To point out the complex relationships, on a planetary level, between the following issues: sources of power; environmental balance; climatic changes; technological innovation; fight against poverty; global economy.

In the perspective of the future:

- if school aims to involve and prepare future citizens, it has to carry out a significant improvement and incorporate branches of knowledge, scientific information and complexity-oriented cognitive methodologies in view of the sustainable planetary future;
- school needs to use new communication, teaching and information tools in order to professionalize future social workers;
- school needs to practise new relationships among students (Internationalization) if it aims to promote new culture and a new social organization oriented to defend the general future interests of the planet and its inhabitants.

Ultimately, school should change into a cultural, scientific and technological innovation centre (civil education).

METHODS

The research centres interact with the schools to give them help in the realization of both processes and results.

During the first experimental step, as a preliminary, it will be necessary to question how to teach science, which connections between the branches of knowledge are required in order to teach the scientific contents of the project.

In this sense, the Actions to be taken consist of:

1. Production of modules aimed to increase the scientific and technological knowledge in order to put into a framework and connect the themes of interest for the future.

The modules can contemplate the involvement of an adult target, so as to widen the educational offer of the school on the territory with cultural "routes" oriented to the specific themes (lifelong learning).

2. Realisation of workshops and e-learning courses for both teachers and students.

3. Circulation of international scientific reports on the themes of interest.

4. Realisation of the database of the school produced materials to spread and encourage free exchange between students and teachers.

5. Creation of a school network of the North and the South of the world to educate future adult generations for international co-operation.

#### TOOLS

School networks are the key to the continuous enriching of the experiences which will be started up. Collaborative experimentation tools in environments of scientific objects manipulation and scientific simulation will be used. For this purpose, the sharing of the experiences will be realized with the following tools: web repository, electronic forum, web seminar, virtual classroom, virtual laboratory, by which the schools participating in the experiment will be connected to access the information and the multimedia didactic resources.

For the schools it will be possible to use the ENEA USABILITY LAB, which was set up back in 1992 during the experimentation of the ESPRIT Venus Project at the ENEA Pilot Centre.

The laboratory has carried on the development of an advanced visual interface to multimedia databases.

The Usability Lab has implemented innovative web search engines to explore web sites on the Internet:

1. AWM (Active Web Matrix) is an innovative approach to manage e-Learning web sites and related multimedia. MATRIX is an active web-db system based on ASP and Java Technology. It has been developed in the ENEA Casaccia Research Centre in collaboration with the "La Sapienza" University in Rome. The system allows the web end user to access different multimedia web pages produced by querying relational and distributed databases. Then the experimental results have been tested by end-user classes, by using MATRIX in the e-Learning field.

2. Advanced web based modules integrated with the multimedia database to manage the seminar information.

Net Seminar disseminates a seminar on the Internet by means of the integration of specific slide collections and video streaming services. Moreover, the module manages: events, sessions, speaker information sets and dynamic web pages related to the web seminar.

3. Iconic Visual Query System Server (IVQSS)

A client/server system to query remote multimedia databases through the web with an iconic interface.

It is a system developed with the JVM SDK1.3. It makes it possible to query different RDBMS through the web with an iconic interface and the personalization of the result visualization.

Website reference : <http://www.enea.it/com/ingl/default.htm>

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