A European project is to raise young people's interest in studying for scientific degrees
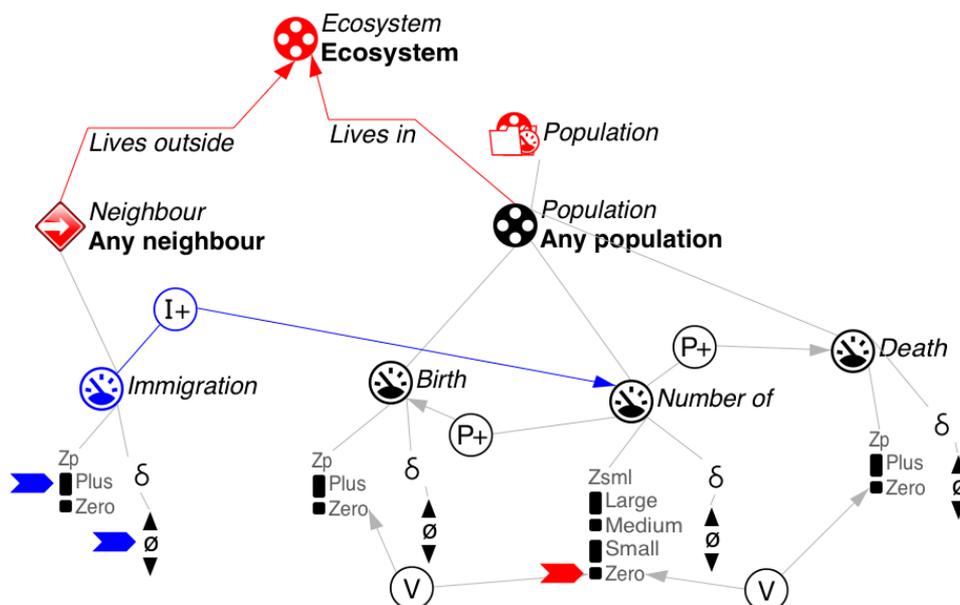
This project is to develop an interactive learning environment enabling students to individually or collaboratively build conceptual models of the scientific subjects under study. The ultimate aim of this project is to play a role, through the integration of well-established technological developments, in raising European youth's interest in studying scientific disciplines.

It is important for human beings to understand how things work. It is vital to be able to explain and predict their behaviour to use the accessible educational resources for the benefit of humanity. Therefore, society needs to find effective instruments to improve individual education in different fields. However, there is a clear decline in science education. The number of students is dropping sharply, as fewer and fewer students are opting for a science education and, of those that do, more and more are dropping out.

Recent surveys, like Osborne's 2003 study, offer extensive information on this problem and identify under-commitment and under-motivation in science education as one of its main causes. They also pinpoint the under-use of information technologies for the purpose that they are really most necessary, that is, as tools for dealing interactively with the theoretical concepts explaining all sorts of different natural phenomena.

Educational needs

These educational needs are what are behind the DynaLearn project. DynaLearn sets out to integrate well-established but currently independent technological developments and utilize

the resulting added value from their integration to meet such needs and alleviate these problems.

The priority objective of DynaLearn is to develop an interactive learning environment enabling students to build conceptual models of the scientific subjects individually or in a collaborative environment. This environment will have three key features: it will tailor the use of the conceptual knowledge to the learning experience, it will appeal to students and it will react to each student's individual learning requirements.

Students will handle graphical elements to build the knowledge models and interact with other students and experts (teachers) to exchange knowledge on different subjects. The resulting technology will have the potential of becoming a secondary and higher education standard for knowledge acquisition across a wide range of subjects.

The developed software will significantly improve students' ability to understand and explain scientific system behaviour. Also, avatars will encourage students to use the software, getting them to collaborate and compete with each other and stimulating the social side of learning.

Finally, thanks to semantic technology, students will be able to automatically compare their results against the models created by other students and by teachers. This will provide information on how to improve their models and advice on an individualized learning itinerary.

DynaLearn is a European Union Seventh Framework Programme Project for Research on Information and Communications Technologies (FP7-ICT), coordinated by the University of Amsterdam and partnered by the Technical University of Madrid, the University of Augsburg, the University of Brasilia, Tel Aviv University, the University of Hull, the Bulgarian Academy of Sciences and the University of Natural Resources and Applied Science of Vienna.

DynaLearn website: www.dynalearn.eu