

## About the project

What is the rationale for the project?

There is a tendency for the number of social science specialists to increase across Europe, but there is corresponding lack of natural science and technology specialists. In addition the knowledge level of pupils in subjects such as mathematics, physics and chemistry appears low. The view is that there is a need for methods to be introduced, which are capable of increasing the motivation and interest of pupils in mastering sciences and improving skills levels.

The Aim of the project

To facilitate the development of human resources and improve the knowledge of pupils undergoing vocational learning in mathematics, physics and chemistry by using an ICT supported task-generation and evaluation system. By using this innovative system it is hoped to increase the motivation and interest of pupils in specific subjects and their competitiveness in the labour market.

The Target beneficiaries

- Pupils involved in vocational learning.

Statistics (TIMSS and other sources) show that the knowledge level of vocational learners in natural sciences and mathematics is lower than it is in other areas. There is evidently a need for tools and methods which are capable of stimulating learners to master these subjects.

- Teachers/ trainers working in vocational institutions.

Teachers of mathematics and physics tend to devote high levels of time making and checking tests. The task of the project is to optimise and make automatic this routine work so that teachers have more time to attend to the individual learning needs of pupils.

Result of the project

That the GENEXIS system has been adopted for implementation in collaborating partners' communities.

## GENEXIS

Data Pro Grupa is a limited liability entity which has been working on the development of a training system for mathematics, physics and chemistry called GENEXIS since 2006. The basic system model has now been successfully established. At the core of the system there is the capability to generate infinite numbers of tasks at different levels of complexity. In addition the system provides the user with the opportunity to follow the task solution process step by step and they achieve complete understanding of how the solution has been reached. The Task generation function allows for the replications of different situations and scenarios, for monitoring of knowledge levels and for highly interactive and therefore attractive learning opportunities in subjects which for many learners are seen as boring.



Functions of the GENEXIS exercise generation and evaluation system

Learning (for students):

- generation of exercises;
- detailed demonstration of exercise solutions;
- unlimited numbers of randomised exercises differentiated according to learner capability and level;

Monitoring (for teachers/trainers):

- generation of tests;
- correction of tests;
- monitoring of pupils' knowledge level.

Aim of GENEXIS:

- increase the motivation and interest of pupils in specific subject areas and improve their competitiveness in the labour market
- to reduce teachers' workload in the key areas of preparation and monitoring of tests

GENEXIS ICT supported task-generation and evaluation system for mathematics, physics and chemistry in vocational Institutions.

Training  
(for pupils)

Generation of exercises

Detailed demonstration of exercise solutions

Unlimited quantity of exercises

Monitoring and Control  
(for teachers)

Generation of tests

Correction of tests

Monitoring of pupils' knowledge level