

– THE VccSse SYSTEM –

A MULTILANGUAGE COLLABORATION LEARNING ENVIRONMENT BASED ON WEB RESOURCES



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VccSse Project – Aim and Objectives:

Started in October 2006, the Socrates - Comenius 2.1 European Project no. 128989-CP-1-2006-1-RO-COMENIUS-C21 entitled **VccSse - Virtual Community Collaborating Space for Science Education** (<http://www.vccsse.ssai.valahia.ro>) is carried out with the duration of three years, having as main aim to adapt, develop, test, implement and disseminate training modules, teaching methodologies and pedagogical strategies based on the use of virtual instrumentation and to promote the cooperation between different European teaching and educational institutions to produce and disseminate training materials that will assure the technical and pedagogical elements with the view of implementing in the classroom of the virtual applications through Information and Communication Technology tools. In this sense, the partnership assumes to build various pedagogical approaches in a virtual space able to offer efficient ways of using specific tools for logical understanding of the fundamental concepts in sciences.

The overall aim of the project has the following specific objectives:

- Offering to the in-service teachers a particular technology (based on **Virtual Instruments**) that will enhance learning in specific laboratories.
- Applying the developed teaching methodologies and pedagogical strategies to the teaching process and share them in an easy-accessed learning environment (the **Virtual Cooperative e-Space**).
- Improving the research base of knowledge and the implementation to other training areas.
- Developing European cooperation and awareness.
- Disseminating all the results at the local, national and European level.

VccSse Project Outcomes:

- **Virtual Instrumentation e-Space** – it contains a web based virtual learning environment with virtual tools and instruments for Science disciplines training (Mathematics, Physics, Chemistry);
- **Modules for training** – under the form of 3 seminars and 3 laboratories, they are dedicated for in-service teachers training and provide both technical and pedagogical elements with the view of the implementation in the classroom of the virtual applications using experiments from the **Virtual Instrumentation e-Space**.
- **Materials for training** – having the form of the on-line materials, they complete the training materials and contain examples of using VI software and producing VI experiments. They present also teaching methodologies and pedagogical strategies in relation with the used software – *Cabri Geometry*, *LabView*, *Crocodile Clips*, *GeoGebra*.
- **Database for virtual experiments** – it contains a number of experiments as a support for practical activities (laboratories). It includes also the experiments developed by the teachers as a result of the collaboration between tutors and trained in-service teachers.
- **Assessment tools** – they assure the quality of the training and implementation processes and evaluate different stages and activities of the project.
- **Guideline for best practices** – it takes the form of a manual for guiding a class or a group when using virtual experiments.
- **Virtual Instrumentation e-Space Exhibition** – it consists of 50 experiments and on-line simulating laboratories accessed from the project's web-page and addressed to every teacher and student from Europe.
- **CD-ROM Edition** – it includes all the materials developed in the frame of the project and it is defined as "a media" through which becomes possible making the project and its results known in each partner country.
- **Scientific articles** – as the national and international journals offer a pre-validated channel to publish the project results, the partners have to produce related articles and presentations for dissemination activities.
- **Project's web-page** – presents the project's progress and results, being available in 6 languages (English, Romanian, Spanish, Polish, Finnish and Greek).



VccSse Project web-page

Dissemination bilingual book

VccSse Project Partnership:

Coordinating institution:

□ VALAHIA UNIVERSITY TARGOVISTE – ROMANIA

Partner institutions:

- TEACHER TRAINING AND EDUCATIONAL INNOVATION CENTRE VALLADOLID II – SPAIN
- TEACHERS TRAINING CENTRE OF GIJON – SPAIN
- TEACHERS TRAINING CENTRE OF ZARAGOZA 1 – SPAIN
- WARSAW UNIVERSITY OF TECHNOLOGY – POLAND
- REGIONAL IN-SERVICE TEACHER TRAINING CENTRE "WOM" IN BIELSKO-BIALA – POLAND
- UNIVERSITY OF JOENSUU – FINLAND
- BABES-BOLYAI UNIVERSITY CLUJ NAPOCA – ROMANIA
- UNIVERSITY OF PATRAS – GREECE



VccSse Team in the Instrumentation World

VccSse Project Multilanguage Collaboration Learning Environment:

□ The VccSse Multilanguage Collaboration Learning Environment Web System integrates three main components: the **Project web-site**, the **E-learning Platform (Moodle)** and the **Groupware Platform (phpGroupWare)**. The VccSse web-site is entirely developed with **Perl** programming language. The communication with the other two main components was developed using **PHP** programming language, by creating of a set of controllers. This set provides the access to the databases (one for each main component) on a **MySQL Server** and to the file repository stored in the system files of the operating system.

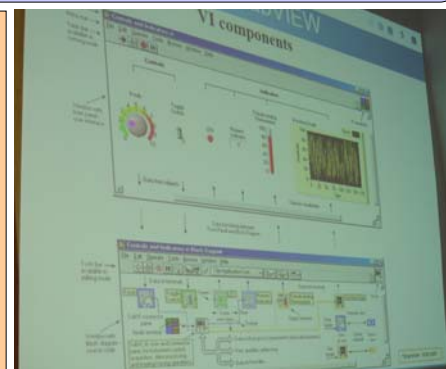
□ The VccSse Web System architecture can be represented by a four layers structured model. Each layer contains devices or software applications which implement specific set of functions. The communication between the layers is realized using standard interfaces. The first layer represents the hardware architecture. The operating system from the second layer is acting like an interface between hardware architecture and applications programs located to the next layers. The third layer includes all the libraries, tools and server applications required by the web system applications. The higher layer integrates the VccSse Web System.



Collaboration inside the Evaluation Group

VccSse Web System Software Components:

- **e-Space Browser** – can be used by any Internet user to explore the virtual experiments space available on the VccSse Web System. The e-Space stores the virtual experiments files in a file repository and the information related to the experiments in a **MySQL** database.
- **e-space Uploader** – used by the project team members to populate the e-Space with virtual experiments.
- **On-line tool for web page translation** – used by the team members involved in the web site translation. The instrument provide a web form for each web page to be translated from a computer connected anywhere in Internet. Each translator is restricted by the application to translate the site in a single language.
- **On-line tool to update the English content on the web page** – used to update the content of the web page.
- **Project member register tool** – used by the project team members for updating their profiles, available on the web page.
- **Forms for Assessment Tools** – developed to be used for teachers' and students' evaluation. Data collected from those forms is stored in a centralized database.
- **Products Matrix** – a public browser which operates in relation with the teachers experiments database.
- **Products Matrix Updater** – a dedicated tool for the tutors who can manage the experiments (products) created by the teachers.



VI components presentation

VccSse participants working together during the project meetings



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