A CHAT ON ECHEMTEST

Antonio Laganà,
Department of Chemistry, Biology and Biotechnologies,
University of Perugia, Perugia, IT

I had recently the opportunity of discussing about the European Chemistry Thematic Network (ECTN) activities with the Scientific editor of an important international publisher and with the Director of a private post secondary School in Rome. As usual, this has been an opportunity not only to advertise such activities but also to better envisage what role ECTN can play in the international educational context.

In both cases it immediately became apparent the importance of the role played by the European Chemistry Thematic Network in organizing, within the frame of several projects carried out as EC Life Long Programs, the design, development and implementation of EChemTest. EChemTest is a set of libraries of questions and answers on chemistry knowledge at different levels of competence and related sessions of self-assessment using networked computer technologies. To this end, ECTN relies on the initiatives of its Virtual Education Community (VEC) standing committee that stimulates and coordinates the active Institutions of the network for updating the Syllabus, enriching the libraries and sub-libraries, designing new tools, managing the Test centers, providing centralized services, developing support materials. All these activities focus mainly on the base English version while translations to national languages are taken care by the National test centers.

Both the English version and its translations into the most important European national languages are increasingly used, as for other disciplines, by means of various (commercial, proprietary or open source) Knowledge Management tools for different purposes. Among these purposes are the support to teaching and training, the award of academic credits, job selection, student and worker transnational mobility, etc. At present, however, the prevailing usage of EChemTest is the educational one thanks to the fact that it sets a European standard in terms of contents in Chemical knowledge and students profiling. The most popular set of questions are the Demo ones which have been translated in almost all the European languages, are freely available on the web and are often used for national contests of Schools and Universities. Another important use is that of spotting knowledge debts and indicating in what subject are the gaps to fill or what is the optimum teaching route.

The electronic nature of EChemTest guarantees a higher efficiency in random selection, sorting and publishing of questions and answers. Other higher level advantages are the possibility of interaction with the media for using support tools (like calculators, graphics, animations, composition and decomposition of formulae, etc.), of better tailoring the set of questions for specific purposes (like job selection, professional questionnaire, etc.), of adopting evaluation metrics that reduce subjective biases (of both teachers and students) and facilitate the design of teaching roadmaps, of utilizing databases for importing questions and/or statistically manage answers to the end of compiling reports and comparing the performances of different countries and disciplines.

The main challenges of EChemTest are the possibility of having different test sessions of identical statistical validity for large contests and the possibility of continuously improving and checking the content of the libraries thanks to the specialized teams that take care of them. Moreover, EChemTest is intimately linked also to the cooperative development of teaching materials for supporting the student preparation (learning objects), that can be continuously improved in the spirit of distributed repositories. This is indeed the major strength of EChemTest that has been designed and implemented as an outcome of the work carried out by hundreds of higher education operators

ISSN: 2279-8773

belonging to all the European countries which joined ECTN. During the 15 years of such joint endeavor a common Syllabus, setting a common frame of educational levels (first, second and third cycle), has been designed and the trees of subject specific libraries and sub-libraries have been identified. Such work is still on-going for extending, revising and maintaining the libraries. As a result, such project has played a unique role in setting a European standard in higher Education in Chemistry and in aggregating a community able to develop highly values shared European educational interactive materials.

The role of EChemTest is even going to be more important in the near future due to the fact that more and more (even de facto) standards will be needed for quantifying the amount of molecular science to be mastered by candidates wishing to document the level of competence achieved in Chemistry knowledge. In European schemes standards are necessary to enhance exchanges and cooperation such as those of the Erasmus programs. Moreover, in addition to a greater outreach and dissemination of e-testing, EChemTest is bound to activate in the near future a virtuous circle of continuous improvement in e-learning material.

ISSN: 2279-8773