GENERAL CHEMISTRY ON ICT SUPPORTS FOR SCHOOL TEACHERS
(PAS 2013-2014)

Antonio Laganà, Department of Chemistry, Biology and Biotechnologies, University of Perugia, Perugia (IT)
Sergio Tasso, Simona Pallottelli, Department of Mathematics and Informatics, University of Perugia, Perugia (IT)

The key objective of the 2013-2014 program of the PAS on General Chemistry held at the University of Perugia (Italy) during the first semester of the year 2014 has been to train school teachers to implement European standards in teaching Chemistry among which is an appropriate use of electronic tools in educational activities. This task was jointly undertaken by the three authors by carrying out in co-presence the lectures. More specifically the objective was to:
"Introduce and analyze some ICT technologies meant to support networked learning and the establishing of Virtual Education Communities (VEC)s. Design and assemble General Chemistry learning modules of European level aimed at fostering the development of a solid knowledge of Chemistry and Chemical Technologies using an ICT platform. Exploit Chemistry related knowledge management techniques on distributed repositories by building self assessment tools and related support materials ."
In order to implement such plan the authors together with the PAS participants did:
- carry out a detailed analysis of the European Syllabus for Chemistry in Schools developed by the European Chemistry Thematic Network (ECTN [1]) under the name General Chemistry level 1 (GC1);
- single out a suitable set of lectures to be developed together with the related materials and leaning objects by the participants;
- give an introductory lecture on the use of the open source software Moodle [2] for lecturing;
- develop individually and in team the chosen lectures using Moodle;
- apply Moodle technology to the assembling of the lecture materials
- give an introductory lecture on the use of EOL (Exams on line) [3] a tool developed by Osvaldo Gervasi and one of the authors for preparing and aministering self evaluation sessions;
- give an introductory lecture on the use of G-LOREP (a distributed repository manager developed in Perugia by the article authors) [4] for developing Learning Objects (LO)s as support materials to lecturing and supporting the preparation for self evaluation;
- design together with the participants related LOs and related descriptions;
- prepare a set of reports containing the specifications for the proposed LOs (Title, brief description, keywords, time length, etc.);
- prepare some specific LOs and some examples of self assessment materials.

The above mentioned materials are attached here.

References
[1] http://ectn-assoc.cpe.fr/network/index.htm
[2] https://moodle.org/
[3] O. Gervasi, A. Laganà, EOL: a web based distance assessment system, Lecture Notes in Computer Science Volume 3044, 2004, pp 854-862
[4] S. Tasso, S. Pallottelli, R. Bastianini, A. Laganà, Federation of distributed and collaborative Repositories and its application on Science Learning objects, Lecture Notes Computer Science 6784, 466-478 (2011)