

**CHEMISTRY IS ALL AROUND NETWORK  
WORKSHOP ON "SUCCESSFUL EXPERIENCES"  
ŁÓDŹ, (POLAND), 1 APRIL 2014**

**MINUTES**

**Participants**

The workshop was attended by 12 participants. 5 of them were project Chemistry experts and 5 Chemistry teachers. 2 other participants were WSIU representatives Magdalena Gałaj and Aneta Orska. Below there is a list of experts and teachers involved in the workshop activities.

Experts:

- Dr Mariusz Jarocki – University of Lodz
- Mgr Alicja Szymańska Paszczuk representing Dr n. Farm. I inż. Chem. Elzbieta Zurek – Medical University of Lodz and dr n. Med. Kinga Kostrzewa – Medical University of Lodz
- Dr Iwona Krawczyk – Technical University of Lodz
- Mgr inż. Jadwiga Skowrońska – Technical University of Lodz, 3 Age University (retired)
- Dr Maciej Nowakowski – Technical University of Lodz

Teachers:

- Mgr Mirosław Ziemecki – teacher
- Mgr Ewa Pietrzak - teacher
- Mgr Iwona Orłowska - teacher
- Mgr Halina Łuczak-Skowrońska - teacher
- Mgr Teresa Ożarek - teacher

Administration:

- Aneta Orska
- Magdalena Gałaj

**Objectives of the workshop**

The main objective of the workshop was to discuss the issues and activities already realized and to be achieved in the third year of the Chemistry is All Around Network project.

The workshop was also intended to involve teachers and experts into further project activities related to planning, designing, implementing and disseminating resources and materials collected on the portal by the project's consortium. What is more, the objective of the workshop was to introduce teachers and experts to final activities of the project i.e. two international conferences (Braganza and Genoa), as well as to discuss final outcomes of the project and its sustainability.

**Workshop Organization**

The workshop was organized on 1 April 2014 at 8:00-12:00. It was quite short due to many teachers and experts' suggestions. It was agreed that the needed cooperation and exchange of information will be done by e-mail prior to the workshop. However, despite the convenient timing the workshop was participated by quite a small number of experts and teachers. Unfortunately some experts and teachers quit the project in the meantime due to various reasons; either stopped cooperating with the University of Computer Sciences and Skills (one expert) or changed their place of work (3 teachers). WSIU partner was forced to search for new teachers and experts. We managed to invite and introduce a few new teachers to the project who agreed to join us and help us evaluate final products.

The workshop was moderated by Magdalena Gałaj WSIU and the main expert conducting the workshop was dr Mariusz Jarocki. The workshop took place at the premises of the Foreign Languages Department, in the classroom equipped with a whiteboard for better visualization of the portal contents. Each participant had his or her own laptop for more convenient and effective workflow. During the workshop teachers and experts received all the necessary materials about the project requirements to facilitate project work.

## Delivery of the contents

The workshop started with a brief introduction by Magdalena Gałaj, where teachers and experts were quickly reminded about the project activities and once again reminded about the deadlines. Teachers were introduced to the contents of the portal briefly and asked to study it on their own back home in order to complete the evaluation questionnaire. Due to the fact that WSIU is lagging behind with a few activities new dates were discussed and tasks assigned to new teachers and experts.

The main part of the workshop was occupied by presenting the portal resources with reference to materials, papers and articles with reference to Successful Experiences in teaching and learning chemistry. Participants were also able to discuss the Polish situation with reference to teaching and educating prospective teachers of chemistry and motivating young people to study the subject further on their own.

Prior to the workshop each teacher and expert was asked to think of their most successful best practices implemented in their classrooms.

Then dr Mariusz Jarocki took over with a presentation of a few most interesting resources collected on the portal. Dr Jarocki started with a short presentation of the Polish situation to let everybody realize the availability of the resources online. He briefly reminded websites and objectives of all of the collected resources and initiatives in Poland. Dr Jarocki referred to the resources described in his paper, which is going to be presented during the 5<sup>th</sup> International project conference in Braganza, Portugal.

## Examples of good practices discussed during the workshop:

### 1/ Initiatives of Universities and Polytechnics

a/ Jagiellonian University – A language course for chemistry students and teachers - <http://www.efch.icj.uj.edu.pl>

**English for Chemistry: Film Bank** is a non-profit project, aiming to provide materials for teaching English for Specific Purposes at B2 level in accordance with the Common European Framework of Reference to the students of the Faculty of Chemistry at the Jagiellonian University in Kraków. The project was conducted in the academic year 2010/11 by third year students of this faculty under the supervision of Dorota Klimek, a teacher of English at the Jagiellonian Language Centre. The film bank includes a set of listening comprehension exercises based on films concerning a variety of chemistry subjects, carefully selected from the multitude of materials available on the Internet. The films are accompanied by a follow-up section, consisting of complementary reading and vocabulary exercises. The materials can be used in the classroom and for self-study purposes alike. The files are also available as printable pdfs.

The course aims to bridge the gap in the Polish Chemistry Teacher's education and qualifications with reference to language training so needed in order to use materials available in English language versions.

b/ Higher education institutions in Poland are quite active in promoting learning and teaching chemistry in an interesting and innovative way. In the current academic year, Jagiellonian University in Cracow Department of Chemistry invites pupils and students of secondary schools to participate in *Meetings with interesting chemistry*, *Cryogenic Demonstrations*, *Workshops for high school graduates - "Last call before Matura exam"* ; *Lectures on "Chemistry has many names"*. The above listed are only a few among many exciting initiatives for young people, whose main objective is to increase awareness of the society and promote better

comprehension of science oriented subjects. Similar initiatives are promoted by University of Lodz, University of Warsaw, Technical University of Lodz and many others.

## 2/ Initiatives of Chemical businesses and industry

a/ The chemical portal [www.poczujchemie.pl](http://www.poczujchemie.pl), the main result of the project by PKN ORLEN Chemical Plant, as interactive, dynamic, with a modern graphic design, stands out from the other solutions suggested by chemical business. The portal included presentations of experiences and interactive learning tools. The novelty consists of competitions with prizes (including non-virtual), often organized by the exchange of multimedia records of chemical experiences. The pioneer feature is also a formula for direct contact of schools with 'mobile' experts, 'experts on the road' who promote not only the chemistry as it is, but also through loosely related activities available through the portal. The portal gathered many experts who interact with users on blogs and forums. Many of these experts are PKN ORLEN scholars who stand out not only due to their knowledge, but also due to pro-social attitudes. The portal has an additional interface for mobile devices. In this version of the site the authors abandon a typical professional hierarchy, known from other information portals for a loose convention of the computer game.

b/ Chemical Plant "Police" co-operates with schools and universities from the West Pomeranian region, which include: University of Szczecin, West Pomeranian University of Technology, Maritime Academy, and West Pomeranian Business School. Among many partner universities are also Poznan University of Technology, Warsaw University and Warsaw School of Economics. Cooperation with schools and universities is based on long-term contracts on the basis of organized programs and internships in the company in order to prepare students and prospective teachers for their work either in the chemical or educational sector.

## 3/ Initiatives collected and available online

a/ "Baza Narzędzi Dydaktycznych" is the best example of an online database of resources for both teaching and learning chemistry in Poland. It offers a variety of tasks within the subject of chemistry, physics, mathematics and humanities with comments and answer keys. The intention of this initiative was to support teachers who endeavor to make teaching and learning chemistry at school more interesting. The authors of the portal were encouraged and inspired by the results of recent studies indicating that young people are more likely to go to school today than five years ago. New core curriculum of general education tends to go from memory learning, „learning for the test”, the repetition of algorithms and „chaining dates.” The initiative wants to promote the new systematic approach towards teaching critical thinking, reasoning, and logical thinking skills. The whole portal offers proven ideas and sets of tasks in chemistry and physics which can be useful for conducting interesting classes in these subjects. The portal authors invite educators, teachers, and teacher trainers to add to the tasks discussed. The portal's main objective is to serve as a source of inspiration not only for teachers but also for students across disciplines and parents who want better education for their children ; education which is more attractive for them , awakening their imagination and ability to think independently.

b/ "Projekt Gimnazjalny Akademii Uczniowskiej" an online database full of lesson plans and ready-to-implement solutions based on the conduct of experiments, observations, learning games and activities with the problematic question. Various scenarios of projects equipped with tailored lesson plans were developed by teachers and students and validated by experts as a good practice of science teaching in the modern Polish classroom. Teachers, actively involved in the project, participated in the *Akademia uczniowska* course on "experimentation and mutual learning". All lesson plans collected in the database include the following issues formulated by the students: needs analysis, research questions, hypotheses, description of the students' experiences, planned and carried out projects designed Mutual Learning, educational games and evaluation.



## The reaction of teachers and experts

Teachers and experts were generally quite positive about the contents of the workshop – those who were generally positive about the project and the portal recourse available online on the Chemistry is All around Network platform found it useful and for those, so far quite reluctant to cooperate fully, some bits of the workshop were difficult and the portal not user-friendly. Technology mattered here a lot as some teachers complained about poor internet connection at home when they wanted to upload their comments. Teachers appreciated the Polish language version of the portal. Dr Jarocki pointed out the functionality of the resources but also stressed the fact there is a huge demand for young teachers and experts to be able to create their own interactive materials. This would of course have to involve a change in the training of prospective teachers so that on completion of their training or university course they will be able to design and create their own materials with the least effort and time. Such materials would give teacher freedom to select the most interesting content to be introduced to his or her students, as well as will allow them to adapt it to the learners needs – from the most talented to the weakest ones. The teachers pointed out poor chemistry lab infrastructure. Access to latest technologies during the lesson is possible only in schools with computer-equipped or white-board-equipped classrooms. Another problem was, which was discussed during previous workshops was the language barrier. Interactive resources could only be implemented fully when the teacher and his or her students are able to understand and explain the chemical processes fully. In Polish reality students may have fewer problems to understand the technical concepts. This could be both a disadvantage and advantage. Mainly due to the fact that thanks to materials available in the foreign language versions both students and teachers can develop linguistically. Of course for a busy teacher of chemistry is mean more preparation and work prior to the lesson. Further discussion during the workshop also tackled the issues related to chemical industry involvement into the learning and teaching processes both in lower-secondary and secondary schools, as well as universities. For example the organization of internship programs for most talented students at university level or conducting interesting lessons in the chemical plant labs in order to facilitate young learners' interest in chemical phenomena in everyday life.

### Skills Acquired

Teachers and experts were briefly acquainted with the contents of the portal with reference to successful experiences, all the resources available there and new teachers were introduced to their roles in further project assignments.

### The evaluation of the portal

Evaluation of the portal was not carried out during the workshop. The questionnaires about the portal were distributed to all the participants and questions were briefly discussed. The results will be collected from each of the experts and teachers by WSIU representatives and the report will be produced at the later time.