

Short report on chemical education issues in Hungary for the CCE Meeting in Seoul 12 August 2006

Status of chemistry in primary and secondary schools

Curricula in primary and secondary schools (age 7 to 18) are ordained by the Ministry of Education (ME). Small deviations are, however, permitted.

Between 1976 and 2001 the number of chemistry lessons per week was 10 (in the classes 7 to 11, i.e. ages 13 to 17). Additional optional lessons (4) were possible.

According to the new national curriculum (2002) the number of weekly lessons has drastically been reduced to 7 (together with other subjects of sciences). Chemistry is taught in classes 7 to 10 with the content:

Class 7 introduction, basic general chemistry, structure of matter

Class 8 inorganic chemistry

Class 9 general chemistry (thermochemistry, electrochemistry, kinetics)

Class 10 organic chemistry

Inorganic chemistry is taught only at age 14 in relatively simple level that causes problems at the final exam. Additional training is only possible in optional afternoon courses.

New final exam system

New final exam system for secondary schools (in age 18) has been introduced in 2005. Students may choose between lower and higher levels (topics are the same; differences are in the depths of the knowledge). In addition to compulsory subjects (Hungarian language, literature, history, mathematics, foreign language) there are optional subjects, too, among others chemistry. Approx. 4 per cent of all candidates choose chemistry in final exam.

Chemistry exams on both levels have written and oral parts. Tests are compiled by the ME. Oral exam includes simple laboratory experiments, too. Final exam of higher level has to be passed in the presence of state (ME) commissions. Final exams of both levels are accepted by universities as entrance examination (with different marks, of course).

New chemistry teacher training system

New system of chemistry teacher training will be introduced in September 2006 in accordance with the Bologna Declaration of European Union. Teacher education will be organised only on MSc level (after BSc in chemistry). BSc curricula are compatible for all universities of Hungary and correspond to the Eurobachelor criteria. MSc curricula correspond to the demands of public education as well, with high level and credits in psychology and pedagogy. MSc qualification in two subjects is preferred (mostly chemistry and biology).

“Grand Prix Chimique”, chemistry Olympiad for vocational school students

Grand Prix Chimique (GPCh) is an international chemistry competition of students of vocational secondary schools with chemical orientation organized every two years in Europe since 1991. The competition consists of solving of at least two laboratory tasks (classic and instrumental analysis, preparative tasks), but contrary to the Chemistry Olympiad there are no theoretical tests. The laboratory skill of competitors is judged by the international jury. The International Committee of GPCh is chaired in the present term by Prof. Alfred Mathis (France).

New countries may apply for the participation in GPCh. Any new country applying for participation must present a draft of their educational system to the International Committee and a detailed description of their vocational education of chemical orientation.

9th Grand Prix Chimique will be held in Zagreb (Croatia) in 2007 (previous one was held in Prague 2005). More details are given on the website <http://www.gpch.hu/>

STANDARDBASE a database for vocational education

Five institutions from four European countries (Great Britain, Hungary, Slovenia and The Netherlands), in years 2002-2005 adapted and tried out 72 analytical methods used by chemical industry so that they could be used under vocational school conditions. In order to be able to compare the data measured in different schools and different countries the same quality of commercial products as samples are used (e.g. beer, cheese or shampoo of a certain brand, Euro95 petrol, etc.).

The STANDARDBASE website (<http://www.standardbase.com/>) contains the detailed description of experiments (method and technique used, necessary instruments, equipment, materials and samples, its estimated time and level of complexity), typical results and background information. Students could directly download the description of the experiments, add their own results to the database and compare graphically their own measured data with the typical results.

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