

Chemistry is All Around Network Workshop on "Student's Motivation" Prague, Czech Republic, 29th August

Minutes

Participants

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At the beginning of the workshop, there was presented the programme of the day. It was composed of seven parts. The first part was focused on different views of chemistry. There were presented very interesting topics like Chemistry of fragrances, Chemistry of cosmetics, Nanotechnology. The second part was devoted to Mikuláš Duda, the spokesperson of Unipetrol Company, who presented the new website project.. The third part was dedicated to CIAA Network, presented by Zdeněk Hrdlička. The part number four was about problems of motivation in chemistry. What are the causes? What are the results? Than the director of MSŠCH Křemencova presented the proposals of changes which were focused on the process of school-leaving examinations at vocational schools. This part was followed by discussion of participants about previous topics. At the end of the workshop there was time for questions, answers and proposals of professors to improve

interest in chemistry.

As already mentioned above, the first part was focused on chemistry in different views. The aim of professors was to show chemistry in common life, with no formulas needed. This is the one of few ways to increase motivation of students to study chemistry. There were seven presentations: "Chemistry of fragrances" presented by L. Červený, which showed that everything around us is connected with substances and chemicals; presentation "Quality, safety and authenticity of food" by J. Hajšlová – food is also closely connected with chemistry, every day food is analysed if it satisfies the conditions required by law. Very interesting was also the presentation by J. Moravcová, "Saccharide code or how to cells plotting"; presentation "Cosmetics, nature or chemistry?" by J. Šmidrkal – if there were no chemists, there wouldn't be any cosmetics products. This claim was extended to food production by R. Ševčík who presented a lecture "Harmful Es or significant part of traditional quality food?" Very positively evaluated by audience was the presentation of L. Joska about "Metallic biomaterials in medicine". Chemistry is very important part of medicine, they seem to be like twins. They help together. The last presentation aimed to show chemistry in the world of nanotechnology. It had also very good response by audience.

This part was specially made for students. It presented chemistry in other view. It was the attempt, if the students evaluate it. If this is the right way which will improve the interest in chemistry. It had to involve as much as possible branches of chemistry.

The second part consisted in the presentation of Mikuláš Duda, the spokesperson of the Unipetrol company. It was the first time when he introduced new website project www.zazijchemii.cz, a new way which can improve interest in chemistry in the Czech Republic. Unipetrol is the oil company so it is closely connected with chemistry. These website is very clear, it contributes experiments, crosswords, quiz. It can serve as the scheme of chemistry lesson. It demonstrates experiment in pc version. Lots of professors were excited. The presentation had really great response by audience.

The third part of the workshop was devoted to presenting the CIAA NET project - Chemistry is all around network. Zdeněk Hrdlička, assistant professor at ICT Prague, presented the aim of the project – to stimulate students in studying chemistry. He also showed that this project is international with lots of partners from eleven countries of Europe. He introduced the coordinator of the project, Maria Maddalena Carnasciali, from the University of Genoa in Italy. He talked about database of educational materials in the areas of chemistry, about networking and sharing of knowledge between experts, teachers, and also about removing existing barriers in chemistry area. He pointed out the importance of organization transnational conferences to share information. Part of his presentation was dedicated to the way of funding. He informed that the project is financed by European Commission as a part of Lifelong Learning Programme. It takes 36 months. Very interesting information was the amount of money provided on it. The European Commission provided the amount € 445 706 of the total budget € 594 275. The Czech Republic is allocated by the amount € 25 545 and the remaining portion of € 8 515 will be provided by the Institute of Chemistry Technology Prague.

As a part of his contribution he presented the expected results of the project. The results would be the creation of network of cooperating teachers and experts at the transnational level, which would evaluate resources for teaching chemistry, and also creation of comprehensive database of teaching materials in field of chemistry.

At the end of his part he presented the invitation to International Conference on Innovative Learning in Chemistry in December 5th. This conference is aimed at addressing the issue of education in chemistry and of motivation of students to study chemistry. The key part of the conference will be the presentation of results of national reports on student's motivation.

The fourth part of the workshop was the topic “Problems with the motivation of students in chemistry at gymnasium” (grammar schools). This part was presented by Marie Vlková from Gymnázium Havlíčkův Brod. There is no doubt that there currently exist significant problems surrounding student motivation towards the study of chemistry in the Czech Republic. She also stressed that pursuing a career in chemistry does not seem to be among the top choices for the youth but also studying chemistry at school seems to be unpopular. It seems that the main obstacle is that teaching is mostly conducted in too abstract terms so that most of the students are unable to imagine in reality what is the teacher talking about. The main problems appears to be too little real life examples in classrooms, too much theoretical technical lecturing, old textbooks with abstract plain text without simple explanation and no possibility of at-home-studying as most of the teachers do not use any textbook and just teach “their own materials”.

These problems or obstacles were confirmed by lots of professors at the workshop.

The fifth part of the workshop was lead by Jiří Zajíček, the head of Masaryk Secondary School of Chemistry. He had the presentation “The proposals of changes focused on process of school-leaving examination at vocational schools”. He stressed that it is a matter of endless disputes how to increase student motivation towards the study of chemistry and it is dependent on many factors. For example he suggested more real life examples, teaching more about issues that can be useful and helpful in daily life and/or to provide materials to study at home for those who do not understand it in class. Another issue to be further researched is why is there lack of students wanting to pursue career in chemistry. It seems one of the main reasons is the fact that pursuing career in chemistry does not appear to be “in style” and also there still seems to be a gender issue within technical disciplines.

The end of the workshop was reserved for discussion of participants, questions and answers, proposals of professors to improve interest in chemistry. A few professors proposed that there is no general overview of legislation concerning chemistry which is very fragmented and very difficult to have clear view in this. So professors suggested the necessity to make an overview of chemical legislation. Another opportunity to make chemistry branch clear is to create of overview of marks. Which liquid has to have which signification, which designation.

Lots of primary and secondary school professors and also students participated in the workshop,. New, very interesting and actual topics were discussed; new ideas also arose to improve this area.