



518300-LLP-2011-IT-COMENIUS-CNW

Chemistry is All Around Network Workshop on "Teacher Training" Kırıkkale, Turkey, 29 May 2013

Minutes

Participants

Workshop about training chemistry teacher was realized with 15 participants in Education Faculty of Kırıkkale University on May 29, 2013 . 3 of them were experts and 12 of them were researchers and teachers. the issues discussed and the following suggestions have been put forth about "Chemistry is all around Network Project".

The name of all the participants and the name of the institution they belong to;

Murat Demirbaş, Kırıkkale University; Mustafa Bayrakçı, Sakarya University; Mine Özkurt, Şehit Fatih Kemal Yarar Ortaokulu, Abdullah Anıl Hoşbaş, Kırıkkale University; Nurcan Ertuğrul, Hacıibrahimuşağı Ortaokulu, Gamze Özbek, Kırıkkale University, Gülşah Tanrıverdi, Periyot Etüt Eğitim Merkezi; Ramazan Göğüş, Karakeçili Çok Programlı Lisesi; Hüseyin Miraç Pektaş, Kırıkkale University; Erdem Çakır, Pİ Analitik Özel Eğitim Kurumları, Mehmet Polat Kalak, Alfen Özel Eğitim Kurumları, Ömer Faruk Şen, Kırıkkale University, İbrahim Ethem Yavuz, Bahşılı Atartürk Ortaokulu, Süleyman Seren, Kırıkkale University, Elif Tuğçe Karaca, Kırıkkale University.

Minutes

Methodologies to teach a specific topics(e.g. acids and bases, the period table, ...): analysis and comparison between positive and negative experiences

In changing and improving the education system of our time, the important point is to get student to be constructive, creative and inquisitive while applying the constructivist approach. For this reason, teachers have to use teaching methods which help student to be constructive, creative and collaborative and gain problem solving ability actively such problem-based learning when teaching of natural sciences such as chemistry based on fully implementing and monitoring (Özeken ve Yıldırım, 2011).



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When opinions of the teachers considered, while using the activities based on problem-based learning in teaching some topics was efficient, it was not for some topics. They emphasized that problem-based teaching activities provided meaningful learning especially redox reactions, the mole concept, atomic models, and titration. In addition, teachers expressed that this method had positive effects to have high motivation, attitudes, and gain problem solving skills, critical thinking, and cooperative behaviors. However, some problems were observed such as not being accustomed to the method, communication problems, shortage of time, and distribution of tasks in groups.

In the literature, teachers' thoughts revealed about regarding the implementation of problem-based teaching methods are contained in similar results (Tatar, Oktay & Tüysüz, 2009; Tosun & Taşkesenligil, 2012).

One of the techniques mentioned is game education technique. Looking at teachers' practices, the technique is more effective in primary and secondary education, and this method's effect is decreasing in later age groups. The reason for this is thought to be that young age students have more sense of curiosity for technology. For instance Karamustafaoğlu, Coştu and Ayas (2005) studied with 7th grade students on Periodic Table and Their Properties located in the science curriculum. Their aim was implementation instruction based on the use of simple tools and equipment and determination the effectiveness of the study. As a result the success which is obtained using the periodic table developed by simple tools and instruments have been identified not only reduction wrong understanding and misconceptions but also increasing interest and demand of the students towards science courses.

Pre-service and In-service training:

Training Pre-service and In-service Chemistry teachers is an important issue. In this regard, it is necessary that doing more and more applications, informed about new teaching methods and techniques, having enough knowledge about how to use measurement and evaluation for Pre-service teachers. Teachers have been made Emphasis on these issues at the workshop. Furthermore, teachers in service have stated that they are participated in many in-service training courses which are organized by Ministry of National Education, remaining the theoretical level and not very concerned with their fields. The courses should be more practical rather than theoretical. Teachers have stated they know about Theoretical structure of methods but they have trouble with the application. For instance they have explained that they do not know how to use the methods and

techniques such as analogy, concept maps, V-diagram, Case study. Önen, Mertoğlu, Saka and Gürdal (2009) studied with 104 teachers and 26 of them belong to branch of chemistry in their research that is named “In-service training of teachers on teaching methods and techniques to the Summary Effect: Öpyep Example (ISE)”. Before ISE teachers stated that they used methods of teaching techniques such as laboratory, computer-assisted instruction, brain storming, event inquiry, group work, games, problem-based learning, Field-trip and direct observation, models. After the study of ISE teachers have stated that they will use methods of teaching techniques such as laboratory, computer-assisted instruction, concept maps, Field-trip and direct observation, projects, puzzles, model, drama, brain storming, discovery learning, case studies, story completion, problem-based learning, in the event inquiry, cooperative learning, group work , games, analogy, V diagram, part of teaching, case study.

Use of simulations and animations:

Issues related to the chemical course that is often abstract level so some issues may be difficult to make meaningful by students. In this regard, simulations, and animations are frequently used in science lessons. For example, Hameed, Hackling and Garnett (1993) studied about the effect of a Computer-Assisted Instruction package (CAI) on conceptual change.

They were applied the CAI Package that contains the Computer simulations to 12 chemistry students between the ages of 16-18 .The results of the study, including simulation computer-aided instruction have revealed that students’ many of the misconceptions in chemical equilibrium. CIA Package has provided meaningful and lasting conceptually changes in the application of 12 students (trans:Pekdağ, 2010).

Day by day simulation samples prepared for science teaching in interactive environment are increased. However, most of these simulations contain information that may be caused by students’ misconceptions. Therefore, when we select of simulations, the validity of scientific knowledge must be checked. Teachers should have the necessary equipment how applied to simulations. Because, each simulation may be perceived as exact copy of the truth by the students. The difference between the actual situation and modeling should be provided by teachers

Learning and living is more in the forefront, the simulation experiments made with even if only simple ingredients should be avoided.

Thus, students perform active learning with gaining psychomotor skills.

Recommendations, guidelines for teachers:

Students' difficulties in learning chemistry topics should be determined; they should be arranged on the teaching of in-service courses for teachers. These courses should be planned activities for the use of technology. Interactive portals on the training of qualified chemistry (www.vitaminegitim.com,, www.morpakampus.com, etc.) that can be used by teachers and students should be done presentation and should be widespread. This portal should be free to access and up to date. Successful Teachers should be given to promote. Thus, the interest and motivation of teachers will increase further.

References

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