

National Workshop on Science Education

15.10.2014 - Iasi, Romania

Minutes

Participants

The event organised by EuroEd within Goerudio project involved 19 participants: 12 teachers, 1 school principal, 4 parents and 2 staff members involved in implementation of the project at national level.

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The aim of the workshop was to introduce to the participants the Goerudio project and familiarize the teachers with the Goerudio method with the view to involve teachers in the future activities with the students in developing and testing the educational materials that will be developed.

The first topic of the workshop was to involve the participants in discussions about teaching experiences, educational system and science classes in schools. Participants discussed about the lack of motivation of students in studying scientific related topics, and the related insufficient results that they achieve during their school curricula and about the lack of capacity of teachers and trainers in updating their teaching methods in order to promote the interest of their students toward scientific issues. The main problem identified by participants is that students approach to scientific issues is too passive, based on memorising rather than understanding.

As parents have been involved, participants discussed about their role in science education for their children. Has been agreed the importance of cooperation of parents-teachers-students in the education system. Parents must support and understand the methods that the teachers are using at class, and agree for their children the use of informal instruments or methods.

To understand better Goerudio, staff members made a presentation of the project, introducing the main aim of the project on creating a learning community of European science teachers and students willing to identify solutions to overcome the main obstacles related to scientific subjects studying. After the introduction of the project, the discussions focused on the roles of the schools and teachers and types of activities to be implemented. Have been mentioned the following roles: involvement in sharing on the "Goerudio" Portal and commenting on experiences and efforts to adopt teaching methods to promote the interest of students towards scientific issues and to make their pupils autonomous in their learning process; participate in the review of science project initiatives focusing on the promotion of innovative practices for teaching scientific issues in a more attractive way; participate in virtual meetings with their European colleagues discussing the project results; participate in the production of a teaching resource on scientific issues.

The next section in the workshop involved the presentation of the project portal and resources available for teachers. Within this teachers have been informed how to access and navigate among the portal and what kind of resources they can access. Participants have been introduced in the data base of experiences collected from teachers and students from the partners' countries and also in the data base of other initiatives or examples of good practices concerning teaching/learning activities/project in science disciplines in schools.

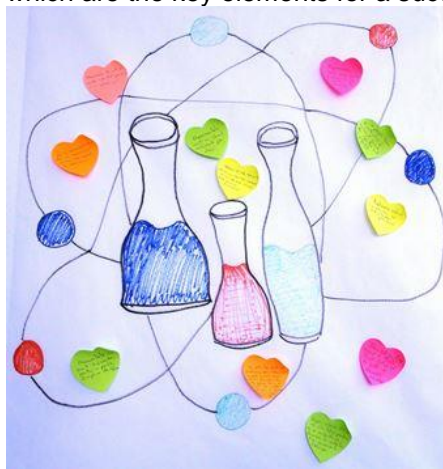


Based on a selection of testimonials and experiences presented by other teachers and students, participants have been invited to freely discuss about their own experiences, activities done and share about the teaching techniques and instruments used at class to attract students. Participants found this section very interesting, because they had the opportunity to discuss about their difficulties encountered at school or students level and to find out useful ideas of activities or methods/tools which can be effective and improve first the students' interest to science classes and second their grades.

The next topic in the event was related to the introduction of the Goerudio method. To the participants have been presented the learning methodology proposed by the project, including: user involvement in its application and subject matter development; user's active use of familiar examples; interaction and communication among the users; creation of models (familiar phenomena/image- close to recipient – experience, culture, climate, nationality). Participants discussed and tried to understand the stages of the new approach of reaching comprehension using models.

Within the group activity How to use Goerudio method at class?, participants have been introduced to the development of a model by practical work on an example. First of all to create the model, the staff project members presented to the teachers the comprehension worksheets to be used: comprehension of the concepts and correlations related to the subject matter through models/interpretation more familiar to the particular region and its target audience (these are multiple choice questions, like – what does it mean? why and how does it function?); Feedback – participation of the target audience in the development of new models and in the evaluation of the existing ones; Verification of models/interpretation submitted by the target audience; Quality assurance and quality control of the presented material.

Close to the end of the event participants have been involved in an evaluation activity with the aim to identify which are the key elements for a successful science lesson. Some of the answers were:



- Transform the class not in a teaching environment but more in a practical one.
- Experiments and practical activities should be predominant.
- Permanent discussions with school's principal and parents to support the organisation of practical activities and equip the classes with necessary resources.
- Use of models gives benefits in education.
- Peer to peer based learning
- Teachers should encourage students to be the managers of their own learning process
- Active use of familiar examples
- Interaction and communication
- Learning by doing
- Simple experiments are one of the best ways to motivate your students and raise their curiosity

As follow up activities of this workshop, teachers involved agreed to develop activities at class with students on creating Goerudio educational products. 4 of the teachers involved did the follow up activities and using the Goerudio working sheets, created the following educational materials:

- Pollution: The description of the model sheet; The model; The evaluation of the model sheet; The summary of the model evaluation sheet.
- Evaporation: The description of the model sheet; The model; The evaluation of the model sheet; The summary of the model evaluation sheet.
- Boiling: The description of the model sheet; The model; The evaluation of the model sheet; The summary of the model evaluation sheet.
- Temperature Measurement: The description of the model sheet; The model; The evaluation of the model sheet; The summary of the model evaluation sheet.

The conclusions of the workshops are that Science plays an important role in everyone's life and has lately touched nearly every aspect of our daily lives. Science is an inspiring process of discovery that helps quench our innate curiosity. Scientific discoveries shape the way we perceive the world and influence our decisions. Science teaches people how to think critically about any subject. It is an integral part of our lives—even if it is not our career. Use of models gives benefits in education. Innovative practices and methods aiming at putting the learner at the centre of the educational and training process and to involve teachers and students in being the protagonists of an international peer to peer based learning community to share, disseminate and exploit the best practices available at European level in the field. Teachers should encourage students to be the managers of their own learning process, giving them the chance to achieve personal learning goals in addition to learning the scientific issues that meet their needs. Teachers enjoyed the idea of the project and find the method useful and applicable and they are eager to work with students to identify models or other types of interactive educational materials.

Annexes

1. 1st Seminar_RO_Programme
2. 1st Seminar_RO_List of participants
3. 1st Seminar_RO_Photos
4. 1st Seminar_RO_Products (Goerudio_Project presentation and 4 Goerudio_Working sheets)