



UNIVERSITÀ DEGLI STUDI
DI GENOVA



518300-LLP-2011-IT-COMENIUS-CNW

Chemistry is All Around Network Workshop on "Student's Motivation"

Genoa (Italy), Monday, September 10th 2012

Minutes

Participants

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5. Bennucci Valter (D'Oria Lyceum – Genova)
6. Bignone Caterina (I.C. Prà – Genova)
7. Caviglia Giuseppina (I.C. Prà – Genova)
8. Ghibaudi Elena (University of Torino)
9. Lotti Antonella (DISFOR – University of Genova)
10. Lucifredi Enza (D'Oria Lyceum – Genova)
11. Mallarino Barbara (I.C. Savona III – Savona)
12. Matricardi Giorgio (DISFOR – University of Genova)
13. Parmigiani Davide (DISFOR – University of Genova)
14. Pitto Anna (Cassini Lyceum – Genova)
15. Rametta Marco (Cassini Lyceum – Genova)
16. Rebella Ilaria (I.C. Savona III – Savona)
17. Regis Alberto (SENDS Group – University of Torino)
18. Saiello Silvana (University Federico II – Napoli)
19. Zamboni Nadia (I.C. Cogoleto – Genova)
20. Zunino Rosalia (I.C. Voltri 1 – Genova)

Minutes

Project presentation and description of the future activities

Maria Maddalena Carnasciali welcomes all the participants and wish a good work.

Before starting teachers' and experts' comments presentations, Maria Maddalena dedicates few minutes to summarize the activities carried out during the first 9 months of the project and to remember the activities that have to be carried out by the end of the year.

She recommends everyone to make a good dissemination by speaking with colleagues, people, organizations, societies interested in chemistry teaching and learning.

Teachers' and experts' comment presentations

Every teacher and every expert comments 1 paper and 1 teaching resource chosen among those uploaded by Partners on the Project Portal. In order to get the evaluation of all papers and resources proposed by the other Countries, the latter have been divided so that each teacher and expert had to analyze 3 or 4 papers and about 10 teaching resources.

The list of papers and resources that have been presented and commented is reported below:



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Valter Bennucci (upper secondary school teacher)

Paper:

A study of students' level of understanding of the particulate nature of matter at secondary school

Teaching resource:

Chemistry experiment simulations and conceptual computer animations

Caterina Bignone (primary school teacher)

Paper:

Rocard report: "science education now: a new pedagogy for the future of Europe"

Teaching resource:

Science Kids – Chemistry

Giuseppina Caviglia (primary school teacher)

Paper:

Popularity and relevance of science education literacy: using a context-based approach

Teaching resource:

Science children

Elena Ghibaudi (expert)

Paper:

Questioning patterns and teaching strategies in secondary education

Teaching resource:

The Macrogalleria

Antonella Lotti (expert)

Paper:

How children learn

Teaching resource:

Learn chemistry by Royal Society of Chemistry

Enza Lucifredi (upper secondary school teacher)

Paper:

A scientific approach to the teaching of chemistry

Teaching resource:

An introduction to chemistry

Barbara Mallarino (primary school teacher)

Paper:

Identification of difficult topics in the teaching and learning of chemistry in Irish schools and the development of an intervention programme to target some of these difficulties

Teaching resource:

Chemistry at Steve Spangler science

Giorgio Matricardi (expert)

Paper:

The problems with science education: "the more things change, the more they are the same" (Alphonse Karr 1808-1890)

Teaching resource:

Chemistry stimulus to engage - discover sensors

Davide Parmigiani (expert)

Paper:





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What's wrong with Leaving Cert chemistry?

Teaching resource:

Iniciación interactiva a la materia

Anna Pitto (upper secondary school teacher)

Paper:

Attitudes toward chemistry among 11th grade students in high schools in Greece

Teaching resource:

PARSEL (Popularity and Relevance of Science Education for Science Literacy)

Marco Rametta (upper secondary school teacher)

Paper:

Bulgarian school chemical education: the state of the art, what then? (results from international and national studies)

Teaching resource:

Las mujeres en la física y química-Quimicaweb

Ilaria Rebella (primary school teacher)

Paper:

Junior Science: teaching and learning: science education in the 21st century

Teaching resource:

Chemistry for junior: Sci-Spy

Alberto Regis (expert)

Paper:

Students' motivation and chemistry teaching. A controversial point

Teaching resource:

BBC school science

Silvana Saiello (expert)

Paper:

Students' motivation in secondary school chemistry teaching using common life tasks.

This resource is really interesting and the detailed review allowed to evaluate its importance. We would like to require the translation in English of the whole document, in order to get more information about this topic.

Teaching resource:

IrYdium Chemistry Lab

Nadia Zamboni (lower secondary school teacher)

Paper:

Greek students' science-related interests and experience: gender differences and correlations

Teaching resource:

Chemistry at home

Rosalia Zunino (primary school teacher)

Paper:

Science education in Europe: critical reflection

Teaching resource:

E.K.F.E. Chanion

Teachers and experts claim they had difficulties in evaluating and choosing teaching resources and papers. In many cases, the difficulty of assessing the resource did not depend on the comprehension of the national language but on the brevity of the related review. Conversely, it has been possible to appreciate the content of resources provided with detailed review.



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During the comments presentation few important points have been discussed and suggestions to improve the future activities have been produced. The main results of the discussion are summarized below.

1) Despite the Italian school system is trying to keep up with Information and Communication Technologies (i.e. National Plan Digital School), considerable difficulty in selecting the 20 resources in the national language have been encountered. Availability of these tools, at least in terms of scientific disciplines, is very limited and of poor quality: resources are often unsuitable, due to the poverty of the interactive material or to the inaccurate / trivial contents.

2) The analysis of the teaching resources evidenced the difficulty of finding suitable ICT tools to enhance the teaching of chemistry, in particular when the age 5-10 is considered. The resources available for kids are often characterized by low quality or poor scientific reliability and are not adequate to the age suggested. On the contrary, a lot of material requiring deeper scientific skills can be found: a careful selection of this material can provide useful resources to be proposed to upper secondary school students.

3) United States and, secondly, United Kingdom, are the major makers of multimedia resources for the teaching of science subjects. Thus, it is possible to find appropriate materials in English language for the school grade required.

4) It is possible to find several websites and portals providing interactive material dealing with various scientific topics. However they are not very useful because their contents are structured in a chaotic way. It is likely to use resources dedicated to a limited number of content that has however a simple structure and can be easily used by students, even without the help of the teacher.

5) Many interactive resources, as easily accessible and scientifically reliable, have the characteristics of playful approaches, which certainly offer a nice variation to the classic lesson, but they do not guarantee an improvement in the learning. The construction of a multimedia resource should indeed take into account the 'problem solving' aspect of the exercise proposed: a motivated student is not just a student who enjoys, but above all a person who derives satisfaction in facing and overcoming challenges encountered during his training.

6) On the base of the above observations, all participants agree in concluding that although some selected resources are of good quality, they are not optimal, especially those addressed to the younger students. Therefore it would be good if every Partner will project at least one resource both national language, using the selected material as reference. For this aim, the defects will be corrected, the most positive aspects will be optimized and the contents will be integrated.

7) At the end of the meeting it has been decided that the most valuable national resources, along with few foreign ones, will be proposed to students of different schools. Moreover, a questionnaire will be prepared and used to assess the effect of these ICT resources on students' motivation.

It will also be estimated if the use of the above ICT resources will improve the learning of the scientific contents and if they can be adopted as valuable tools to integrate the more classic lessons. This kind of assessment needs much longer times, therefore it will be carried out at the end of the school year.