

Energy issues, European citizenship, CLIL methodology *How a Comenius Regio project helps improve students' competences and teachers' professionalism*

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The sense of the project

Science for ActiVe citizEnship in Europe (SAVE EU) - Scientific learning paths to face future challenges (September 2013 - August 2015) is a Comenius Regio project which expresses in the title and subtitle its main aims, that is:

- to build innovative learning paths focused on scientific issues inside Europe and on the learning of a foreign language in an integrated way;
- to adopt a new methodology (CLIL and the use of social networks - web 2.0);
- to develop teachers' professional competences and students' knowledge and skills as concerns Active Citizenship inside the EU and in the two partner countries (Italy and Denmark).

The project answers the main questions presented in the abstract:

How can the question of energy sources and the development of European citizenship be related? How can CLIL methodology be a valid and useful tool for students and teachers to research and explore today's scientific challenges in Europe in order to propose alternative solutions? How can a Comenius Regio project (in which various stakeholders – politicians, schools, institutions and associations - cooperate) contribute to setting up an innovative way of working together at distance, through ICT and social networks?

by pointing out how the citizens in the two partner countries face scientific and social issues of common interest (such as climate and energy targets, the environment, sustainable development, biodiversity, etc.), thus developing their own feeling and attitude of European citizenship.

The two partner countries in which the territorial institutions are set and work are:

- Italy: Province of Pisa (coordinating institution); 3 secondary schools; the professional association of *lengua e nuova didattica*;
- Denmark: Municipality of Fredericia; 4 secondary schools; UCSyd, University College Syddanmark, Haderslev.

The target groups include: the staff of the involved schools (teachers of scientific subjects, history, philosophy and English, teacher trainers, mentors); the students from 14 to 16 years old as "second addressees", but at the same time active participants in the learning paths; other stakeholders such as teacher associations, headmasters, researchers.

The state of art

Planning and implementing the scientific paths

The phases and deadlines of SAVE EU have been well marked (international meetings, planning and implementing the learning paths, evaluating the outcomes and disseminating them), as it does occur in European projects. This has led to good motivation in teachers and students in their initial phase of communication and exchange of experiences, and to active cooperation among the various "actors" of the project. A planning chart for the CLIL scientific path/unit on the themes of *energy issues (renewable and non-renewable energy sources) and their environmental impact*, has been discussed and agreed upon by teachers as concerns phases, activities and materials. The draft has constituted the "backbone" for all schools, which have also been free to introduce a few changes according to the level (language and content) and the age of students. As for methodology teachers have followed a very active approach (the 5Es: *engagement, exploration, explanation, elaboration, evaluation*), stimulating students to research, analyze, interpret, discuss and produce, in a spirit of exchange and cooperation.

The first step of the work has been to undertake scientific research and survey in one's own areas on energetic needs and policies adopted at local and national level, as well as on European documents and recommendations for common solutions and political action. Secondly, students have been asked to make an ecological footprint test, and to comment on the results realizing how their lifestyle and

habits might improve or change in order to save energy and to be more eco-friendly. Thirdly, they have studied, reflected upon and debated the chosen issues and have made presentations, reports and videos. Finally, all the school materials have been uploaded on the project platform. The theme of European citizenship has been the *fil rouge* which has linked and permeated the whole project either as knowledge of EU, its political system and institutions or as awareness to be achieved by students in order to be part of a supranational entity and to recognize common rights and duties (in particular as concerns energy policy). This has been dealt with in various ways:

- a) there has been a class who has faced this question starting from the notion of citizenship (what it means and implies in terms of duties and rights, how you can acquire citizenship in the European countries and what the differences are between being a citizen of a national state and a citizen of Europe);
- b) in another school context, at the end of the scientific path, a mock *European Youth Parliament Plenary Session* has been arranged in which students have discussed possible proposals for energy policy and have presented their resolutions respecting the rules and procedures of the European Parliament (defence speech, attack speech and open debate);
- c) another class has mainly focused on the results of their ecological footprint test and have debated personal attitude and lifestyle, thus becoming conscious of the urgency of the energy question and getting to feel more "European"!

The outcomes of the project, achieved so far are:

- a web-platform for teachers, researchers and all stakeholders to exchange opinions, experiences, materials (<http://saveeu2013.wordpress.com/>);
- a Facebook page for students;
- guidelines and suggestions for CLIL methodology;
- learning and e-learning CLIL scientific paths implemented at school;
- videos and reports documenting the experimentation phase;
- self-evaluation questionnaire for teachers and one for students (inner evaluation).

In terms of teacher training the project has encouraged teachers to update their competences in particular as concerns CLIL methodology and the use of ICT. This has occurred in various moments: in the international meetings a space has always been allocated for exchange of knowledge and experiences, for presentations and debates on the questions above mentioned. Besides, suggestions for further professional development have been indicated in the materials uploaded on the platform. Certainly one of the main objectives of the project is to contribute to fostering teachers' professional competences, that is *language and communication, science, digital skill, civic competence, sense of initiative and entrepreneurship* (among the eight key competences indicated in the European teacher profile).

Monitoring and evaluating the results

In order to monitor the project in the phase of implementation of work at school and to evaluate its results two tools have been adopted:

1. a questionnaire addressed to students as feedback on their work at the end of their activities;
2. a self-evaluation questionnaire filled in by teachers.

The former asked students to reflect on their learning experience inside the CLIL scientific path and point out their reaction – interest, attitude, feelings – to the research on energy issues and to the use of the foreign language in dealing with a scientific topic. The latter focused on a few areas of analysis (*teachers' motivation, organization of the whole project, teaching in class, outcomes, communication, interpersonal relationship, strengths and weaknesses* emerged so far) and aimed to make teachers discuss their personal response to the whole project and to their innovative didactic practices.

The results obtained so far underline the following points:

- as for the teachers in the area of *motivation* all of them started the project and continue it feeling a strong motivation to cooperate and work together. The *organization* sounds good on the whole, especially as concerns the division of roles and responsibilities. As for *teaching in class* on the average teachers seem to be satisfied with their work (more with students' response and activities, a bit less with timing). The level of *students' products* is indicated as good. The *effectiveness of communication* is recognized, but as concerns the means there has been some difficulty at the beginning in managing the platform. Finally in the section *strengths and weaknesses*, the positive aspects are the richness of this professional experience of work and cooperation among colleagues and the strong professional motivation stimulating them. Also students' response is seen as a strength. The negative comments underline the problems of funding, resources and the means of communication.

- as for the students the great majority of them have considered the learning experience inside the CLIL scientific paths very important or important and useful for their future. Most have found out that learning a subject in a foreign language is fairly easy, but they have also underlined a few difficulties such as: “understanding scientific notions in English”; “interacting in the foreign language”; “reporting what has been researched and analysed”. The methodologies they have mainly appreciated have been the scientific method and multimedia.

It is also planned that in the second year there will be some forms of external evaluation as regards the process and the products of the project (both in the scientific area and in the management of the activities).

Future perspectives

If we go back to the initial questions focusing on the core of the project and on its various aspects - topics and methodology - we could conclude that SAVE EU has brought to innovative methodologies and strategies, to valid educational policies and to more European “consciousness”.

Indeed, the impact of the project on the actors has been quite positive up to now as teachers, students and the regional institutions in both countries have become aware of the scientific challenges Europe has to face in the near future in particular as concerns energy sources, and have been developing a feeling of citizenship inside EU. They have worked in an innovative way (CLIL and ICT) in an intercultural context, and have actively cooperated in view of their common objectives.

The dissemination of the outcomes of the project has already started (online and in presence): this has led to a deeper reflection on the project itself and is also paving the way to the second phase, the 2nd year of experimentation in classes (planning, implementing and evaluating new learning paths on scientific challenges!)

We expect that in the second year of the project the four “threads” of it - local autonomy and education, common scientific challenges, the CLIL teaching/learning process and European citizenship - will interrelate more closely in order to bear further good fruits.

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