

GIRONA, SEED CITY FOR SCIENCE



Project funded by the European Community
under the "Science and society" Programme – FP6
Structuring the European Research Area

POLLEN PROJECT
2006-2009



Girona, seed city for science



- An overview of the implementation of the Pollen Project in the Spanish seed city: Girona.
 - Getting started and developing the project.
 - What we have learned through experience. Lights and Shadows.
-

Where is Girona?

pollen 



SPAIN



GIRONA

CATALONIA

GIRONA: THE CITY

pollen. 



Girona in few words...



Girona is located in the North of Catalonia, 100 km north of Barcelona. Its population is about 80 000, with 15 000 people born out of Catalonia and almost 5000 born abroad.

The project's target group of population (children from 3 to 11) is composed by 7 000 children. Girona has got a young and active university with a special interest in science and technology. The university has 46 research groups on science and technology topics working in 5 different research institutes.

It also has 8 IT (Technology Innovation groups) linked to private enterprises, and a scientific and technological park (Parc Científic i Tecnològic).

Educational Context:



Elementary education

During this period that includes ages from 0 to 6, curricula is structured in areas: Oneself discovery, Environment discovery and Intercommunication and languages. Although Science education is basically present in Environment discovery, it can be lively and experimentally approached from all the areas.

Primary education

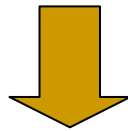
This period, including ages from 6 to 12, is structured in cycles (initial, medium and superior) consisting of two courses per cycle and 8 areas in total (plus religion, which is voluntary). Science education is included in the Natural knowledge area which has 140 lective hours in the initial cycle and 140h more in medium and superior cycles. During the first two years are basically present the natural sciences whereas during the medium and superior cycle physics and chemistry are gradually introduced.

Schools (from 3 to 11 years) in Girona

- 19 public schools
- 8 private schools with public foundings
- 2 totally private schools

Main goals of the Project in Girona pollen

- **Promote observation, experimentation, hands-on and inquiry in science lessons.**
- **Create new dynamics and synergies inside and outside the schools.**
- **Create new links and collaborations between institutions: community project.**



- **Improve the science education amongst children between 3 and 11 years old.**
-

Local partners



- Ajuntament de Girona (City Council)



- Departament d'Educació (Educative authority in Catalonia)



- University of Girona



- PAU Education



What has been done?



2006-2007: preparation

- Several meetings involving the partners (City Council, University, Education Department and PAU Education)
 - Cross visit to Perpignan
 - “*State of the art*” meeting with the participation of representatives of the institutions mentioned above plus teachers, inspectors, cultural organizations and researchers.
 - Project presentation for schools and teachers
-



State of the art: Some results



- The state of Science Education in Girona was quite **different from school to school and it also strongly depends on every teacher's interests**. We can find schools where a specific project is carried out so they work a lot in science education and others where they just do the minimum (without involving actively the students).
 - On 2006 the Educative authority launched an **innovative project in science education that included a material dotation (computers, webcams, projectors and scientific material) and in-service training** (to let the teachers know how to manage that equipment and refresh scientific and didactic knowledge). This project is Catalonia-wide and it affected two schools from Girona in 2006 (one was joining the Pollen Project)
 - **Teachers and schools are absolutely collapsed with plenty of work** and innovative projects, so our project had to enter slowly and carefully and it had to be understood as a helping hand, not as “more work to do”.
-

What has been done?



2007-2008: the project starts in the schools

■ **What was offered?**

- Training in the school (3 sessions minimum) + consulting
- Material (when needed)
- Participation in the Science Fair

■ **Voluntary participation but with some criteria:**

- 3 teachers per school minimum
- They should attend the trainings and try at least one session with their pupils and report back.

■ **The two main activities of the Project were:**

1. In-service teachers training on a school basis
 2. Organization of the Science Fair (involving pre-service teachers training)
-

What has been done?



2008-2009: consolidation of the project

■ What was offered?

- Training at the Faculty of Education (3 sessions) + training and consulting in the schools.
- Material (when needed)
- Participation in the Science Fair

■ Voluntary participation but with some criteria:

- 3 teachers per school minimum
- They should attend the trainings and try at least one session with their pupils and report back.

■ The main activities of the Project were:

1. In-service teachers training at the Faculty (all together) + pre-service volunteers
2. In-service teachers training on a school basis + pre-service volunteers
3. Organization of the Science Fair (involving pre-service teachers training)
4. Coorganization of Community events such as the Researcher's Night and the Schools Ecological Market

In-service Teachers training

pollen. 



In-service Teachers Training



- Hands-on experiments about science topics:
 - Air
 - Water
 - Vegetables
 - Laboratory
 - Minerals and rocks

In-service training at the Faculty Hotellen

- Inquiry based science education.
- Hands-on science related to food and cooking.



Pre-service training

p.o.l.l.e.n. 



Pre-service training



- The future teachers design, prepare, test and evaluate their own science workshops for children.
- They offer and guide the workshops during the Science Fair.

Science Fair

pollen. 



The pollen classes visit the University



- The younger children visit the Faculty of Education and Psychology (from 3 to 7 years old).
- The older ones visit the Faculty of Sciences (from 8 to 11 years old)

Science Fair - workshops

p.o.l.l.e.n. 



Science Fair - Workshops





pollen. 
8 a 11



Science Fair - Exposition



Shadows



- Slow process: to create a common and shared project involving different stakeholders and institutions is not easy.
- There are loads of projects and demands to the schools, teachers feel overwhelmed and collapsed as work piles up.
- Science is not a practical subject in the majority of schools. Teachers don't feel confident in science and find difficult to organize hands-on activities with the whole class.
- It is difficult to go beyond some hands-on activities in some schools or classes. Inquiry requires training and practice, for both pupils and teachers.
- To create links and promote trust between institutions is something that not occurs overnight. Networking is still at a preliminary phase.
- Implication of Science and Technology Faculties is good for concrete days or activities but we think is not enough in the framework of the whole project.

Lights



- We have created and consolidated the project. The numbers and facts point out a growing interest:
 - 150 pupils the first year
 - 750 pupils the second one
 - 1000 pupils the third one
 - 1500 pupils this year

 - The questionnaires show good evaluations (teachers and head teachers opinions)
 - The Community board has reported very good evaluations.
 - The project is known and more groups, schools and students ask to participate in it.
 - Science is becoming slowly a practical subject in our Pollen Schools.
-

Near Future: Pollen goes on!



Fira Infantil de la ciència, a la UdG. Una 750 alumnes de sis escoles de la ciutat de Girona van participar ahir en la primera edició de la Fira de la Ciència de la UdG, que es continuarà font avui. L'objectiu primordial és potenciar les ciències entre els nens d'entre 3 i 11 anys en vista de la davallada de vocacions científiques que s'ha notat els darrers anys. / MIQUEL RUIZ

Thank you very much!!

pollen 



- Any questions or comments?

Lidia Ochoa Cañigueral E-mail: lidia.ochoa@udg.edu

Faculty of Education and Psychology -University of Girona (Spain)
