



This Newsletter is published on a regular basis and reports on the Pollen project's current and future actions by highlighting partners' work. Please do not hesitate to send your comments and/or suggestions to : helen.needham-reboul@voila.fr

Seed cities life

Perugia

Traditional and renewable energy sources – meteorology and environment

(contact : Anna Allerhand at a.allerhand@katamail.com)

During the second year, the Pollen project in Perugia evolved in two directions : the first concerned the development of children's activities on the theme of traditional and renewable energy sources and the second involved children's activities on meteorology and its implications for the environment. More than 90 primary and kindergarten teachers participated in three training days at the Foligno Laboratory of Experimental Sciences when they made experiments on these two main topics. Pollen found consensus and appreciation on the part of managers, teachers and families. More information at www.pollen-europa.net : "news"

During the third year of the project, each Pollen class will continue the process started ! All final work achieved by the schools will be used during an event which will be held in the spring of 2009 in Foligno. It will take place at the Quintana tournament location, the Taverns, which are very interesting because they are located in the cellars or in other parts of old palaces in the Foligno city centre.

During this same period, two important events will take place in Italy which are the following :

- 1) the second national conference on scientific training in Italy.
- 2) the tenth anniversary of the Laboratory of Experimental Sciences.

Amsterdam

A centre of expertise – successful in-service training

(contact : Ed van den Berg at eberg@science.uva.nl)

After a slow start in POLLEN, Amsterdam is now taking off due to national projects in elementary science and technology education. In October 2007 the AMSTEL Institute of the University of Amsterdam and its POLLEN partner the teacher college of Hogeschool Amsterdam received a grant to start a Centre of Expertise on Elementary Science and Technology Education (2007 – 2010). The major teacher education colleges in Amsterdam and the province of North-Holland are participants in this Centre of Expertise. Subsequently Hogeschool Amsterdam received a grant to conduct in-service for 300 teachers between 2008 – 2010.

Some of the highlights of the past few months are:

- March/April 2008 second try-out of our ICT enriched lesson package in grades 4 – 6 in two Amsterdam-Old-West inner-city schools with 140 children after an previous try-out with 140 other children at two other schools late 2007. Lessons and software are available for free in English www.pollen-europa.nl/wiki/Lesmateriaal/DownloadEn
- March 2008 start of a one year in-service training with a pilot group of 16 teachers.
- September 2008 start of 5 in-service training groups with a total 120 teachers from Amsterdam and surroundings who will participate in 7 one-half day training sessions. Most teachers participate with a team from their own school rather than just individually. The training also pays for coaching visits to all participating schools. For about half the group there is a good chance that coaching can be extended for a second year. Another teacher college affiliated with us is enrolling another 50 teachers.
- September 2008 completion of a resource booklet for the €Sense sensor package (Frank Schweickert). The booklet will be translated in English and will be made available on the POLLEN website late 2008.
- In September and October 2008 we will be reviewing the Science and Technology curricula of the pre-service teacher training programs in our region.

The team: Rene Onclin, Thomas van Eijck, Paul Ruis, Frank Schweickert, and Ed van den Berg.



Saint Etienne
Annual science fair in Saint Etienne – June 2008

The annual science fair “La vogue des sciences” gives young people between 5-18 years the opportunity to present and appreciate their scientific projects developed during the school year or leisure activities. It took place this year on June the 4th and 5th at *Saint-Chamond*. More than 1000 people were able to discover 35 stands set up and animated by the children.

The projects presented by Pollen classes were the following :

- Stick insects and magnets, *Ecole maternelle La Chabure* (Saint-Chamond)
- Visual effects and manufacturing of objects, *Ecole Lamartine* (Saint-Chamond)
- Gears, movement, electricity and renewable energies, *Ecole Villon* (Saint-Chamond)
- The puddle and its ecosystem, *Ecoles Paganini et Gounod* (St-Etienne, Montreynaud)
- The small scientists, *Ecole Massenet-Pasteur* (Saint-Chamond)



For the pleasure of the oldest...
and the youngest !!!



Discovering strange animals



Optical illusion



Taking up challenges



Sacavém (Loures District)
The Pollen project in a local open-air event
 (contact : Rosario Oliveira at roliveira@cienciaviva.pt)

On the last Sunday of September, African music and food, as well as scientific activities for children attracted a great deal of people to the main square of Terraços da Ponte (Sacavém, Loures district), a neighbourhood where just some weeks before violent social conflict had taken place. Several local organisations joined in this event and so did the Pollen team !

People who lived locally and mainly children (the highest percentage) could choose from a variety of activities offered by local social organisations and by teachers from two of the Pollen schools, CAIC and Pomba da Paz. At lunch time, dishes from different African countries (Mozambique, Guinea, Sao Tome Principe Island, Angola) were presented on different stands run by people dressed in traditional costumes. National television covered the event showing for once a positive image of the community.



The Pollen team set up experiments aimed at getting the children involved and which challenged them to try and find out the science behind the phenomena. Some of the experiments which the children got involved in are the following :

- Removing an eggshell with vinegar (Introducing the concept of chemical reaction and relating it to the effect of acid rain on monuments)
- Is black ink really black? (Chromatography experiment using filter paper strips and black ink to show that a given colour can be the result of the mixtures of several pigments)
- Flowers changing colour (Understanding capillary action and how chemicals and pollutants in the soil water contaminate our vegetables and plants).
- Making butter by shaking cream in a jar (Learning about food composition and emulsions).

By taking part in this event, the Pollen team got to know and created links with people in charge of local organisations in this community. Besides, the Pollen team had the opportunity to have a chat, in a relaxed atmosphere, with the mayor, the local parish president and the governor of the Lisbon area and make them very much aware of what had been done so far within the project.



"We have been told the idea is to carry on with such events. We'll be there again!"

Girona

Claudia Alsina at claudia.alsina@paueducation.com



Last June, as part of the dissemination goals of the project, our trainer Lidia Ochoa and one of our Pollen primary school teachers, organized a one day session for teachers from all over Spain. This was included in a teacher training in-service course held in Cuenca and called "European science education today: the Rocard report". This was part of various summer courses organized by the Spanish Ministry of Education. It was very successful and teachers from several Spanish cities were enthusiastic and willing to share different experiences with our seed City.

Girona's school year started off with the participation of Pollen to "the Researchers' night" on September 26, led in Spain by the University of Girona.

More than 1000 children attended this event, where they could participate in different activities: look at the sky through a telescope, understand how a sewage treatment plant works, make flour like the prehistoric people did or play with robots...

Pollen participated in this event with a stand (following a specific request by the organisers) where it was set up so that children could play with densities, understand the vacuum effect, perform other experiments or just get more information about the project.

Seven schools will participate this year in the project, with more than 1100 students. As a difference with last year when all the training sessions took place in the actual schools concerned, this year three main training sessions will be carried out together with the all Pollen teachers from Girona. This will encourage communication amongst teachers from all the different schools. It will be a good opportunity to exchange good practices and contact information. Apart from these three main seminars, separate training sessions will be held in the schools already participating in the project which should answer the teachers' concrete questions.

In April 2009, the second two day "Science Fair" will take place : one day for Preschool and the second for Primary Education. Schools will be able to exhibit their Pollen science work and participate in different workshops organized by the student teachers of the University of Girona. Following a clear demand from the teachers from Girona, this exhibition of Pollen school science work will continue to be shown after the fair but this time in a different space, so parents, teachers and children can continue to visit it.



Finally, we have started to develop Girona's key issue, "learning science in multicultural environments" and we will therefore study this in the context of the schools of Girona as part of this year's project. . Our key issue will be transversal to all the schools training sessions.

And last but not least, we are proud to announce that several student teachers who participated in last year's Science Fair are now collaborating with the project and will be helping new teacher students as well as teachers in-service to improve science classes in line with IBSE during this academic year!

Observer Seed cities

Since the beginning of Pollen, several EU cities or national organizations have taken a growing interest in getting involved as "observer members".

Dublin

A full timetable of scientific events for Irish school children

(contact : Oonagh Meighan at oonagh.meighan@forfas.ie)

Discover Science and Engineering have a busy year ahead !

In particular, Science Week Ireland runs from Nov 9th to 16th this year with in excess of 500 science events nationwide. DSE coordinate science week and have produced a science week guide to events and encourage primary and secondary schools to attend or to stage their own science event. <www.scienceweek.ie/sw2008/index.asp>

Regarding incoming actions, in January 2009 DSE will Launch Greenwave 2009, a mass science experiment encouraging all Irish school children to observe and plot the arrival of springtime. Last year we measured temperature rise during spring, this year we will monitor rainfall during spring, a very topical subject in Ireland as it always rains! See <www.greenwave.ie> for more details.

From February 9th to 13th DSE will work with Engineers Ireland on their Week of Wonder during schools mid term break. Many science and engineering events will be held throughout Ireland and parents are particularly encouraged to participate as these activities are outside term time. See <www.weekofwonder.ie>

In May 2009 Irish schools will submit their science log books to DSE for the Award of Science Excellence. This year 654 of 3,000 Irish schools received awards and we hope to increase this number in 2009. See <www.primaryscience.ie> for a video of our award ceremonies last year.

Trnava

Recent field work with all the attributes of IBSE

(contact : Kristina Kzoldos at kzoldos@truni.sk)

The Pollen project has widely developed recently in Slovakia due to successful dissemination. A reform of the whole Slovakian school system concerning educational content and process is already in place and has therefore considerably helped and served as a framework for the introduction of the project. Many schools are interested in joining Pollen due to the project's principles and international experience. To promote a higher level of motivation, field work takes place during school hours. Recent field work has had all the core attributes of the inquiry based scientific approach and has been carried out by experienced pedagogical staff from Trnava University. The children can experience real scientific problem solving in a relaxed pedagogical environment. This field work has great potential in helping to gradually change the rigid way of thinking which is very typical of traditional Slovak education. School surroundings are being appropriately prepared and adapted so that field work topics can be implemented in accordance with IBSE. Detailed methodology lists which focus on the basic principles of IBSE are drawn up in order to give teachers a better start. These lists guide the teachers who are often usually only copying the visual form of instruction and not looking out for the valuable principles of IBSE which are not always so obvious.



Bucharest

Junior Science Summer School and dissemination in Romania

(contact : Dan Sporea at dan.sporea@inflpr.ro)

During the first week of August 2008, a "Pollen Junior Science Summer School" took place in the small village of Izvorul Rece (Cold Spring) in the southern part of Romania.

Lectures and demo sessions were delivered by a number of Physics school teachers at the Theoretical High School "Tudor Vladimirescu" and the Technical College "Edmond Nicolau" (both in Bucharest) who introduced the local school staff to inquiry-based science education. The Summer School students were from 3 to 13 years old (Figure 1).

The Summer School's program included environmental education (voluntary participation to the cleaning of village streets, a visit to the local water supply station, science trips), courses on light and optics (Figure 2), and an introduction to data acquisition used in school experiments based on various sensors and LabVIEW programming (Figure 3).

At the beginning of September 2008, Dr. Dan Sporea, Director of the Center for Science Education and Training (CSET), was invited to attend the Annual National Congress of the Romanian Primary School Teachers where he did a presentation to more than 1000 participants on the Center's educational activities. These included the Romanian contribution to the Pollen project. Over 800 flyers describing CSET involvement in science education were distributed.

To learn more on the Romanian team projects and activities please visit <education.inflpr.ro> or e-mail to Dan Sporea.



Figure 1 : Pollen Junior Summer School participants



Figure 2 : The spoon as a curved mirror



Figure 3 : Investigation on objects motion using an ultrasound sensor and LabVIEW programming

European Coordination Highlights

Grenoble

A European conference under the French Presidency of the European Union

A major conference gathering 300 European experts was organized by the French Ministry of Education on October 8 and 9 in Grenoble, SE of France. This conference provided a platform for reflection on the methods, tools and combined efforts which are being implemented in Europe at the moment with the aim to change public perceptions with respect to science education as well as reflection on the reform of curricula and educational approaches and systems.

In particular, the conclusions reached at the end of the conference stressed the following aspects :

- the need to learn from and develop successful practices at a very large scale ;
- the need for a long-lasting effort, of the order of a decade or more ;
- several components should be targeted for a global reform, either through national or European- coordinated actions :
 - Teachers' professional development
 - Teachers' circulation in Europe, through an *Erasmus for teachers*
 - Teachers' cooperation with science education researchers, industrial partners and informal education
 - Better integration of scientific disciplines
 - Experimental access to mathematics
 - Sharing of resources for curriculum design and implementation
 - Students assessment
 - A European network of pilot centres
 - A program of research into student and teacher attitudes and effective pedagogy.

This common ambition could be materialized by the creation of a *European Council for Science Education*. All these conclusions will be submitted to the attention of the forthcoming European Councils for Education and Competitivity.

Science Education World

The FIBONACCI project

On July 28, 2008, a new EU project was submitted by *La main à la pâte* in the frame of the 2008 Science in Society 2008 call for proposal. Called FIBONACCI, it gathers 25 partners from 21 countries and is both focused on science and maths education, at primary and secondary school. FIBONACCI aims at a broad dissemination of successful initiatives like Pollen or SINUS (<www.sinus-transfer.de>) throughout Europe. Hopefully, FIBONACCI will make the continuation of Pollen actions possible !

New Science and Society EU call for proposal

The European Commission has published on 3rd September 2008 a new Science in Society call citing the following main action lines : a more dynamic governance of the science and society relationship, strengthening potential and broadening horizons, science and society communicate.

This 2009 call includes the possibility of an indicative budget of EUR 7.50 million for the following topic :

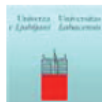
SIS-2009-2.2.3.1 : Supporting and coordinating actions on innovation in the classroom : Dissemination and use of inquiry-based teaching methods on a large scale in Europe. (This is part of Activity 5.2.2. Young people and science, Area 5.2.2.3 Research and coordination actions on new methods in science education.). More information on the internet site of the program Science and Society : <cordis.europa.eu/fp7/sis/home_en.html>

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Pollen is a European research and development project supported by the DG RESEARCH (FP6) of the European Commission