

**SUMMARY ON THE PROGRESS OF THE WORK TOWARDS
THE OBJECTIVES OF THE HIPST PROJECT
UT, 31 January 2009**

The Project approach can be summarised in three **general objectives of HIPST**:

1. To increase the **inclusion of history and philosophy of science in science teaching** for the benefit of scientific literacy.
2. To **improve strategies for the development and implementation** of domain-relevant materials, teaching and learning strategies into educational practice.
3. To **strengthen the cooperation and establish a permanent infrastructure** of sustainable networking of all involved stakeholders in the field of scientific literacy and public understanding of science (schools, museums, universities).

Ad. 1, 2.

At the beginning of the Project we wished to get more information on the state of art in the implementation of history and philosophy of science in science teaching in Poland. For this reason we designed a special and comprehensive Questionnaire containing 18 tasks, which were sent to the network of Polish Association of Science Teacher members. We analysed the Questionnaire and prepared the Power Point presentation from the results.

We took a part in the kick-off meeting in Florence and because the Polish teachers in June went for the vacations we decided to organise the national meeting in Torun on 12th September 2008, where we could also to use opportunity to discuss the details of national work plan of the project with teachers and experts. Forty two participants were attended the first national meeting and the schedule of this meeting was as follows:

- Dr. Józefina Turło, Introduction to the Project HIPST.
- Lecture of professor Andrzej Bielski on: *Witelo, the first Polish nature scientist from XIII c., having international reputation.*
- Lecture of professor Lech Bieganowski and professor Janusz Mallek on: *Invention of spectacles in Europe.*
- Lecture of professor Grzegorz Karwasz on: *Practical realisation of interactive exhibition on OPTICS” (including the optical historical experiments, eg. Witelo, Copernicus, Galileo, Goethe).*
- Dr. Józefina Turło, Presentation of the science teachers Questionnaire studies on: *The HPS elements in science teaching.*
- Research group establishment, discussion in groups, plan of work, summary.

Four working groups were established:

- elaboration of materials and methodology of HIPST in secondary schools,
- elaboration of teachers education and training programme with the HIPST elements,
- elaboration of materials and practical realisation of exhibitions at museums,
- designing of new replicas.

The first list of teaching materials was identified by the Torun Partner Group members and by the Questionnaire answers of science teachers. Some were described.

New Polish physics curricula (obliged from 1st September 2009) for low and high secondary school have been analysed by science teachers taking into account the possibility of HIPST elements introduction.

In spite of this, to improve strategies for the development and implementation of selected materials from optics (related to eg. Witelo, Copernicus, Newton, Goethe experiments, historical microscopes and spectacles) the teachers started to elaborate scenarios of the inquiry-based lessons. The first scenarios are ready already and the first lesson on historical spectacles was taking place in the secondary school in Torun.

We would like to add, that to intensify these activities we ask our three students - science teachers to be to collaborate with practising teachers and us on HIPST issue.

Ad. 3.

The cooperation was strengthened and a permanent infrastructure of sustainable networking of all involved stakeholders in the field of scientific literacy and public understanding of science (schools, museums, university) was established.

Especially, the interactive exhibition on “*FIAT LUX – from Witelo to optical tomography*” was exposed from 29 April until 15th September at the Regional Museum in Torun. Exhibition contained among others the replicas of historical experiments as: Witelo devices, Goethe prism, many kinds of historical spectacles, Copernicus instruments, set of historical telescopes, etc. This exhibition is exposed now in the Hewelianum Center in Gdańsk and is going to be presented in Olsztyn Planetarium.

Furthermore, the Regional Seminar for science teachers on HIPST and related problems was established and the most important, selected materials on HIPST Project were placed at Polish web page of HIPST: (<http://hipst.fizyka.umk.pl>).

In addition, we prepared the mid-term overview and financial report.

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