

## WP4: An overview

# Content development: Physical Chemistry

**Leading partner:** Eugenides Foundation

**Duration of work package:** 27 months

**Main task:**

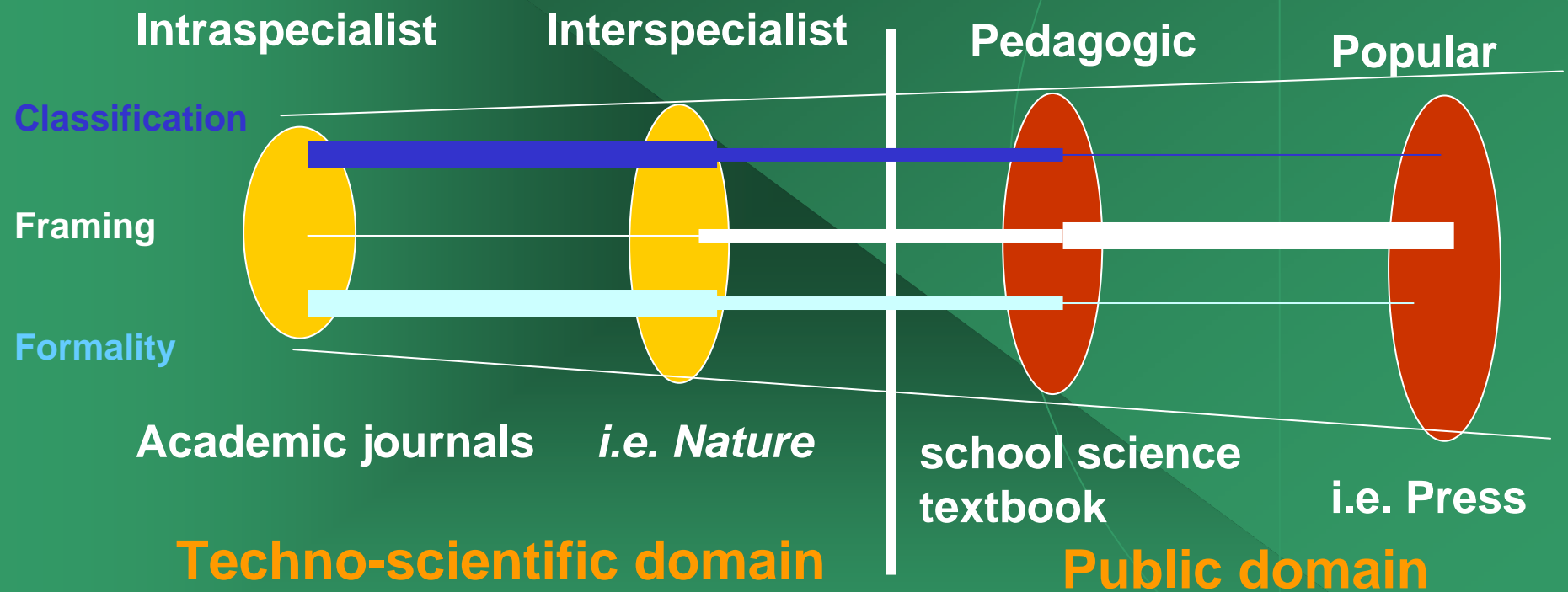
Content and pedagogical processes development for the e-KNOWNET platform (physical chemistry).

Applications (concerning new knowledge) will be digital and web-based. Schools, science centers will act as agencies for disseminating it. Tools like Video, Web casting, Video on Demand, Grid Computing will be employed.

**Three sub-packages:**

- a) Design of pedagogical processes
- b) Content development. Knowledge produced in CNRS (primary scientific knowledge production site) will be transformed so as to be accessible by different kinds of lay publics. The development of 7 digital exhibits is planned in the field of Physical Chemistry and 6 digital exhibits in the fields of Materials and Biotechnology.
- c) Design and development of educational activities scenaria.

# A possible model for describing the re-contextualization process in the texts of S&T



## Platform-Science Centers-Pedagogy

- ◆ An **e-platform** will act depository for redistributing popularized new science knowledge available in non-conventional forms.
- ◆ **Science centres** are expected to act as catalysts in this process of knowledge circulation considering their outreach potential.
- ◆ Science centres can encourage their visitors to profit from **ICT-enabled life long learning** activities.
- ◆ The e-KNOWNET will offer pilot learning activities which will be customized along the **different pedagogical profile** of each learning audience. e.g. dialogue with users with special and demanding needs, will be established in order to ensure that their requirements are met.
- ◆ The piloting activities will focus on fast developing topics of **Physical Chemistry** and will be adjusted to fit real learning needs of the users.

## Target groups: Audiences

- ◆ **Secondary education audiences** – new incentives for science teaching to disinterested students; simulation of laboratory work, illustration of phenomena and processes that might be too slow or fast; offer access to non-existing entities, e.g. the frictionless body; model activities of examination of and experimentation on material that would be dangerous, etc;
- ◆ **Adult audiences** - opportunities for science learning to adults with no previous knowledge or interest in science; learning opportunities to early school leavers  
Strategies: increased incentives to become involved in science learning; opportunities for social interaction through the web or locally in the science centre; “safe” contexts for exercising life skills.
- ◆ **Science centres** – Science centres and museums develop their content most of the times relying on external expertise. This project will help science centre and museums to increase their positive impact to the public, offering innovative ICT-enabled services and well informed scientific content by establishing fast and direct communication with research laboratories.

## Beneficiaries and impact

- ◆ Science centre visitors of all ages and educational background, who make use of educational activities.
- ◆ Users of science popularisation portals.
- ◆ Formal education communities (students, educators)
- ◆ Professionals and experts specializing in ICT in education, museum educators, etc.
- ◆ Info-centres and libraries
- ◆ The mass media and the general public.

# Educational material: Pedagogy and evaluation

The educational content will be tailored to the needs of this audience.

- ◆ For **secondary education audiences** applications are expected to provide: activities available for “physical” manipulation, simulation of lab field work, examination of and experimentation on material, studies, etc..

*Communication technology (ICT) is able to support both learning of science content (e.g. laws, theories, facts) and science processes such as measuring, recording, processing data, information etc. Simulations and modeling offer a wide range of opportunities by either describing reality or simplifying it to aid conceptual interpretation. Through simulations variables can be easily controlled and teachers can focus on theoretical issues instead of dealing with managing the lab.*

- ◆ For **adult learners**, the pilot learning modules will include the social dimension of ICT-enabled interaction and will refer to more practical and everyday dimensions of science and technology.