

IBSE : some key elements of a public policy

France, European Union (EU)

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Working areas : 3 examples




France : primary school

France :
lower secondary school

UE :
global policy in MST

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Main issues : 3 keystones

- Evolution of science curriculum
- Teachers : training and support
- Promotion of innovative models

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France : the main strategic axes

- Implementation of **competence-based** curriculum
- Clear instructions in the **syllabus**
- Large and sustainable in-service **training**
- **Institutional** support
- A keystone : **assessment** !

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France : primary school institutional support

- Partnership between the French Academy of Sciences and the ministry of Education
- “La Main à la Pâte” as a model
- Human and material resources; various support for teachers

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Primary school; syllabus (classes 3-4-5)

“ Observation, questioning, experimentation and arguing practiced, for example, according to the mind of “la main à la pâte” are essential; it is why knowledge and skills are acquired in the framework of an inquiry method that develops the curiosity, the creativeness, the critical mind and the interest for the scientific and technical progress”.

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Syllabus : outcomes

« The pupil is able to:

- to practice **inquiry**
- to **observe**, to **question**
- to **experiment**
- to formulate a **hypothesis** and to test it, to argue
- to test several **tracks** of solutions
- to express and to exploit the results of a measure or a research while using a scientific vocabulary to the **writing** and to the **oral** »

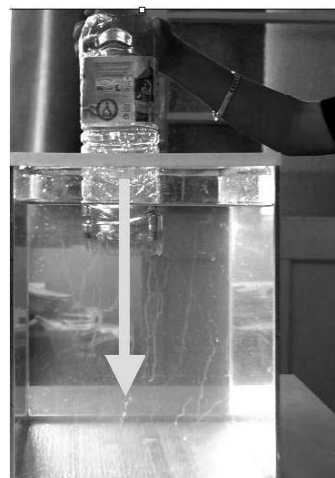
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Steering and assessment...

By means of the supplied equipment you have to realize following both experiments:

- Push vertically a **bottomless bottle, without cork**, in a bowl filled with water
- Push vertically a **bottomless bottle with a cork** screwed on the necks in a bowl filled of water



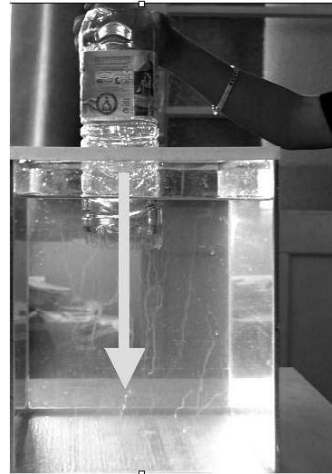
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Steering and assessment...

Two skills evaluated :

- Individual elaboration of an experimental protocol
- Ability to take part in a scientific debate



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France : lower secondary school

- Continuity between primary and secondary levels
- Implementation of innovative and comprehensive models
- And always... syllabus , initial and in-service training, assessment !



Importance of LITTERACY

Construction of various skills

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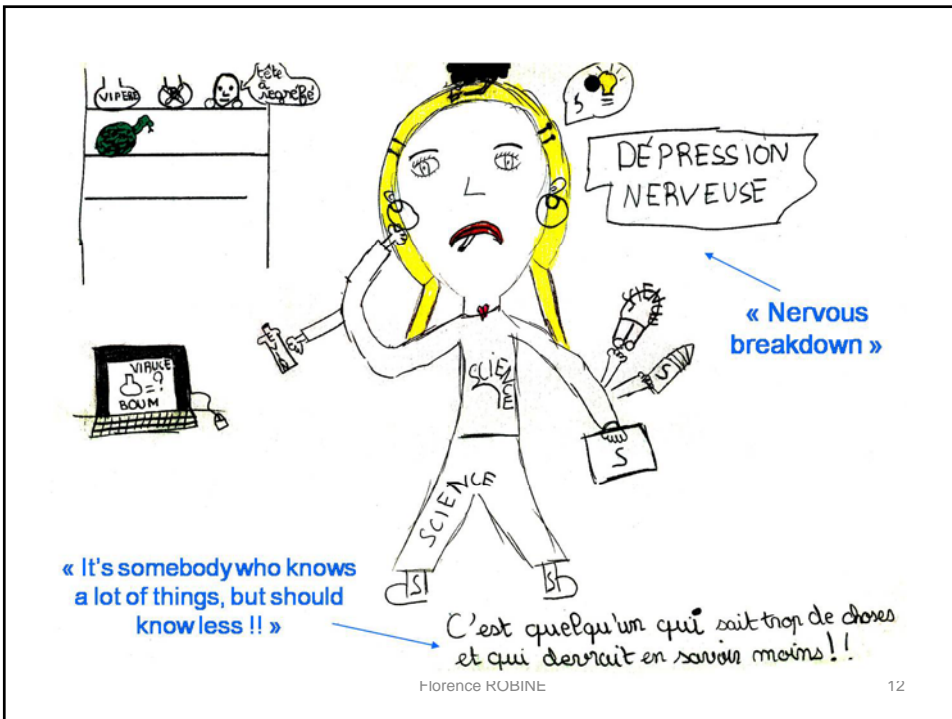
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EU : a global policy in MST

Lisbon strategy : enhancing involvement in MST


ESSENTIAL !
Before it's too late ...





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EU : a global policy in MST


- Lisbon strategy : enhancing the involvement in MST
- Open Method of Coordination : clusters and peer learning activities
- FP7 : Framework Program

Dissemination
of best
practices

Research in science
education
Operational projects

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FP7 : Science in society

ACTIVITY 5.2.2 Young people and science (indicative budget: EUR 8.25 million)	
Supporting formal and informal science education in schools as well as through science centres and museums and other relevant means	Topic : Supporting and coordinating actions on innovative methods in science education: teacher training on inquiry based teaching methods on a large scale in Europe

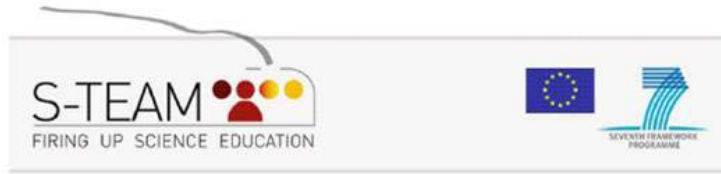
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**Fibonacci
project**

- 21 countries; 25 varied partners (included LaMap as a coordinator)
- 4.7 M Euros
- Creation of a network of References centres based on successful Pollen seed cities and SINUS-TRANSFER centres, for broad dissemination of IBSE, including mathematics in Europe (primary and middle schools).

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5.4 M euros

15 nations

26 partners

Premières Journées d'études S-TEAM

Les démarches d'investigation dans l'enseignement scientifique

Effets du travail collectif enseignant sur les pratiques de classe

Effets des pratiques de classe sur les acquisitions des élèves

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Cluster MST :

- [compendium](#) of good practices
- PLAs [Norway](#)

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Muchas gracias!



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