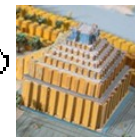


Science Education Goals: Paris / French schools' Perspective

A Babel tower for school

Many
languages,
many
questions
connected
to generate
creativity
and action

www.babylon.com



Ecole

School

Escola

школа

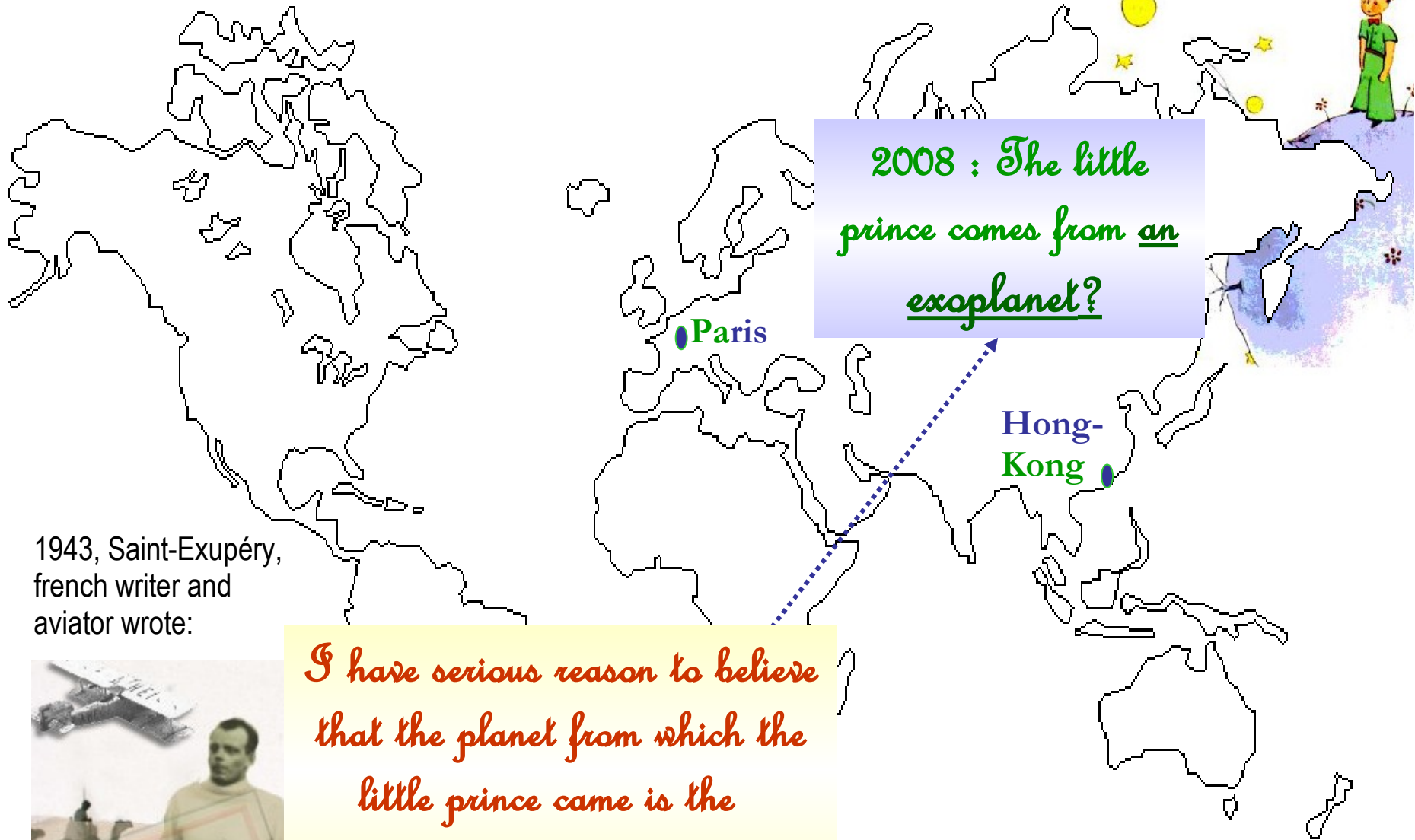
流派



Hong-Kong 2008

Suzanne FAYE, France

From France to Hong-Kong : challenges of education



1943, Saint-Exupéry,
french writer and
aviator wrote:



*I have serious reason to believe
that the planet from which the
little prince came is the
asteroid B 612.*

Education in France :

French educational system :

- highly centralized, organized, and ramified.
- divided into 4 stages:
 - kindergarten(age 3 to 6)
 - primary education (6-11)
 - secondary education (11-18)
 - higher education (> 18)

Grandes écoles : special schools (instead of universities) for the best students

- **Ecole Polytechnique for Sciences**
- Fémis for Cinema ...

Main precepts :

Liberty, equality, brotherhood

*French republic motto
since french Revolution,
now common values in Europe.*

No religion at school

*March 2004 : the French government banned all
"conspicuous religious symbols" from schools and other
public institutions - for tolerance .*

Low tuition costs : education is mainly funded by the state .

The Bologna process
is now creating European
standards for Universities



French classrooms : a balance between tradition and innovation

Tradition and innovation:

- **Acquisition of a standard body** of fundamental knowledge:

Maths

French language (reading and writing)

- **Continuously updating** official curriculum to face scientific, technological and cultural progress

- **Particularly efficient for science teaching:**

Laboratory work in experimental sciences (several hours a week)

Tutored student research from secondary school (TPE) on.

« Think tanks »:

- **Ecoles Freinet**, innovating public schools using schoolmaster Célestin Freinet's methods in the context of the international New Education movement (XXth century)

*Freinet, the
schoolmaster who let the
children dream*



- **La Main à la Pâte**, for scientific education, in the context of international Hands-On with Georges Charpak (Nobel 1992)

Be a rizard, be a scientist



To compare: **Tradition and innovation in the Chinese school curriculum**

<http://journals.mup.man.ac.uk/cgi-bin/pdfdisp//MUPpdf/RED/V61I0/610016.pdf>

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Hands-On-Universe

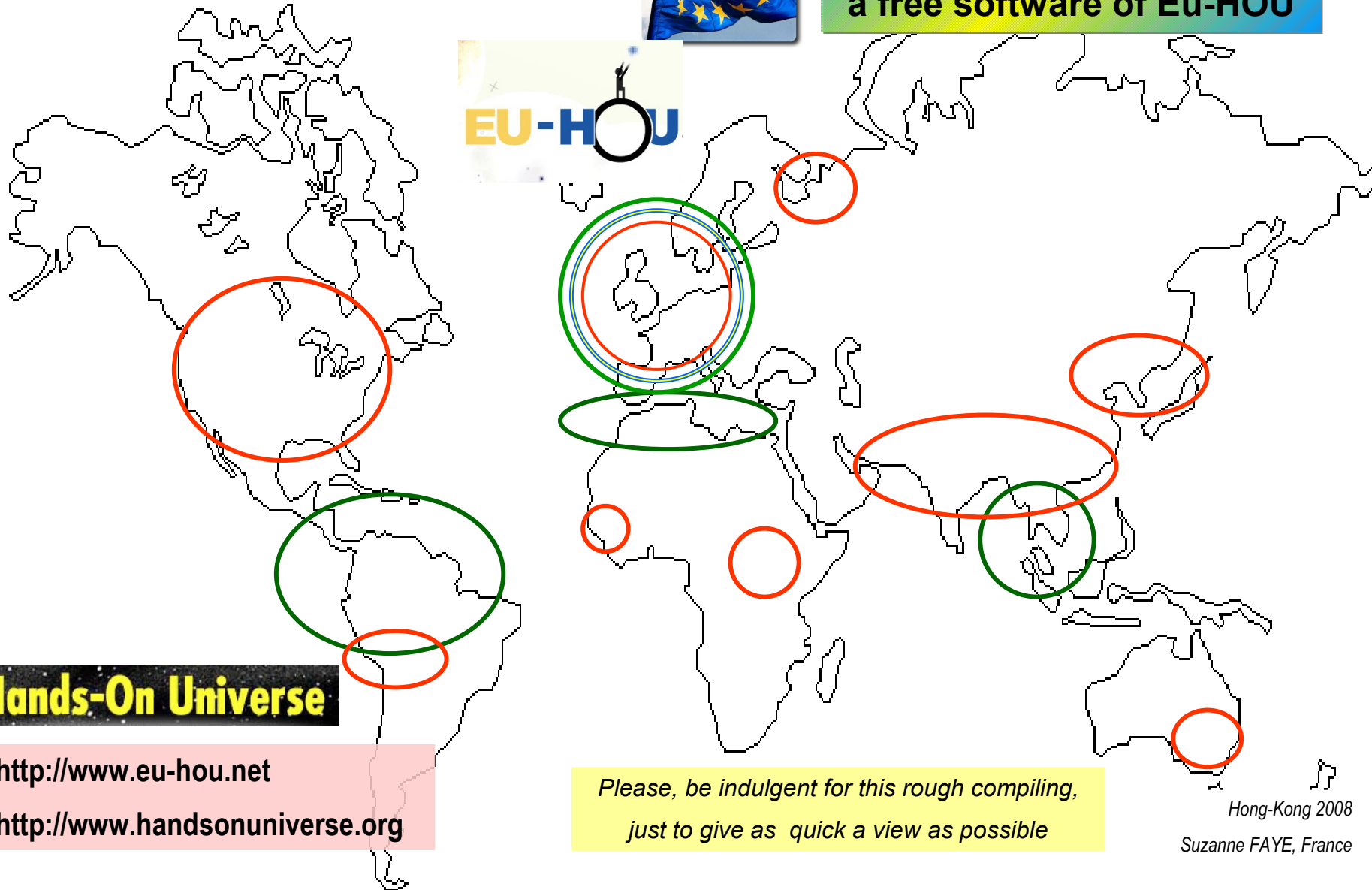
La main à la Pâte



We made it!!

SalsaJ,

a free software of Eu-HOU



Hands-On Universe

<http://www.eu-hou.net>

<http://www.handsonuniverse.org>

*Please, be indulgent for this rough compiling,
just to give as quick a view as possible*

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- Freinet's pedagogy as a « think tank »



The fox to the Little Prince:

« Men have no more time to learn; they just buy ready-made things from tradesmen. As there is no tradesman for friendship, men have no friends. If you want a friend, you have to tame me. »

Let us share experiences

Saint-Exupéry, 1943

According to french republic motto:

Liberty : find and test your own questions, your own experiences, your own conclusions; **be involved, don't** passively absorb information.

Equality is not sameness; **embed** your own learning with modern tools, yesterday printing machine, today the Web.

Brotherhood: exchange informations and share experiences; **create group** cohesion and dynamics to generate **creativity and action**.

Fun
Training
Exchanges

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What a perspective, my uncle's story

Why and how young people go to science: be curious, do it yourself



Am I a guy? Why not a girl?
Meet Emilie slide 10



How can a guy become
tiny enough to enter
such a small plane?



My uncle was living in a house with a view on a distant tiny house, that looked like home of happiness. We walked and walked, and the house of happiness was growing bigger and bigger, et when we got there, my uncle house in the sky-line looked like a tiny home for happiness.

*I enjoyed it as
my first scientific demonstration.*

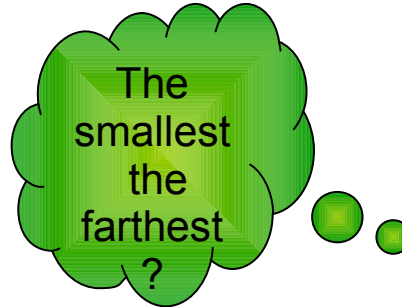
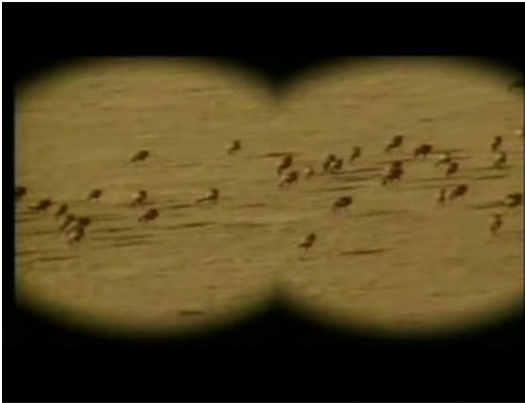
Thanks to Melville for « home of happiness » and Jersey girl (cinema 2004) for the picture

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Let a popular british-irishTV series laugh at my previous slide

Father Ted - Hell 2/3



Scientific recipe:

- Experiment
- Sense of humour
- Be without complex
- Test new ideas



About Jupiter's moons

Why and how girls go – or do not go - to science

Jupiter moons : famous Galileo's work

Wonderful exercise nowadays about Kepler's law

So, what is the matter?

Hey, what about girls ?? ☹ ☹



Galileo had 2 daughters and, in his male-dominated society, Galileo decided to put his two daughters in a convent for life.

Part of the sentence that Galileo received in 1633 was to recite the seven penitential Psalms once a week for the next three years ». His elder daughter, Sister Maria Celeste, took it upon herself to perform this penance for him !

Women
emancipation
is still on the
loom →

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Emilie du Châtelet - 18th century, Enlightenment Age - a woman who had absolutely no complex

Why and how girls go – or do not go - to science



Considered as **the first french scientific woman**,
Émilie du Châtelet translated and annotated Newton's works

Is cinetic energy proportional to v^2 ?
Émilie du Châtelet studied marbles fall in clay
and said yes, agreeing with Leibniz against
Newton and against her lover Voltaire.

Even in 2008 :



Boys in sciences

Too many girls out of ??



Girls often don't dare

Politic, economic and scientific
responsabilities are still often men's
safeguard

Scientific recipe for girls too!

- Experiment
- Sense of humour
- Be without complex
- Test new ideas



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- *Today in France: passionate discussions*

- ✓ A reform of primary school by the minister for national education, reinforcing fundamentals
- ✓ Discussions about funding and efficiency in universities
- ✓ Young people in secondary schools want education; demonstrations in the streets.





Xavier Darcos,
french minister of
National Education

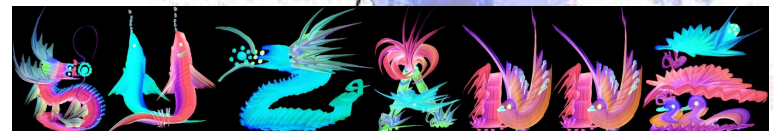
What do we all have in common?

Kepler laws
Snell-Descartes laws
Maxwell laws
Carnot's principle

Emilie de Châtelet $mv^2/2$
Einstein mc^2

Chandraseckhar's limit
Exoplanets
Dark matter ...

We are all lying in the gutter,
but some of us are looking up 
at the stars (Oscar Wilde) 



Suzanne FAYE, France / Hong-Kong 2008