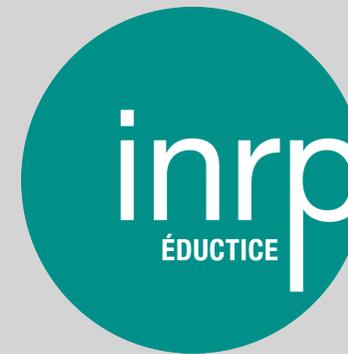


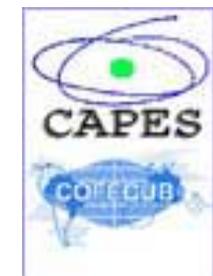
SOURCING AND RE-SOURCING TEACHERS ACTIVITY

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H. Sabra

Psychology of Mathematics Education – PME 34 – SO Conceptual development
Belo Horizonte - MG, 18-23 July 2010



INSTITUT NATIONAL
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Profusion of online resources

New ways of doing, learning, teaching mathematics...

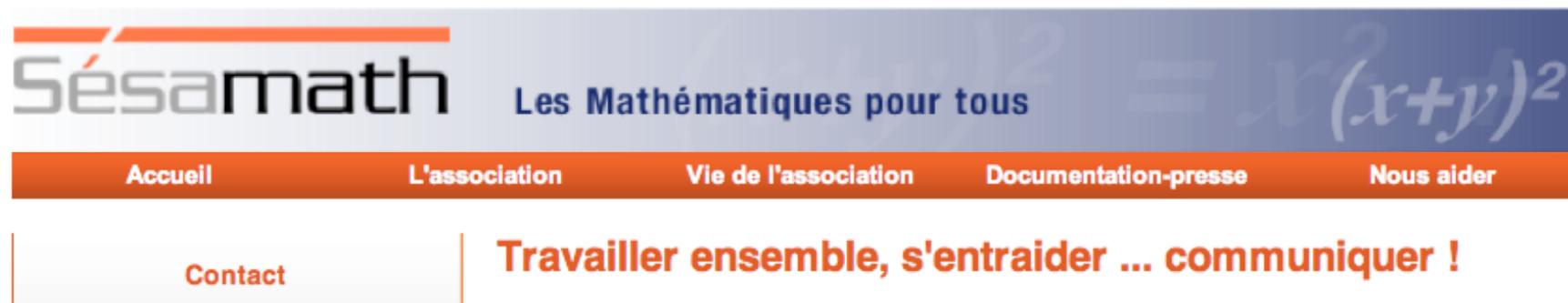
The screenshot shows a Google search interface. At the top, the search bar contains the text "3,35*5,7 - Recherche Google". Below the search bar, there are navigation links: "Web", "Images", "Maps", "Actualités", "Vidéo", "Gmail", and "plus". The Google logo is on the left, and the search input field contains "3,35*5,7". To the right of the input field is a "Rechercher" button and links for "Recherche avancée" and "Préférences". Below the search bar, there are radio buttons for "Web" (selected), "Pages francophones", and "Pages : France". The search results section is titled "Web" and shows a calculator icon next to the equation $3,35 * 5,7 = 19,09500$. Below the equation is a link: "Plus d'infos sur la fonction calculatrice." At the bottom of the results, there is a text prompt: "Rechercher les documents contenant les expressions [3,35*5,7.](#)". The footer of the page contains the text: "Accueil Google - Programmes de publicité - Solutions d'entreprise -".

New forms of teachers collective work

Example of Sésamath (<http://www.sesamath.net/>, a French online mathematics teachers association (2001)...

... very rapid growth of the association (100 members, 5000 teachers participating in online collaborating working groups, 100000 connections, each day, on its website for downloading resources)...

... a philosophy of sharing, helping together (Sabra 2009)



Needing a new theoretical approach

Previous work about *ICT integration*, building on the *instrumental approach* (Guin *et al.* 2005)

A context of generalized availability of digital resources for teachers

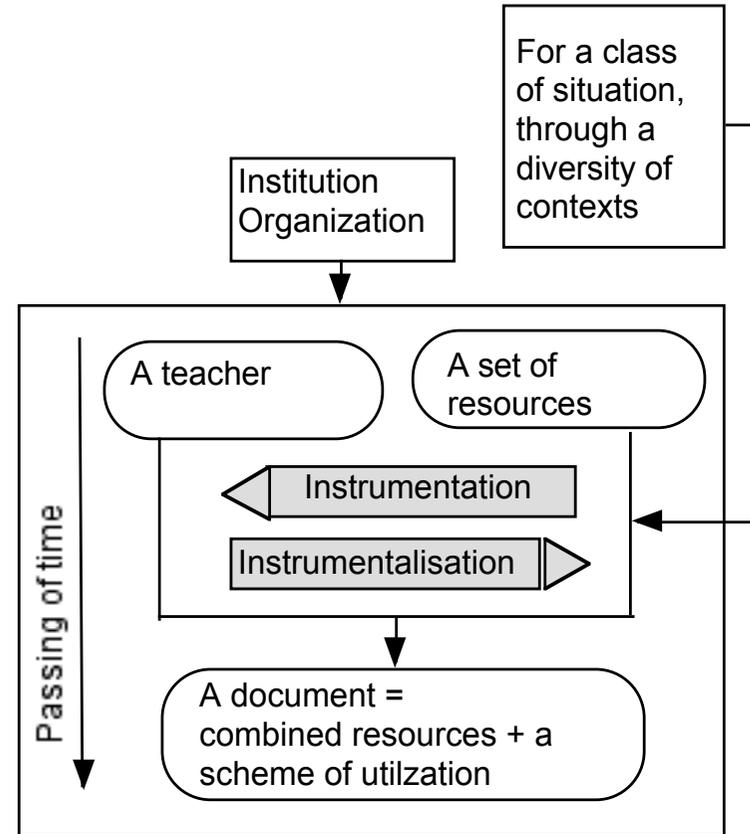
A general notion of *resource*, wider than ICT: « Our conception of a *re-sourced teacher* then becomes a teacher acting with material and socio-cultural resources » (Adler 2000)

A new perspective on teachers' *professional development*

A focus on teachers' *documentation work*, out of class and in class

A documentary approach of didactics

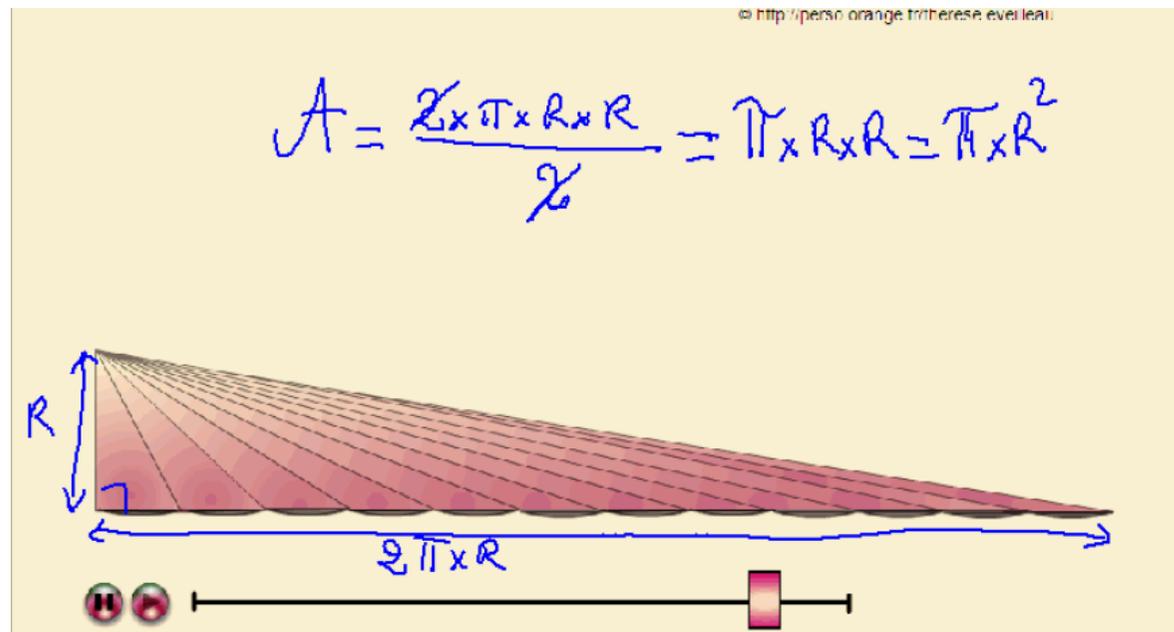
(Gueudet et Trouche 2009)



Documentational genesis:

- a teacher develops a document from a set of resources;
- the *document* associates resources, and a cognitive structure, professional knowledge;
- a double *instrumentalization/instrumentation* movement: the teacher shapes the resources, and the resources frame the teacher's choices and craft knowledge

An example

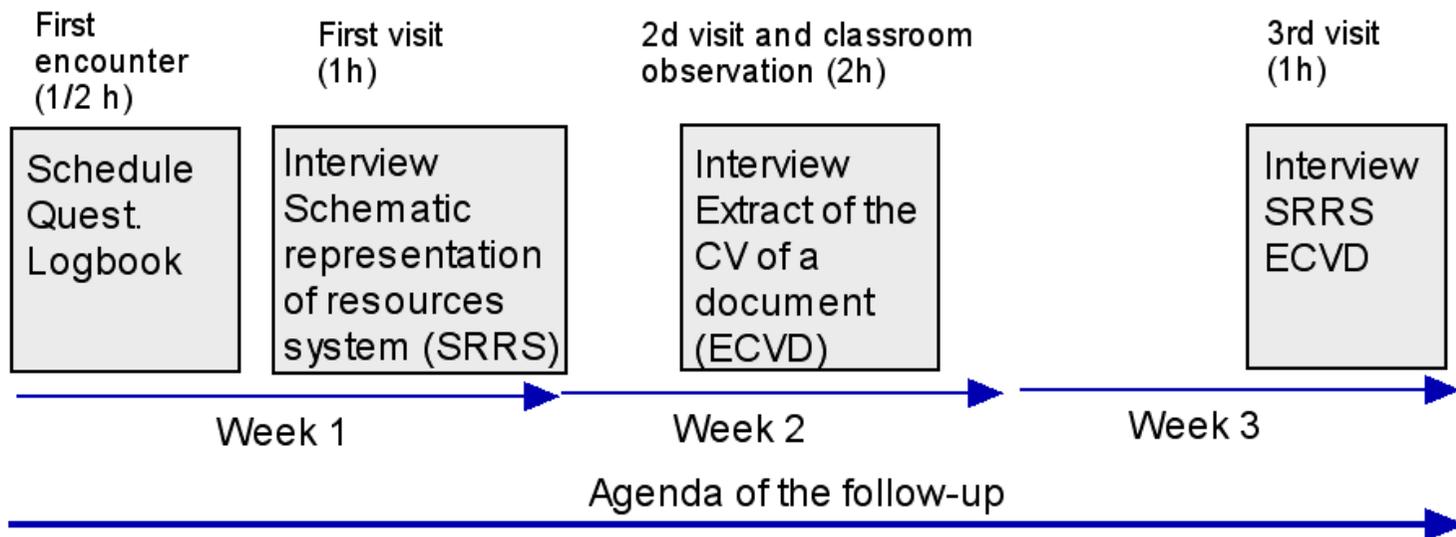
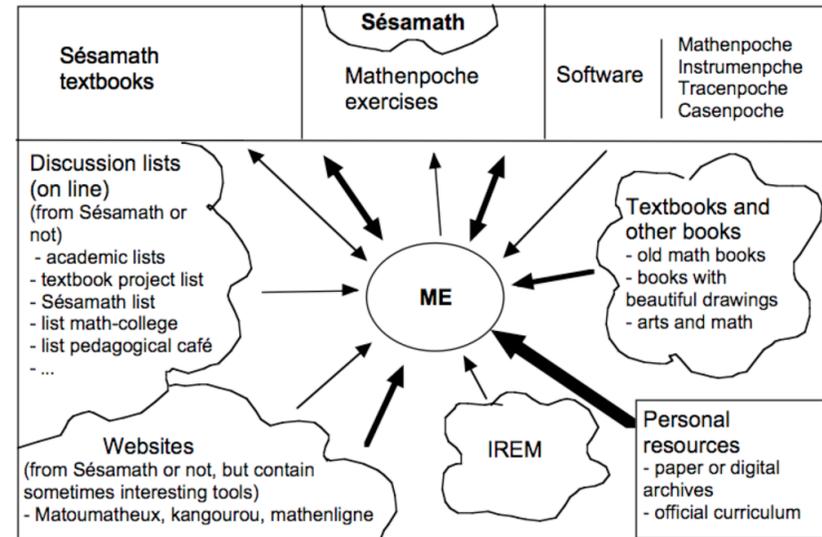


Various resources: a website, an IWB...

Marie-Pierre selects pieces of these resources, recombines them, sets up the course in class, writes on the IWB and records a paperboard for her students.

Professional knowledge (example!) that could be involved in this document:
“a new area formula must be justified by a cutting and recombining of the pieces to form a figure whose area is known”

About methodology



Investigating teachers collective work

The case of teachers associations (as Sesamath in France)

Monitoring of “natural” collective documentation work (mainly in high schools)

Using the support of existing project, as laboratories

Intergeo: lived resources, enriched and validated by the uses of teachers' communities

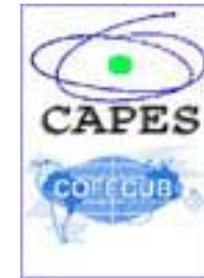
The Intergeo project

<http://i2geo.net>

(Trgalova *et al.* 2009)

The screenshot shows the I2G website interface. At the top, the logo 'I2G' is followed by the text 'Interoperable Interactive Geometry for Europe'. Below the logo is a login section with a 'login name' field, a 'Go' button, and a 'Faça-se Membro' link. There is also a search bar with the text 'pesquisa...'. A navigation menu on the left includes 'HOME', 'PESQUISAR', 'CONTRIBUIR', 'COLABORAÇÃO', 'AJUDA', and 'PROJECTO INTERGEO'. Below the menu is a 'Report a bug' link and a 'TABLE OF CONTENTS' section with a 'WebHome' link. A 'WATCH I2GEO GROW' section displays statistics: Recursos: 2531, Membros: 794, Grupos: 17, and a link 'Associe-se!'. The main content area features 'THE INTERGEO EU PROJECT' with a description and a list of links, and 'RECURSOS EM DESTAQUE' with a grid of geometric icons and a link to 'Euler's Line and the 9 Points Circle'. There is also a 'GRUPOS EM DESTAQUE' section with a link to 'IREM-INRP Academie de Lyon'. At the bottom, there is an 'I2GEO NEWS' section.

A work in progress...



A French-Brazilian project CAPES-COFECUB (2009-2011), involving 4 universities (UFPE Recife, UNIBAN Sao Paulo, Universités de Lyon et de Paris): *From the study of the teacher and her activity in classroom towards the design of resources for and by the teachers*

Coordinators MAIA Lícia de Souza Leão (Brazil) et TROUCHE Luc (France)

<http://educmath.inrp.fr/Educmath/recherche/projets/capes-cofecub/>

Another presentation of this project at PME:

A comparative study of the secondary-tertiary transition

M. Alves Dias, M. Artigue, A. P. Jahn, & T. M. Campos

22 July, 11h-11h40, room 2014

References

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- Gueudet, G., & Trouche, L. (2009). Towards new documentation systems for mathematics teachers? *Educational Studies in Mathematics*, 71(3), 199-218. <http://springerlink.metapress.com/content/6600hx1254664n74/>
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- Trgalova, J., Jahn, A.P, Soury-Lavergne, S. (2009). Quality process for dynamic geometry resources: the Intergeo project, in V. Durand-Guerrier, S. Soury-Lavergne & F. Arzarello, *Proceedings of CERME 6*, 1161-1170, INRP, <http://www.inrp.fr/editions/editions-electroniques/cerme6/working-group-7>
- A website dedicated to the documentational approach of didactics
http://educmath.inrp.fr/Educmath/recherche/approche_documentaire

