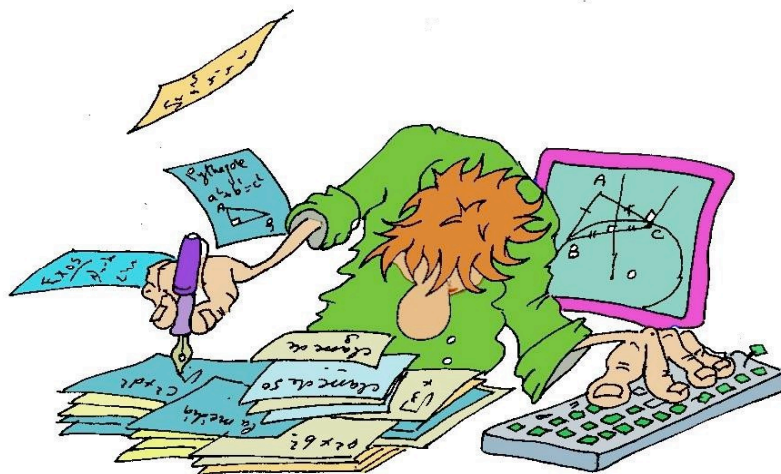


# Teaching resources and teachers' professional development: towards a documentational approach of didactics



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# From digital resources to teachers' documentation work

A new perspective on teachers' *professional development*

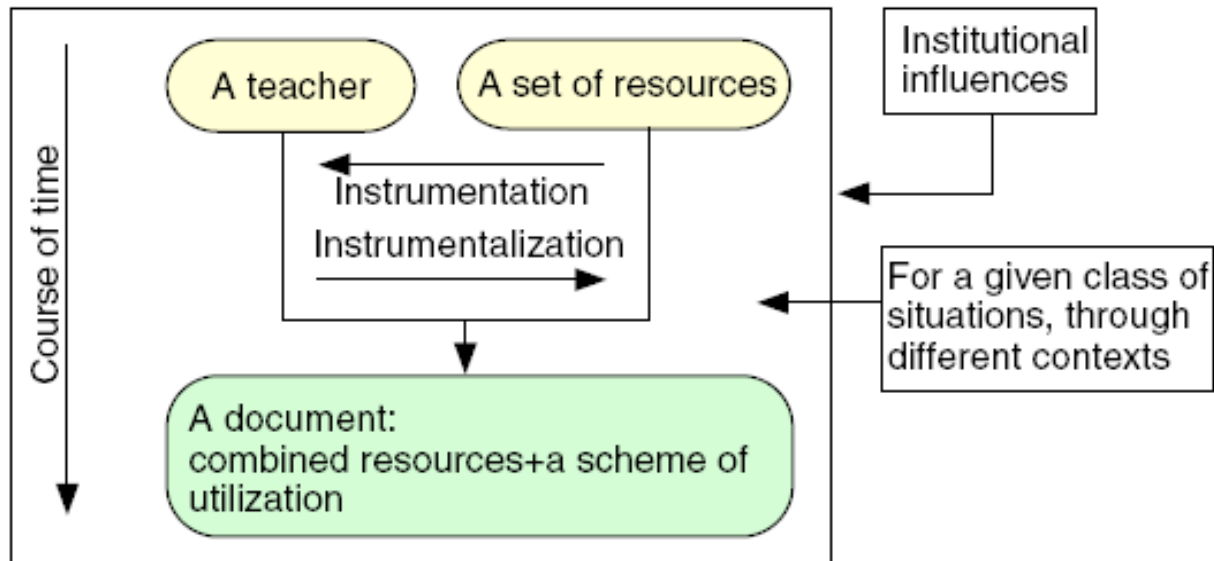
A context of generalized availability of digital resources for teachers

Previous work about *ICT integration* (Guin et al. 2005), teacher training with a distant platform (Guin & Trouche 2005), e-exercises (Bueno-Ravel & Gueudet 2007)

A general notion of *resource*: « Our conception of a *resourced teacher* then becomes a teacher acting with material and socio-cultural resources » (Adler 2000)

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

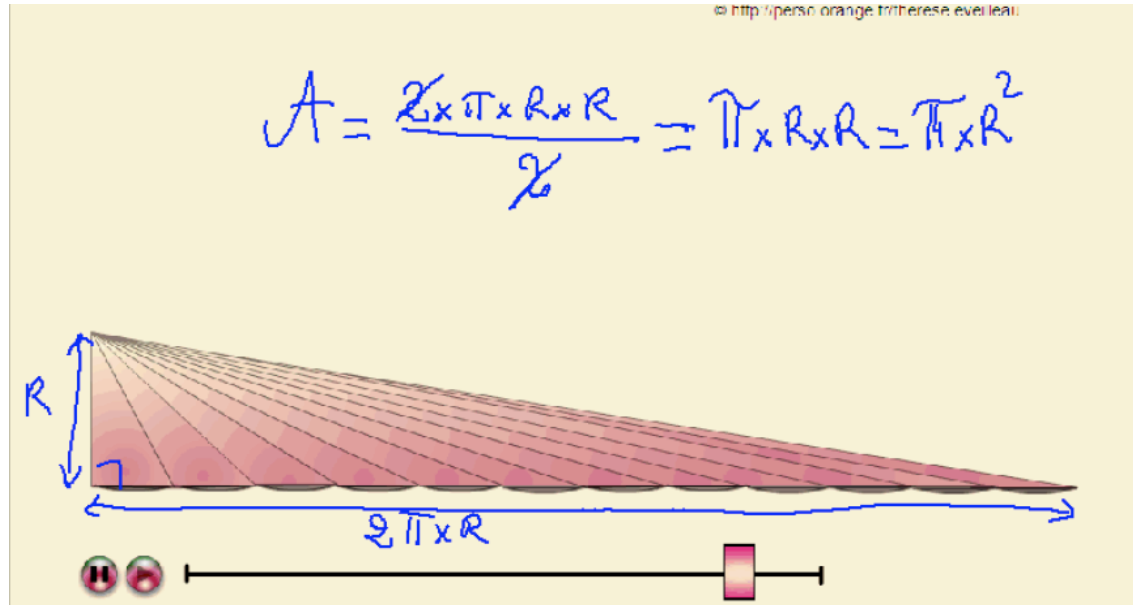
# Teachers' resources and documents



## *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

## Introducing the circle's area



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.

*Operational invariant, professional knowledge* (example!): “a new area formula must be justified by a cutting and recombining of the pieces to form a figure whose area is known”

## Further questions

Methodology: studying the teachers' documentation work, various times and places, a challenge?

Documentation/orchestration

Structure of the *documentation systems/structure of activity*

Collective dimensions: a key issue.



# References

Adler, J. (2000), Conceptualising resources as a theme for teacher education. *Journal of Mathematics Teacher Education*, 3, 205–224.

Bueno-Ravel, L. & Gueudet, G. (2008), Online resources in mathematics: teachers' genesis of use, in D. Pitta-Pantazi, & G. Philippou, *Proceedings of CERME 5*, Larnaca, Chypre.

Guin, D., Ruthven, K. & Trouche, L. (eds.) (2005), *The didactical challenge of symbolic calculators: turning a computational device into a mathematical instrument*, Springer, New York.

Guin, D., & Trouche, L. (2005), Distance Training, a Key Mode to Support Teachers in the Integration of ICT? Towards collaborative conception of living pedagogical resources, in M. Bosch (Ed.), *Proceedings of CERME 4*, St Felix de Guixols, Spain.

## Further details

*A paper (online, to be published):*

Gueudet, G., & Trouche, L. (2009), Towards new documentation systems for mathematics teachers? *Educational Studies in Mathematics* (to be published)

*A website dedicated to this documental approach (Gueudet, G., & Trouche, L.), possible and necessary (for us!) comments:*

[http://educmath.inrp.fr/Educmath/recherches/projets-de-recherche/approche\\_documentaire](http://educmath.inrp.fr/Educmath/recherches/projets-de-recherche/approche_documentaire)