Collective documentation activity as a mode of teachers' training: which methodological assistants ?

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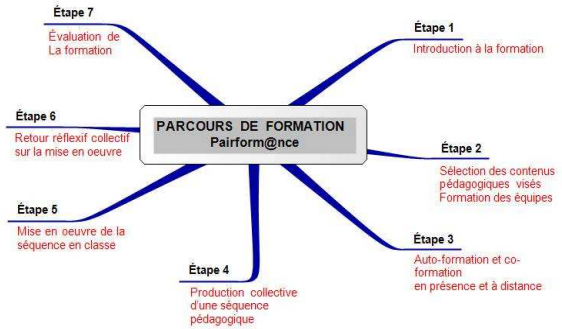
Presentation’s outline

1. A documentational approach of didactics

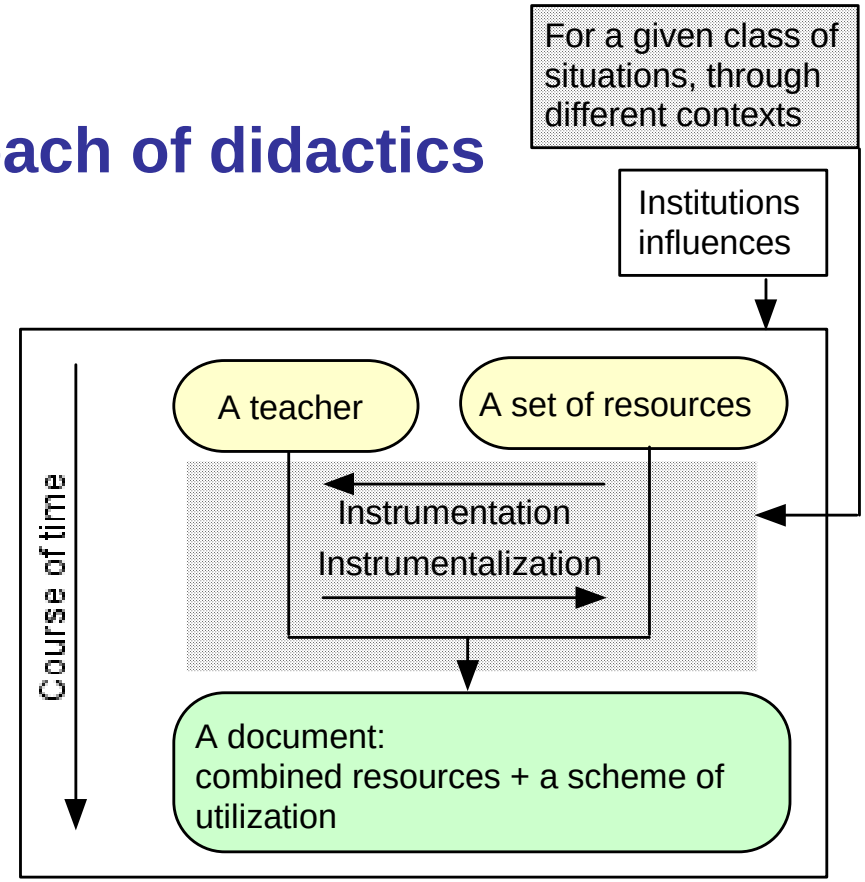
2. A research and development project, grounded on design in use principles

3. Methodological assistants, communities of trainees and designers

4. Conclusion



1. A documentational approach of didactics



A theoretical positioning:
(Gueudet & Trouche, to appear)

documentational geneses: a teacher develops a *document* from a set of *resources*, for a given class of situations

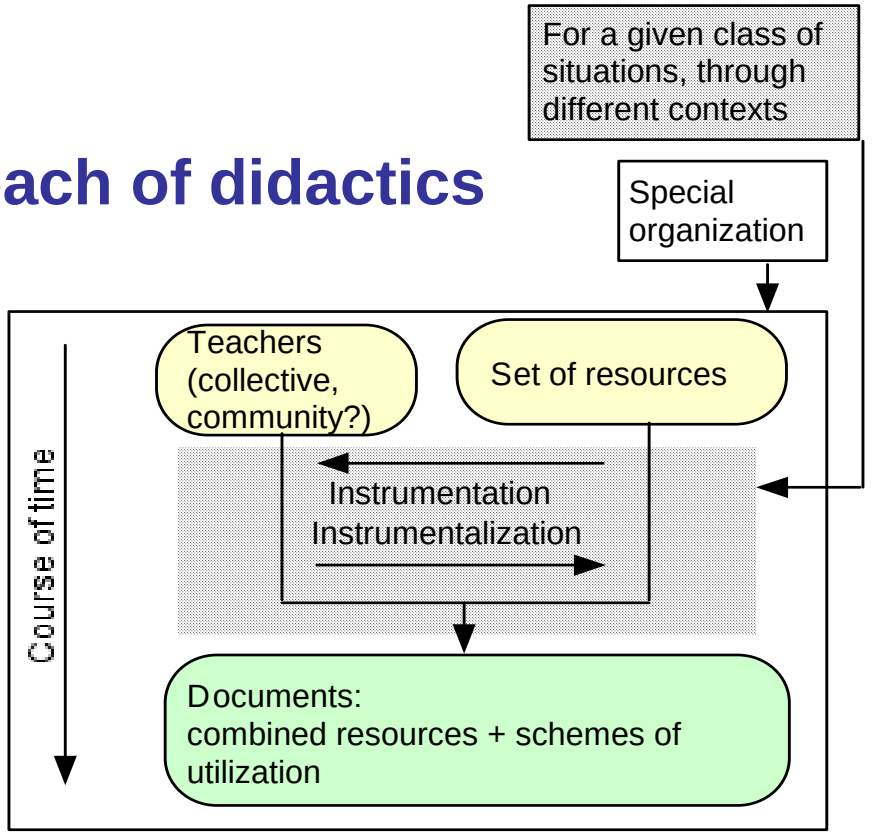
A document composed of recombined resources, and a scheme of utilization

ICT among other *curriculum material* (Ruthven 2008)

documentational geneses central in teachers' professional development

Towards ICT integration: set up professional development programs supporting documentational geneses involving ICT

1. A documentational approach of didactics



For a group of teachers

Collective sessions design: a promising mode of teachers' training (Jaworski 2006)

In *communities of practice* (Wenger 1998), *participation* and *reification* (component of common documentational geneses)

SFoDEM (Guin & Trouche 2005): collective documentation work aiming ICT integration for and by mathematics teachers. Combined emergence of communities of practice and of *models of resources*

Methodological assistants: sets of resources supporting common documentation work

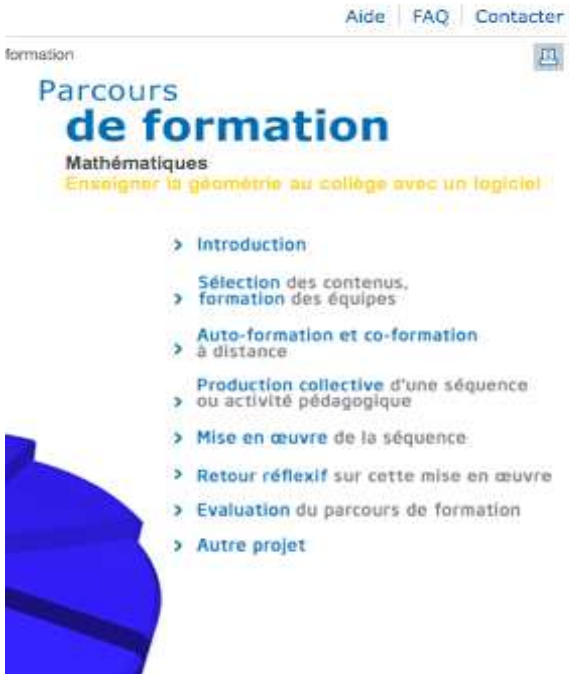
Which methodological assistants for teachers' collective documentation work, for teacher trainers?

2. A research and development project

pairFORM@NCE
formation collaborative en ligne

Pairform@nce, a French national project set up by the Ministry of Education:

- ✓ all disciplinary fields, primary and secondary school;
- ✓ *integration of ICT* ; following the German project “Intel Lehren”;
- ✓ design of *training paths*, providing the structure of training device to be carried out across the country;
- ✓ *blended training*, using a distant platform; *collective design of classroom sessions*;
- ✓ *national specifications* for the paths; in particular, it comprises *seven stages*…



2. A research and development project

(INRP, CREAD, IREM of Montpellier and Rennes, IUFM Bretagne, Ministry of Education support)

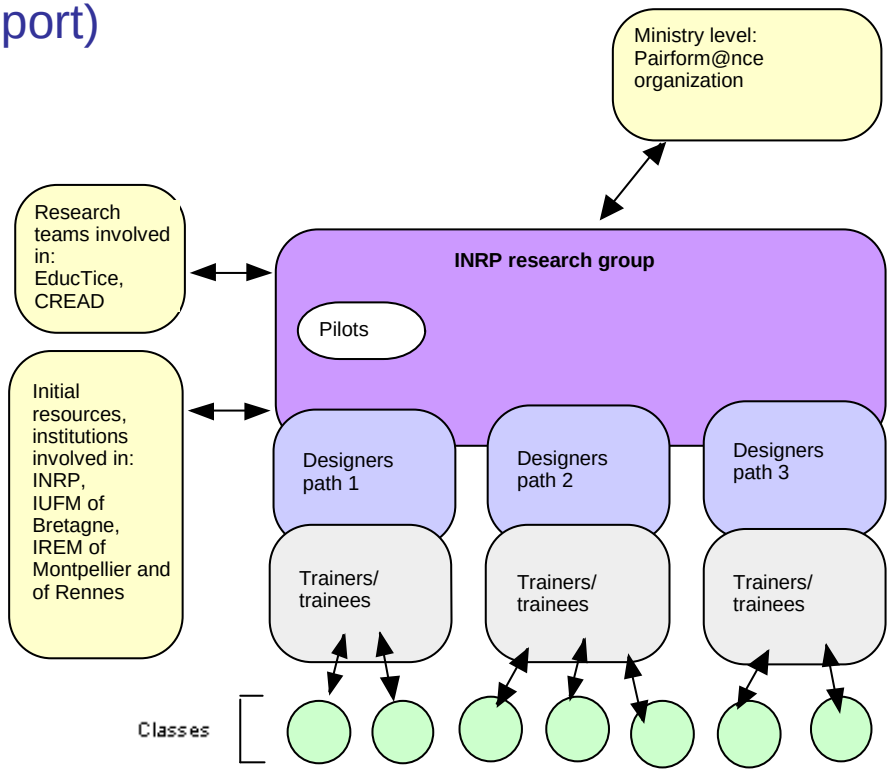
Three training paths, simultaneously designed and tested, according to the *design in use* (Rabardel & Bourmaud 2003) principles:

✓ *Geom@tic*, geography and geology, virtual globes;

✓ *C2m@tic Montpellier*, mathematics, dynamic geometry;

✓ *C2m@tic Rennes*, mathematics, individualisation and e-exercises bases.

Meta design (Fischer & Ostwald 2005), users as co-designers.



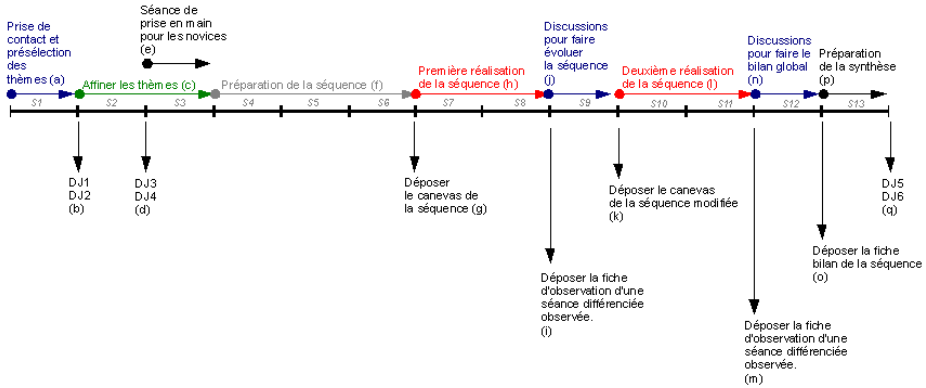
A complex design and research structure: researchers, designers, trainers, trainees, students

3. Methodological assistants, communities of trainees and designers

Three initial communities of designers, emergence of one community.

Reification processes, documentational geneses:

- ✓resources mentioned in the national specifications, modified (short presentation);
- ✓additional resources, introduced in one path, shared by the others: indicative schedule, path's history
- ✓a model of training assistant for all paths: a table, with the trainees and trainers activities.



A model of training path emerged from the design work.

This model aims to constitute a methodological assistant for designers, for trainers and trainees.

3. Methodological assistants, communities of trainees and designers

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Individualization with e-exercises: example of a training path and experimental training.

Objectives: expand the trainees pedagogical practice by the integration of e-exercises as a means for individualization

- ✓6 teams of trainees in 6 schools (teaching grade 6 to 9);
- ✓each team designs a session integrating e-exercises and individualization; cross-observations within the team, the initial session is modified and tested if possible a second time;
- ✓a training over 3 months, with a distant platform, 4 half days in presence: choice of a mathematical theme, e-exercises technical features, individualization, final report.

3. Methodological assistants, communities of trainees and designers

Individualization with e-exercises: example of a training path and experimental training

- ✓the experimental training fostered collective work in the trainees schools;
- ✓the cross-observation was appreciated by all trainees, who drew on the grid provided (appropriation, genesis);
- ✓the grid for session description was appreciated as a means of communication during the final report; it was not used to prepare the session;
- ✓the trainees did not use the distant platform during their preparation.

Design in use, modification of the path

- ✓additional presence training: training on the platform, thorough study of sessions examples using the description grid;
- ✓ modification of the trainees teams composition;
- ✓scheduled exchanges on the platform's forum.

4. Conclusion

A project still in progress, we retain:

✓collective sessions design as an efficient mode of teachers' development;

✓the design in use principle: interactions between trainees and trainers, trainees and designers, and within the community of designers yielded improvement of the initial training paths;

✓models of resources, of training assistants, of paths emerged from these interactions, providing methodological assistance for all agents.

The methodological assistants are the driving force, and the outcome of the collective documentation work.

They provide assistance for *use*, and for *design:*

✓assistance to take up the path;

✓assistance to support trainees taking up the path;

✓assistance for further path evolution and design.

The development of an efficient assistant requires *time* for the geneses, *space* in the collectives, *movement* in the interactions.

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