

Reviewing students' conceptions of problem solving. In fact, what sort of problems are they talking about?

Studies on pupils' conceptions about **problem solving** up to now:

- ❑ Studies concentrate on the process of solving (e.g. *solving problems is only for clever people, one should be able to solve them in 5 min. or less, only one solution can be drawn for each problem, etc.*)
- ❑ Studies often remain opaque with respect to the problems the subjects are to solve, or interviewed about.
- ❑ Studies seldom compare responses with respect to age and mathematics achievement.

Study on primary and secondary pupils' conceptions about **problems** revealed ...

with the following participants' characteristics:

- ❑ 60 subjects from 18 different public schools in urban and sub-urban area.
- ❑ Age from 8 to 16 in five age groups (each age group 12 subjects).
- ❑ 20 Low, 20 average and 20 high achievers, as evaluated by their teachers.

and the following data collection process:

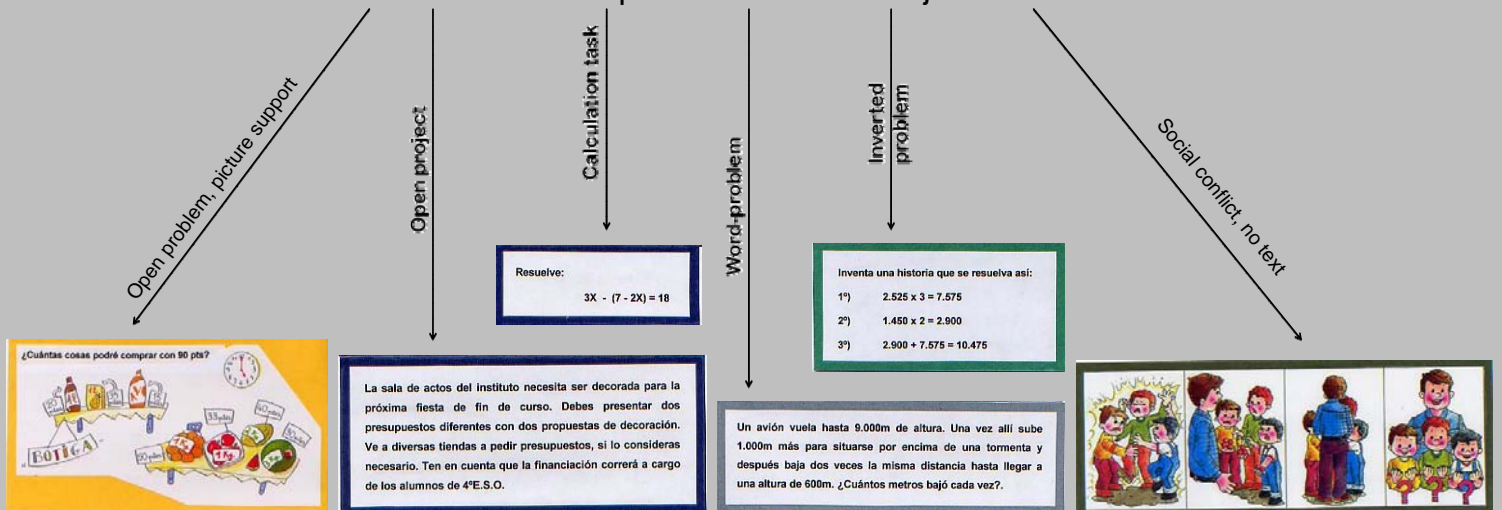
- ❑ Individual interview on mathematics conceptions, and classification and definition of problems, plus design of one assessment task for classmate.

The following results:

- ❑ 3 different conceptions of problems among pupils of primary and secondary school:
 - ❑ no conception of problems at all.
 - ❑ superficial conception of problems, based on structural data.
 - ❑ traditional conception of problems: word-problem.
- ❑ Differences of presence of these conceptions along compulsory education based on:
 - ❑ age (the younger, the more likely is a superficial conception or none at all),
 - ❑ achievement (the lower, the more likely is a superficial conception, the higher – regardless of age, the more likely is a traditional conception of WP).

Yet, what is a PROBLEM?

Some of the tasks presented to the subjects:



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