



Documentational approach to didactics The multilingual project

Translating Issues Report, concerning both the translator and the reviewer

Language: French

Translator: Ghislaine Gueudet & Luc Trouche

Reviewer: Gilles Aldon

Main source: English version

Date: March 2020

1. In a few lines, could you describe the main issues that emerged when translating the DAD entry into French? What were the issues emerging during your interactions with the reviewer?

Preliminary remarks

1. DAD has been introduced in French (Gueudet & Trouche 2008), then translated in English (Gueudet & Trouche 2009). Therefore this current translation of the Encyclopedia DAD entry could be considered a 'back to the starting point' process.

Indeed most of the concepts have been taken from theories developed in French: *scheme*, *situation* and *operational invariants* from the theory of conceptual fields (Vergnaud 1998), *genesis*, *instrumentation* and *instrumentalisation* from cognitive ergonomics (Verillon & Rabardel 1995). As these theories have already been introduced in English, we had no difficulty for translating them to English, and then back to French (with actually some adapting issues, see below the case of 'operational invariants').

In our French initial paper, we had introduced two main terms: *ressource* and *document*.

- The French word *ressource* was taken from the English word *resource* introduced by Adler (2000), benefiting from the same analogy in English or French: Re-sourcing (vs. Re-sourcer), "to source again or differently"; then a move from English to French for the introduction of DAD, then back to English for its adaptation in English, and finally back to French for the current translation;
- The French word *document* had been taken from the field of Architecture information developed in France (Pédaque 2006) in the frame of a new international framework (Rosenfeld & Morville 1998). This word is clearly linked to the Internet World, that makes its integration in the mathematics education community not 'natural'.

2. Launching the DAD-Multilingual project, we have, in the same time, updated the original English version, and started the process of French translation. Most issues were in fact lacks of clarity in the English text, that we noticed with the very precise kind of reading needed to translate. This led us to revise also the English text.

Other issues

- Theoretical links/references: In French we felt the need to explain the link between DAD and didactic transposition (Chevallard & Bosch 2014). In the English version, we only cited "intended curriculum" and "enacted curriculum", but it is not possible in France to present these notions without referring to didactic transposition. Nevertheless didactic transposition is never cited as a theory inspiring for DAD in the papers in French...

- "Use" in English translated to "Usage" and/ or "Utilisation"? This is linked with a difficulty in the French language for the instrumental approach theory. Sometimes we say "schème d'utilisation" and sometimes "schème d'usage". If we define "usage" as "regular utilization" we should only say "schème d'usage". But actually we use both in the text, to be changed perhaps in a later version...

- The reviewer raised inclusive writing issues. In French, we have to choose for example to use *enseignant* (male), *ou enseignant.e*, *ou enseignante* (female), there is no such choice needed with the word "teacher". We have decided, finally, for simplicity reasons, to choose *professeur* (which can also be accepted for a woman, even if the official inclusive writing would be *professeur.e*).

References

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

Chevallard Y., & Bosch M. (2014). Didactic Transposition in Mathematics Education. In Lerman S. (Eds.) *Encyclopedia of Mathematics Education*. Dordrecht : Springer.

Gueudet, G., & Trouche, L. (2008). Du travail documentaire des professeurs : genèses, collectifs,

communautés. Le cas des mathématiques. *Education et didactique*, 2(3), 7-33

Gueudet, G., & Trouche, L. (2009). Towards new documentation systems for mathematics teachers? *Educational Studies in Mathematics*, 71(3), 199-218.

Pédauque, R. T. (coll.) (2006). *Le document à la lumière du numérique*. Caen : C & F éditions

Rosenfeld, L., & Morville, R. (1998). *Information architecture for the World Wide Web*. CA, US: O'Reilly Media
<https://repo.zenk-security.com/Others/Information%20Architecture%20For%20The%20World%20Wide%20Web.pdf>

Vergnaud, G. (1998). Toward a cognitive theory of practice. In A. Sierpiska, & J. Kilpatrick (Eds.), *Mathematics education as a research domain: A search for identity* (pp. 227–241). Dordrecht: Kluwer.

Vérillon P. & Rabardel P. (1995) Cognition and artifacts: A contribution to the study of thought in relation to instrument activity, *European Journal of Psychology of Education*, 9(3), 77-101.

2. For the following words / expressions (table below),

- Did you find easily an equivalent word in your language? In this case, could you give, in English, a definition of this equivalent word? (Case A)
- If you hesitated between different translations (or disagreed between translator and reviewer), which were the possible choices (each one associated with/related to which definition?), and what was the motivation of your final choice? (Case B)
- If it was impossible to find a relevant translation, what did you do (e.g. leaving the English name, or giving a complementary explanation in a footnote)? (Case C)

The French and the English expression are very closed each other, and the definition are exactly the same. This situation is also linked to the origin of the theoretical frame (see the preliminary remark)

Word/expression	Difficult to translate yes/no	Translation retained (if any)	Definition (in English) of the word (case A) Definition of the different possible words, motivation for the final choice (case B) Motivation for an alternative solution (case C)
Resource	no	Ressource	See preliminary remark
Document	No	Document	
Genesis	No	Genèse	
Scheme	No	Schème	
Situation	Yes	Situation	The word <i>Situation</i> is indeed polysemic. In the French didactics of mathematics, it could refer to a didactical situation (Brousseau's theory) or a situation of teacher's activity (Vergnaud's theory). It is in this last sense that we use.
Operational invariant	No	Invariant opératoire	About "operational invariants", it seems that this expression in English does not convey a clear meaning. Nevertheless this vocabulary was chosen by Gérard Vergnaud in his 1998 paper and then used in many papers by Vergnaud. So we cannot change this term.
Instrumentation	No	Instrumentation	
Instrumentalisation	No	Instrumentalisation	
Resource system	Yes	Système de ressources	In the English expression, <i>Resource</i> is written as a singular (keeping the idea of a system re-sourcing teacher activity), whereas in French we had to use a plural (<i>Ressources</i>): the structure "Système de" implies to give the content of this system, i.e. a set of resources (plural).
Reflective investigation	No	Investigation réflexive	
Use	Yes	Usage Ou Utilisation	« Usage » means a regular use while « Utilisation » means an occasional use Then the expression "scheme d'utilisation" is a bit paradoxical (even if it is used by Rabardel).

3. Other issues that you would like to share