In this part of the project we try to characterize the changes in the mathematical discourse. We analyse it on the basis of the four properties identified by Sfard, (2008): Mathematical words, Visual mediators, Endorsed narratives and Routines.

The context on which we focus our research is the mathematical process of defining, and the result of it, the definition.

The aim of our research is the study of students' mathematical learning of no-compulsory levels from a sociocultural approach (Sfard, 2008).

The data for our study consists mainly of the transcriptions of the verbal dialogues the small group of students maintained when they solved a mathematical task in the classroom.

Example of a process of change in the discourse through our scheme of analysis

Narrative: “Defining is labelling or naming” (l. 530-534)

Route: “Identify the characteristics of the figures” (l. 549-550; 578-579)

Narrative: “Defining is giving a list of characteristics”

The process of analysis to characterize the change in the discourse comprises two levels:

i) Level 1: Identification of theoretical tools. We develop this identification in three phases:
   Phase 1: identification of mathematical words and visual mediators.
   Phase 2: identification of narratives
   Phase 3: identification of routines.

ii) Level 2: Identification of relationships between the identified theoretical tools, which allow us to notice changes in the discourse.

In the totality of these groups, this transition has been made through the “Identify characteristics of the figures” routine.

Among the first results, we can mention that in the process of change shown here the transition from the narrative “defining is labelling or naming” to the narrative “defining is giving a list of features” has been identified in approximately 40% of the analyzed groups.

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