

# The discourse of engineering students constructing concept maps in Linear Algebra

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## Abstract

The aim of this study is to characterize the communication among engineering students jointly constructing concept maps in Linear Algebra. In order to reach this goal an examination of the students' mathematical communication and their interpersonal activities was made. Four groups (3 students in each group) from a Swedish university were videotaped while constructing concept maps. The videotaped group discussions, each lasting about 45 minutes, were transcribed and analysed. Two types of analytical tools were used to analyse the data: *Preoccupational analysis* was carried out by means of interactive flowcharts, rendering a picture of the participants' engagement in the communication. The mathematical content of the conversations was examined through *focal analysis* (Sfard, 2001).

The preliminary results indicate that the communication among the engineering students was mathematically productive due to the mathematical content and the efficiency of the communication. Even though the preliminary results suggest that the engineering students' communication was productive, mathematically interesting questions and statements from the students were not elaborated by the group members. Subsequent interaction with a more experienced member of the mathematical community seems to be needed in order to increase the mathematical productivity of the communication.

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