

# Mathematical classroom discussions – Developing a framework focussing the teacher's role

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*While orchestrating a mathematical discussion is important, it is a difficult task for many mathematics teachers. We report on the process of developing a framework describing the teacher's role in promoting mathematical discussions. A short intervention is carried out where the proposed framework is being tested in an iterative process in three mathematics education classes for pre-service teachers. Data was collected concerning the understanding, use and effectiveness of the proposed framework. In this presentation, initial results and possible contributions of the framework are discussed.*

## **Developing the communication competence framework**

Mathematical discussions make up powerful classrooms (Schoenfeld, 2014). Based on previous research that stresses the importance of mathematical discussions (e.g. Franke, Kazemii & Battey, 2007, Kilpatrick et.al, 2001) and extensive classroom work on mathematical talks (Kazemii & Hintz, 2014), a framework describing the teacher's role in orchestrating mathematical classroom discussion has been developed. The aim is to create a framework useful as a tool in planning, conducting and analysing mathematical classroom discussions. The framework is assumed to contribute to the development of teacher education by making pre-service teachers aware of basic components of a mathematical discussion, thus making them better equipped to face the challenges of teaching mathematics.

Developing the framework involved a team of researchers and lecturers within the mathematics education group at the department. Starting with initial question types and talk moves from the literature, and through a process of analysing a large amount of video data from different sources in search for examples of actions in the classrooms corresponding to talk moves by the teachers that promote mathematical discussions, the team created, tested and revised the framework. The framework includes two main aspects of

mathematical discussions teachers need to be aware of: *mathematical objectives* and possible *talk moves* (Figure 1). Special attention was also given to cultural contexts, local terminology, norms and aims to make it relevant to Swedish classrooms.

The try-out of the framework was made through one short intervention in four different pre-service mathematics courses. The short intervention consisted of a lecture and a workshop that were implemented in different courses and revised in an iterative process, using one video which was chosen by the team. Data gathered from these lectures and workshops targeted how the framework was understood and used by the pre-service teachers. More reflections on what is interesting about our results or what they indicate are worth discussing further.

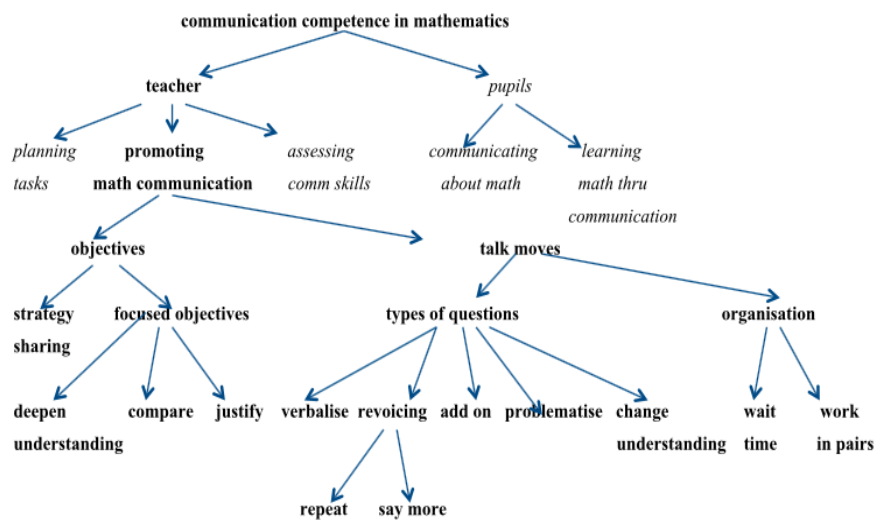


Figure 1: *Communication competence framework, where the parts included in the study are highlighted in bold.*

## References

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