

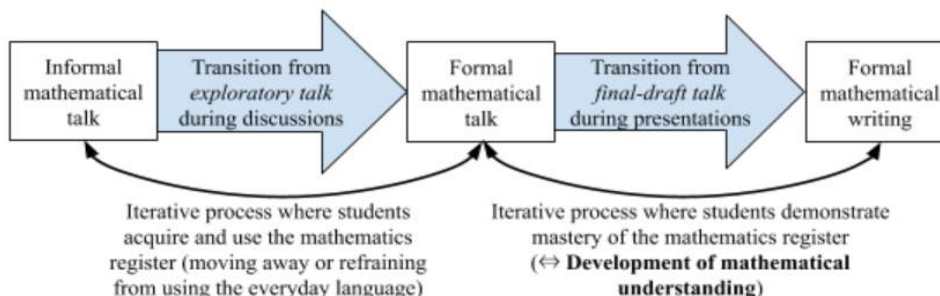
## TALKING IN MATHEMATICS – DO WE KNOW HOW?

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With communication being highlighted as a process standard in The Curriculum and Evaluation Standards for School Mathematics by the National Council of Teachers of Mathematics (NCTM) in 1989 (NCTM, n.d.), the notion of communicating mathematically (Pimm, 1991) has since become an increasingly important yet demanding task both for students and for teachers. Moreover, the role of spoken communication and how it effectively helps in the development of mathematical thinking did not seem clear. On the one hand, it was often assumed that students know how and what to communicate in the mathematics classroom, i.e. mathematical communicative competence was assumed to be a given (Adler, 2002; Pimm, 1987; Sfard et al., 1998) when it is the exact opposite. On the other, teachers face the challenge of orchestrating and facilitating meaningful mathematical conversations with and for their students, as Sfard et al. (1998) argued that it is “an extremely demanding and intricate task” (p.51) for conversations (either orchestrated or spontaneous) to be meaningful or productive in the mathematics classroom.

As part of this poster presentation, the author has attempted to explore the value and process of spoken communication in the mathematics classroom; and surfaced some corresponding implications on the teaching (and learning) of mathematics. In particular, on the value of spoken communication in the mathematics classroom, Pimm (1991) has suggested how spoken communication can be considered as the pathway to written communication if used purposefully with the intent of acquiring the mathematics register with regard to the notion of communicating mathematically. As for the form of spoken communication in the mathematics classroom, Barnes’ (1976) studies on classroom talk can be a possible source of reference in providing a frame to understand classroom talk which contributes to learning. Based on these ideas, a preliminary framework (Figure 1) is proposed with the intent of explaining why and how spoken communication (or mathematical talk) can contribute to the teaching (and thus learning) of mathematics. While it may not fully explicate the value and process of spoken communication in the mathematics classroom, this idea can be further explored and refined through future research, e.g. the use of the framework as a possible structure for teacher professional development activities, focusing on developing the necessary mathematical knowledge for teaching (Ball et al., 2008) to orchestrate and facilitate mathematics talk.



**Figure 1: Spoken Communication as a Process in Mathematics Classrooms**

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