

## Leveraging Reasoning through Discourse: A Case Study in Secondary Mathematics Classrooms

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**Abstract :** Teaching and learning through the use of discourse support students' conceptual understanding by attending to key concepts and relationships. One discourse structure used in primary classrooms is number talks wherein students mentally calculate, discuss, and reason about the appropriateness and efficiency of their strategies. In the secondary mathematics classroom, the mathematics understudy does not often lend itself to mental calculations yet learning to reason, and articulate reasoning, is central to learning mathematics. This qualitative case study discusses how one secondary school in the Middle East adapted the number talk protocol for secondary mathematics classrooms. Several challenges in implementing 'reasoning talks' became apparent including shifting current discourse protocols and practices to a more student-centric model, accurately recording and probing student thinking, and specifically attending to reasoning rather than computations.

**Keywords :** discourse, reasoning, secondary mathematics, teacher development

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