

Consensus-Building in Mathematics Classroom Talk: A Speech-Act Perspective

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Discussion with others plays a central role in learning mathematics. Classroom talk not only promotes conceptual understanding (Mercer & Howe, 2012) but also supports broader intellectual and social capabilities (Lampert, 1990). However, the capabilities that should be intentionally fostered through classroom interaction are not always clearly specified. Without such clarity, it becomes difficult for teachers to design learning environments that systematically support students' participation in meaningful mathematical discussion. In this study, we focus on the concept of consensus-building and argue that the ability to reach agreement with others should be regarded as an important capability to be cultivated through mathematics lessons.

In contemporary society, characterised by rapid technological change and unpredictable global challenges such as the COVID-19 pandemic, citizens increasingly need to collaborate with others to address complex problems. The ability to build consensus is therefore an important civic capability. From a disciplinary perspective, mathematics itself has historically developed through processes of negotiation and agreement regarding the validity of reasoning and knowledge (Ernest, 1991). From this viewpoint, mathematics classrooms can be understood as spaces where students negotiate mathematical ideas with others and work towards shared agreement about the validity and appropriateness of mathematical reasoning.

Research question: How do students negotiate mathematical ideas when attempting to build consensus during classroom discussion?

This short communication proposes an instructional model designed to foster students' consensus-building in mathematics classrooms. The study analyses episodes of consensus-building observed in a Year 6 mathematics lesson conducted in Japan. To examine the processes through which students negotiate mathematical ideas, we draw on Searle's (1969) theory of speech acts and analyse the intentions embedded in students' utterances. By examining the sequence of speech acts within classroom dialogue, the analysis aims to clarify how consensus emerges in students' interactions and how instructional design can support the development of consensus-building through classroom talk.

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