

ALTERNATIVES TO MATHEMATICS CLASS DISCUSSIONS: INCLUSIVE WAYS TO CONNECT AND EXPAND CHILDREN'S IDEAS

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Teachers' efforts to orchestrate mathematics class discussions frequently result in the monopolization of the discussion by a few students (Webb et al., 2019). The purpose of this paper is to explore how a teacher learned to transform mathematics whole class discussions toward being more inclusive of multiple students. I report on a study where students' perspectives informed a teacher-researcher collaboration to develop these inclusive alternatives in a third-grade Spanish immersion classroom. I ask: How did a teacher make sense of students' perspectives on mathematics class discussions to develop alternative ways to socialize ideas? I argue that developing inclusive ways to connect and expand children's ideas involves learning about how students navigate class discussions and challenging unquestioned teaching practices.

Methodology

I followed a participatory research approach (Fals-Borda, 1987), where I collaborated with the teacher to make sense of students' perspectives on mathematics class discussions, and to develop inclusive ways to socialize students' mathematical ideas. Data sources included audio-recordings of focus groups with students, video-recordings of mathematics lessons, and audio-recordings of interviews and collaborative data analysis sessions with the teacher. I used a social semiotics analytical framework, which acknowledges that students' multiple ways of developing and contributing ideas is part of the multimodal nature of mathematical activity (O'Halloran, 2015). The teacher and I collaborated analyzing data to interpret relationships between the students' and the teacher's perspectives. These interpretations informed how we co-developed teaching strategies to transform class discussions. Interpretations also informed how the teacher flexibly and responsively approached students' interactions in her class.

Summary of Findings

Initially, the teacher considered her role in mathematics class discussions to involve distributing uniformly student talking time. In contrast, students valued opportunities to influence others' thinking, and they experienced mathematics class discussions as overcompetitive. For students, influencing others' thinking involved more than contributing ideas through spoken utterances.

The teacher flexibly and responsively drew on two teaching strategies to promote inclusive ways to socialize mathematical ideas. The group ambassador's strategy offered opportunities to develop initial ideas in a small group and then influence the work of a different group. Ideas circulated both within and across groups, thus serving one purpose typically reserved to class discussions. In the spotlighting gestures strategy, whenever the teacher noticed gestures that communicated relevant aspects of a mathematical idea, she directed the class attention to such gestures. Students observed the gestures, and adapted and incorporated them in their own mathematical activity. Spotlighting gestures helped children communicate ideas and make sense of others' ideas without the linguistic demands that class discussions frequently impose.

References

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