Co-Teaching and Math Discourse to Support Students and Teachers in Linguistically Diverse Elementary Classrooms

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INTRODUCTION
- There are cognitive advantages to speaking more than one language; yet, linguistic diversity can impact teaching and learning in complex ways (Moschkovich, 2005).
- All students are expected to develop rigorous understanding of content and math practices (CCSSO & NGA Center, 2010).
- English learners (ELs) need opportunities to participate in rich math activities and discussion that take into account their competencies and also provide necessary support.
- We need to consider innovative educational ideas for supporting rich math instruction for ELs (and all students).

CO-TEACHING
- Co-teaching, where both teachers assume the responsibility of planning and implementing instruction (Bacharach, Heck & Dahlberg, 2010), may provide innovation for increasing teacher confidence and flexibility in responding to student needs.

METHODS
- **OVERVIEW:** Ongoing, small-scale study investigates how supported, co-teaching practices may enhance engagement with math discourse in linguistically diverse elementary school classrooms.
- **PARTICIPANTS:** 7 co-teaching teams: one experienced teacher & one master’s intern (post-student teaching). Professional development (PD) and ongoing collaborative support in co-teaching and math discourse.
- **DATA:** field notes and video and audio recordings (PD and math lessons), co-teaching team reflections, and classroom artifacts. Data collection and qualitative analysis (Creswell, 1998) are ongoing.

CO-TEACHING APPROACHES

![Diagram of Co-Teaching Approaches](image)

<table>
<thead>
<tr>
<th>Approach</th>
<th>Diagram</th>
<th>Explanation</th>
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</thead>
<tbody>
<tr>
<td>One Teach, One Observe</td>
<td><img src="image" alt="Diagram" /></td>
<td>One teacher teaches while the other strategically observes and collects purposeful data. Co-teachers share and analyze observational data afterwards.</td>
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<tr>
<td>One Teach, One Assist</td>
<td><img src="image" alt="Diagram" /></td>
<td>One teacher has the primary responsibility for teaching; the other teacher moves around the classroom helping individuals and/or “voicing” student perceptions and questions.</td>
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<tr>
<td>Parallel Teaching</td>
<td><img src="image" alt="Diagram" /></td>
<td>Co-teachers plan jointly but split the classroom in half to teach the same content at the same time. Co-teachers are at particular stations; other stations are run independently by the students or by another adult.</td>
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<tr>
<td>Station Teaching</td>
<td><img src="image" alt="Diagram" /></td>
<td>Co-teachers share responsibility for planning &amp; teaching. The classroom is divided into teaching centers. Co-teachers are at particular stations; other stations are run independently by the students or by another adult.</td>
</tr>
<tr>
<td>Alternative (Differentiated) Teaching</td>
<td><img src="image" alt="Diagram" /></td>
<td>One teacher manages most of the class; the other teacher works with a small group. This strategy can be used to provide additional challenge as well as support.</td>
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<tr>
<td>Team Teaching</td>
<td><img src="image" alt="Diagram" /></td>
<td>Co-teachers are responsible for planning, instruction, and classroom management of all students. Lessons are taught by both teachers who actively engage in conversation to encourage student discussion.</td>
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MATH DISCOURSE

Revoicing – The teacher restates some or all of what a student has said and verifies if it was accurate
Repeating/Restating – A student is asked to restate someone else’s idea or reasoning
Reasoning – Students are asked to apply their own reasoning to someone else’s reasoning
Adding On – Students are prompted for further participation
Waiting – Providing wait time or “think time”

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RESULT & DISCUSSION

Co-teaching models, when accompanied by focused PD and co-planning opportunities, have the potential to increase student-teacher interaction, instructional flexibility, and attention to student needs – and, thus, may promote more meaningful mathematical discourse and, in turn, positive student learning outcomes.

This work is significant because it has the potential to identify best practices, strategies, and tools to support teacher education and PD with specific emphasis on the intersection of co-teaching and math discourse to support linguistically diverse classrooms.

REFERENCES