Using State Space Grids to Assess Patterns of Belonging Support in Middle School Mathematics Classrooms

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OVERVIEW

Former approaches to examine belonging support typically do so in a linear fashion. This ignores the multidimensional and dynamic nature of belonging-supportive practices.

BELONGING CENTERED INSTRUCTION (BCI)

Teachers' provision of opportunities for acceptance, achievement, active inclusion, and empowerment encompass two dimensions of belonging support: **Instructional Supports** and **Interpersonal Supports.**

METHOD

1. Observed classroom videos of *N* = 133 teachers from the *Measures of Effective Teaching* database. We specifically examined middle school mathematics classrooms in which majority of students were of color.
2. Ranked teachers according to the BCI scores and selected the top **three** teachers who provided exceptional belonging supports
3. Used state space grid analyses to examine common themes in belonging-supportive practices

Teacher A: White, female (8th grade)
Teacher B: Asian American, female (6th grade)
Teacher C: White, female (6th grade)

RESULTING THEMES

We identified two patterns of how teachers already provide belonging support. SSGs allowed us to examine how belonging supports interact to powerfully support students' sense of belonging.

Destigmatizing Wrongness with Communal Support

Teachers often normalized experiences of wrongness and reminded students of the classroom community and how it can support them.

Engaging Students' Expertise with Enthusiasm

Teachers often centered students' experiences and explanations of the content with excitement and enthusiasm.

QUESTIONS?

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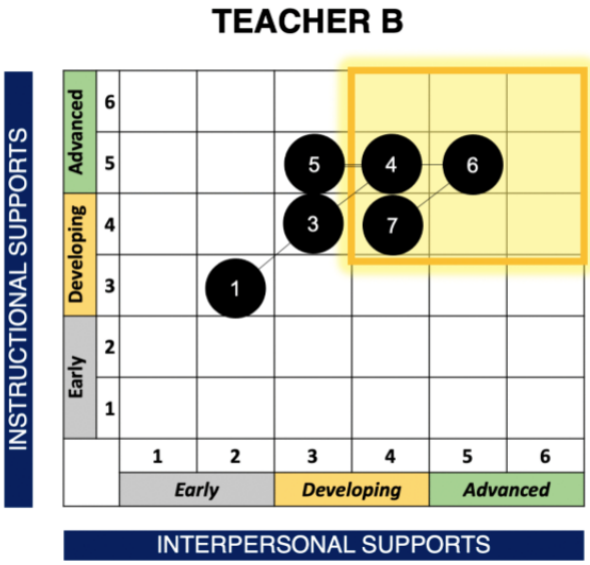
WHAT WERE TEACHERS DOING TO SUPPORT BELONGING?

We reviewed our top three teachers' classroom videos and scored their levels of belonging supports in five-minute increments throughout their class periods. Below is an example of how teachers' scores were mapped on to state space grids. This technique allowed us to elaborate on the specific behaviors that teachers enacted to support belonging both instructionally and interpersonally.



Teacher B: Asian American, female, 8th grade

TIME	DESCRIPTION	INSTRUCTIONAL SCORE	INTERPERSONAL SCORE
25:00 to 30:00 **[6]**	"Do you see why she did it this why? I feel like people don't get it." [Normalizing difficulties] [Inviting feedback]; "Any other questions? Which one do you want to go over?" [Creating space for questions] [Opportunities for agentic engagement]; "Who wants to read the question?" [Opportunities for agentic engagement]; "Anybody want to become a designer in anyway? Yeah! So you really have to know proportions" [Elaborating on mathematical relevance] [Teacher-generated real world connection] [Teacher enthusiasm] [Social talk and lightheartedness]; Teacher pauses through the prompt to ensure that everyone understands the content - "Does everyone know what X means?" [Inviting feedback] [Relevant and responsive instruction]	**5**	**5**
30:00 to 35:00 **[7]**	"Jackie, do you think you could help me out?" [Carving out roles]; "Anyone can do it - who's got it?" [Opportunities for agentic engagement]; Teacher laughs at students' enthusiasm and joins the excitement - Oh my gosh! It's simple math!! [Shared enthusiasm]; "Luke can you explain your part?" Teacher asks the student to explain when another student doesn't understand. [Teaching interdependence] [Engaging students' expertise]; "Are you all ready?" [Inviting feedback]; "Who wants to read this one?" [Opportunities for agentic engagement]	**4**	**4**