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Facilitating Emergent Bilinguals' Participation in Mathematics: An Examination of a Teacher's Positioning Acts

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ABSTRACT

This study examined the mathematical learning opportunities provided to emergent bilinguals (EBs) through their participation in whole class discussions in an elementary classroom. Positioning theory (Harré & van Langenhove, 1999) was used to examine a third-grade monolingual teacher's positioning acts and related storylines across two years. An examination of the data revealed the teacher utilized three prevalent positioning acts with EBs (i.e., inviting EBs to share mathematical thinking, valuing EBs' mathematical contributions, and inviting peers to consider EBs' mathematical contributions) that provided multiple and varied opportunities to participate in whole class mathematical discussions while circulating two storylines: EBs are mathematically competent and EBs can explain their mathematical reasoning to others. Findings suggest that positioning acts can be used in similar ways by other teachers across contexts to strive for equitable mathematics education.

Keywords: positioning theory, elementary mathematics teaching, emergent bilinguals, language learners

Introduction

Emergent bilinguals[1] (EBs) are a diverse group of students who represent an increasing demographic within U.S. public schools (National Center for Educational Statistics [NCES], 2016). Given EBs' unique educational goals of simultaneously learning mathematics and the English language, teachers must enhance instruction to increase access and create opportunities to learn (Harper & De Jong, 2004; Lucas et al., 2008). Yet, EBs continue to underachieve in mathematics in comparison to their peers (National Assessment of Educational Progress, 2022) despite knowledge of research-based strategies specifically for teaching mathematics to EBs (e.g., de Araujo et al., 2018).

Engagement in discourse is critical to learn mathematics (National Council of Teachers of Mathematics [NCTM], 2014) and the English language (Lightbrown & Spada, 2013). Yet, classroom discourse is a powerful tool that can either empower or repress students (Turner et al., 2013). Therefore, those who control the classroom discourse also control opportunities to learn (Gee, 2008). Thus, teachers must not only understand the importance and influence of their own discourse in the mathematics classroom, but also have ways to use their discourse strategically to facilitate mathematics and language learning for every student.

[1] I use the term emergent bilingual in alignment with translanguaging literature (García, 2009) to indicate students are in the process of acquiring English and are not fully bilingual. I also use this term to highlight the linguistic competencies students possess, as opposed to what they lack.

Stereotypes, narratives, and storylines of mathematical competence permeate U.S. culture (Nasir, 2016). Stereotypes, narratives, and storylines related to EBs have historically been deficit-oriented, focusing solely on their English language deficiencies and the added challenges they pose to over-worked teachers (de Araujo et al., 2016; Gandara et al., 2005; Pettit, 2011). Such storylines can be circulated in classrooms and determine ways in which teachers and students interact with EBs (de Araujo et al., 2016; Smith, 2022; Turner et al., 2013; Wood, 2013; Yamakawa et al., 2009; Yoon, 2008). For instance, if teachers position EBs in deficit storylines—as has historically happened (Brenner, 1998; Gutiérrez, 2008)—EBs' opportunities to access, learn, and achieve in mathematics are diminished. Thus, it is critical for teachers to establish and foster storylines of mathematical competence for EBs in the classroom through strategic uses of their discourse.

Positioning theory (Harré & van Langenhove, 1999) provides a useful theoretical lens to examine classroom discourse. Positioning theory foregrounds discourse and proffers a way to analyze the dynamic nature of classroom interactions. More specifically, positioning theory provides a framework to guide the examination of teachers' positioning acts and the ways they facilitate EBs' participation in whole class mathematical discussions and circulate storylines for EBs across time.

Positioning Theory

Positioning theory assumes social phenomena exist in, and are a product of, discursive practices (Harré & van Langenhove, 1999). Moreover, it assumes all social interactions occur in distinct, sequential, and historically situated episodes, which are "defined by their participants, but at the same time they shape what participants do and say" (Harré & van Langenhove, 1999, p. 5). In this study, I used positioning theory (van Langenhove & Harré, 1999) as a conceptual and methodological framework to examine the discursive practices of an elementary mathematics teacher.

Positioning theory is composed of three central components: acts, storylines, and positions (Harré & van Langenhove, 1999). *Acts* refer to the social meaning(s) of people's intended actions, which, in any situation, may have multiple social meanings (Harré, et al., 2009; Moghaddam, et al., 2007). *Storylines* are "strips of life [that] unfold according to local narrative conventions" (Harré, 2012, p. 198) that are constituted and reconstituted through social interactions. Storylines can be used to refer to the multiple categories, stereotypes, or cultural values people draw on in social situations to define the expectations and conventions of interactions in that setting (Herbel-Eisenmann et al., 2015). For example, a mathematics teacher may draw on the storylines of reform/traditional instruction and right/wrong answers simultaneously to motivate their interactions with students. Moreover, individuals never enter a social interaction with a *clean slate*, since fragments of prior experiences and storylines exist that shape current and future interactions. Thus, within each interaction multiple storylines may be at play that are all drawn on participants' cultural, historical, and political backgrounds and experiences.

The ways individuals enact storylines are, or become, socially recognizable. For instance, if a teacher employs a storyline that contradicts historical or culturally shared storylines (e.g., incorrect answers are just as valuable as correct answers), the *new* storyline may not initially be conceived as socially recognizable; however, over time, through various acts, new storylines can be shaped and become socially recognizable in the local moral order.

Positions refer to one's "moral and personal attributes as a speaker" (Harré & van Langenhove, 1991, p. 395) and the "momentary clusters of rights and duties to speak and act in a certain way" (van Langenhove, 2011, p. 67) in social interactions. Said another way, one's position determines the social expectations and range of available acts of participants/people. Individuals continually engage in *positioning acts*—either they are assigning themselves a position, called *reflexive positioning*, or assigning positions to others, called *interactive positioning* (Green et al., 2020; Kayi-Aydar, 2019; McVee, 2011). In this way, positions are relational (Harré & Slocum, 2003), dynamic, and contingent upon the unfolding storyline and the competencies of the participants. Thus, positions can shift at any one time along a continuum rather than a binary (e.g., competent/incompetent; Anderson, 2009; Pinnow & Chval, 2015).

Interactive positioning can impact one's position and the availability of acts. To illustrate this, consider a medical emergency where a bystander points and states, "They're a doctor." The bystander's interactive positioning serves to position the doctor as someone who may have the skills and training to offer medical advice and whose contributions should be considered valid. Alternatively, in that same situation, a person begins to offer medical advice, and another exclaims, "They're just a chef." This interactive positioning results in the chef being positioned as one whose medical recommendations should be considered invalid given the knowledge and social standing of their job.

The setting of social interactions can also affect the positions available and the resulting rights and duties of participants. For example, in the institutional setting of a school, teachers' conferred rights and duties are socially prescribed (given their position) and evidenced in their performance of specific actions (e.g., assign grades, discipline students) and various discursive practices (e.g., give directions, provide instructions). Thus, classroom interactions are shaped by the local moral order and the "cluster of collectively located beliefs about what it is right and good to do and say" (Moghaddam & Harré, 2010, p. 10).

Positioning Theory and Emergent Bilinguals

Positioning theory has been used in mathematics education to examine social interactions (i.e., student-to-student and teacher-to-student) in classroom settings. This body of research has identified that positioning can influence students' mathematical identities (Esmonde, 2009; Ju & Kwon, 2007; Turner et al., 2013; Wood, 2013; Yamakawa et al., 2009), development of competencies (Enyedy et al., 2008; Pinnow & Chval, 2015), and opportunities to participate and learn (Anderson, 2009; Esmonde & Langer-Osuna, 2013; Mesa & Chang, 2010; Tait-McCutcheon & Loveridge, 2016). However, much of this research did not specifically focus on or include EBs. This raises questions of the applicability of the findings to teachers of EBs, particularly when many teachers continue to report a lack of preparation and confidence in their capabilities to teach a diverse range of learners (Banilower et al., 2018; Banilower et al., 2013), the prominence of deficit-oriented storylines for EBs—and immigrants in general—in the U.S. (Battey & Leyva, 2016; de Araujo et al., 2016; de Araujo & Smith, 2022), and prior research indicating EBs have been marginalized and positioned inequitably in classroom contexts (Gutiérrez, 2008; Pappamihiel, 2002; Yoon, 2008). Therefore, in this section I draw from research across educational disciplines where EBs were a specific focus of study when examining teachers' positioning and student participation.

Researchers have examined, to a limited extent, teachers' positionings of EBs in English language (Martin-Beltrán, 2010), English Language Arts (ELA; Yoon, 2008), and social studies classrooms (Duff, 2002). The earliest of these studies, Duff (2002), identified that not all teacher positioning is equivalent and that a desire to create an equitable learning environment, where every student contributes to discussions in meaningful ways, is insufficient to ensure productive EB positionings. Extending this work, Yoon (2008) and Martin-Beltrán (2010) also examined teachers' positioning and EBs' participation. Their findings illustrated teachers' positioning affected EBs' participation, not EBs' English language competencies or teachers' pedagogical approaches (e.g., student-centered). These collective findings highlight the significance of teachers' positioning on EBs' participation and identified a need to determine *what kinds* of interactive positionings teachers can use to facilitate EBs' participation and, in turn, content and language learning.

To identify specific interactive positioning acts teachers can use to facilitate EBs' participation in mathematics discussions, Enyedy and colleagues (2008) and Turner and colleagues (2013) examined bilingual teacher positioning. In Enyedy and colleagues' (2008) study, the authors examined a bilingual high school mathematics teacher's use of revoicing in a multilingual classroom. Their findings indicated the teacher often used revoicing to translate EBs ideas between Spanish and English; thereby positioning EBs at the center of the idea or discussion while making the idea accessible to non-Spanish speakers and potentially advancing storylines of mathematical competence. In a similar vein, Turner and colleagues (2013), examined a bilingual teacher-researcher's positioning acts of EBs in an after-school program and identified three prevalent acts that facilitated EBs participation in small and whole group discussions. These positioning acts were (a) validating an EB's ideas and/or ways of communicating the idea, (b) asking EBs to share mathematical thinking, and (c) inviting peers to consider an EB's idea. Both study's findings show promise for bilingual teachers and bilingual teacher-researchers but raise questions as to how monolingual teachers (or other bilingual teachers) can utilize these positionings when they lack fluency in EBs' first language. Moreover, the findings from Turner and colleagues (2013) raise additional questions of whether teachers in traditional school settings, constrained by large class sizes and educational demands (e.g., curriculum, policy, standardized assessments), implement similar positionings. Thus, more research is needed to determine the interactive positionings of monolingual teachers in traditional classroom settings that facilitate EBs' participation in mathematical discussions and whether these positionings reoccur longitudinally across different academic years with different students. Therefore, this study sought to answer the following question:

What positioning acts did an elementary teacher employ to facilitate the participation of EBs during whole class mathematics instructional episodes and what storylines were circulated as a result of these positioning acts?

Methodology

Data for the present study was drawn from a large, longitudinal professional development intervention study that spanned three years. The professional development focused on supporting EBs' development of mathematics and language, enhancing mathematics curriculum materials, and orchestrating productive classroom interactions (Chval et al., 2014). For more information about the features of the professional development, please see Chval et al. (2021).

This study focused on one teacher, Courtney[2], who was selected because she was a common, yet unique case (Stake, 1995). As white, female, and monolingual, Courtney characteristically represented many elementary teachers in the U.S. (Grissom et al., 2015; Sleeter, 2001). Moreover, she taught in an area of changing demographics and saw EBs in schools that these students had historically been absent in (NCES, 2016). However, Courtney is unique because she developed (over the course of the intervention) specialized knowledge for teaching EBs. This included an increase in her abilities to: interpret EBs' mathematical thinking as opposed to simply describing it (Estapa et al., 2016); enhance mathematics curriculum to facilitate EBs' learning *about* and *through* language (Chval et al., 2014); and provide opportunities for EBs to participate in classroom discourse (Pinnow & Chval, 2015). Although these prior studies show evidence of Courtney's ability to facilitate mathematical and language learning for EBs, to date a more in-depth analysis has not examined the extent of Courtney's acts. Thus, more research was needed to identify how she interactively positioned EBs and how these positions facilitated EBs participation in whole-class mathematical interactions.

Context

Courtney taught in a Midwestern city with an approximate population of 115,000 in a school that was predominately white (>70%), with less than 10% of the student population Latinx. In

[2] All names are pseudonyms.

addition, over half of students received free and reduced lunch. At the start of the intervention, Courtney had two years of elementary teaching experience with no prior education in pedagogy for EBs or experience teaching EBs. Thus, the first year of the study coincided with her first opportunity to teach EBs. In the first two years of the intervention, Courtney had three Latinx EBs. In the last year, Courtney had one Latinx EB who moved away partway through the school year. As a result, data from the third year of the study was excluded.

I selected four students from the first two years of the intervention to focus my examination of Courtney's interactive positionings of EBs. I selected one student, Alonzo, from the first year and three students, Lea, Bryce, and Samuel, from the second year. These students were selected because they provided a robust range of interactions that occurred across the two years and represented an array of mathematical and language competencies. See Table 1 for this information.

Table 1

Demographic Information for the Emergent Bilinguals

EB	Year in Study	Birthplace	ACCESS Composite Score^	ACCESS Listening Score^	ACCESS Speaking Score^	ACCESS Writing Score^	ACCESS Reading Score^
Alonzo	1	Mexico	4.6*	5*	5.4*	4.2*	5*
Lea	2	USA	NA	NA	NA	NA	NA
Bryce	2	USA	3.8	3.8	2.9	3.7	5
Samuel	2	USA	4	5	3.5	4.2	3.6

Note. NA = not available.
^ Based on a 6-point scale.
* ACCESS scores were only available in the year following the study.

Furthermore, I excluded the other two students in year one because they represented duplications in the mathematical and language competencies represented by the other students. I also selected the four focal students to capture the interactive positionings Courtney initially implemented (in year one) and continued to hone (as evidenced by their presence in year two). Therefore, by including a greater number of students in year two, I had increased opportunities to examine Courtney's positionings. The school district classified each focal student as an English language learner based on their scores on the Assessing Comprehension and Communication in English State-to-State for English Language Learners (ACCESS) assessment.

Alonzo

Alonzo's ACCESS composite scores in fourth grade placed him at the "expanding" performance level. Students at this level generally can understand and may use some technical mathematical language, speak, or write in varied sentence lengths of various linguistic complexity, and communicate given various kinds of support (e.g., sentence frame) with some errors that do not affect the overall meaning[3]. Although it is unknown what Alonzo's ACCESS scores were in third grade, Courtney did describe some of Alonzo's language competencies. Courtney reported that he read close to grade level and was "pretty good at expressing himself through writing." Additionally, Alonzo was "pretty willing to participate in other areas [outside of mathematics] like writing or reading." Courtney hypothesized that this was based on his reading comprehension, "I think he can read the directions and understand them and so he is not hung up on some of the things." Lastly, Courtney identified Alonzo as a "pretty strong student in all academic areas" who was uncomfortable sharing publicly in mathematics unless "he knows the right answer."

Lea

Lea's ACCESS scores were not available from the school district. However, Courtney described Lea as a student who had different comfort levels with public speaking and writing, stating "there's some disconnect between what she's willing to say and what she's willing to put on paper." Courtney also described Lea as a "pretty strong math student" who possessed some mathematical "misconceptions." Courtney provided no other information about Lea at the beginning of the school year, stating, "I don't know her [Lea] as well as I feel like I know [Samuel and Bryce]" because she had been gone for two of the first five weeks of the school year.

Bryce

Bryce's ACCESS composite score placed him at the "developing" performance level. Students at this level generally can understand and may use some specific mathematical language, speak, or write in expanded sentences or paragraphs, and communicate given various kinds of support (e.g., sentence frame) in narrative or expository forms with errors that may affect communication, but retain the overall meaning. Courtney described Bryce as a student who "[did] a lot of mental math," possessed "some number sense," and "[needed] to be assured that he's right." In addition, Bryce was a student Courtney was academically concerned about. Courtney explained that Bryce did not appear confident in his mathematical work and was often seen erasing work when approached (by Courtney). Moreover, Bryce was not comfortable and faced challenges sharing his mathematical reasoning publicly, stating "he has a tough time really like communicating how he's thinking about things."

Samuel

Like Alonzo, Samuel's ACCESS composite scores placed him at the "expanding" performance level described above. In contrast to the other students, Courtney did not discuss Samuel's language competencies with the researcher. She did, however, discuss his mathematical competencies. Specifically, Courtney reported that Samuel "has a lack of confidence" in his mathematical thinking, was "very reluctant to share his thinking with anybody," and "like[d] to be in the background."

Data

Data for this study was composed of classroom video and audio recordings from the teacher and student perspectives, and audio recordings of professional development interventions (nine to 12 debrief and nine to 12 planning sessions each year per teacher). Each class was generally recorded biweekly in the first 12 weeks of the school year and for two more weeks at the end of the school year.

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[3] For a more thorough description of student performance at each level, contact World Class Instructional Design and Assessment (WIDA).

Across the two years, a total of 45 lessons were video and audio recorded, each approximately one hour long. In year one, 27 lessons were recorded, and 22 had a whole class interaction with Alonzo. In year two, 18 lessons were recorded, and each had at least one whole class interaction with Lea, Bryce, or Samuel.

Data Refinement and Analysis

I refined the data of whole class interactions to interactional episodes focused on mathematics. An interactional episode occurred when an EB participated, were asked to participate, or were interactively positioned by Courtney or a peer. Interactional episodes began at the initial turn when an EB participated, was asked to participate, or was interactively positioned and ended when the discussion switched focus or topic (e.g., when the discussion moved to another student's strategy). The frequencies of interactional episodes for each EB across the school year are shown in Table 2.

Table 2

Frequency of Interactional Episodes for Each Emergent Bilingual

Emergent Bilingual	Number of lessons present	Number of interactional episodes	Number of teacher positioning acts
Alonzo	22	43	156
Lea	12	32	117
Bryce	12	27	111
Samuel	13	20	72
	Totals	122	456

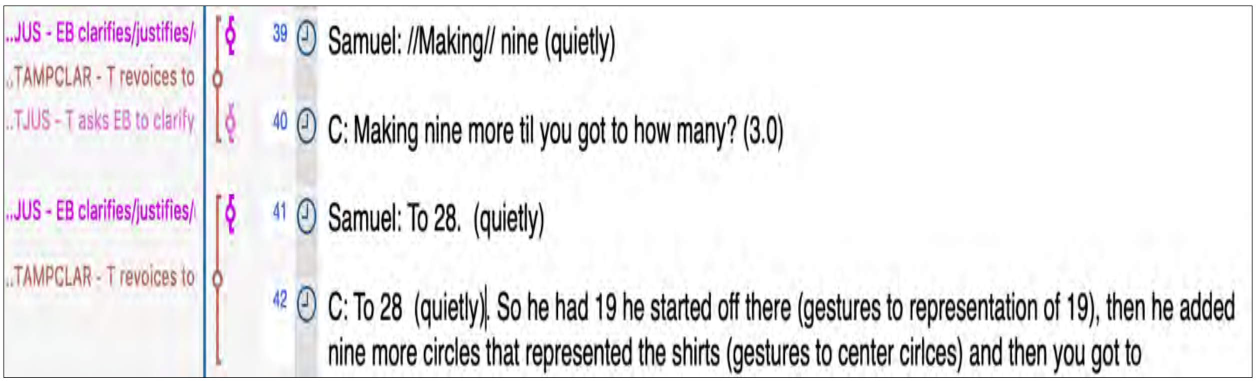
Since Courtney's lessons were typically structured with an initial whole class discussion at the carpet, individual, or group seat work, and a closing whole class discussion, frequent opportunities to engage students in whole class mathematical discussions were provided.

To analyze the data, I first transcribed all interactional episodes. Transcripts reflected the intonation, volume, pause, and pronunciation used in speech (see Appendix A for listed conventions used) and included images of written acts when relevant (e.g., instances when an EB's idea was publicly documented). Then, I coded transcripts iteratively at the utterance and turn taking levels using the constant comparative method (Patton, 2015). To do this, I began with an initial coding scheme based on teacher positioning acts found to be used by bilingual teachers to facilitate EBs' participation in mathematical discussions. These positioning acts were used even though Courtney was monolingual, because no other positioning acts had been identified in the literature. Moreover, any positioning acts that restricted EBs' participation was excluded from the coding scheme because they fell outside the scope of the research question.

I initially coded a subset of the data to solidify the coding scheme given the sheer size of the data set. After this first iteration, the coding scheme was refined, and some codes were collapsed. For example, the three positioning acts (1) the teacher solicits EB's math thinking, noticing, or observation, (2) the teacher invites EB to provide a solution strategy, and (3) the teacher invites EB to comment on a peer's idea were collapsed to the single act of *teacher invites EB to share mathematical ideas*. This was done since the three positioning acts served the same purpose (of inviting EBs to share their mathematical thinking that was deemed unique or relevant). The refined coding scheme (see Appendix B) was then used by a colleague and I to independently re-code a subset of the data. We met to discuss our analysis and all disagreements were notated and resolved through discussion and refinement of the coding scheme. Afterwards, the remaining data was coded in MAXQDA while I maintained an audit trail. See Figure 1 for an example. The number of acts identified were shown in Table 2.

Figure 1

An Example of a Coded Transcript in MAXQDA



In order to make sense of the data, I chose to narrow my focus to positioning acts that were recursive across the two years in order to identify what interactive positions and storylines were prevalent for EBs in Courtney's classroom. In this process, I simultaneously sought to identify how Courtney positioned EBs across multiple interactions, lessons, and years, and how these positions were related to classroom circulated storylines. After preliminary findings were identified, I employed investigator triangulation and had colleagues in and outside of mathematics education examine the data, analyses, and findings (Stake, 1995). In each of these conversations, assumptions and alternative interpretations were discussed.

Findings

The findings are presented in three parts. First, I describe the three prevalent positioning acts I identified in my analysis that facilitated EBs participation in whole class mathematical interactional episodes. Second, I present a vignette to reflect how the three prevalent interactive positioning acts were typically seen across the data. Then, I describe two prominent storylines that were circulated across the two years via Courtney's positioning acts.

Teacher Positioning Acts

The three prevalent positioning acts evidenced across the two years were: invites EB to share mathematical thinking, values EB mathematical contributions, and invites peers to consider EBs' mathematical contributions. These positioning acts occurred at least 30 times across the two years and were present in both years. To illustrate the positionings acts, multiple classroom interactional episodes are presented (see Appendix A for transcript conventions). These episodes were selected because they epitomized and demonstrated the nuances of each respective interactive positioning act. Table 3 displays a summary of the positioning acts used.

Table 3

Summary of Courtney's Positioning Acts Used with Emergent Bilinguals

Teacher Positioning Acts	Selected Data	Frequency of Positioning Acts with Focal Students		
		Year 1	Year 2	Total
Invites EB to share mathematical thinking	"Why would that be 24?" "How did you figure that out?" Invited to present problem-solving strategy to class (e.g., "Can you [Samuel] go on up and explain how you solved number two")	45	94	139
Values EBs' mathematical contributions	"Really cool idea" "Really smart thinking Bryce"	11	26	37
Invites peers to consider EB's mathematical contribution:	"Any comments about Lea's strategy?" "So any questions for Jake, Samuel (EB), Keri about their strategy?	16	15	31

Note. EB = emergent bilingual

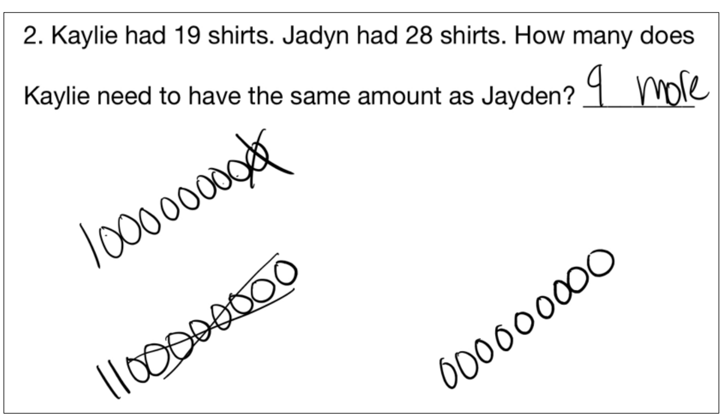
Invites EBs to Share Mathematical Thinking

The EBs in Courtney's class were most often invited to participate in a mathematical discussion by sharing their mathematical ideas. When inviting EB participation, Courtney used a range of invitations that typically required language use beyond simple or short answers (i.e., asking "What'd you do?" or "What is it representing?" as opposed to "What was your answer?"). To illustrate Courtney's use of this interactive positioning act, I present two classroom episodes.

Episode 1. On October 6 (Year 2 [Y2]), after students had worked individually, the class sat at the carpet to discuss three student strategies Courtney had selected for the problem shown in Figure 2. Samuel was the first student to share his scanned and projected work.

Figure 2

Samuel's Scanned Mathematical Work



Courtney (C): I've got three friends who are going to share a strategy that they figured um—that they used to figure out number two. [Administrative talk] Ok the first person I'd like to share (pulls up scanned work on board) is uh Samuel. [Administrative talk] Can you go on up and explain how you solved number two. Shh.
Samuel: (gets up to come to board, then stands at edge of board)
C: I need your um papers on the ground and your eyes up at Samuel. What'd you do?
Samuel: Well, I thought um 19 and 28 and I took 9 away. (8.0)
C: Ok so hold on, you've got 19 here and 28 down here?
Samuel: (nods) Uh-huh
C: Ok. And then what did you do to figure it out how much difference there was between the amount of shirts Kaylie had and Jadyn had?
Samuel: (20.0)
C: (moves to board) What it looked like to me, was when you had 19 (points to top left representation) and 28 (points to bottom left representation). It looked (points to center representation) to me like you took the 19 and you were, (gestures drawing circles in center representation) //maybe//
Samuel: //Making// nine (quietly)
C: Making nine more til you got to how many? (3.0)
Samuel: To 28 (quietly)
C: To 28 (quietly). So he had 19 he started off there (gestures to representation of 19), then he added nine more circles that represented the shirts (gestures to center circles) and then you got to
Samuel: nine—28 (quietly)
C: 28. So the difference he found between Kaylie's shirts and Jadyn's shirts was what?
Samuel: Nine
C: Nine shirts. Nice job Samuel. (claps)
Students: (clapping)
C: Drawing a picture can sometimes really help you. Thank you very much for sharing.

Before inviting Samuel to the board, Courtney had scanned and projected his work. This act benefited Samuel because he could connect his written and oral language with his mathematical representations and use the image as a visual referent while he spoke—an instructional strategy recommended for EBs (Chval et al., 2009) and discussed during the professional development. Courtney invited Samuel to take up the physical and metaphorical position of the teacher whose rights included explaining a problem-solving strategy to the class with her act to "go on up and explain" (line 4). In addition, her invitation interactively positioned Samuel as a student who had successfully solved the problem since he had a strategy "to figure out number two." In this way, Courtney positioned Samuel at the start of his presentation as a student who was mathematically competent. In lieu of inviting Samuel to explain, Courtney could have explained his work entirely herself or only asked Samuel to share the answer. However, her acts indicated she expected students to be explainers.

At the board, Courtney questioned Samuel about his mathematical representation and how he determined the value of nine (lines 8, 10-11). This act provided extended talk time, reinforced Samuel's position and storyline as a student who could explain his reasoning to others, signaled his idea was worthy of further consideration, and that he still controlled the conversational floor. Samuel, however, did not respond (line 12). After waiting 20 seconds, Courtney moved to the front of the room to explain her interpretation of Samuel's strategy (lines 13-16). Courtney's act positioned the understanding of a peer's strategy as important, even if the student did not articulate it themselves. Courtney did not let Samuel "off the hook" even though he was hesitant to speak publicly as evidenced by his quiet and limited responses, but continued to probe (lines 18, 24) amid extended wait time. As a result, Courtney did not take over the explanation or allow Samuel to "give up," instead she continued to provide Samuel multiple opportunities to share his reasoning.

Episode 2. In some cases, when invited to share mathematical ideas an EB did not always speak. For example, on October 28 (Y1), the class sat at the carpet with Courtney in a circle and discussed how many "rolls" (of ten) should be in a "box"—a conversation built off the story *Grandma Eudora's T-Shirt Factory* (Fosnot, 2007).

C: How many rolls do you think I should put into a big box? Alonzo, what do you think?
Alonzo: I think 10.
C: Why do you think 10 big rolls–10 of these rolls would be good? (1.0) Not sure, ok. But he thinks 10 might be a good number. Why do you think 10 might be a decent number to choose? Why do you think 10 would be a good number to choose to put into the box? Ian, what do you think?
… [Courtney solicits other student ideas for 3 minutes]
C (standing in front of board): Ok. Alright. Well you know what I think we've got ten shirts in one roll and, you know, we—our place value blocks, if we're going to use those because we don't have enough of these (holds up rolls of ten shirts). I mean I don't have enough shirts for all of us to have ten rolls of ten, do I? I don't have enough shirts at home and if we're going to use the place value blocks. I'm kind of thinking, you know we've got the, the rolls represented by the rods that have 10 and then the flats, they have a hundred on them, those flat ones, they have 10 groups of 10, so that's a hundred and so if, if you guys are going to work with those I kind of like Alonzo's idea that there's gonna be a hundred shirts in a box because then, if we wanted to, we could just pretend that that was one box, if we wanted to. So, I think that I, I like Alonzo's idea, and your other ideas were great, but I think we'll go with Alonzo's idea about having a hundred in a box, a hundred shirts in a box.

As the class talked, Courtney invited Alonzo to share how many rolls of t-shirts he thought should go in a big box (lines 1-2). This act positioned Alonzo as possessing an idea worth sharing. After Alonzo shared his idea, Courtney invited him to justify why "10 of these rolls would be good" (line 3), which indicated he still held the floor. This occurred regardless of the limited wait time provided for Alonzo to respond (1.0 second pause). Courtney then provided Alonzo an out, "Not sure, ok. But he thinks 10 might be a good number" (lines 3-4). This act allowed Alonzo to retain his position in the class as a student with an idea worth discussing and signaled it was acceptable to be unable to articulate a justification. As a result, Courtney facilitated a space in the classroom where taking mathematical risks was acceptable and moved to normalize "not knowing." Next, Courtney turned the request for a mathematical justification for Alonzo's idea to the class (lines 5-6). This act signaled Alonzo's idea was worthy of further consideration by positioning it at the heart of the class discussion (i.e., Courtney used footing to create this link; Goffman, 1981). After Courtney fielded different student responses, she revisited Alonzo's idea (lines 15-16) with a hedged evaluation, "I *kind of like* Alonzo's idea," which placed ownership of the idea with Alonzo. Courtney then re-asserted her value judgment of Alonzo's idea without the hedge (lines 18-19) and positioned his idea as the one the class will use, "I *like* Alonzo's idea, and your other ideas were great, but *I think we'll go with Alonzo's idea*." This combination of statements (lines 15-16, 18-19) further reinforced Alonzo's interactive position as a student with a (valuable) mathematical idea worth sharing and using. Moreover, it signaled that even though Alonzo was unable to fully justify his mathematical idea, it did not invalidate it.

Summary. Across the two years, this interactive positioning act was the most prevalent used by Courtney with the focal students, which may be tied to the professional development's focus on facilitating EBs participation. Overall, the prevalence of this positioning act contrasts with other research that has found teachers infrequently invite EBs into mathematical discussions in substantial ways (e.g., Iddings, 2005; Planas & Gorgorió, 2004; Weiss et al., 2003) and further demonstrates that EBs can participate in mathematics discussions as they develop their language proficiencies (Moschkovich, 2002; Setati, 2005; Turner et al., 2013).

Some may see this interactive positioning as just "good teaching", however, for the EBs in Courtney's class it supported them in multiple ways. First, Courtney's positioning of EBs as active participants who possess mathematical ideas worth sharing and contrasts common positionings of EBs as periphery participants documented in the literature across content classrooms (e.g., Brenner, 1998; Yoon, 2008). Second, by positioning EBs in agentive ways (e.g., mathematical explainers, students with valid mathematical strategies), the potential to positively impact their mathematical identities became available. Third, multiple storylines were circulated for EBs, including EBs are mathematically competent and EBs can explain their reasoning to peers. Lastly, the invitations provided varied and extensive opportunities for EBs to develop their English language competencies—a necessity for second language acquisition (Gibbons, 1992; Lightbrown & Spada, 2013).

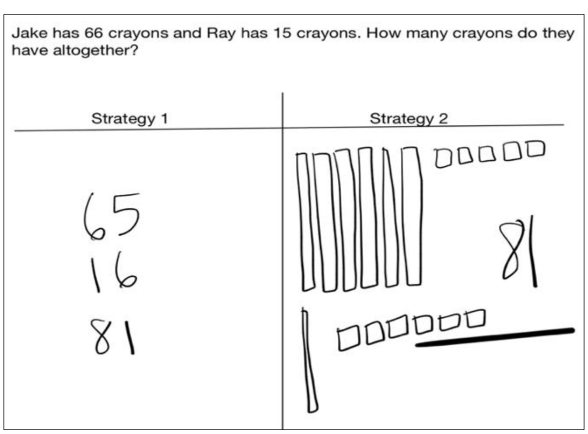
Value EBs' Mathematical Contributions

Through her interactive positionings, Courtney indicated valued ways of being and acting mathematically in the classroom. One way this occurred was through explicit statements, such as value judgments or evaluations, that called attention to aspects of an EB's mathematical contribution and varied in specificity from general (e.g., "Ok, so, Lea had a really cool idea, can you explain your idea?") to particular (e.g., "[Alonzo] did a nice job of explaining this a few different ways"). In some cases, albeit less often, direct evaluations were stated (e.g., "that's right").

Episode 3. On September 13 (Y2) while students worked to solve multi-digit addition word problems using multiple strategies, Bryce asked Courtney if he could share his strategy with the class for solving the problem. The problem and Bryce's strategy are provided in Figure 3. This represented a unique situation since Bryce often appeared uncomfortable speaking in front of the class. Courtney capitalized on this moment and invited Bryce to share during the whole-class discussion at the close of class.

Figure 3

Bryce's Written Work



C: Alright. We have a couple different strategies we're going to share. Bryce um wanted to share a strategy he did with drawing a picture. Do you want to come up and show us what you did? So I saw really smart strategies on problem number one. [administrative talk] Ok so Bryce can you explain kind of what you did?

Bryce: This one (very quietly; gestures to rods in picture)

C: So, yeah, so the problem was Jake has 66 crayons, Ray has 15 crayons, how many crayons did they have altogether? So what did you do?

Bryce: (looks at paper in hands as he faces the board diagonally with back to majority of class) I forgot how I did it (4.0). There's si—six tens and…five because…I switch, the five to…66 I switch the (5.0) (looks at paper and board)

C: It looks like you switched it to=

Bryce: =switched the last, the last six of the 66

C: 66 to 65, right?

Bryce: Six and I took the, the 16 off 15 switched it (gestures to algorithm)…and…then I add one more ten and it's seven tens…equals…seventy (10.0; looking at paper) and I (10.0; looking at work on board and gestures between the two representations) and I—no I added the six and that made it to 81.

C: Wonderful. (clapping) Ok so I…well how do we show respect to Bryce? (class claps) Yeah. So Bryce thank you so much for sharing. It looked like Bryce said you know 66 is a, is a not so kind number, I'm going to change that to 65 and I'm just going to add 16 crayons to it and so he counted up by tens and then counted the ones and got 81. Did anyone else get 81 too?

Students: (raise hands)

C: Really smart thinking Bryce.

Courtney introduced Bryce to the class as someone who "wanted to share a strategy" (line 1), which interactively positioned him as a student who believed his mathematical ideas were worth sharing. This differed from Courtney's typical approach of selecting speakers based on aspects of their mathematical thinking *she* wanted to highlight. After inviting Bryce to the front, Courtney stated, "So I saw some really smart strategies on problem number one" (lines 3-4). Given its situated context, this act simultaneously validated Bryce's desire to share as legitimate and evaluated Bryce's strategy as "really smart," which was not superficial considering Bryce's use of an invented algorithm. This act may have also been used to further bolster Bryce's confidence in his own mathematical thinking—an area Courtney identified in need of improvement in a conversation with the researcher on September 2, "Bryce definitely needs to be assured that he's right and, like, he needs to know, 'You're right, and so tell me why you're right,' type of situation […] [otherwise] he's very…reluctant [to share his thinking]." Consequently, Courtney's act set the stage for Bryce to explain his strategy and contributed to Bryce's storyline of a mathematically competent student. After Bryce explained his strategy, Courtney concluded the interactional episode by publicly evaluating Bryce's thinking again, stating "really smart thinking" (line 27). This act reinforced her initial interactive positioning of Bryce as competent and continued to foster a similar storyline. Moreover, it served to promote Bryce's own self-confidence in his mathematical thinking and reiterated his desire to share was valid. Thus, Courtney's use of this interactive positioning appears to be intentional and strategic, not flippant.

Summary. Across the two years, the positioning act of valuing EBs' mathematical contributions occurred more frequently in year two (potentially due to the number of EBs) and preceded or followed opportunities to participate. The findings confirm what other research has identified in different contexts, that evaluating student contributions is a common type of discursive practice used by teachers and even more so for novice teachers (Cazden, 2001; Kawanaka et al., 1999; McHoul, 1978; Sinclair & Coulthard, 1975). Although others may assert teachers use of this practice can limit student participation, preserve teacher rights and duties, and restrict student ownership of mathematics, I contend Courtney's use of this discursive practice served to productively position EBs in her classroom as students who possessed valued ways of thinking mathematically (e.g., "that's a smart way of thinking about it [Bryce]"), signaled their mathematical ideas or strategies were worthy of public consideration (e.g., "So I saw some really smart strategies on problem number one"), and indicated EBs were students who could explain their reasoning to others in intelligible ways while they developed their language competencies (e.g., "I thought that [Alonzo] did a nice job of explaining this a few different ways"). At this same time, Courtney's use of this positioning act simultaneously fostered the storyline that EBs were mathematically competent students. Consequently, this interactive positioning allowed Courtney to leverage her rights as a teacher to call attention to EBs mathematical thinking in front of peers and acted to counter deficit-oriented storylines of EBs in mathematics.

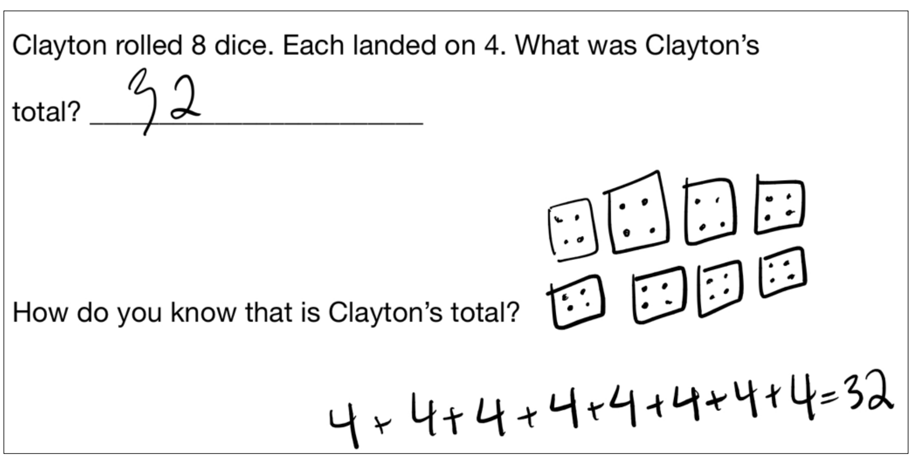
Invites Peers to Consider EBs' Mathematical Contributions

Courtney expected every student to attend to the mathematical contributions of others. This expectation was reinforced through Courtney's requests for students to respond to the mathematical contributions of others, such as asking peers to respond to or restate the mathematical contribution of an EB.

Episode 4. Courtney often requested peers to explain, comment, question, or compliment on an EB's mathematical contribution after they had shared a problem-solving strategy. For example, at the close of the lesson on October 22 (Y2) Courtney selected three students to share their strategy to solve the problem, Lea was the second student to share her work shown on board. Her work and the problem are provided in Figure 4.

Figure 4

Lea's Written Mathematical Work



C: Alright the next person to share is Lea. Lea will you get up.
Lea: (gets up and comes to board)
C: [administrative talk]
Lea: First um I added four and then um I added four plus four plus four plus four. First I drew a picture of eight dice and then added four plus four plus four plus four plus four plus four plus four plus four equals 32.
C: So why did you—how many four—how many times did you need to count up by four?

Lea: Well I needed to count um I needed to count eight times so I could get (inaudible)
C: Ok so when she—when she—what'd um—any comments about Lea's strategy?
Lea: Janie.
Janie: Nice work an:d I like your strategy.
Lea: Carl
Carl: I like the way how you like, drew a picture of this stuff (gestures across work)—numbers.
Lea: Ok. Laura
Laura: Um I think the way that you drew your picture of the four plus four plus four is kind of confusing but I still think you did a great job.
C: Alright so she wrote a number sentence and she wrote up a picture to go along with that. I like—I like your strategy a lot. Nice job Lea. (clapping and cheers)

After Lea presented, Courtney asked if there were any comments on her strategy (line 10). Courtney's act reinforced the expectation students would attend to and think about each other's mathematical reasoning, signaled Lea's ideas were worthy of further consideration, and kept Lea's mathematical thinking at the center of the discussion. Lea took on a typical right of a teacher (Lemke, 1990; McHoul, 1978; Mehan, 1979) to call on Janie, Carl, and Laura and field their comments. Lea's peers had many comments they could make. Each comment referenced Lea's mathematical work and included praise (e.g., "I like your strategy")—although Laura's was back-handed ("but I still think you did a great job" line 20). After Laura's comment, Courtney stepped in to re-state Lea's strategy (line 21) and positively evaluate it, stating "I like your strategy a lot. Nice job" (line 22). Thus, Courtney's final act in this episode amplified Lea's strategy, signaled the strategy represented valued mathematical thinking that contradicted Laura's assessment, and reinforced Lea's mathematical competence.

Episode 4. Another way Courtney implemented this positioning act was by aligning an EB's strategy to peers, asking if peers used the strategy, and then stating explicit connections between the peer(s) and EB. An example of this occurred on May 13 (Y2) immediately after Jake, Samuel, and Keri had collectively shared their problem-solving strategy to an equal sharing problem of seven brownies and four people. Courtney stated:

> Ok so any questions for Jake, Samuel, or Keri about their strategy? Did anyone else try this strategy? (some students raise hands) Caleb did this strategy, Laurence did this strategy. I think it's a really effective way of doing it because you always know you're going to have a fair share if you're cutting it into one-fourth pieces and you know that there's four people, you know you're going to be able to share it fairly. Nice job guys.

In this act, Courtney placed ownership of the strategy on the three students when inviting peer feedback on the problem-solving strategy, which reinforced Samuel's interactive positions as a problem solver like Jake, Keri, and a community member. Next, Courtney moved to create connections between the three presenters and peers when she asked if others had used the strategy (lines 1-2). Courtney publicly named two students who also used the strategy (lines 2-3), thereby expanding the mathematical connections in the classroom and creating a large group of students who all shared similar mathematical reasoning as Samuel (and Jake and Keri). Courtney capitalized on this moment further with her evaluation of the group's strategy, stating "I think it's a really effective way of doing it" (line 3). In this way, she publicly validated the strategy, positioned it as valuable, and interactively positioned Samuel as using an effective strategy—a characteristic of mathematical competence in Courtney's class. Moreover, positioning acts like this may have been used by Courtney with Samuel and other EBs who may be resistant, hesitant, or uncomfortable with public speaking to proffer peer support and an out if they chose not to speak when in front of the class.

Summary. Across the data this interactive positioning act occurred in both years, was seen throughout each year, either preceded or followed opportunities for EBs to participate, and was predominately split between each year regardless of the number of EBs in year two. The reduction of this interactive positioning in the second year (based on total EBs) may have been a result of Courtney's increased ability to deftly use it to: set and uphold the classroom expectation peers would attend to and think about EBs' mathematical contributions (e.g., "any comments about Lea's strategy"), support the development of a dialogic classroom environment where students interacted *with* each other and took on greater rights and duties typically reserved for teachers, interactively position EBs' mathematical contributions as valuable as advocated by research (e.g., "I think it's a really effective way of doing it"; Gorgorió & Planas, 2001; Secada & De La Cruz, 1996), and foster the storyline that EBs can explain theirs or others mathematical reasoning (e.g., "Lea, can you go up there and explain what Emily did?"). Importantly, Courtney's use of this positioning act challenged stereotypes of who can do mathematics (Battey & Leyva, 2016; de Araujo et al., 2016) and advanced counter-stories of who can do and be successful in mathematics.

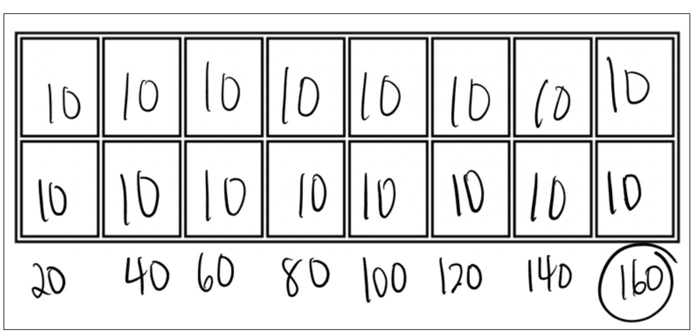
The Reality of Implementing the Positioning Acts*:* A Vignette

Up to this point, I have presented the prevalent interactive positioning acts Courtney employed across two years to facilitate EBs participation in whole class mathematical discussions independently. However, these positioning acts did not occur in isolation, but in conjunction with one another. Thus, I present a vignette to illustrate the reality of the interactional episodes that occurred in Courtney's classroom and elucidate how her interactive positioning acts worked in conjunction with one another.

In the lesson on October 27 (Y2), students created a book of stamps in an array, selected a stamp value, and calculated the total cost of the book of stamps. To conclude the lesson, Courtney selected some students to share their strategies for calculating the total cost of the book. Bryce was the first student selected to share his book of stamps shown in Figure 5.

Figure 5

Bryce's Book of Stamps and His Written Work



C: Bryce, you're my first fellow to share. Why don't you go on up. [Administrative talk] Ok Bryce is going to share how he figured this problem out. [Administrative talk].
Student: Hey, that's the same thing I did.
C: Shh.
Student: He did the same thing I did.
C: Alright, make sure your voices and eyes are showing respect for your presenter
Bryce: I //counted down by twos// (gestures down the columns)

C:	//Shh. Carl//
Bryce:	I got 20, 40, 60, 80, 100, 120, 140, 160. A 160 is my answer.
C:	Ok, so um questions, comments for Bryce about his strategy for figuring out the value of his book?
Bryce:	(looks at students on carpet) (4.0)
C:	You can call on
Bryce:	What's up (looking at student)
Student:	Um you did—you had a great strategy and great work.
C:	Ok, //any other// of comments on his strategy?
Bryce:	//Janie//
Janie:	Um instead of putting 10, 20, 30, 40 all the way to um the answer he just did it like, added the, you know 10 plus 10 is 20 so he said 20, 40, 60, 80, 100, 120, 40, 60 and then he.
C:	Yeah so he was being very efficient, right? So he was doing a quick way of counting. Greg something else?
Greg:	Nice job.
C:	Alright well we are all pleased with your work. Thank you very much for showing us how you figured out the value of your stamps. (class claps)

In this interactional episode, Courtney employed each of the positioning acts previously described and some other notable acts.

Invited Bryce to Share His Mathematical Thinking

In Courtney's introduction for Bryce, "Bryce, you're my first fellow to share. Why don't you go on up. [Administrative talk] Bryce is going to share how he figured this problem out" (lines 1-2), multiple things occurred. First, Courtney invited Bryce to share his problem-solving strategy with the class, which shifted the duty to explain onto him and thereby allowed him to participate in the discussion. Second, Courtney's invitation enabled Bryce to take up the physical space typically reserved for the teacher at the front of the room, which shifted *some* of the rights and duties of a teacher onto Bryce. Third, Courtney called attention to Bryce's mathematical competency when she stated he had "figured this problem out" (line 2). Courtney may have chosen to interactively position Bryce in this way to bolster his self-confidence given his historical hesitancy in presenting to the class and a perceived need "to be assured that he's right."

Invited Peers to Consider Bryce's Mathematical Contributions

After Bryce's explanation, Courtney asked, "Ok, so um questions, comments for Bryce about his strategy for figuring out the value of his book?" (lines 10-11). In this act, four things happened. First, Courtney exercised her duty (as a teacher) to facilitate mathematical discussions. Second, Courtney's act indicated an expectation peers would listen and respond to Bryce's explanation and that he was a part of the classroom community. Third, Bryce's position as participant and explainer was reinforced since his explanation was considered valid and Courtney as the "expert" did not restate it or offer an alternative explanation. Fourth, Courtney reinforced Bryce's position as mathematically competent since he had a valid strategy for "figuring out" the problem. Courtney then paused for 4.0 seconds and stated to Bryce, "You can call on" (line 13), which indicated Bryce could control the conversation and shifted the duty to mediate discussions onto him. Bryce took up this duty (lines 14 and 17) and fielded comments. After the first peer positively evaluated Bryce's work (line 15) Courtney asked if there were other comments, but Bryce had already begun to call on another student (line 17).

It is unclear why Courtney took over the conversation at this point, however, it marked a shift in the interaction where she reclaimed the duty to facilitate interactions between Bryce and his peers.

Evaluated Bryce's Mathematical Reasoning

After Janie—a peer—had restated Bryce's explanation, Courtney evaluated the strategy, "Yeah so he was being very efficient, right? So he was doing a quick way of counting" (line 21). This act positioned Bryce's strategy as valued since it was efficient and reinforced his prior position as a mathematically competent student. In addition, it served to further advance Bryce's storyline of mathematical competence.

Other Notable Acts

In addition to the positioning acts described above, Courtney employed four additional acts that influenced Bryce's position and opportunity to participate in this interactional episode. First, Courtney scanned Bryce's written work (Figure 5) to serve as a visual referent he could gesture to (line 7) to support his explanation—an instructional strategy recommended for EBs (Khisty & Chval, 2002; Moschkovich, 2002; Raborn, 1995). Second, Courtney reinforced Bryce's duty as a teacher to present mathematical information to the class when she referred to him as "a presenter" (line 6). This is an important position for Bryce since EBs are infrequently asked to present in content classrooms or referred to as "presenters" in front of native speaking peers publicly (Brenner, 1998; Gibbons, 2008). Third, as Bryce described his strategy he stated, "I counted down by twos" (line 7), which was not an accurate reflection of his strategy. However, Courtney did not call attention to this error and allowed him to maintain face in front of peers. Courtney's decision to remain silent may have been a result of their overlapping speech, a prior discussion she had had with Bryce, or she may have found an interruption unnecessary since Bryce continued to accurately describe his strategy of counting by twenties (line 9). Lastly, Courtney concluded this episode by stating, "*We* are all pleased with your work. Thank you very much for showing *us* how you figured out the value of your stamps" (line 26). This final act is important in multiple ways. First, the use of "we" and "us" indicated the class was a community and Bryce a member of it (Ju & Kwon, 2007). Second, Courtney reflexively positioned herself as a speaker for the community, which is not unusual given her rights and duties as a teacher. Third, the *community* was satisfied with Bryce's mathematical reasoning and respective explanation (as opposed to only Courtney being satisfied). This is notable since teachers usually reserve the duty to evaluate student thinking (Lemke, 1990; McHoul, 1978; Mehan, 1979), however, Courtney's statement reinforced Bryce's peers' evaluation of his thinking. Fourth, Courtney reinforced Bryce's position as presenter, explainer, and participant when she thanked him for sharing his strategy with the class. Lastly, Courtney called attention to Bryce's mathematical competence when she reiterated his success in "figuring out" the problem for the third time. In this way, she chose to conclude the episode by reinforcing his position and storyline as a mathematically competent student.

Storylines

Since storylines can occur at multiple scales, I limited my focus to the storylines Courtney fostered for EBs collectively through her interactive positionings across the two years. In this way, I centered on the storylines Courtney advanced via her position that were or became socially recognizable for EBs that defined the expectations and conventions of interactions in her classroom (Herbel-Eisenmann et al., 2015). Given this, I do not claim the storylines presented herein were exclusive or unique to EBs, but they were evident for the EBs in Courtney's class. Moreover, it is outside the scope of this paper to describe the storylines constructed for all students across the two years.

Across the data, two prominent storylines were promoted by Courtney: EBs are mathematically competent and EBs can explain their mathematical reasoning to others (see Table 4 for selected evidence). These storylines were advanced across each respective year and EB and, at times, overlapped (i.e., multiple storylines were advanced in one turn).

Table 4

Storylines of EBs and Selected Evidence

Storyline	Selected Evidence
EBs are mathematically competent	"that's a smart way of thinking about it [Bryce]. I like thinking about it like that, I'm a visual person."
	"I think it's a really effective way of doing it"
	"I like Alonzo's idea"
EBs can explain their mathematical reasoning to others	"I scanned in Alonzo's work because I thought that he did a *nice job* of explaining this a few different ways"
	"Ok, so, Lea had a *really cool idea*, can you explain your idea?"
	"Can you go on up and explain how you solved number two"

Storyline 1: EBs are Mathematically Competent

Mathematical competence is important for EBs since it defines what counts as mathematics and who gets to do it (Gresalfi et al., 2009). However, for storylines of competence to take hold, student acts must be recognized, which is most powerfully done through teachers' conferred rights and duties. The storyline that EBs are mathematically competent was repeatedly fostered through Courtney's interactive positionings of individual EBs. In this way, Courtney positioned EBs as engaging in mathematical practices that were culturally and socially valued and representative of academic success (Gresalfi et al., 2009). These positionings most often took the form of an EB possessing valued mathematical thinking, being mathematically efficient, solving problems accurately, and being able to explain problem-solving strategies. Since the latter positioning contributes to the storyline that EBs can explain their mathematical reasoning, the description of these positionings is omitted from this section and provided in the next.

To position EBs' mathematical thinking as valued, Courtney would qualify EBs' thinking with adjectives such as "cool," "smart," "awesome," or "good" (e.g., "awesome strategy") and, oftentimes, would include "really" to further emphasize the value (e.g., "really cool," "really good," "really smart"). In addition, Courtney would refer to an EB's thinking as something she "liked" or position a contribution as valuable by indicating the speaker had done well (e.g., "Nice job Samuel"; Gresalfi et al., 2009). Since Courtney was socially identified as the content expert and possessed rights and duties unavailable to students, she could define what counted as valuable mathematical thinking and who was considered "smart." Thus, her positioning acts had the power to shift interactions in the classroom (Reeves, 2009; Tait-McCutcheon & Loveridge, 2016; Turner et al., 2013; Wood, 2013).

Courtney valued mathematical efficiency in problem solving and was explicit about this with students. For instance, she stated, "We've been talking a lot about efficiency and making sure that your strategies are quick and that you use your time wisely." Consequently, being mathematically efficient was positioned as a characteristic of mathematical competence. When this occurred Courtney was always explicit, such as "If you wanted to be more *efficient*, you might think about it like Alonzo did" or "He [Bryce] was being very efficient."

The ability to accurately solve mathematical problems was also positioned by Courtney as characteristic of EBs who were mathematically competent. At times, this positioning was explicit, such as when she stated, "He [Alonzo] *solved* it many different ways and every single time he *solved* it, he got the same answer," and, in this particular act, Courtney also emphasized Alonzo's ability to use multiple strategies. At other times, the positioning was indicative of accuracy, such as "figured out" a problem. While it may be common in some classrooms to include incorrect solution strategies as valuable points for learning and an aspect of mathematical competence, Courtney did not emphasize this in her classroom or in her storyline for EBs. Instead, she focused on positioning EBs in ways that accentuated their mathematical accuracy. Courtney may have chosen to do this to bolster EBs self-confidence in mathematics or prevent situations where EBs' thinking could be perceived negatively by peers. Another reason may have been a desire to proffer a storyline that contrasted with the more prominent storyline that EBs need remediation and support in mathematics (de Araujo et al., 2016; de Araujo & Smith, 2022; Gutiérrez, 2008). Over the two years, Courtney leveraged her position to call out "smart" EBs over 185 times through the positioning acts of inviting EBs to share mathematical ideas, valuing EBs' mathematical contributions, and inviting peers to consider EBs' mathematical contributions. Consequently, Courtney's positioning acts identified valued ways of being in the classroom that were indicative of mathematical competence.

Storyline 2: EBs Can Explain their Mathematical Reasoning to Others

The ability to explain one's mathematical reasoning to others provides opportunities to develop, refine, or clarify thinking, engage in mathematical discussion, and/or advance lessons. This practice was valued in Courtney's classroom as shown by her frequent requests for students to explain. Even though the benefits of explaining reasoning are well known, requests to do this are infrequently used in classrooms generally and with EBs specifically (Iddings, 2005; Planas & Gorgorió, 2004; Weiss et al., 2003). In contrast to this research, Courtney was found to often ask EBs to explain their mathematical reasoning and representations.

Courtney expected students, including her EBs, to explain their reasoning to others. One way she did this was to regularly pre-select 2-3 students to present their problem-solving strategies at the close of her lessons. Sometimes, Courtney would set the stage for the presenter by asking or directing them to explicitly "explain" their strategy. At other times, Courtney used language that referred to explanation, such as, "Alright, Bryce what did you do [to solve the problem]?" Consequently, these statements positioned EBs as students who had a strategy they could articulate to peers, shifted the duty of explaining strategies from Courtney onto EBs, and provided extended talk time for the EB in their L2. Additionally, in some cases, Courtney highlighted the value of these strategies by prefacing the EB's explanation, such as "Lea had a *really cool* idea. Can you explain your idea [to solve the problem]?" or "I scanned in Alonzo's work because I thought that he did a *nice job* of explaining this a few different ways." Statements like these reinforced the EB's explanation as valuable and a point of learning and positioned the EB as mathematically competent.

Requests to explain mathematical reasoning were not limited to the close of the lesson but happened throughout as well. For instance, when debating the appropriateness of 42 to represent two tens and four ones in a class discussion, Courtney stated, "Bryce says that would be 24. Why would that be 24 [Bryce]?" Alternatively, Courtney would ask an EB about details in their problem-solving strategy to elucidate reasoning, such as "How come you chose to add the three groups of 19 like that instead of 3+3+3+3+3 [indicating 19 groups of 3]?" while Alonzo described his strategy for summing three groups of 19. These types of positioning acts allowed EBs extended talk time, retain the conversational floor, and, in the case of Alonzo, highlight the deliberateness of an approach.

Courtney expected EBs—as well as other students—to explain mathematical representations. This expectation was shown through questions that varied in specificity. For instance, she would ask general questions, such as "[Lea] tell us about your picture," and more specific questions, such as "Why'd you [Bryce] put that line there, what's that mean?" These acts positioned EBs as individuals who had the capability to explain mathematical representation to others. To reinforce EBs ability to explain representations, Courtney would refer to the EB as someone who had explained. For example, after Bryce shared Courtney stated, "*Bryce is telling us* the numerator represents the number of pieces that the person gets and the denominator represents the number of pieces you cut that whole into." In this way, Courtney acknowledged an explanation had occurred and, at times, publicly and directly expressed gratitude for the explanation.

Across the data, Courtney positioned EBs as students who can explain their mathematical reasoning to others over 75 times through two positioning acts: inviting EBs to share mathematical ideas and inviting peers to consider EBs' mathematical contributions. In this way, Courtney advanced a storyline for EBs in this study that countered the belief that EBs cannot explain their thinking or take an active role in mathematical discussions as they acquire another language. Moreover, the acts she employed in conjunction with her explanation requests positioned EBs' explanations as valued, points of learning, and comparable to her own explanations. Therefore, the combination of these positions and other productive storylines (e.g., EBs explanations are just as valuable as Courtney's, EBs are mathematically competent) served to advance the storyline that EBs can explain their reasoning to others and further support prior research from other contexts that illustrate EBs participation in classroom discussions is contingent on the teacher (Turner et al., 2013; Yoon, 2008).

Summary. As evidenced in the data, Courtney strategically used acts to foster storylines that EBs are mathematically competent and can explain their mathematical reasoning to others. Notably, these storylines were frequently found to occur simultaneously in interactions, which attests to their complexity and ability to be at play in any given interaction. Such findings provide further evidence of the nuanced ways teachers interact with students and how teachers can position students—particularly those who have been historically underserved in mathematics—in storylines at multiple scales (e.g., utterance, lesson, academic year) that run counter to dominant narratives that perpetuate inequities. In this way, the storylines Courtney promoted individually for EBs across the data served to counter deficit-oriented storylines for EBs as a collective via their group association. Thus, Courtney facilitated opportunities to reshape who can be mathematically successful on a multi-year scale.

Discussion and Conclusion

In this study, I used the lens of positioning theory (van Langenhove & Harré, 1999) to examine the discursive practices of one third-grade monolingual teacher, Courtney, and the ways she facilitated EBs participation in whole class mathematical discussions across two academic years. Findings from this study show Courtney implemented three prevalent interactive positioning acts, often in conjunction with one another rather than in isolation. The interactive positionings were inviting EB to share mathematical thinking, valuing EB mathematical contributions, and inviting peers to consider EBs' mathematical contributions. These findings extend Turner and colleagues' (2013) study of a bilingual teacher-researcher in an after-school program by shedding new light on the applicability of the positioning acts and other acts across contexts, teachers, and time as well as address calls for "more research on effective teaching and learning environments" for EBs and "richer descriptions of those environments" (Gutiérrez, 2008, p. 362) as well as examples of storylines in mathematics (Herbel-Eisenmann et al., 2015).

In contrast to Turner and colleagues' (2013) study, Courtney taught in a school with historically low populations of EBs and was constrained by class sizes and educational demands (e.g., curriculum, policies, standardized assessments). These drastically different U.S. school settings demonstrate the usefulness of the positioning acts for EBs across contexts. Said another way, the findings indicate the positioning acts can be used in classrooms with both high and low concentrations of EBs in the U.S. to foster EBs' participation in mathematical discussions. Additionally, the findings illustrate the positioning acts can be implemented by teachers who are in the early stages of thinking and learning about positioning theory. This is notable since the teacher-researcher in Turner and colleagues' (2013) study was familiar with positioning theory, understood the power of teacher positioning on EBs' learning, and was strategic in their use of discursive practices to position students in particular ways right from the start of the after-school program. Consequently, Courtney offers a picture of what positioning acts a teacher may initially begin to use as they learn about positioning and continue to refine across multiple years with different EBs with various mathematical and linguistic competencies. Furthermore, the positioning acts appeared to affect EBs' mathematical identities (e.g., Bryce's desire to share his problem-solving strategy with the class) and peers' interactive positionings of EBs (e.g., a peer's compliment on Bryce's efficient representation). Although prior research has identified teachers' positioning of EBs can affect the development of mathematical identities and the ways peers' interactively position EBs (Esmonde, 2009; Ju & Kwon, 2007; Turner et al., 2013; Wood, 2013; Yamakawa et al., 2009; Yoon, 2008), examining this effect was not a focus of this study.

It is important to note that Courtney's participation in ongoing professional development likely centered her attention on EBs and the ways she interacted with them. As a result, other teachers may also need professional development to focus and maintain their attention on EBs as they learn about positioning theory. Such professional development may begin with supporting teachers to first recognize how acts, positions, and storylines affect their own lived experiences in and out of school settings. Next, teachers could begin to think critically about ways to leverage their acts to (1) ensure EBs participate in productive ways as advocated by the NCTM (2013, 2014) and (2) challenge dominant narratives of who can be, who is, and what counts as mathematically successful as they strive for equitable mathematics instruction.

Through the interactive positioning acts, Courtney circulated multiple storylines for EBs collectively across the two years, such as EBs are mathematically competent and EBs can explain theirs or others' mathematical reasoning. Importantly, these storylines took hold because student acts were recognized specifically by Courtney. If, on other hand, Courtney would have undermined EBs' explanations (e.g., responding in ways that discredited their explanation), the storyline that EBs can explain theirs and others' mathematical reasoning would not have circulated. Even though the storylines Courtney circulated may not have transferred across classrooms in subsequent years for the EBs in this study, they were present across multiple years for EBs in Courtney's classroom. In this way, the storylines Courtney advanced for EBs defined the expectations and conventions of interactions in her classroom, served to create socially recognizable storylines for EBs, and had the ability to reshape who can be mathematically successful on a multi-year scale (Herbel-Eisenmann et al., 2015).

As a white, monolingual, elementary teacher, Courtney characteristically represents many elementary teachers in the U.S. (Grissom et al., 2015; Sleeter, 2001) and, given her success in teaching mathematics to EBs (Chval et al., 2014; Estapa et al., 2016; Pinnow & Chval, 2015), is in a unique position to offer insight into the ways other monolingual teachers can use discursive practices to create opportunities for EBs to participate using varied forms of language in mathematical discussions regardless of their competencies in EBs' first language. Although Courtney was able to implement the positioning acts deftly, it may be unrealistic to expect teachers to integrate all the positionings at once. As a result, teachers may find it beneficial to employ the positioning acts one by one as they begin to make changes in their practice. For instance, mathematics teacher educators may encourage future and current teachers to begin implementing Courtney's most common positioning act first (i.e., inviting EBs to share mathematical thinking) as opposed to those used less frequently. In this process, teachers should simultaneously reflect on their existing positioning acts, such as asking themselves, "What am I asking EBs to share about their mathematical thinking in whole class discussions?" or "What is one thing I will ask ____ to share in class tomorrow about their mathematical thinking?" Alternatively, a teacher may focus on a positioning act they perceive as easier to initially implement, such as valuing EBs' mathematical contributions. A teacher could then focus on drawing explicit attention to a desired practice an EB demonstrates (e.g., "Zainab was being *very efficient*") or recommend peers embody aspects of an EB (e.g., "If you wanted to be *more efficient*, you might think about it like Mariam did"). When employed, such acts interactively position the EB as possessing desirable mathematical thinking, advance their storyline of mathematical competence, challenge historic stereotypes of who can do mathematics (Battey & Leyva, 2016; de Araujo et al., 2016), and fulfill teachers' rights and duties to mediate interactions between EBs and peers to ensure EBs' mathematical contributions are positioned as valuable (Gorgorió & Planas, 2001; Secada & De La Cruz, 1996).

Although the use of positioning theory in mathematics education research is burgeoning, researchers (Herbel-Eisenmann et al., 2015) have called for greater attention to the acts and storylines that influence positions in classroom settings. Thus, the detailed analysis of acts, positions, and storylines help to fill this gap in the literature. Moreover, the analysis reveals the presence of multiple positioning acts and storylines in *each* interaction, which provides further evidence of the nuanced ways teachers interact with students, highlights the complexity of classroom interactions, and confirms the importance of the teacher in student positioning. In addition, there appears to be a potentiality for the positioning acts to advance storylines for EBs at multiple scales (i.e., utterance, lesson, academic year) that draw attention to their competencies and challenge existing deficit-oriented storylines (de Araujo et al., 2016; de Araujo & Smith, 2022; Gandara et al., 2005; Pettit, 2011). When promoted over time, such storylines can shape what becomes socially recognizable for EBs in mathematics and can support efforts to ensure equitable mathematics instruction for *every* student. Despite this, unanswered questions remain, such as: How does learning about positioning theory support teachers' understanding and integration of the previously described positioning acts? In what ways do teachers' draw on positioning theory to describe the intention of their acts and interactive positions in the classroom? What specific challenges do teachers face when implementing the positioning acts within and across different classes and contexts? An exploration of these research questions would expand our understanding of the interplay between understanding positioning theory and teacher acts in the classroom.

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References

Anderson, K. T. (2009). Applying positioning theory to the analysis of classroom interactions: Mediating micro-identities, macro-kinds, and ideologies of knowing. *Linguistics and Education*, *20*(4), 291–310.

Ballantyne, K. G., Sanderman, A. R., & Levy, J. (2008). *Educating English language learners: Building* *teacher capacity. National Clearinghouse for English Language Acquisition & Language Instruction Educational Programs*. Washington, D.C.: National Clearinghouse for English Language Acquisition.

Banilower, E. R., Smith, P. S., Malzahn, K. A., Plumley, C. L., Gordon, E. M., & Hayes, M. L. (2018). *Report of the 2018 NSSME+*. Chapel Hill, NC.

Banilower, E. R., Smith, P. S., Weiss, I. R., Malzahn, K. A., Campbell, K. M., & Weis, A. M. (2013). *Report of the 2012 National Survey of Science and Mathematics Education.* Chapel Hill, NC.

Battey, D., & Leyva, L. A. (2016). A framework for understanding whiteness in mathematics education. *Journal of Urban Mathematics Education*, *9*(2), 49–80.

Berman, L. (1999). Positioning in the formation of a "national" identity. In R. Harre & L. van Langenhove (Eds.), *Positioning theory: Moral contexts of intentional action* (pp. 138–159). Malden, MA: Blackwell Publishers Inc.

Brenner, M. E. (1998). Development of mathematical communication in problem solving groups by language minority students. *Bilingual Research Journal*, *22*(2), 149–174.

Cazden, C. B. (2001). *Classroom discourse: The language of teaching and learning* (2nd ed.). Portsmouth, NH: Heinemann.

Chval, K. B., Chavez, O., Pomerenke, S., & Reams, K. (2009). Enhancing mathematics lessons to support all students. In D. Y. White & J. S. Silva (Eds.), *Mathematics for every student: Responding to diversity PK-5* (pp. 43–52). Reston, VA: National Council of Teachers of Mathematics.

Chval, K. B., Pinnow, R. J., & Thomas, A. (2014). Learning how to focus on language while teaching mathematics to English language learners: A case study of Courtney. *Mathematics Education Research Journal*, *27*(1), 103–127.

Chval, K., Smith, E., Trigos-Carillo, L., & Pinnow, R. (2021). *Teaching math to multilingual students: Positioning English learners for success grades K-8*. Corwin and the National Council of Teachers of Mathematics.

Darling-Hammond, L., & Berry, B. (2006). Highly qualified teachers for all. *Educational Leadership*, *64*(3), 14–20.

de Araujo, Z., Roberts, S. A., Willey, C., & Zahner, W. (2018). English Learners in K–12 mathematics education: A review of the literature. *Review of Educational Research*, *88*, 879–919.

de Araujo, Z. & Smith, E. (2022). Examining ELLs' learning needs through the lens of algebra curriculum materials. *Educational Studies in Mathematics, 109,* 65–87. https://doi.org/10.1007/s10649-021-10081-w

de Araujo, Z., Smith, E., & Sakow, M. (2016). Reflecting on the dialogue regarding the mathematics education of English learners. *Journal of Urban Mathematics Education, 9*(2), 33–48.

Duff, P. A. (2002). The discursive co-construction of knowledge, identity, and difference: An ethnography of communication in the high school mainstream. *Applied Linguistics*, *23*(3), 289–322.

Engle, R. A., & Conant, F. R. (2002). Guiding principles for fostering productive disciplinary engagement: Explaining an emergent argument in a community of learners classroom. *Cognition and Instruction*, *20*(4), 399–483.

Enyedy, N., Rubel, L., Castellón, V., Mukhopadhyay, S., Esmonde, I., & Secada, W. (2008). Revoicing in a multilingual classroom. *Mathematical Thinking and Learning*, *10*(2), 134–162.

Esmonde, I. (2009). Ideas and identities: Supporting equity in cooperative mathematics learning. *Review of Educational Research*, *79*(2), 1008–1043.

Esmonde, I., & Langer-Osuna, J. M. (2013). Power in numbers: Student participation in mathematical discussions in heterogeneous spaces. *Journal for Research in Mathematics Education*, *44*(1), 288–315.

Estapa, A., Pinnow, R. J., & Chval, K. B. (2016). Video as a professional development tool to support novice teachers as they learn to teach English language learners. *The New Educator*, *12*(1), 85–104.

Fairclough, N. (2010). *Critical discourse analysis: The critical study of language* (2nd ed.). Harlow, UK: Pearson Education.

Fosnot, C. T. (2007). *The t-shirt factory: Place value, addition, and subtraction*. Portsmouth, NH: Firsthand Heinemann.

Gandara, P., Maxwell-Jolly, J., & Driscoll, A. (2005). *Listening to teachers of English language learners: A survey of California teachers' challenges, experiences, and professional development needs. Policy Analysis for California Education, PACE (NJ1)*. Santa Cruz, CA: The Center for the Future of Teaching and Learning.

García, O. (2009). Education, multilingualism and translanguaging in the 21st century. In T. Skutnabb-Kangas, R. Phillipson, A. K. Mohanty, & M. Panda (Eds.), *Social justice through multilingual education* (pp. 140–158). Tonawanda, NY: Multilingual Matters.

Gee, J. P. (2008). *Social linguistics and literacies: Idealogy in discourses* (3rd ed.). London, UK: Routledge.

Gibbons, P. (1992). Supporting bilingual students for success. *Australian Journal of Language and Literacy*, *15*(3), 225–236.

Gibbons, P. (2008). "It was taught good and I learned a lot": Intellectual practices and ESL learners in the middle years. *Australian Journal of Language & Literacy*, *31*(2), 155–173.

Goffman, E. (1981). *Forms of talk*. Philadelphia, PA: University of Pennsylvania Press.

Gorgorió, N., & Planas, N. (2001). Teaching mathematics in multilingual classrooms. *Educational Studies in Mathematics*, *47*(1), 7–33.

Green, J. L., Brock, C., Baker, W., & Harris, P. (2020). Positioning theory: Its origins, definition, and directions in education an explanatory theory and analytic lens. In N. S. Nasir, C. D. Lee, R. Pea, & M. M. de Royston (Eds.), *Handbook of the Cultural Foundations of Learning* (pp. 119–140). Routledge.

Gresalfi, M., Martin, T., Hand, V., & Greeno, J. (2009). Constructing competence: An analysis of student participation in the activity systems of mathematics classrooms. *Educational Studies in Mathematics*, *70*(1), 49–70.

Grissom, J. A., Kern, E. C., & Rodriguez, L. A. (2015). The "representative bureaucracy" in education. *Educational Researcher*, *44*, 185–192.

Gutiérrez, R. (2002). Beyond essentialism: The complexity of language in teaching mathematics to Latina/o students. *American Educational Research Journal*, *39*(4), 1047–1088.

Gutiérrez, R. (2008). A "gap-gazing" fetish in mathematics education? Problematizing research on the achievement gap. *Journal for Research in Mathematics Education*, *39*(4), 357–364.

Harper, C., & De Jong, E. (2004). Misconceptions about teaching English-language learners. *Journal of Adolescent & Adult Literacy*, *48*(2), 152–162.

Harré, R. (2012). Positioning theory: Moral dimensions of socio-cultural psychology. In J. Valsiner (Ed.), *The Oxford Handbook of Culture and Psychology* (pp. 191–206). New York, NY: Oxford University Press.

Harré, R., Moghaddam, F. M., Cairnie, T. P., Rothbart, D., & Sabat, S. R. (2009). Recent advances in positioning theory. *Theory & Psychology*, *19*(1), 5–31.

Harré, R., & Slocum, N. (2003). Disputes as complex social events: On the uses of positioning theory. *Common Knowledge, 9*(1), 100-118.

Harré, R., & van Langenhove, L. (1991). Varieties of positioning. *Journal for the Theory of Social Behaviour*, *21*(4), 393–407.

Harré, R., & van Langenhove, L. (1999). The dynamics of social episodes. In R. Harré & L. van Langenhove (Eds.), *Positioning theory: Moral contexts of intentional action* (pp. 1–13). Malden, MA: Blackwell Publishers Inc.

Herbel-Eisenmann, B., Wagner, D., Johnson, K., Suh, H., & Figueras, H. (2015). Positioning in mathematics education: Revelations on an imported theory. *Educational Studies in Mathematics*,

89(2), 185–204.
Hufferd-Ackles, K., Fuson, K. C., & Sherin, M. G. (2004). Describing levels and components of a math-talk learning community. *Journal for Research in Mathematics Education*, *35*(2), 81–116.
Iddings, A. C. D. (2005). Linguistic access and participation: English Language Learners in an English-dominant community of practice. *Bilingual Research Journal*, *29*(1), 165–183. https://doi.org/10.1080/15235882.2005.10162829
Inagaki, K., Hatano, G., & Morita, E. (1998). Construction of mathematical knowledge through whole-class discussion. *Learning and Instruction*, *8*(6), 503–526.
Ju, M.-K., & Kwon, O. N. (2007). Ways of talking and ways of positioning: Students' beliefs in an inquiry-oriented differential equations class. *The Journal of Mathematical Behavior*, *26*(3), 267–280.
Kawanaka, T., Stigler, J. W., & Hiebert, J. (1999). Studying mathematics classrooms in Germany, Japan and the United States: Lessons from the TIMSS videotape study. In I. Huntly, G. Kaiser, & E. Luna (Eds.), *International comparisons in mathematics education* (pp. 96–113). Philadelphia, PA: Taylor & Francis
Kayi-Aydar, H. (2019). *Positioning Theory in Applied Linguistics*. Cham, Switzerland: Palgrave Macmillan.
Khisty, L. L., & Chval, K. B. (2002). Pedagogic discourse and equity in mathematics: When teachers' talk matters. *Mathematics Education Research Journal*, *14*(3), 4–18.
Lemke, J. L. (1990). *Talking science: Language, learning, and values.* Norwood, NJ: Ablex Publishing Corp.
Lerman, S. (2001). Cultural, discursive psychology: A sociocultural approach to studying the teaching and learning of mathematics. *Educational Studies in Mathematics*, *46*(1), 87–113.
Lightbrown, P. M., & Spada, N. (2013). *How languages are learned* (4th ed.). Oxford, U.K.: Oxford University Press.
Lucas, T., Villegas, A. M., & Freedson-Gonzalez, M. (2008). Linguistically responsive teacher educxation: Preparing classroom teachers to teach English language learners. *Journal of Teacher Education*, *59*(4), 361–373.
Martin-Beltrán, M. (2010). Positioning proficiency: How students and teachers (de) construct language proficiency at school. *Linguistics and Education*, *21*(4), 257–281.
McHoul, A. (1978). The organization of turns at formal talk in the classroom. *Language in Society*, *7*, 183–213.
McVee, M. (2011). Positioning theory and sociocultural perspectives: Affordances for educational researchers. In M. McVee, C. H. Brock, & J. A. Glazier (Eds.), *Sociocultural research in literacy: Exploring culture, discourse, narrative, and power in diverse educational contexts* (pp. 1–22). Hampton Presss, Inc.
Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge, MA: Harvard University Press.
Mesa, V., & Chang, P. (2010). The language of engagement in two highly interactive undergraduate mathematics classrooms. *Linguistics and Education*, *21*(2), 83–100.
Moghaddam, F. M., & Harré, R. (2010). Words, conflicts, and political processes. In F. M. Moghaddam & R. Harré (Eds.), *Words of conflict, words of war: How the language we use in political processes sparks fighting* (pp. 1–28). Santa Barbara, CA: Praeger.
Moghaddam, F. M., Harré, R., & Lee, N. (Eds.). (2007). *Global conflict resolution through positioning analysis*. New York, NY: Springer.
Moschkovich, J. (2002). A situated and sociocultural perspective on bilingual mathematics learners. *Mathematical Thinking and Learning*, *4*(2), 189–212.
Nasir, N. S. (2016). Why should mathematics educators care about race and culture. *Journal of Urban Mathematics Education*, *9*(1), 7–18.
National Academies of Sciences, Engineering, and Mathematics. (2018). *English learners in STEM subjects: Transforming classrooms, schools, and lives*. Washington, D.C.: The National Academies

Press.

National Assessment of Educational Progress [NAEP]. (2022). *NAEP Report Card: 2022 NAEP Mathematics Assessment*. Washington, DC: Author.

National Center for Educational Statistics. (2016). *English language learners in public schools*. Washington, DC: Author.

National Council of Teachers of Mathematics. (2013). *Teaching mathematics to English language learners: A position of the National Council of Teachers of Mathematics*. Reston, VA: Author

National Council of Teachers of Mathematics. (2014). *Principles to Action*. Reston, VA: Author.

Pappamihiel, N. E. (2002). English as a second language students and English language anxiety: Issues in the mainstream classroom. *Research in the Teaching of English*, *36*(3), 327–355.

Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Thousand Oaks, CA: SAGE Publications.

Pettit, S. K. (2011). Teachers' beliefs about English language learners in the mainstream classroom: A review of the literature. *International Multilingual Research Journal*, *5*(2), 123–147.

Pinnow, R. J., & Chval, K. B. (2015). "How much you wanna bet?": Examining the role of positioning in the development of L2 learner interactional competencies in the content classroom. *Linguistics and Education*, *30*, 1–11.

Planas, N., & Gorgorió, N. (2004). Are different students expected to learn norms differently in the mathematics classroom? *Mathematics Education Research Journal*, *16*(1), 19–40.

Raborn, D. T. (1995). Mathematics for students with learning disabilities from language-minority backgrounds: Recommendations for teaching. *New York State Association for Bilingual Education Journal, 10,* 25–33.

Reeves, J. (2009). Teacher investment in learner identity. *Teaching and Teacher Education*, *25*(1), 34–41.

Santos, M., Darling-Hammond, L., & Cheuk, T. (2012). *Teacher development to support English language learners in the context of Common Core State Standards*. Stanford, CA: Understanding Language.

Secada, W. G., & De La Cruz, Y. (1996). Teaching mathematics for understanding to bilingual students. In J. LeBlanc Flores (Ed.), *Children of la frontera: Binational efforts to serve Mexican migrant and immigrant children* (pp. 285–308). Charleston, WV: ERIC Clearinghouse on Rural Education & Small Schools.

Setati, M. (2005). Teaching mathematics in a primary multilingual classroom. *Journal for Research in Mathematics Education, 36*(5), 447–466.

Sinclair, J., & Coulthard, M. (1975). *Towards an analysis of discourse: The language of teachers and pupils*. London, UK: Oxford University Press.

Sleeter, C. E. (2001). Preparing teachers for culturally diverse schools. *Journal of Teacher Education*, *52*(2), 94–106.

Smith, E. (2022). A teacher's positioning of a multilingual learner in the first month of the school year. *Research in Mathematics Education*. DOI: 10.1080/14794802.2022.2133004

Søreide, G. E. (2006). Narrative construction of teacher identity: Positionig and negotiation. *Teachers and Teaching*, *12*(5), 527–547.

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Tait-McCutcheon, S. L., & Loveridge, J. (2016). Examining equity of opportunities for learning mathematics through positioning theory. *Mathematics Education Research Journal*, *28*(2), 1–22.

Tan, S., & Moghaddam, F. M. (1995). Reflexive positioning and culture. *Journal for the Theory of Social Behaviour*, *25*(4), 387–400.

Turner, E., Dominguez, H., Maldonado, L., & Empson, S. (2013). English learners' participation in mathematical discussion: Shifting positionings and dynamic identities. *Journal for Research in Mathematics Education*, *44*(1), 199–234.

van Langenhove, L. (2011). Conversation as the primary social reality. In L. van Langenhove (Ed.), *People and Societies: Rom Harré and Designing the Social Sciences* (pp. 65–68). Routledge.

van Langenhove, L., & Harré, R. (1999). Introducing positioning theory. In R. Harre & L. van Langenhove (Eds.), *Positioning theory: Moral contexts of intentional action* (pp. 14–31). Blackwell Publishers Inc.

Weiss, I. R., Pasley, J. D., Smith, P. S., Banilower, E. R., & Heck, D. J. (2003). *Looking inside the classroom: A study of K-12 mathematics and science education in the United States*. Chapel Hill, NC.

Wood, M. B. (2013). Mathematical micro-identities: Moment-to-moment positioning and learning in a fourth-grade classroom. *Journal for Research in Mathematics Education*, *44*(5), 775–808.

Yamakawa, Y., Forman, E., & Ansell, E. (2009). Role of positioning: The role of positioning in constructing an identity in a third grade mathematics classroom. In K. Kumpulainen, C. E. Hmelo-Silver, & M. Cesar (Eds.), *Investigating Classroom Interaction: Methodologies in Action.* (pp. 179–201). Sense Publishers.

Yoon, B. (2008). Uninvited guests: The influence of teachers' roles and pedagogies on the positioning of English language learners in the regular classroom. *American Educational Research Journal*, *45*(2), 495–522.

Appendix A

Transcription key

Symbol	Key
=	Adjacent speech
?	Rising intonation as with a question
,	Natural break/pause in speech
—	Abrupt change in speech
…	Longer pause in speech (~2 natural pauses)
:	Elongated sound
(#)	Pause length in seconds
TWO	Louder speech
// //	Overlapping speech
!	Said with excitement

Appendix B

Teacher Positioning Act Coding Scheme

Category		Code	Description
Mathematics	Invite	TSHARE	Teacher invites EB math thinking, noticing, observation, or solution strategy
		TJUS	Teacher asks EB to clarify, justify, or explain math claim or solution
	Peer Invite	TDIR	Teacher invites peers to consider EB's contribution
	Ownership	TOWN	Teacher assigns or restates ownership to EB
	Documenting	TDOC	Teacher documents EB math idea or claim
	Representative	TREP	Teacher positions EB as representation of a group
	Revoicing	TAMPCLAR	Teacher revoices to amplify or clarify EB contribution
		TBLD	Teacher reconceptualizes/extends/builds on EB math contribution
		TREVACT	Teacher revoices EB math actions
	Value	TVAL	Teacher makes value judgment on EB justification, explanation, thinking, claim, idea, noticing, observation, or strategy
	Knowledge	TKNOW	Teacher states or confirms EB math knowledge or ideas
Linguistic	Documenting	TDOCL	Teacher documents EB linguistic contribution
	Value	TVALLING	Teacher makes value judgment of EB linguistic contribution
	Revoicing	TREVLING	Teacher revoices EB linguistic contribution
		TBLDLING	Teacher builds/extends on EB linguistic contribution
	Invitations	TLING	Teacher invites EB linguistic contribution