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Tasova, H., Welji, S., Hamilton, M., Wood, E., Moore, K. C., Ellis, A. B., & Bozkus, F. (2024). Navigating beliefs and knowledge: The impact of deficit thinking on teaching slope. In K. W. Kosko, J. Caniglia, S. A. Courtney, M. Zolfaghari, & G. A. Morris (Eds.), *Proceedings of the 46th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1913-1923). Kent State University.

Available at:
https://www.pmena.org/pmenaproceedings/PMENA%2046%202024%20Proceedings.pdf

NAVIGATING BELIEFS AND KNOWLEDGE: THE IMPACT OF DEFICIT THINKING ON TEACHING SLOPE

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This study examines the impact of teachers' beliefs on the implementation of Mathematical Knowledge for Teaching (MKT) slope, focusing on an in-depth case study of an in-service teacher, Ms. R. Through classroom observations and interviews, we explore how Ms. R's beliefs about her students' abilities and backgrounds influence her teaching of slope. Findings reveal that deficit beliefs significantly mediated the implementation of MKT slope, affecting instructional decisions and practices.

Keywords: Teacher Beliefs, Mathematical Knowledge for Teaching.

Teachers' beliefs affect their instructional strategies and shape their classroom practices, and one particularly influential aspect of teachers' beliefs is their asset or deficit thinking about students. This study narrows its focus to Mathematical Knowledge for Teaching slope ($\text{MKT}_{\text{slope}}$), investigating how one teacher's beliefs about students' mathematical abilities, behavior, and potential career paths affected the enactment of her $\text{MKT}_{\text{slope}}$. We conducted a series of classroom observations with an in-service teacher and then, in response to one classroom incident, which we introduce below, we collected a sequence of follow-up interviews to understand the dynamic between the teacher's $\text{MKT}_{\text{slope}}$ and her beliefs about her students. In this paper we examine how a teacher's beliefs influenced her actions to constrain student engagement with the mathematical concept of slope. In doing so, we address the following research question: How does one teacher's beliefs about student groups affect the implementation of $\text{MKT}_{\text{slope}}$ in a classroom setting?

Literature Review and Background

Teachers' Beliefs and Expectations in Mathematics Education

Teachers' beliefs significantly influence their instructional actions in mathematics education. Beliefs about mathematics, teaching, and learning are pivotal in shaping classroom practices (e.g. Conner et al., 2011; Liljedahl, 2009; Thompson, 1984). A number of researchers have also studied more specific or nuanced teacher beliefs. In particular, studies have shown that teachers' beliefs about their students, including their needs and backgrounds, play a critical role in determining their teaching approaches (Sztajn, 2003; Skott, 2001). This study addresses how one teacher's deficit beliefs about her students affected her instruction.

Deficit thinking involves attributing academic challenges to perceived deficiencies in students (Valencia, 2010), often linked to their racial or cultural backgrounds (e.g., Diamond et al., 2004; Bol & Berry, 2005), socio-economic status (e.g., Rubie-Davies, 2016), or language (e.g., De Araujo, 2017). This perspective tends to overlook students' existing skills, focusing instead on their weaknesses. Deficit thinking is not only a personal bias but is also entrenched in educational systems and societal structures (Parks, 2010). It leads to biased expectations and inequitable treatment in educational settings (Martin, 2009; Irvine & York, 1993; Townsend, 2000). For instance, academic failures among marginalized students are often linked to inherent deficiencies, overlooking the role of teaching methods and educational practices (Delpit, 1992).

More recently, researchers have increased the amount of attention given to deficit-based beliefs because these beliefs influence teachers' choice of tasks and instructional strategies, often limiting mathematical opportunities for those to whom they attribute deficiencies (Jackson et al., 2017; Peck, 2021). Marginalized and lower-achieving students frequently encounter tasks emphasizing procedural skills rather than conceptual understanding (Ferguson, 1998). These beliefs can result in simplified language and less challenging mathematical tasks (De Araujo, 2017), lower cognitive demands in activities (Jackson et al., 2017), and a diminished sense of responsibility for student learning, ultimately leading to lower expectations and fewer opportunities for students (Diamond et al., 2004; Flores, 2007). This creates a negative feedback cycle that only exasperates the issue. In attributing deficiencies to particular student groups, teachers may then lower the cognitive demand of the tasks they implement, which then limits students' reasoning opportunities and prevents them from building the competencies teachers would like to see, thus leading to a self-perpetuating cycle of lowered expectations.

This study explores how a teacher's deficit thinking about her students' mathematical abilities, behavior, and career paths affected her teaching of slope. Unlike previous research that has drawn on surveys, NAEP data, or simulations (e.g., Bol & Berry, 2005; Battey et al. 2021; Irvine & York, 1993; Lubienski, 2002), we examine a specific classroom-based incident in which a teacher's beliefs influenced her in-the-moment decision making in a manner that reduced opportunities to reason meaningfully about slope as a ratio of change.

Mathematical Knowledge for Teaching (MKT)

Teachers' MKT is crucial for effective teaching (e.g., Ball et al., 2008; Harel, 2008; Kahan et al., 2003.; Rowland et al., 2005). We use Silverman and Thompson's framework (2008), which is rooted in the concept of key developmental understandings (KDUs), which are essential for developing a teacher's MKT. Initially, a teacher must identify and develop their own KDU for a specific mathematical topic, which equips them with knowledge that has the potential for pedagogical application. This knowledge must then undergo a process of reflective abstraction to transform into pedagogically powerful MKT. The framework further requires a teacher to adopt students' perspectives ("decentering," p. 508), envision how students might grasp mathematical concepts similarly to themselves, and devise supportive activities and discussions.

Researchers have identified various meanings of slope among teachers (see e.g., Nagle & Moore-Russo, 2013; Byerley & Thompson, 2017). Three prevalent meanings include slope as steepness, in which slope is seen as a physical property with visual steepness; slope as rise over run, in which slope is understood as a geometric or algebraic ratio often focused on procedural movement (i.e., "rise" and "run") on a Cartesian plane but lacking in multiplicative reasoning (Byerley & Thompson, 2017); and slope as a ratio, in which one compares changes in two quantities to multiplicatively form a new quantity, which is an interpretation applicable across various contexts and related to the mathematical property of constant rate of change (Diamond, 2020; DeJarnette et al., 2020). This last interpretation, though less common, is essential for a comprehensive understanding of slope and its applications in mathematical concepts and real-world scenarios.

Diamond (2020) defined MKT_{slope} as teachers' personal understanding of slope, teachers' understanding of students' developed meanings for slope (e.g., slope as steepness, slope as formula, slope as ratio, etc.), and how the teachers use classroom activities and discussions to support the development of these meanings. We examine a teacher's MKT_{slope}, particularly her focus on the slope-as-formula meaning, and how it is mediated by her beliefs about students.

Interaction Between Teachers' Mathematical Knowledge and Beliefs

Research indicates a complex interplay between teachers' mathematical knowledge and their beliefs, which affects their instructional practices (Bray, 2011; Campbell et al., 2014; Wilkins, 2008). Teachers' beliefs mediate their instructional decisions, and these beliefs are, in turn, influenced by their mathematical knowledge (Fennema & Franke, 1992; Zhang & Wong, 2015). Studies have shown that although strong knowledge is essential, beliefs play a critical role in how teachers engage with instructional practices (Charalambous, 2015; Copur-Gencturk, 2012). However, the specifics of this interaction, especially instructional decisions in the moment, remain underexplored (Philipp, 2007; Wilkins, 2008; Yang et al., 2020). Most research addresses beliefs about mathematics and its teaching and learning, with limited studies on how teachers' beliefs about students might mediate their knowledge to influence instruction. Our study bridges this gap by examining how a teacher's deficit beliefs about students affected her use of MKT_{slope}, revealing how such beliefs constrain student engagement with complex mathematical concepts.

Methods

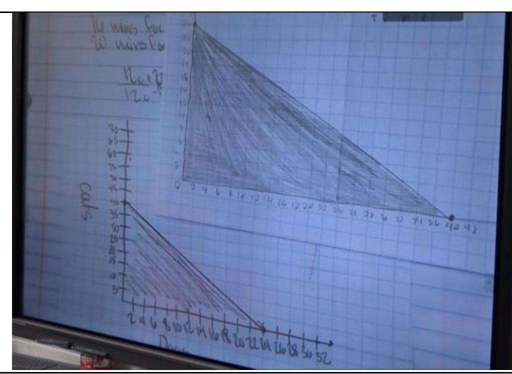
This study is part of a larger project focused on understanding how teachers support students engaging in mathematical generalization (see Ellis et al., 2024). We conducted a series of classroom observations and interviews with several teachers to observe what happened in practice and to understand their beliefs about generalization and their perspectives on the lessons. Within this broader project, we identified Ms. R, a sixth-year high-school algebra teacher from a rural district, for an in-depth case study (Merriam, 1998; Yin, 2009) due to her insights into the teaching and understanding of slope. While teaching her lesson on Systems of Equations and Inequalities, Ms. R used the Pet Sitter Task (Figure 1a). She asked students to collaborate and represent the constraints algebraically and graphically. As she facilitated the discussion, Ms. R make some choices about which she later expressed regret, and the details of the situation are discussed in the next section.

Carlos and Clarita have been worried about space and start-up costs for their pet sitters business, but they realize they also have a limit on the amount of time they have for taking care of animals they board. To keep things fair, they have agreed on the following time constraints.

<u>Feeding Time:</u> Cats will require 12 minutes to eat per day. Dogs will require 20 minutes to eat per day. Carlos can spend up to 8 hours each day to feed the animals.

<u>Playing Time:</u> Cats need 16 minutes each day to be brushed. Dogs will need 20 minutes each day playing with the ball. Clarita can spend up to 8 hours to play with the animals.

Write inequalities for each of these additional time constraints. Shade the solution set for each constraint on



separate coordinate grids.	

(a) (b)

Figure 1: (a) The Pet Sitter Task and (b) Two differently oriented graphs from two different students for the feeding time

Through a series of six semi-structured interviews (Roulston, 2022), which were conducted over a mixture of in-person and Zoom-based settings, we explored her MKT, her beliefs, and how these factors influenced her instructional actions. MKT interviews focused on Ms. R's understanding of slope and were adapted from Diamond (2020). The questions included tasks intended to explore how her knowledge might impact her teaching such as the Five Students problem (Figure 2) and follow-up questions that incorporated contexts from her classroom to explore the knowledge related to the classroom incident that is illustrated in the next section.

Five students are discussing the meaning of slope in a linear context. Student A says that slope is $\frac{y_2-y_1}{x_2-x_1}$. Student B says that slope is the steepness of the line. Student C says that slope is rise over run. Student D says that slope is the rate of change of the line. Student E says that slope is the number m.

Figure 2. Five Students problem (Adapted from Diamond, 2020).

Beliefs interviews focused on her beliefs about mathematical generalization and the capabilities of her students and allowed us to follow-up with her to confirm our conjectures about her beliefs. These interviews incorporated video clips from her classroom so that she could reason and provide context to the choices that she had previously made in teaching. This retrospective reasoning was not intended to understand her in-the-moment decision making, but it helped us to explore the beliefs that she holds.

We analyzed the interviews through a multi-phased qualitative process. Initial analysis focused on Ms. R's beliefs about her students' mathematical abilities and her $\mathrm{MKT}_{\mathrm{slope}}$ and were coded using an open and axial coding approach (Strauss & Corbin, 1998). As a result, categories of her beliefs about students' knowledge and ability emerged as did her understanding of slope. Later interviews were modified based on previous data to continue to explore her beliefs and understanding. As a result, we created an account of explanations of how her beliefs and MKT influenced her teaching actions.

Background: Classroom Incident

Here we detail a classroom incident that sparked our curiosity about Ms. R's $\mathrm{MKT}_{\mathrm{slope}}$ and beliefs. We share this incident as a separate section from the Results, as it is the event that initiated further data collection in the form of interviews to better understand both Ms. R's $\mathrm{MKT}_{\mathrm{slope}}$ and her beliefs about her students. This incident occurred during the implementation of the Pet Sitter Task (Figure 1a). During the task's implementation, the students worked in groups to write inequalities. As they began to graph the solution sets on separate coordinate axes, the students asked Ms. R which quantity, feeding time or playing time, should go with which axis.

Ms. R decided to allow the students to choose how to orient their axes, stating, "Let's just see who comes up with what. I think that'll be better… that'll be cool to see." As the students continued to work on their graphs, Mr. R moved from one group to another and appeared to regret her decision to allow the students to choose their axes orientations. She said, "Man, I wish I had never said anything about y'all's axes." Despite this apparent regret, Ms. R nevertheless proceeded to foster a discussion about the situation, comparing two students' graphs with different orientations (Figure 1b).

Ms. R put the two graphs under the document camera, saying, "I thought it was interesting, um, how you guys graphed. So, the cats and the dogs, the axes were different and similar." She then asked the class, "Alright, so do you guys see the difference between these two graphs?" Several students responded that the dogs and cats were "flip-flopped" on the axes of the coordinate plane. Ms. R then highlighted the difference in the axes and drew the students' attention to the slopes of the two graphs. Some students claimed that both graphs had the same slope, whereas others believed that the slopes were different. In trying to navigate this disagreement, Ms. R drew the students' attention to the quantitative referents, claiming "they [both graphs] represent the feeding time… the one has cats as a *y*-axis, one has dogs as a *y*-axis." She then asked the students again, "So, would the slopes be the same or different?" One student pointed out that in comparing the two graphs, "the rise and the run would be, like, switched." Referring to the graph at the top (Figure 1b), another student said that the slope is "Negative 3 over 5 and, like, if you start with 40 cats [referring to the bottom graph in Figure 1b] and you go down 5 and over 3." In response to this argument, through employing the "rise over run" method, the majority of students concluded that the slopes were different, in fact, they were "flip-flopped," seeing the reciprocal values of the slopes as different.

Following this classroom incident, we were intrigued by Ms. R's expression of regret about allowing the students to choose their own axes orientations. We were also interested to understand why, despite this regret, Ms. R decided to still bring the two graphs into a whole-class discussion and why, during this discussion, she compared the slopes of these graphs.

Results

In this section, we initially focus on Ms. R's reflective interview concerning the classroom incident. Subsequent sections will dive deeper into her $\text{MKT}_{\text{slope}}$ and beliefs about students, exploring how these factors may have influenced her instructional actions.

Ms. R's Reflection

We were curious about Ms. R's stated regret over her decision to let the students choose their axes orientations, particularly given that she then nevertheless used this as a learning opportunity by presenting two students' graphs to the class. We decided to conduct a reflection interview with Ms. R to gain insights into (i) her potential regret and its driving factors, and (ii) her decision to use the student graphs with different orientations. It was during this reflection interview that Ms. R's descriptions of the classroom incident suggested that her beliefs about students and her $\text{MKT}_{\text{slope}}$ might impacted her actions.

Ms. R's beliefs regarding her "on-level" students' abilities may have influenced her perception of her instructional decision as a mistake, as she believed that discussing graphing in different orientations, or "axis flipping," was appropriate only for honors settings. She noted, "it [*referring to the axis flipping*] is only something that I think should be discussed in like honors setting," and added, "on level, I mean they already cannot figure out which like they are like which way does it go," indicating a preference to "let's just focus on the basics." This stance suggests she reserves more complex discussions for honors students, underlining a belief that on-level students are better served by focusing on basic graphing skills due to perceived limitations in handling advanced topics.

We also explored Ms. R's decision to use two student graphs with different orientations

(Figure 1b) in a class discussion despite her regret. During a video interview, Ms. R reflected on her decision watching a clip of herself. She noted her wish to have more clearly demonstrated the slope formula, citing concerns that some students (especially her "on-level" students) might misconstrue the graphs' similarity in decline and spacing, potentially assuming identical slopes. Ms. R remarked, "both of them [graphs] are decreasing and they look about the same spread," highlighting a potential misunderstanding outside an honors context where students might overlook differences, emphasizing, "I can see if that had not been in honors gifted class, it would have easily been oh yeah everything is the same." Her intention was to clarify that slope analysis goes beyond visual inspection to require formula application, aiming to show, "we are just looking at how this vertical distance is changing over this horizontal distance," to discern the distinct slope values. Our interpretation is that Ms. R's understanding of the slope concept and her MKT_{slope} may have significantly influenced her teaching approach, as she emphasized the importance of the formula over visual steepness in understanding the concept of slope.

The emphasis Ms. R placed on the slope formula and the numerical values of slopes while comparing the two graphs sparked a line of inquiry for the research team as there are other ways of thinking about slope including slope as rate of change[3]. Given the value of understanding slope as a rate of change, particularly for interpreting the two graphs in the pet sitter task, we wondered why Ms. R discussed the meaning of slope as a formula instead of slope as a rate of change. It could have been interesting to see how both Ms. R and the students could conclude whether the slopes of those lines were different or the same when considering the rate of change meaning that is connected to quantities in the context of the problem. We argue that the slopes of these two graphs would be the same as both graphs show the same quantitative relationship: "every time you are done feeding 3 dogs, you can feed 5 more cats." This understanding would require someone to think unconventionally (see Moore et al., 2014, for "breaking conventions," p. 151) about how we represent inputs and outputs in a Cartesian plane.

Conjecture #1: Ms. R's MKT_{slope}

Given Ms. R's emphasis on slope as formula in the initial interview, we hypothesized that her understanding of slope, as well as her MKT_{slope}, might not include the concept of slope as a rate of change. To verify this hypothesis, we conducted MKT_{slope} interviews, drawing on Diamond's methodologies, to explore her perspective. Contrary to our hypothesis, Ms. R demonstrated a multifaceted understanding of slope, primarily as a rate of change between two quantities, often using real-world examples like fuel costs to illustrate this relationship. She considered this interpretation applicable in various contexts beyond formulas or procedures.

We wanted to get further insight into Ms. R's views on students' understanding of slope. Presented with a task (see Figure 2), she highlighted her focus on slope as a rate of change, viewing it as a deeper, more meaningful understanding than just a memorized technique. She considered conceptualizing slope as a formula more substantial than seeing it as mere "rise over run" and deemed understanding slope as steepness, represented by "*m*," as the most basic level.

Ms. R used practical examples, such as "25 miles/hour," broken down into a relatable format ("for every 1 hour, the car goes 25 miles"), to teach slope as a rate of change. Her goal was to enable students to create similar phrases and apply this understanding across different mathematical representations, like graphs, equations, and tables.

[3] We adopt Ms. R's terminology, using "rate of change" to describe the "ratio" understanding of slope, despite our awareness of the conceptual differences between the two terms.

In order to get her insights into how she would compare the slopes of the two graphs oriented differently (Figure 1b) form the rate of change perspective, we designed and presented a task where a hypothetical student claims the following regarding the two graphs in Figure 1b: *Slope is the rate of change. So, both graphs show that "For every 3 dogs you are done feeding, you can feed 5 more cats". So, the rate of change in both graphs are the same. Therefore, the slopes are the same. The student also knows that inputs can be represented on the y-axis and outputs can be represented on the x-axis.* Our goal was to see how Ms. R would interpret the hypothetical student's understanding. Ms. R indicated that the student's emphasis lay in understanding the relationship between quantities and the meaning of slope, rather than fixating solely on the numerical value of the slope. According to her, "these numbers [*referring to the numbers in the student's phrase*] represent something and have meaning."

When directed to the aspect that the student also asserts that the slopes are equivalent, she explained, "The phrasing [*referring to the student's phrase*] to me is more about like a relationship. And they're saying, okay it's [*i.e., slope*] a rate of change. So, their rate of change is the same" because "these two graphs represent the same relationship although they just look different visually." Although she acknowledged that "the slopes are technically different"—using "technically" to denote "the literal exact value"—she argued that by conceptualizing the slope as a rate of change, the slopes are indeed identical. The interview data revealed that Ms. R emphasized slope as a rate of change connected to varying quantities. It was therefore more confusing that she did not adopt the rate of change perspective in her teaching, especially when comparing two graphs. This finding adds complexity to our understanding of her teaching approach regarding the concept of slope.

Conjecture #2: Ms. R's Beliefs about Students

Our initial interview with Ms. R suggested she held deficit beliefs about certain students. Therefore, we created an alternative hypothesis that perhaps her beliefs mediated the way she implemented her $\text{MKT}_{\text{slope}}$. To test our hypothesis, we investigated Ms. R's stance on the feasibility of engaging her students in a discussion about slopes as rate of change and, more importantly, a discussion about the equivalence of slopes—as exemplified by the hypothetical student's response. Results confirmed our conjecture. Ms. R's beliefs about student behavior issues, abilities, and their future paths played a mediating role in implementing her $\text{MKT}_{\text{slope}}$.

Ms. R recognized the value of teaching slope as a rate of change but emphasized its complexity, noting, "I think that's a good idea and a good thing to talk about, but I also recognize how big of an idea that is," and contrasting it with simpler, procedural methods like the slope formula. She observed that students struggle with abstract concepts, expressing, "like we are talking about a relationship and meaning versus the concrete smaller procedural like 'let's do slope formula.'" Concerned about lower-level students' reactions to difficult material, she mentioned, "when they're confused, it's like they're angry and they start misbehaving," leading her to prefer straightforward approaches to minimize disruptions. Ms. R pointed out that in a gifted setting, complex topics were more feasible due to fewer behavioral issues but anticipated "blank stares" and resistance from lower-level students. Additionally, she linked behavioral issues to external factors like home life, suggesting, "a lot of it [*referring to behavior issues*], I would say probably stems from something happening at home … if they [*referring to parents*] were more proactive, I think that would help a lot with kids being more engaged."

Ms. R's beliefs about her students' readiness to understand concepts like switching *x* and *y* axes on the Cartesian plane influenced her use of MKT_{slope} in the classroom, particularly hesitating to introduce such topics to lower-level students. She considered these concepts more accessible to gifted students and challenging for others, noting, “I think that is a big jump for those, that level of kids [*referring to lower-level students*] to handle the different orientations.” This provided additional evidence that her beliefs about students’ ability moderated the enactment of MKT_{slope} as she decided to not bring slope meaning as rate of change when comparing the two graphs. In other words, even though she had more powerful MKT_{slope} (slope as a rate of change), her deficit beliefs interfered with them leveraging that MKT. Moreover, Ms. R expressed doubts about teachers’ understanding of slope as a rate of change, saying, “as for like teachers as a whole, like, honestly, I don’t know that teachers even understand it.” Crediting her own understanding of the slope as a rate of change to being labeled as gifted, she observed, “I don’t want to sound cocky, but I think it’s because I was labeled gifted as a kid in school,” and noted a tendency among teachers towards rote learning. This stance implies she views the rate of change concept of slope as potentially too complex for standard classroom settings, fitting more for advanced learners and educators.

Moreover, Ms. R held varying expectations for her honors and lower-level students, influenced by her perceptions of their future career paths. For honors students, she emphasized challenging mathematics tasks relevant to their projected careers requiring advanced skills. She stated that the rigorous mathematics is important “for the ones that I’m thinking that want to go to, like a four-year college and potentially major in something where they’re gonna have to use a good bit of math.” In contrast, she expected less from lower-level students, tailoring instruction to simpler concepts she deemed more practical for their potential vocational paths like “nursing,” and noted, “I think the advanced, the depth of math they need is just depending on where they want to go.” Additionally, Ms. R highlighted how external factors such as social class and parental education, especially in lower socio-economic backgrounds, impact students’ educational directions, observing, “I think it’s because the parents don’t know [about career options]... so it’s harder for them to educate their own kid about it.”

In summary, Ms. R’s deficit beliefs about certain student groups and her perception of their abilities and future paths significantly influenced her implementation of MKT_{slope}, particularly in her approach to teaching slope concepts.

Conclusion and Discussion

Our findings indicate that Ms. R’s beliefs about students mediated her MKT_{slope} to influence instructional actions and decisions in various ways. Initially, she regarded the decision to allow students to choose their own axis orientations as a mistake, driven by her beliefs about their abilities, leaning towards a “focus on the basics.” However, once she recognized this perceived error, she used it as a learning opportunity. Guided by the interaction between her beliefs about students and her MKT_{slope}, Ms. R emphasized the formulaic meaning of slope while discouraging the steepness interpretation. This combination of beliefs and knowledge led Ms. R to lead a discussion about graph differences and their respective slopes, redirecting students’ attention from visual appearances to the numerical aspects of slope as a formula. Furthermore, despite Ms. R’s MKT encompassing the concept of slope as a rate of change, she chose not to introduce the rate of change interpretation when comparing the two graphs, influenced by her deficit beliefs about student behavior issues, her perception of students’ abilities, and future career pathways.

This paper highlights the profound influence of teachers' beliefs on the implementation of MKT in the context of teaching slope. Through an in-depth case study of Ms. R, it provides nuanced insights into how a teacher's perceptions of students' abilities and potential can shape instructional practices, particularly in complex mathematical concepts like slope. Moreover, our findings extend the discourse on the interplay between teachers' MKT and their beliefs, offering a unique perspective on the dynamic interactions that occur in real classroom settings. By focusing on slope as rate of chance—a concept that is pivotal for students' deeper mathematical understanding—this study sheds light on the missed opportunities for enriching students' learning experiences due to the constraints imposed by deficit thinking. Thus, it calls for a reevaluation of teaching practices and belief systems in mathematics education, aiming to empower teachers with the knowledge and strategies to effectively nurture and leverage students' mathematical understanding, irrespective of their backgrounds. This research underscores the necessity of addressing and challenging deficit beliefs within teacher professional development programs, advocating for a more holistic approach that includes fostering an understanding of diverse student capabilities and promoting instructional strategies that are inclusive and supportive of all learners.

Acknowledgments

The research reported in this paper was supported by the National Science Foundation (award no. 1920538).

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HOW MENTORS PROVIDE FEEDBACK TO ELEMENTARY TEACHER CANDIDATES ON ELICITING STUDENT THINKING IN MATHEMATICS

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Mentor teachers may have the most immediate influence on teacher candidates' (TCs) practices, suggesting that teacher educators must continue to explore the messages conveyed about ambitious mathematics instruction in field-placements to bridge the gap. The purpose of this case study is to explore mentors' perceptions of eliciting student thinking in mathematics and to understand how they go about modeling and providing feedback to their TCs about such practices. Data were collected with four TC-mentor dyads via recorded mathematics lesson observations, coaching conversations and interviews. The findings focus on how the TCs and mentors made meaning of what it means to elicit student thinking, the structures of the feedback conversations, and the coaching moves used during feedback conversations.

Keywords: Instructional Activities and Practices, Preservice Teacher Education, Elementary School Education, & Teacher Educators