JOURNAL OF

# MATHEMATICS EDUCATION AT TEACHERS COLLEGE

*A Century of Leadership in Mathematics and Its Teaching*

## Examining the Classroom Experience

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JOURNAL OF **MATHEMATICS EDUCATION** AT TEACHERS COLLEGE | FALL 2017 | VOLUME 8, ISSUE 2


# Deficit Discourse and Labeling in Elementary Mathematics Classrooms

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**ABSTRACT** In this paper we examine deficit perspectives that prospective elementary school teachers (PTs) noticed their mentor teachers held with regards to classifying students by their achievement or behavior. Using a sociopolitical framework, we explored the following research question: What labels and forms of labeling of students have elementary school PTs experienced as part of their school placements? According to PTs, mentor teachers commonly expressed deficit narratives and attached labels to their students, particularly to students of color and low-income students. Deficit perspectives led to student blaming and lowering of expectations, which PTs were convinced negatively impacted students' mathematical identities. Though student labeling was common, PTs also provided examples in which their mentor teachers refused to attach degrading labels to their students.

**KEYWORDS** *deficit discourse, student labeling, underserved students, elementary mathematics methods*

## Introduction

In this paper, we examine deficit perspectives that prospective elementary school teachers (PTs) noticed their mentor teachers held with regards to classifying students by their achievement or behavior. Many PT participants in this study noticed that their mentor teachers regularly used deficit mathematical discourse in their classrooms. The PTs expressed concern about how such discourse could lead students to develop unhealthy and negative views of themselves. Attaching labels such as "Unsat" to students who achieve a score of unsatisfactory on a standardized test promotes exclusionary learning environments that negatively impact the mathematical identities of groups and individuals (Kitchen, Anderson Ridder, & Bolz, 2016). Using a sociopolitical framework, we explored the following research question: What labels and forms of labeling of students have elementary school PTs experienced as part of their school placements?

Deficit narratives and labels such as "culturally deprived," "disadvantaged," and "at-risk" (referred to as "deficit discourse" throughout) have historically been assigned to K-12 students by teachers and researchers in the United States. These narratives and labels cause students (particularly students of color and low-income students ["underserved" students]) to be viewed from deficit perspectives (Carey, 2014). Deficit discourse is a subtractive practice that perpetuates negative perspectives about students and their abilities (Skrla & Scheurich, 2001). To remediate perceived student deficiencies, teachers make "recommendations" for educational interventions (Valencia, 1997). Interventions include processes such as "description-explanation-prediction-prescription" in which educators *describe* a student's deficits, *explain* the deficits, *predict* additional perceived deficits, and *prescribe* desired interventions to address these deficits. Over time, educators and students begin to believe these deficits, which are commonly commu-

nicated through labels (Cobb, McClain, Lamberg, & Dean, 2003). Moreover, these labels become difficult to remove once they have been attached to students (McDermott, Goldman, & Varenne, 2006).

Narratives about students in the context of schools take on the form of labels, and are commonly associated with how students perform on standardized tests (Gergen & Dixon-Román, 2014). Assessments of students, teachers, and school systems are constructed through the perspective of positivist science in which tests are used to measure specific outcomes (Porter, 1996; Scott, 1999). Language such as "below basic" and "proficient" are "used to demarcate, in value-laden terms, what is good and bad about schools, their teachers, and their students" (McDermott, et al., 2006, p. 443–444). Kitchen et al. (2016) found that students at a low-income, diverse, public high school were routinely labeled based upon their test performance, and that instructional decisions were made based upon these labels. The practice of attaching labels to students based upon their performance on high-stakes tests led some students to be perceived by teachers as less capable in mathematics than others. Categorizing students by their achievement on standardized tests can also "reinforce feelings of marginalization that already impact the achievement of many students of color and others ill-served in schools" (Duckor & Perlstein, 2014, p. 27). Moreover, standardized tests reduce students to test performers and essentialize them as numbers (e.g., a test score) or sets of numbers that are then used by those in power (administrators and teachers) to make decisions that impact students' lives (Gergen & Dixon-Román, 2014).

Student labeling is closely linked to student identity (Duckor & Perlstein, 2014). A student's mathematical identity is how the student thinks about her/himself in relation to mathematics (Martin, 2000). The notion of mathematical identity considers issues related to "affect," such as students' persistence and interest in mathematics and their motivation to engage in learning mathematics (Cobb, Gresalfi, & Hodge, 2009). Recent research in mathematics education has expanded the notion of mathematical identity to include the study of the relationship between learning and the larger learning environment of the classroom (Aguirre, Mayfield-Ingram, & Martin, 2013; Boaler, 2002; Boaler & Greeno, 2015; Cobb, Gresalfi, & Hodge, 2009; Cobb & Hodge, 2007; Martin, 2000; Nasir, 2002; Nasir & Hand, 2008). Martin (2000) describes the experiences of African American students who are discouraged from pursuing high-level mathematics, highlighting their negative experiences in mathematics. He emphasizes the important role that mathematics participation has on students' mathematical identities. Both academic and non-academic labels have been found to have lasting damage on the identities of underserved student populations (Brendtro & Brokenleg, 2001; Duckor & Perlstein, 2014; Gergen & Dixon-Román, 2014). Dutro, Kazemi, and Balf (2006) write, "Students learn to locate themselves within the dichotomies of schooling. They narrate themselves and are narrated by others into storylines of success and failure, competence and incompetence, participation and non-participation, included and excluded, etc." (p. 25–26). Deficit labels serve as "symbolic boundaries" (Bourdieu & Passeron, 1977) that become normalized over time and create tangible barriers for students to overcome (Carey, 2014).

In this study, we use a sociopolitical lens to understand the labels and forms of labeling that elementary school PTs experienced in their school placements, particularly with regard to underserved students. Such a lens affords an examination of structural inequities and injustices in education in general, as well as specific classroom-level arrangements that may limit students' opportunities to learn at high levels (Gutiérrez, 2013a; Kitchen, 2003). A sociopolitical lens places the social, cultural, and political context of learning in the vanguard when examining phenomena such as how tracking affects learning mathematics (e.g., Boaler, 2011; Zevenbergen, 2005), whether underserved students have access to standards-based mathematics curricula (e.g., DiME, 2007; Kitchen, et al., 2016), and how race and class influence mathematics instruction (e.g., Martin, 2013; Gutiérrez, 2008). In this orientation, educational policies and practices are considered from the perspective that differential access to educational opportunities is rooted in differences based on race and class (Battey, 2013; Martin, 2009).

## Methodology

The 25 participants in the study were all students in an elementary mathematics methods course at the University of Denver in the fall of 2016. To conduct our research, we facilitated a 45-minute "research conversation" with the PTs during a class meeting that took place on October 21, 2016. The conversation was part of a lesson that focused on exploring issues related to student diversity, inclusion, equity, and multiculturalism. We asked three broad questions about the PTs' experiences with respect to how their mentor teachers were attaching labels to their students in general, but specifically during mathe-

matics lessons (See Appendix A). During the whole-class discussion, responding to a particular question was strictly voluntary and PTs were not penalized in any way for not responding to questions posed. All names were kept confidential. In all, 21 of the 25 students in the class contributed to the conversation.

We focused the class discussion around deficit labels. Throughout the discussion, many of the participants highlighted asset-based labels as well. We recorded and transcribed the conversation, then coded the transcription for both significant statements and broader themes (Creswell, 2013). The transcripts of the classroom conversation were analyzed by each of us individually using interpretive methods (Erickson, 1986; Maxwell, 2005). We then compared our respective analyses. After a set of themes was obtained from the dataset, we sought both confirming and disconfirming evidence by searching for supportive and non-supportive evidence (Erickson, 1986; Miles, Huberman, & Saldaña, 2013). The following themes emerged following our compilation of data into three categories: deficit labels, shifting blame, students' mathematical identities, and asset-based discourse.

## Research Findings

### Deficit Labels

The PTs identified deficit-oriented labels that many of their mentor teachers used routinely when discussing students. The labels highlighted in our discussion concerned school readiness, language, and classroom behaviors. One PT described how veteran teachers used the label "immature." "…They are just immature. You know, they can't do the math." Another participant noted how her mentor teacher talked about some students "needing another year" or being "maladaptive". The students given these labels were often students of color. One PT discussed two African American students and a Hispanic student whom her mentor teacher labeled as "maladaptive:"

> "…It's a behavioral thing. It pains me that two of them are black and one is Hispanic. And there are other kids that are bad in the class too, but those three… Math is the second to the last period of the day. By the time that we get to math, they're in the Dean's office, the Vice Principal's office, doing their worksheets. And so they're never in there for math by the end of the day."

The PTs identified other student labels as well, such as "lazy," "unfocused," or "needs medication." These labels were commonly attached to students who are multilingual. A number of the PTs discussed how English language learners (ELLs) were being mislabeled as "lower level," "needing an IEP" or just "lazy." PTs argued that these students were not necessarily "lower level" students; they were just challenged by language barriers. The PTs communicated their frustrations about their mentor teachers' misunderstandings regarding multilingual students' abilities. One told us, "In my school, it's largely Hispanic. I have noticed that for a lot of the lower kids, it's more of a language barrier than an actual math problem."

### Shifting Blame

Another major theme that emerged was that PTs believed their mentor teachers often placed the blame for poor student achievement directly on their students. PTs were frustrated that blame had been placed on students, while teachers were reticent to take responsibility for their students' academic challenges. In general, there was agreement among PTs that student blaming and labeling led to lowering the academic expectations for certain groups of students. They also believed that the use of deficit language and labeling of students had become normalized, which led to students' perceptions of themselves in mathematics being impacted negatively. PTs highlighted the problems associated with placing blame on students instead of examining how they were teaching mathematics. In referring to the labels placed on students, one PT said, "While they [labels] can be useful to get students the help they need, a lot of times they're [teachers] shifting responsibility that they need to be taking on themselves." Another PT echoed this idea, stating, "He [the teacher] puts it back on the students again. Instead of, 'Well, maybe I didn't teach this right,' it's always, 'They weren't paying attention to my teaching and that's why they didn't do well.'"

### Students' Mathematical Identities

PTs described the negative impact of labeling on students' mathematical identities. For example, one PT described a female student's perception of her mathematical abilities:

> "There's this one girl in my classroom who struggles with math. And she's always in my teacher's small group. I was working with her one day and I was like, 'You are smart, you can do this.' She goes, 'No, I'm not.' I'm like, 'yes, you are.' She just didn't believe that she was smart and she could do it. It was really sad to see."

Another PT described her experiences working with students who were placed in groups according to ability,

impacting students' mathematical identities: "[Students were asking,] 'Are we the highest group?' because they just couldn't handle being anything but the highest group." Another PT shared his belief that students were well aware of how they were being grouped:

> "When a lower-level student would be moved up to a higher class, the whole class would say, 'Oh, they're the smart kids, oh, they're the smart kids.' So I mean, children know, children know they're being labeled, they know which groups are which, and which teachers are teaching which groups if they are segmented into lower, middle, and high."

PTs alluded to how labeling had turned them off of mathematics and how they had developed negative mathematical identities. In the following exchange, two different PTs and one of the first authors discuss their experiences with school mathematics:

> PT1: "Well, from personal experience, I was always a lower level student. And I truly believed I was bad at math until I had a teacher who told me I was good at math. So, I think it really does leave an impact. Even today, I still feel I struggle with math because for so long I disconnected in math class because I didn't think I was good at it, so why would I try?"
>
> Garcia-Olp: "Yeah, I think on the first day of class Professor Kitchen asked us if any of us needed math healing, right? [Laughter]. And that's kind of like that negative identity of mathematics. Where we can all do mathematics, but how do we perceive ourselves as mathematicians? Right? Are we mathematicians or are we not?"
>
> PT2: "I didn't really start to understand math or really get it until high school and I had a really, really good math teacher and, I mean, it made sense. I enjoyed doing it, which I'd never done before."

### Asset-Based Discourse

Though student labeling was common, PTs also provided examples of mentor teachers who refused to attach degrading labels to their students. One PT told us about the high expectations that her mentor teacher held for her students. When the mentor teacher's students struggled in mathematics, she refused to attach labels to them and frequently questioned whether the curriculum was designed to support the learning of her students: "Now she's questioning whether the material that we're teaching is appropriate for them because they're not understanding anything. I mean, it's going right over their heads." This PT valued analyzing her instruction and course materials rather than simply placing blame on students or their outside circumstances. In addition, she questioned the educational system in general, rather than simply ascribing success or failure to students based on their test scores.

One PT shared her mentor teacher's approach for allowing students access to extra help. In the following, she described how her mentor teacher focused on setting up an environment in which students selected their partners when they needed additional support rather than waiting for the teacher to group them:

> "So, it's more of a comfort thing... keeping the kids comfortable, but also keeping it pretty informal is really helpful. Because then it's not, 'Oh, the smart kid has to be paired with me, because I'm the dumb kid and I have to go work on this again.' It's just kind of 'Okay, who needs a little brush up; who needs a little help on that kind of situation?' And so that's always helpful and I see a lot of kids loving that."

Another PT explained a similar practice in her classroom in which the focus had shifted away from ability grouping and towards grouping students by their learning preferences:

> "So, she's splitting them up by like different things, so that they can be with people that gravitate towards the same type of learning style as them. And what she's finding is that kids will gravitate [toward who] they like to learn from and not necessarily the level that they're at. Like when we went to split up into other types of groups, they know to expect who gets pulled out by the Paras [Paraprofessionals], they know to expect who's gonna be in the same reading group. They know that, so she wanted to find a new way to split them up so that they're in groups they've never been in before because they've all been in the same group for a long time."

In summary, the PTs described how their mentor teachers often expressed deficit narratives and attached dehumanizing labels to students in the classrooms where they had been placed. Deficit perspectives led to student blaming and lowering of expectations, which PTs were convinced negatively impacted students' mathematical identities. Though student labeling was common, PTs also provided examples in which their mentor teachers refused to attach degrading labels to

their students. One PT noted that rather than engaging in deficit discourse about her students, her mentor teacher questioned whether the curriculum was designed in a manner that supported the learning of her students.

## Discussion

In this project, we learned that prospective teachers of elementary mathematics noticed that their mentor teachers engaged in using deficit narratives and labeling when discussing their students. The use of such discourse was not uncommon when mentor teachers talked about some of their underserved students. PTs shared how they viewed student labeling as a negative practice that propagated deficit thinking about students (Skrla & Scheurich, 2001). Deficit perspectives of students revealed through labeling often emphasize students' lack of school competence (Carey, 2014). Moreover, deficit models are often linked to home communities by placing blame on what is not happening in the home (Moschkovich, 2012). Many of the PTs emphasized their frustrations with their mentor teachers' failure to recognize the need to teach students in ways that better met their needs. To move away from deficit discourse, it is both important to spend time learning about the norms of students' home communities and to avoid comparing these norms with school cultural norms (Moschkovich, 2012).

PTs expressed considerable frustration that their mentor teachers placed blame on students when they performed poorly. They described for us how mentor teachers often were reluctant to take responsibility for their students' academic challenges. PTs believed that student blaming and labeling led to decreased academic expectations for students, particularly for underserved students. According to Brown (2012), "Blame is simply the discharging of pain and discomfort. We blame when we're uncomfortable and experience pain—when we're vulnerable, angry, hurt, in shame, grieving. There's nothing productive about blame, and it often involves shaming or just being mean" (p. 195). Blaming poor academic performance on attributes such as laziness and immaturity could be viewed as a direct consequence of teachers feeling fearful of losing their jobs. At a time when students' performance on standardized tests is being used to make decisions about teachers (Apple, 2014), perhaps it should not be a surprise that some teachers may attempt to shift the blame for poor performance to their students.

It was refreshing that the PTs expressed apprehensions about deficit discourse being used at their schools. During our research conversation, it became clear that some PTs were starting to question and combat deficit perspectives and student labeling. Some were clearly inspired by mentor teachers who made a point not to use demeaning labels for their students. Rather, these mentor teachers examined their own practices, questioned the curriculum in use when students struggled, and worked to hold high expectations for every student. PTs were also beginning to critically reflect on educational practices that had become normalized for many of their mentor teachers. Throughout, many of the PTs made comments about how their mentor teachers generally failed to teach in ways that supported their students' mathematical learning. Yackel and Cobb (1996) provide insights into what an elementary school classroom can look like if teachers support students in making sense of mathematics and work to create a community of learners. In such a classroom, teachers work to position students as mathematically competent (Turner, Celedón-Pattichis, & Marshall, 2008; Wagner, & Herbel-Eisenmann, 2009), which entails every student being viewed as having mathematical ideas to contribute to the community (Staples, 2007). Students' mathematical ideas can be incorporated in instruction as the teacher makes a point to include and build on students' ideas to help students make meaning of concepts and experience mathematical success (Kitchen, 2015). Moreover, teachers can work to integrate students' cultures, languages and lived experiences in the mathematics classroom as a means to validate, not disparage, students and their identities (Turner, Drake, McDuffie, Aguirre, Bartell, & Foote, 2012). Such instruction contrasts with deficit approaches, in which the perception is that students, particularly underserved students, have little to contribute (Moschkovich, 2012). To combat such viewpoints, teachers need to work to create learning environments in which they intentionally build on the assets that their students bring to learning mathematics (e.g., students' prior mathematical knowledge and cultural backgrounds), resist engaging in deficit-based student labeling, and look to foster positive mathematical identities among their students.

## Final Comments

In this era of testing, labeling students based upon their performance on high-stakes tests has become normalized (Kitchen, et al., 2016). To be clear, student labeling is not just a by-product of the current test era; it is a defining characteristic of it. Such labeling leads to deficit perspectives in which students are viewed as less capable in mathematics than others. In addition to testing,

tracking (ability grouping) contributes to deficit narratives that are so readily attached to students, particularly underserved students. Those opposed to tracking argue that it creates a pipeline in which underserved students are segmented into low tracks where the quality of instruction is substantially inferior (Kitchen, et al., 2016). Tracking leads to a differentiated curriculum that was created to accommodate the needs of "these 'new' students [immigrants] as well as [fulfill] the more traditional function of providing 'high-status' preparation for upper-class students" (Oakes, 1986, p. 149). Tracking practices that date back more than a century in the United States are still evident today and support the creation of negative and deficit mathematical labeling, particularly of diverse and low-income students (Kitchen, et al., 2016).

More research that explores how teachers can work to combat deficit discourse and move toward asset-based perspectives and discourse is needed. Student labeling in an era of testing highlights the political nature of teaching mathematics (Gutiérrez, 2013b; Kitchen, 2003). From this perspective, teachers reproduce notions of who can and who cannot do mathematics. Deficit discourse is a central aspect of the historic legacy of underserved students having less access to a challenging experience in mathematics than more privileged students (Kitchen, et al., 2016; Kitchen & Berk, 2016). Understanding and ultimately engaging in work intended to confront this legacy suggests the need for teachers to take a political stance in their work to resist attaching disparaging labels to any learner. Such work is desperately needed to combat pigeonholing students, particularly diverse, low-income students, in ways that can hurt them and their mathematical identities.

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## Appendix A

### Protocol for Research Conversation

**Introduction:**

Write the following on the board as reference points: Deconstructing language:

- How these labels persist
- Specifically in mathematics
- Labels determine trajectory

**Share Our Stories:**

- When I taught fifth grade math, the students were grouped by high, medium, and low. When a student was moved to another group, the student and their classmates knew exactly who was in the highest ability group and who was in the lowest.
- Often teachers will hold behaviors as a determinant for ability level. Students are very aware of their placement; at my new school students are very divided based on race and behavior.

**Further questions:**

- What types of deficit perspectives are you currently noticing, specifically in mathematics?
- How do we construct students' mathematics identity when students are grouped high, medium, or low?
- How do we construct our own perceptions of students' mathematics identity when we describe students as, "the low group," or "the high kids?"
- How are these deficit perspectives normalized?

**Moving forward, what do you think will be helpful?**