



Teachers' Grouping Strategies: Implications for Equity

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Abstract

In this article, we invite readers to reflect on their strategies for equitably organizing students for small-group work. We do so by sharing the results of an interview-based study of the ways in which a group of secondary mathematics teachers, working in an urban school district in which racial equity was an explicit focus, described equitable approaches to arranging students for small-group work. We share the grouping strategies that teachers described, and consider implications of those strategies for different dimensions of equity in the classroom.

Discussion And Reflection Enhancement (DARE) Pre-Reading Questions

1. What are your strategies for organizing students for small-group work?
2. In what ways, if at all, do you consider each of those strategies as a means for working toward equity in your classroom?
3. Do you talk with colleagues and/or instructional leaders about strategies for grouping students? Explain.

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Cara Haines and Charles Munter

How can mathematics teachers work toward achieving equity in their classrooms? One of the more influential ways of thinking about the answer to that question in recent years has been in terms of Gutiérrez's (2007) four dimensions—*access*, *achievement*, *identity*, and *power*. The first two have been prominent in mathematics policy documents for many years (e.g., National Council of Teachers of Mathematics [NCTM], 2000). Students' *access* to and *achievement* in rigorous mathematics requires, for example, that students have opportunities to engage in and discuss tasks that promote reasoning and problem solving and develop conceptual understandings of the mathematics central to those tasks (Aguirre, Mayfield-Ingram, & Martin, 2013; Horn, 2012; NCTM, 2014).

Although less prominent historically, attention to Gutiérrez's (2007) other dimensions has been increasing in the field. *Identity* pertains to whether students feel like they can be themselves while they do mathematics (Aguirre et al., 2013; Gutiérrez, 2007). This means that as students learn mathematics, they must also experience affirmation of their racial, gender, and other social identities. Finally, *power*—at the classroom level—requires that students feel like their voice matters (Gutiérrez, 2009). This means that teachers must be aware of and work to negotiate relational dynamics in the classroom (Horn, 2012).

It is important to consider how such ways of *conceptualizing* equity can show up in the *practical* aspects of teaching. Here we consider how teachers' strategies for arranging students for small-group work – a common instructional practice often taken for granted – has implications for all of the dimensions of equity described above. Our discussion originates in what we have learned from listening to secondary mathematics teachers' perspectives on how strategies for arranging students in groups (of two or more) might act as a means for working toward equity in the classroom. The research question that guided this study was: How do teachers describe grouping strategies that are equitable,

and what are their rationales for employing those strategies?

Method

This study was conducted within the context of a larger project that took a mathematics-specific approach to decreasing a racial opportunity gap (Flores, 2007) in a Northeastern U.S. urban school district serving a predominantly Black (55%) and white (33%) student population. The sample for this study included 37 secondary (Grades 6–12) mathematics teachers (8 of whom identified as people of color, and 29 as white) from two cohorts who were participants in the larger study. Teachers' participation in the project included two years of summer workshops that focused on confronting issues of racial inequity in mathematics. During these workshops, project leaders supported teachers in investigating and addressing inequities in school mathematics by: reconceiving what it means to know and do mathematics, discussing the historical marginalization of Black students, reflecting on their own (and students') racial and mathematical identities (Nasir, 2011), and developing and enacting ideas for more equitable practice (e.g., culturally relevant pedagogy, Ladson-Billings, 1995).

Our study's findings regarding teachers' perceptions of equitable grouping strategies are based on analyses of semi-structured interviews conducted with teachers during the first three years of the project. In those interviews, we prompted teachers to describe their perceptions of high-quality and equitable mathematics instruction. The project's research team—of which we were a part—attended explicitly to such perceptions in hopes that ongoing assessment of them would guide project leaders in supporting teachers' learning over time. For the analysis shared in this article, we focused primarily on teachers' responses to the following prompts:

- If you were to observe another teacher’s math classroom for one or more lessons, what would you look for to determine whether instruction was high-quality/equitable? Why?
- Would you expect to see students working in small- or whole-group settings? Why?
- If instruction were equitable, would you expect to see students grouped in a particular way? Why?
- Do you group your students? If so, how and why?

To analyze responses to those interview questions, we identified the grouping strategies that teachers described (*forms* of practice) and the corresponding rationales they provided, in terms of what they expected such strategies to achieve (intended *functions* of those practices) (Saxe, Gearhart, Franke, Howard, & Crockett, 1999). As alluded to earlier, in this article we use the findings of our analysis as an opportunity for reflection, as we focus primarily on how the grouping strategies and rationales that teachers described have implications for different dimensions of equity at the classroom level: access, achievement, identity, and power (Gutiérrez, 2007). In the sections that follow, we focus on two of the most common themes among teachers’ descriptions of grouping strategies (and likely common practices in many classrooms) and, for each, consider implications for equity and raise questions for further reflection.

Grouping by “Ability”

Among the grouping strategies that teachers described as equitable, grouping students according to their perceived mathematics “ability” was one of the most popular. From about half of the teachers ($n=19$), we heard arguments that both homogeneous ability grouping and mixed-ability grouping can be equitable strategies given their potential to afford opportunities for differentiation and student-to-student support. However, in their descriptions of how each of these grouping strategies might afford such opportunities, teachers framed student ability in two different ways: ability as a *static* trait of students, or ability as *fluid* and based on merely students’ current strengths and/or needs, with the former view much more common ($n=17$) than the latter ($n=2$). This is similar to the widely accepted (though also

critiqued—e.g., Kohn, 2015) notions of “growth mindset” versus “fixed mindset” (Dweck, 2006), particularly as it relates to *teachers’* mindsets about their students’ capabilities (Boaler, 2013). However, what we observed was less about teachers’ assumptions concerning general intelligence and more about whether they framed mathematical success as varying by topic.

As an example of framing student ability as static, consider the following teacher’s description of employing a mixed-ability grouping strategy:

You could kind of have like a mixed group where somebody who could be the top person in the class could be paired with somebody who’s a little bit less than that—and then another one who’s even lower than that. And have it in charge of the two kids to kind of help the smaller-achieving -- the lesser-achieving student.

In this response, the teacher suggested organizing small groups by “mixing” students according to the teacher’s own perceptions of students’ ability. Given that those perceptions are based on students’ achievement (i.e., “top person in the class”), the teacher’s framing of ability, here, implies a static view of what students are capable of doing during small-group work.

In contrast, other teachers framed student ability as subject to change, implying a more fluid view of students’ capabilities. Consider, for example, the way in which the following teacher described student ability in a rationale for employing a homogenous grouping strategy:

Sometimes [grouping is] based on ability. ‘Ok, you have this concept. You’re good. And this group over here doesn’t...’ So I can put that- you know, split them that way, and then I can work with the kids who don’t get it and give them some more individualized attention. The kids that have it can do some more on their own.

In this response, the teacher suggested homogeneously grouping students “based on ability,” but characterized ability not in terms of class ranking (as in the previous example), but in terms of proficiency with particular concepts. This implies a different approach to “ability grouping,” one based on students’ current strengths and needs, which may vary according to the mathematical concepts and skills students are learning.

Implications for Equity

Across teachers' descriptions of both mixed-ability and homogeneous ability grouping, we found that either a "static" or "fluid" framing of ability could be invoked; there was not a one-to-one relation between type of grouping strategy and way of framing ability. Regardless of the grouping by "ability" strategy that teachers promote, differences in their framings of ability may lead to important differences in classroom equity. Here we consider the first two of Gutiérrez's (2007) four dimensions discussed earlier: students' *access* to learning opportunities; and students' *achievement*, or success.

Regarding implications for access, in cases in which teachers promoted grouping by static ability, only students whom teachers described as more capable than others were depicted as having consistent access to special, and perhaps richer, learning opportunities (e.g., being "in charge" of other students). While teachers who framed ability as fluid also described scenarios in which students with stronger understandings would have access to distinct opportunities (e.g., could "do some more on their own"), their views of ability may imply that the students with stronger understandings, and thus those with access to special opportunities, will consistently vary over time, depending on students' *current* strengths and needs.

Framing ability as a static trait may also perpetuate issues of academic status (Cohen, 1994; Horn, 2012). This can potentially lead to differences in the extent to which students experience *achievement*, including successful participation in small-group activity, and hinder the development of those students' mathematics identities. Research has shown, for example, that students with high status, or those consistently positioned as "in charge" of their peers, often issue directives to their classmates (Esmonde, 2009), isolate students with low status (Featherstone et al., 2011), and tend to dominate small-group discussions (Cohen & Lotan, 1997; Cohen, Lotan, Scarloss, & Arellano, 1999), ultimately diminishing some students' opportunities to meaningfully participate in small-group activity (Wood & Kalinec, 2012). Given the lack of participation—or *achievement*—that students with low status may experience, coupled with being consistently assigned to the "low-ability" group or grouped with "higher-

achieving" students, it may be especially difficult for those students to come to see themselves as smart, capable learners and doers of mathematics.

Moving Beyond Grouping by (Static) Ability

Given the prevalence of accountability structures in our nation's education system, categorizing students according to their "abilities"—or, in many cases, achievement levels or test scores—is not uncommon. These broader narratives about mathematics ability are so pervasive that countering them is not an easy task, so teachers' framing of ability as a static trait is not necessarily surprising. However, given the potential impacts of such framings on students' access to learning opportunities and achievement, we argue that working toward classroom equity necessitates moving beyond conceptions of ability as static and focusing on the fluid ways that students develop and express forms of expertise and understandings.

We also recommend using grouping strategies that might minimize the risks posed by grouping according to ability—many of which are consistent with strategies promoted within the tradition of *Complex Instruction* (Cohen et al., 1999). For example, some research points to random grouping as a promising strategy (Horn, 2012). If coupled with continuous efforts to broaden notions of mathematical competence and public affirmation of different ways of participating (Cohen, 1994; Boaler & Staples, 2008; Horn, 2012), random grouping communicates that all students are capable of contributing to small-group work and, therefore, can alleviate status issues.

"Diversity" Grouping

A second popular grouping strategy that teachers described as equitable was what we refer to as "diversity" grouping. Note that we write "diversity" in quotes: while we consider diversity to extend beyond social indicators such as race, gender, etc., because a majority of teachers focused explicitly on race and ethnicity, this is the type of "diversity" that we describe here.

Recall that at the time of our interviews, teachers were involved in professional development focused on issues of racial equity in secondary mathematics.

Therefore, that some teachers considered students’ race and/or ethnicity in relation to grouping is not surprising. Fifteen of the 37 teachers recommended arranging students in small groups in a way that mirrors the demographics of the whole class (e.g., if 25% of the students in a class were African American, then one would expect each small group of 4 to include one African American student). Most often, teachers did not provide a rationale for using this strategy, although they occasionally suggested that it could provide opportunities for students to get know and/or work with peers outside of their own social groups, or questioned the affordances of the strategy, implying that it is school leadership—and not necessarily teachers—who prefer “diversity” grouping. To help clarify, we provide examples of such descriptions in Table 1.

Implications for Equity

The responses about “diversity” grouping included in Table 1 suggest that teachers and, perhaps, school leaders consider the “mixing” of students with different racial identities as a means by which teachers can create a more equitable learning environment. While it may be possible that arranging racially-diverse groups of students could foster students’ appreciation of the variety of their peers’ ideas and, as suggested in the second response in Table 1, help students “get to know

each other a little bit more,” “diversity” grouping—or desegregation—is not inherently positive and may have negative implications for students’ *power* and *identity*, the other two of Gutiérrez’s (2007) four equity dimensions.

First, it is possible that “diversity” grouping may, over time, lead to *power* imbalances between the teacher and students. If, for example, teachers consistently decide with whom their students will work in small groups, or, on occasion, intentionally “break up” groups that students had chosen for themselves, then “diversity” grouping may diminish the power of students’ voice, decision-making, and sense of agency in the classroom.

We also wonder whether, in some cases, teachers’ suggestions to “mix” or “break up” racial groups of students may be rooted in ideologies of Black inferiority, which were invoked in the 1950s to grossly mischaracterize the real motivations for desegregation efforts: the unequal distribution of resources and unconstitutionality. If so, teachers’ decisions to group for “diversity”—or desegregate—may communicate negative views of Blackness (Martin, 2012) and, consequently, inhibit the development of students’ racial *identity*. That is, if teachers do in fact separate Black students because of race, then those students may be deprived of opportunities to feel that their mathematics classroom is a place where they can be themselves.

Table 1
Teachers’ Rationales for “Diversity” Grouping

Rationale	Representative Excerpts
No rationale	<p>“I don’t think I’d like to see an all-girls group or an all-boys group. Would I have a problem with all African Americans, or all whites? Um, yeah, I don’t know- I just think that we need to disperse... You just need to mix it around.”</p> <p>“If I do see that one group is all African American males then yes, that is an issue. Um, that, that needs to be broken up.”</p>
Students can get to know/work with others outside of their own social groups	<p>“I have done, on purpose, groups where I’ve had one [student] of each [racial/ethnic group]. So like, they know each other, but here’s to get to know each other a little bit more...I feel that everybody should learn each other’s culture. So, I really do try to group them so that they can learn each other, like get to know each other better.”</p>
The strategy is preferred by district leadership	<p>“I have come to the realization that students are accomplishing more and having more conversations if I’m not forcing them to work with somebody specific...I know [my principal] doesn’t wanna see all African Americans in this section and all whites over here, but making sure that all students are mingled.”</p>

Moving Beyond “Diversity” Grouping

We do not suggest that teachers should never make decisions about how or with whom students are grouped, and recognize that not all teachers who espouse “diversity” grouping have deficit views of students of color. However, we argue that there are more productive ways to respond to student diversity in the classroom, which likely require teachers to think about aspects of their instructional practice beyond grouping strategies (as many of the teachers we spoke to undoubtedly did). For example, teachers might positively influence students’ identity development and empower students by posing authentic tasks that are relevant to students’ lives and encouraging them to draw on their cultural and community “funds of knowledge” (Moll, Amanti, Neff, & González, 1992) as they problem solve (Aguirre et al., 2013).

Additionally, rather than intentionally breaking up groups of students, teachers may consider inviting students to choose their own groups more regularly, as suggested by the last teacher’s response included in Table 1. This is not to suggest that teachers should always allow students to choose their groups, because it is also important to foster positive relationships and collaboration among all students in the classroom. However, affording such opportunity for choice in the classroom can provide an important support for students’ developing sense of autonomy (Williams, Wallace, & Sung, 2016). Additionally, as psychologist and educator Beverly Tatum explained in her book, *“Why Are All The Black Kids Sitting Together in the Cafeteria?” and Other Conversations About Race*, for students of color, time interacting in school with peers in one’s own racial identity group is often important for adolescents’ racial identity development, and that “connecting with one’s Black peers in the process of identity development is important and should be encouraged” (1997, p. 69). Therefore, shifting decision-making power from teacher to students may not only provide opportunities for students’ voices to be heard and preferences to be honored, but, in some cases, may also contribute to creating a classroom environment in which students feel like they can be themselves.

Pursuing Equity Potential of Small-Group Work

As illustrated by the examples in this article, our investigation revealed variation in the grouping strategies that teachers promoted and the ways in which they described student ability and diversity. Through our discussion of how those differences may have important implications for students’ *access, achievement, identity, and power*, we invited teachers to reflect on how their own grouping strategies and views of students may influence classroom equity. Additionally, as alternatives to ability-based and diversity-based grouping strategies, we offered practical ways in which teachers may work to avoid the potential pitfalls of and move beyond those strategies:

- Resist their own static views of student ability and focus on the fluid ways that students develop and express forms of expertise and understandings.
- Randomly group students and publicly affirm different ways of participating to communicate that all students are capable of contributing to small-group work and alleviate status issues (Horn, 2012).
- Question whether “desegregation” in the context of organizing students for small-group work is an inherently good thing.
- Leverage student diversity through other practices, such as posing authentic tasks that are relevant to students’ lives and encouraging students to draw on their cultural and community knowledges and experiences as they problem solve (Aguirre et al., 2013).
- Occasionally or regularly invite students to decide who they work with (Williams et al., 2016).

It is our hope that considerations such as these might support teachers in their instructional decision-making, and that such reflection might aid them in being even more purposeful in their use of common practices such as small-group work.

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Discussion And Reflection Enhancement (DARE) Post-Reading Questions

1. In your view, what reinforces “static” views of student ability (e.g., labels based on standardized testing, tracking, etc.)?
2. In what ways beyond what were discussed in this article might static views of ability be harmful for students?
3. What implications does adopting a “fluid” view of students’ mathematical capabilities have for the nature of small-group activity?
4. What concerns does the idea of allowing students to choose their own small groups raise for you (with respect to both social and mathematical aspects of the classroom)? Are there productive ways to address those concerns?
5. Have you felt inclined to “desegregate” your classroom? If so, what do you perceive to be underlying that inclination?

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5. To inform families about educational policies and learning strategies that will enable their children to become mathematically proficient.