March 1, 2021 • 11 min

Who Par

Niral Shah,Nickolaus Ortiz,Julie Christensen,David Stroupe,Daniel Reinholz

Smart classroom-data analysis can help educators detect inequities in student participation and reduce implicit bias.

PREMIUM RESOURCE

EQUITY PROFESSIONAL LEARNING

Jack was a white man and veteran high school science teacher. He had coached football at his school for more than 20 years. Anyone who talked with Jack for a few minutes could tell he cared about students and was committed to constantly improving as a teacher. In fact, he had just joined our research project, which aimed to provide professional development to physics teachers across the state of Michigan on incorporating computation into their curriculum in equitable ways. But when we first met Jack, equity wasn't central to his practice. Like so many teachers, he acknowledged that racism, sexism, and other forms of oppression were still problems in society, but he wasn't sure how they might be playing out in his classroom.

Over the course of that school year, we supported Jack in collecting data and reflecting on equity patterns in his own classroom. We focused on which of his students were and were not getting opportunities to participate in class discussions. Our goal was to identify inequities and deploy instructional changes to mitigate them.

Midway through the school year, we started to notice something. In our conversations, Jack was asking new kinds of questions related to equity and new questions of himself as a teacher. In one of our data reflection sessions, Jack said, "I've asked myself that question. I've asked myself: Am I biased toward Caucasians? Or Hispanics? Or African Americans? It's easy for me to say I'm not. But sometimes it can come through in such subtle kinds of ways."

Earlier in our collaboration, Jack had often explained inequities in terms of his students' personalities or perceived deficits. But here he was looking at himself and his own potential biases. How did this happen and why?

Bias at the Classroom Level

Bias operates at multiple levels and settings of social life, often in implicit forms (Staats et al., 2017). In education, school leaders have known for years about biases in curriculum, discipline, and course placement (i.e., tracking). Teachers alone didn't create biases, but they are often influenced by them in the classroom. As Khalifa (2018) writes, "Oppression is not always intentional and at the forefront of the minds of educators. Oppression is historical, yet its structures continue to shape the lives of minoritized people. It is reproductive and requires little effort to reproduce" (p. 18).

A crucial site of bias in classrooms is class discussions. Teachers must decide who they call on (and who they don't), and also the quality of participation opportunities they make available to different students. Despite teachers' good intentions, amidst the complex and fast-paced work of teaching, biases can take over. Research shows that teachers tend to privilege participation from students who look like them, talk like them, and produce knowledge like them.

This matters because participation in classroom discourse has a significant impact on student learning. When teachers aren't purposeful about who gets to participate and how, minoritized students usually end up with fewer learning opportunities.

Fortunately, this is also a place where anti-bias work can be made concrete. Although the issue of educational inequity can feel overwhelming, equity in classroom discussions is one area where teachers can exercise their discretionary authority to produce fairness for minoritized students (Ball, 2018). The challenge for school leaders is to put in place structures and resources to support teachers in this anti-bias work at the classroom level.

Of course, addressing the issue of teacher bias in classrooms can't substitute for attention to policies and ideologies that perpetuate structural oppression. For example, the anti-Black biases that so many students experience daily in classrooms are fueled by anti-Black narratives about intelligence, motivation, and other traits. Those same racist narratives also helped build the policies and practices of chattel slavery, Jim Crow, mass incarceration, and other white supremacist systems. So in our work with teachers, we think of a problem like inequitably distributed participation opportunities as just one way that histories of oppressive ideas and structures play out in local classroom interaction.

Reducing Bias Through Active Monitoring

Anti-bias workshops are a common way that school leaders support teachers in amplifying equity. The main purpose of such workshops is usually to make people aware of the science behind implicit bias, an approach we call the "inoculation model." The underlying assumption is that when people realize that they *can* be biased, that they will become immune from actually *being* biased. What research tells us, though, is that biases are sticky and difficult to change. One-time or even multiple trainings focused on awareness are unlikely to change actual teaching practice.

What teachers need is support in actively monitoring how their biases are affecting students in real-time. Some teachers have taken an Implicit Association Test (IAT), which can illuminate potential biases related to race, gender, and other social markers. Although it's useful for a teacher to know they might generally associate math ability with boys rather than girls, for example, an IAT can't tell a teacher how that bias actually shows up in the classroom.

As a first step, teachers need access to data on potential biases connected to the everyday work of teaching, such as participation patterns in class discussions. It's one thing to know that Black boys don't get a fair chance at academic success, but it's another to see how *you* might be marginalizing Black boys in your own classroom. Data can help make inequity a tangible, local problem.

Disaggregating Participation

To address these issues, our team has developed a free, web-based tool called EQUIP. EQUIP is a research-based classroom observation tool designed to empower teachers with quantitative data on equity patterns in classroom interaction (Reinholz & Shah, 2018). EQUIP, which stands for "**E**quity **QU**antified **I**n **P**articipation," focuses on students' actual participation and students' opportunities to participate in the learning process. The tool analyzes how discourse opportunities—both their quantity and quality—get distributed in a classroom, broken down by social markers and by individual students.

EQUIP is customizable, so it can be tailored to specific school and community contexts. Teachers decide which aspects of classroom discourse they think matter most for learning (such as cognitive demand of teacher questions or length of student responses). They also choose the social markers along which they want to disaggregate classroom discourse.

Disaggregating participation patterns by social markers, such as gender or race, is critically important. Slogans like "algebra for all," "literacy for all," and "science for all" are common in education, but to actually realize those equity

visions, it helps to specify the *all* in "for all." Too often educators pursue a generic version of "equity," rather than *racial* equity or *disability* equity or *linguistic* equity. Naming what happens in classrooms in terms of social markers can help teachers avoid common obstacles like color-evasiveness, which obstruct the pursuit of all kinds of equity in classrooms (Martin, 2003).

Typically, teachers use EQUIP on video recordings of lessons they've taught, or they have a coach or colleague use EQUIP in real-time as they watch them teach. When a student participates, the observer codes that moment of participation in the EQUIP web app. Over time, hundreds of moments of participation accrue, which can then be analyzed through multiple data visualizations available in the EQUIP platform. These visualizations make it easier for teachers to see whether one or two students are dominating a class discussion, or whether girls mostly get opportunities to make factual contributions rather than rich scientific explanations (see Figures 1 and 2).

Figure 1. Sample EQUIP Graph: Type of Teacher Question Distributed by Gender Categories

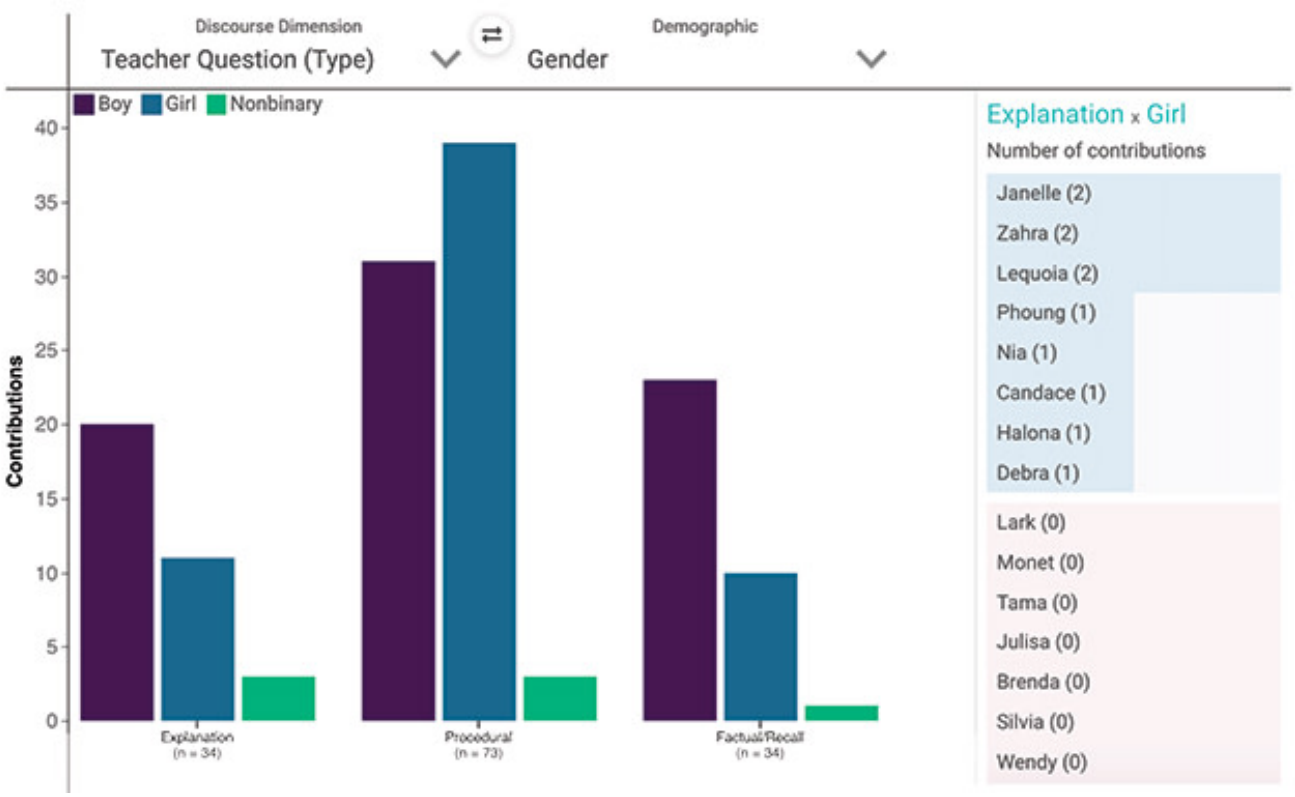
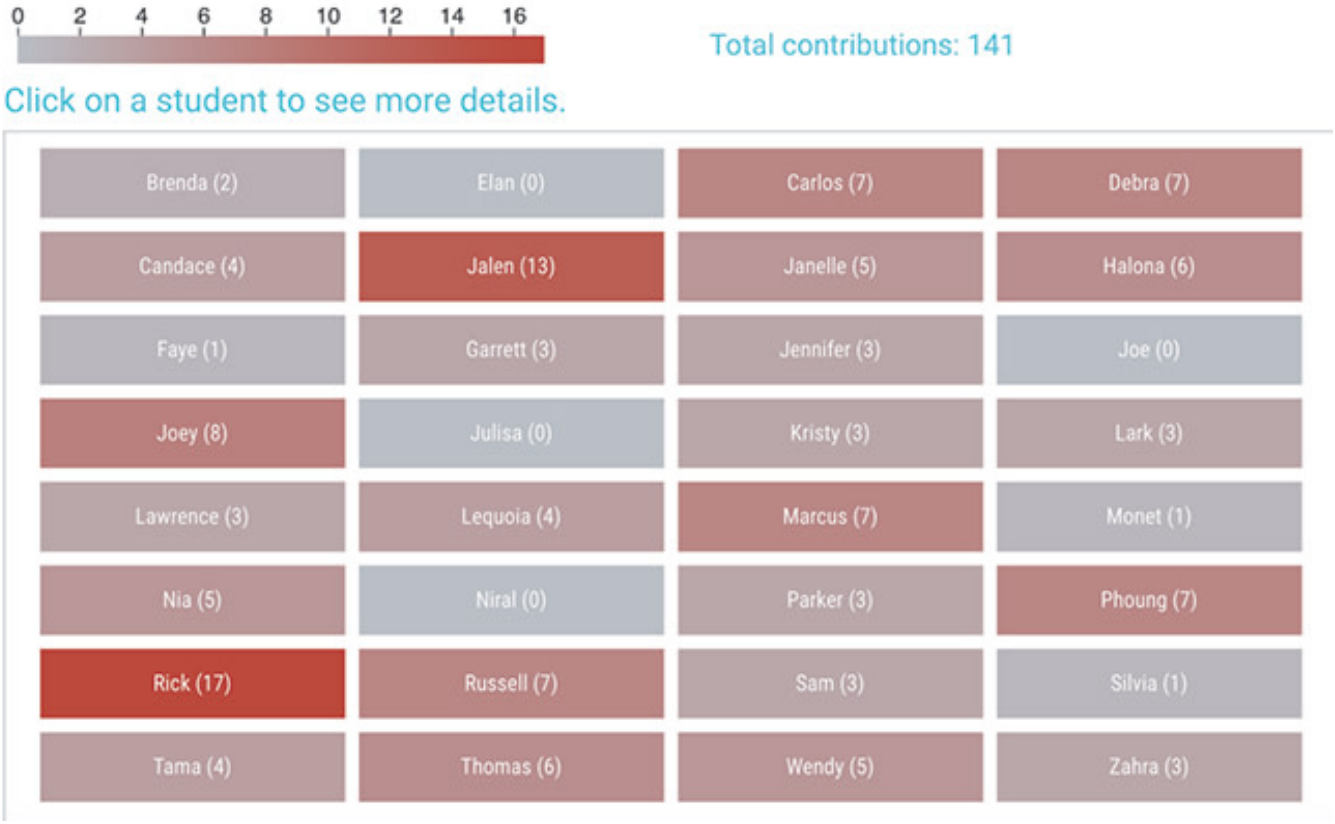


Figure 2. Sample EQUIP Graph: Heatmap Showing Individual Student Participation



It's important to note that these quantitative data are best used in concert with qualitative data on equity and inequity, including minoritized students' subjective experiences in classrooms. Even though EQUIP analytics may indicate equitable levels of participation, students might not feel that they have fair opportunities to participate. Equity can never be reduced to a collection of statistics. This data merely provides an anchor that allows teachers to dive deeper into equity work.

Based on our work with teachers, we have developed an approach to professional development using EQUIP. Here we offer three principles that inform our approach: (1) make anti-bias work local; (2) interpret data and set equity goals in historical context; and (3) collaborate and iterate with colleagues. To illustrate these principles, we draw on examples from our work with teachers in STEM education.

1. Make Anti-bias Work Local

Inequities can differ in form and root cause from district to district and school to school. Anti-bias work in a racially diverse suburban district will differ from similar efforts in an all-white rural district. A key question to ask is: What kinds of hierarchies are present at my school and in my classroom? This helps teachers think about inequity and bias in terms of locally relevant social markers.

Many educators we work with are curious about inequities related to race and gender, although the specific racial and gender categories they track vary based on student demographics in their classrooms. For example, one leader of an all-Black school who was thinking about using EQUIP pointed out that using traditional racial categories didn't make sense in his context. This opened discussions about colorism, and how EQUIP might be used to identify potential biases that favor lighter-skinned students.

Another example is a physics teacher who taught at a Catholic school and had only white boys in one of his classes. In reflecting on local hierarchies in his community, he realized that there was a longstanding false narrative about non-Catholic students being less academically prepared and less competent than Catholic students. This prompted him to customize EQUIP to help him identify potential biases related to religious affiliation.

The key idea is that when we make anti-bias work local, we stand a better chance of improving learning opportunities for minoritized students across different communities.

2. Interpret Data and Set Equity Goals in Historical Context

Data do not speak for themselves— they require interpretation. Although quantitative information can be useful, numbers only tell part of the story. Teachers need to think carefully about how and why they interpret equity patterns the way they do.

One challenge teachers face is how to balance thinking of their students *as individuals* with recognizing them *as members of social marker groups*. To illustrate, consider the classroom depicted in Figure 2. The heat map shows that two boys, Rick (white) and Jalen (Black), have been dominating class discussions, while a Latina girl named Julisa had no opportunities to participate. Many teachers find this scenario problematic, but they do so for different reasons. If students are only seen as individuals, then teachers might take up equality as the primary goal and look for all students to participate at the same rate. On the other hand, if one takes into account histories of Black boys not receiving a fair share of learning opportunities, Jalen's participation might be seen as a sign of relative equity. From a historical perspective, that is, quantitative inequality can be interpreted as equitable in certain cases.

In thinking about Julisa, we have also seen teachers interpret zero participation as evidence of individual personality traits (for example, the student is just "quiet"), or take a deficit-oriented view that Julisa lacks the competence to participate. However, we encourage teachers to think about how pedagogical structures and classroom norms affect what students do in class. To that end, we always try to interpret EQUIP data in relation to teachers' own professional knowledge of their students, as well as other data sources, such as the classroom video itself. Coaching conversations with teachers can also open dialogue about how white supremacy, patriarchy, and other oppressive forces might explain the data.

All of this matters because it influences how teachers set specific equity goals. If biases are historically rooted, then anti-bias efforts should attend to historical context. Doing so can support teachers in coordinating individualistic and social marker-based understandings of minoritized students and their learning needs.

3. Collaborate and Iterate with Colleagues

Anti-bias work can be lonely, difficult work. Interrogating the ways one might be inadvertently causing harm to students can produce feelings of shame and anxiety. Educators we work with have found success pursuing anti-bias work in small learning communities.

For example, over the course of a school year, we supported a group of middle grades mathematics teachers in the same district as they engaged in cycles of action research using EQUIP. A cycle began with teachers gathering for lunch, discussing their EQUIP data, and sharing ideas about new teaching practices to address any inequities. They kept a running Google document where they maintained action plans. At the end of a cycle, the teachers reconvened after collecting another round of data and collectively reflected on and revised their action plans.

One reason this group found success is that *relationships matter*. The teachers developed trust with their colleagues, a trust that allowed them to share their struggles without being judged. It helped that all of the teachers discovered at least one bias that was previously unknown to them. The emphasis was on growth, not perfection. Also, the iterative nature of the approach signaled to the group that anti-bias work is long-term work.

Making Equity Work Actionable

Bias in class discussions is just one facet of the complex inequities that minoritized students face every day in schools. But it is also something that teachers have a degree of control over, which makes it an important lever for change. It is a practical place where the rubber meets the road in terms of students' opportunities to learn.

For teachers like Jack, active monitoring of potential biases through classroom-level data—coupled with opportunities for coaching and collegial feedback—can open new pathways toward more equitable forms of teaching. School leaders can support anti-bias efforts by empowering teachers with the longitudinal resources needed to do this work in collaborative ways.

In all of our work with teachers, we have yet to meet a teacher who says they are actively trying to marginalize students. And yet, we know this happens. As educators we must move with urgency to close the gap between intentions and action.

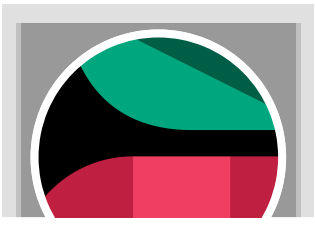
Reflect & Discuss

➛ What kinds of hierarchies are present at your school or in your classroom that might be useful to track using a tool like EQUIP?

➛ In addition to classroom participation, what other ways might implicit biases be cropping up in day-to-day teaching? How can you work to identify and change them?

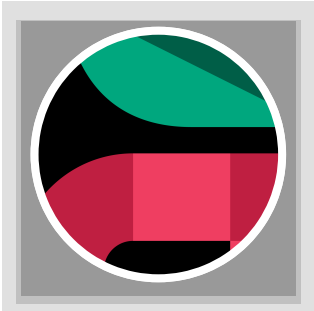
References

- Ball, D. L. (2018, April 19). *Just dreams and imperatives*: *The power of teaching in the struggle for public education*. American Educational Research Association Annual Meeting. New York.
- Khalifa, M. (2018). *Culturally responsive school leadership*. Cambridge, MA: Harvard Education Press.
- Martin, D. B. (2003). Hidden assumptions and unaddressed questions in "mathematics for all" rhetoric. *The Mathematics Educator*, *13*(2), 7–21.
- Reinholz, D., & Shah, N. (2018). Equity analytics: A methodological approach for quantifying participation patterns in mathematics classroom discourse. *Journal for Research in Mathematics Education*, *49*(2), 140–177.
- Staats, C., Capatosto, K., Tenney, L., & Mamo, S. (2017). "State of the science: Implicit bias review." Columbus, OH: The Ohio State University.



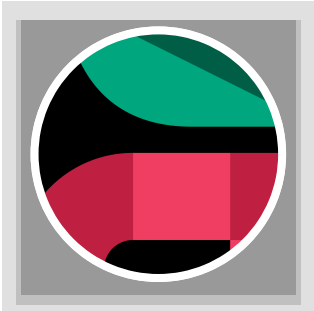
Niral Shah is an assistant professor of learning sciences and human development at the University of Washington.

Learn More →



Nickolaus Ortiz is an assistant professor of mathematics education in the Department of Middle and Secondary Education at Georgia State University.

Learn More →

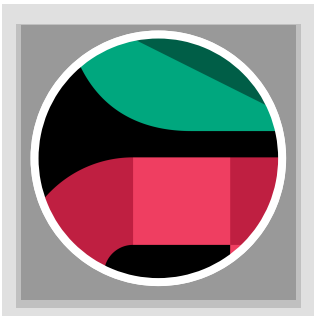


Julie Christensen is a doctoral candidate in the Curriculum, Instruction, and Teacher Education (CITE) program at Michigan State University.

Learn More →

David Stroupe is an associate professor of teacher education and science education at Michigan State University.

Learn More →



Daniel Reinholz is an assistant professor of mathematics education at San Diego State University.

Learn More →

Related Articles **View all →**

EQUITY

Student Choice as a Vehicle for Diversity, Equity, and Inclusion

4 weeks ago

EQUITY

Autistic at the IEP Table

1 month ago

EQUITY

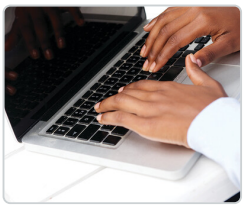
Readers React

3 months ago

EQUITY

Turn & Talk / Shaun R. Harper on Racial Problems in Education Research

3 months ago



EQUITY

Why Every Principal Should Write a Racial Autobiography

4 months ago

From our issue

Equity in Action

Subscribe Now

®

ASCD empowers educators to achieve excellence in learning, teaching, and leading so that every child is healthy, safe, engaged, supported, and challenged.

About ASCD

Who we are
Career opportunities
Government relations
News & Media
Contact

Get Involved

Membership
Affiliates
Emerging Leaders
Communities
Write for ASCD

Partner with Us

Advertisers
Distributors
Event Sponsors
Exhibitors
More opportunities

Sign up for our newsletter

Questions?

Check out our FAQ