

When I was in graduate school, I came upon some of the research that showed the differences in instruction that happened across schools, based on simple classroom observations. I learned that attending a school in a low-income community was linked to a much higher likelihood of "receiving" information in a very transmission-oriented way, while attending a school in a higher-income community was linked to a much higher likelihood of being encouraged to explore, challenge ideas and create solutions. This hit me like a ton of bricks, and it made me realize (for the first time) that our entire system was not just inequitable, it was structurally reinforcing the inequities in our country because we were encouraging certain ways of thinking and doing for some children, and actively discouraging and punishing those same exact things, for other kids. And it all played out in very specific teacher actions, every day.

When I became a teacher in Arizona, I tried to figure out how to encourage my middle school students to explore, challenge ideas and create solutions, even if it meant veering away from the science sometimes. We explored complicated questions, using data and our life experience as evidence, to try to understand why we had policies that allowed rivers to run dry before they hit the ocean, and left people who lived along the rivers without a water source. We would realize our science could only take us so far in deciding what the right course of action might be, and that science could be used to justify the right thing to do, as well as justify the wrong thing to do. And then we would try to figure out what we could do to about it.. Inquiry leading to reflection leading to action.

The development of this science vision is directly tied to those experiences as a learner and a teacher. It's based on research around how students learn best, but from the perspective of knowing that what's outlined here has sometimes put kids in detention or gotten kids arrested for their scientific explorations. As I was putting this together, I was thrilled to come across more research suggesting that while a student-centered and constructivist pedagogy leads to deeper learning for ALL students, it leads to even greater gains and is an even more effective pedagogy for students who have traditionally been barred from learning in this way. It angers me even more to know that research exists, and our classrooms still generally look the way they did when I was a kid.

I'm excited about the opportunities this vision presents, especially in terms of pedagogy, yet I fear that we as teachers, coaches, and teacher-educators may be pulled strongly to teach towards the teacher-centered approaches we likely grew up with. Right now we don't have a lot of strong models of what this looks like, and when we do find examples of this in action, we sometimes find ourselves saying "but that doesn't look like my kids". I challenge us all to jump in, explore the vision and find our own entry points into this approach, and trust that we can enact this because we know it is the right thing to do. Together, we can create more models of what it looks like in practice.