Teacher Responsiveness as a Core Feature of Justice- and Equity-Centered Instruction

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Our conception of teachers’ responsiveness for equity rests on a premise: The things that a “responsive” teacher does in the classroom engages and empowers disciplinary learning for students who have been historically marginalized in our schools—in particular students of color and those from linguistically and socioeconomically disadvantaged communities (Kang 2022). One can become a responsive teacher who promotes equity by continuously engaging in the following processes:

* **Attend to** students’ needs or struggles stemming from both inside and outside the classrooms, in addition to their intellectual contributions as members of a classroom learning community.

* **Interpret** classroom situations with a thoughtful consideration of multiple aspects of students’ lives inside and outside the classrooms, including race, power, and opportunity to learn, instead of quickly judging observed behaviors or performances in the moment (e.g., on-task vs. off-task behaviors, complete vs. incomplete, compliant vs. noncompliant).

* **Take deliberate actions** to address the noted challenges as a way of improving the conditions for students’ participation in the classroom learning community.

In our conception of responsiveness for equity, “action taking” is central because it makes an observable difference in students’ experiences in classrooms. In this article, we unpack these ideas using illustrative examples, sharing the deliberate efforts to help students connect themselves to science, to peers and the teacher in the classroom, and to the place (science classroom, school) at the stages of both planning and instruction. We provide a few key takeaways for educators who aspire to further increase their responsiveness for equity.

**What does it look like in practice?**

A responsive teacher who expands marginalized students’ opportunity to learn takes deliberate pedagogical actions at every stage, from planning to enacting the lesson. One way of sharpening one’s responsiveness for equity is being cognizant of when, how, and what to respond (see Table 1).

**The timing of action: When to respond**

A teacher can take responsive actions that expand minoritized students’ learning opportunities at three different stages: When planning a unit, designing daily lessons, and during the in-the-moment interactions.

When planning a unit, a responsive teacher can use students’ interests, experiences, or concerns to modify the unit design, such as selecting the focal phenomenon. This unit-level responsiveness requires deep understanding of students’ identities, including racial and linguistic identities, considering life situations holistically in the racialized society. It also means working against dominant perceptions of what it means to do and be good at science, as well as rejecting deficit language toward marginalized students.

For example, in our project, one 10th-grade biology teacher worked with students mostly from immigrant, low-income Latinx families who had been tracked in lower-expectation science classes twice. She reported to us that she constantly encountered negative comments toward her students from both

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**TABLE 1**

**Teachers’ responsiveness for equity: When, what, and how to respond.**

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
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| **Timing of actions**       | • In-the-moment responsiveness  
| (“When”)                    | • Lesson-level responsiveness  
|                             | • Unit-level responsiveness  |
| **Subject of response**     | • Intellectual challenge  
| (“What”)                    | • Relational challenge  
|                             | • Linguistic challenge  
|                             | • Home- and family-related challenge |
| **Types of pedagogical actions** | • Modifying task design  
| (“How”)                     | • Modifying participation structure  
|                             | • Adding, removing, or changing the use of tools or scaffolds  
|                             | • Modifying the type and nature of talk move and/or questions  
|                             | • Adjusting norms and expectations of what is OK and appropriate in their classrooms in that moment |

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teachers (“The kids in life science class are the lowest [of] the low”) and students themselves (“Don’t worry. You don’t have to try. We know we’re failures”).

The fact that the students rarely experienced engaging in intellectually challenging tasks, such as designing their own lab in prior science classes, gave her additional challenges. Instead of following the prevalent traditional mode of science instruction (e.g., giving a multiple-choice question, doing a “cookbook lab”), she planned a unit where students actively designed and conducted their own experiments to explore the topic that students were interested in at the time.

For example, students were curious about the spread of the Zika virus during the 2016 Brazil Summer Olympics. She decided to use the example of the Zika virus in the upcoming unit on infectious disease with the driving question “How can we prevent the spread of Zika virus through the Olympics?” (SL.9-10.1, 2, 3, 6; L.9-10.1, 3, 6 and W.9-10.6; WHST.9–10.6) She designed and facilitated intellectually challenging tasks, such as identifying multiple variables and formulating and testing hypotheses to prevent the spread.

Throughout the unit, the instruction was driven by student questions, such as “What causes diseases? “What are viruses and bacteria?” and “How do you diagnose somebody with a disease?” During the interview, the teacher said, “There is no reason we can’t [do this kind of lab].” With this unit-level responsiveness, the students could engage in interesting and intellectually challenging activities in the unit focusing on understanding and addressing a problem that matters to them.

At the lesson level, a teacher can promote equity by responsive-ly modifying their lesson design to address students’ challenges from a prior lesson on a daily basis. One powerful way of modifying the lesson design is leveraging students’ assets, including their cultural practices. In a lesson about cellular respiration, for example, one teacher brought a recipe for rolls for Thanksgiving, saying, “My little brother always complains that they’re not fluffy enough.” She asked students to help her modify the recipe to make the rolls fluffier. She originally planned to have a lab where students make dough with different recipes—different amounts of water and sugar and different temperatures—and measure how much the dough grows in a certain amount of time.

Using this “relatable, everyday phenomenon,” she intended to create a context for students to explore the reactant and products for cellular respiration while comparing aerobic vs. anaerobic respiration (HS-LS1-6 and HS-LS1-7, for the chemical reaction HS-ETS1-2). When she launched this task, however, she realized that many of her students, mostly from Latinx families, did not celebrate Thanksgiving like she did. In the following days, she modified her plan and added an activity to just share out students’ family traditions of making a type of “bread.” This allowed her to learn about students’ cultural practices at home. By leveraging this rich asset, she modified the bread project in a way that students use their “family secrets” to explore chemical reactions.
A responsive teacher constantly takes actions to address students’ challenges in participating in the classroom learning community.

During the in-the-moment interactions, a responsive teacher constantly takes actions to address students’ challenges in participating in the classroom learning community. The challenges are typically manifested by students through either verbal or nonverbal expressions or both. In our data set, we saw three kinds of challenges that marginalized students’ experience during the instruction: intellectual, relational, and linguistic challenges. We provide more details of these challenges and examples of teachers’ actions in the following section.

**What and how to respond**

Here, we describe the three challenges—the subject of response (what to respond)—along with a few pedagogical actions taken by teachers to address the challenges (how to respond).

**Attending and addressing intellectual challenges.** The responsibilities of attending to and addressing students’ intellectual challenges bear significant weight in the daily practice of a responsive teacher. By intellectual challenge, we mean any ideas, confusion, or difficulties expressed by students in deepening their conceptual understanding (Kang 2022). Teachers can take various actions to address intellectual challenges, such as:

- Drawing students’ attention to key information or patterns.
- Asking probing questions that either problematize students’ ideas or guide thought processes.
- Revoicing/restating to help students see the problem space in a new way.
- Connecting, comparing, and stitching students’ ideas to build upon collective understanding.
- Leveraging one student’s ideas to expand the class’s understanding (typically during the whole-group discussion).
- Connecting to prior units or a prior lesson [school knowledge] as a resource to solve the current problem (typically during one-on-one conversation).
- Connecting to everyday experiences, as a resource to solve the current problem; either individually or as a group.
- Reminding students of the goals and directions for the task to re-engage students who encountered a challenge.
- Directly correcting the students’ misconception by giving the answer.
- Adjusting the task (e.g., expanding time, adding scaffolds, adding new observations) or providing alternatives to prevent students’ missing experiences.
- Changing the participation structure (e.g., from individual presentation to a whole-group discussion) on the fly to build upon student ideas, typically for a whole-group discussion.
- Checking work and giving some sort of OK to give students confidence in progressing their work.

In our data set, the three most frequent pedagogical actions taken by the teachers were

- Drawing students’ attention to key information or pattern.
- Asking probing questions that either problematize students’ ideas or guide thought process.
- Re-explaining the goals and directions for the task to assist students who encounter a difficulty in completing the task.

In a chemistry lesson about acids and bases, for example, students measured the time when a “mysterious alien’s blood” (hydrochloric acid) ate through aluminum foil and started to fall into a beaker. When the teacher moved to one lab table, a group of students wondered when to stop their timer to take the “reaction time.” A student asked, “Are we supposed to record, like, right when it starts to go through?” During this short interaction, the teacher drew students’ attention to key information in the instructions (“It says in the instructions, eat through aluminum foil and starts to fall in the beaker, like drip, drip, drip, then that’s where you stop”) and also to the key observation (e.g., bubbling, steam) by asking, “What do you see? What kind of action? What’s the color?” These pedagogical actions were named as drawing students’ attention to key information or patterns.

**Attending to and addressing relational challenges.** Students expressed their difficulties or struggles in personally relating to the discipline, people in the classroom, and/or places (i.e., science classroom or school) through verbal or nonverbal behaviors (e.g., off-task, being quiet, frustration, anger) (Kang 2022). Attending to and addressing relational challenges is particularly important for marginalized students who often struggle to navigate and participate in school science classrooms that historically privilege white, Western, Eurocentric ways of thinking, talking, and being. In this data set, we identified eight actions undertaken by the teachers to address relational challenges:

- Emotionally encouraging/reassuring the good progress to motivate students.
- Reminding students of norms and rules of behaviors to create a supportive learning environment.
- Leveraging students’ interests to modify the task on the fly to help students see themselves in the work.
Providing either material or emotional support to validate students’ wellness in the moment.

Connecting a struggling student to a friend to help each other.

Using students’ vernacular to encourage students’ participation in an academic task.

Talking about student’s lives outside school to affirm their good decision.

Showing appreciation to validate what they do and who they are.

In one event observed in a high school chemistry lesson, for example, one teacher noticed that a 10th grade girl, Alison (all student names are pseudonyms), was texting instead of listening to the teacher’s introduction of the day’s task. Using a cell phone during the instruction was a violation of the school policy, and students who violated the policy had to turn in their cell phones to the teacher. As students began to move to their lab groups after the teacher’s lesson introduction, the girl approached the teacher to explain that she was checking on her cousin whose son was diagnosed with cancer and was going through his first round of chemotherapy (see the details of the interactions in Figure 1).

The situation could be simply viewed as a student’s violation of the rule and policy. The teacher’s quick conversation with the student, however, led the teacher to see the situation in a different way. The girl had difficulty fully bringing herself into the classroom space and engaging in the academic task due to situations outside the classroom. The teacher expressed empathy with her body, eyes, face, and words to an adolescent girl who was worried about her cousin. The teacher’s pedagogical action, providing either material or emotional support to validate students’ wellness in the moment, contributed to improving the condition for Alison’s intellectual engagement by attending to and addressing relational challenges in the moment.

Attending to and addressing linguistic challenges. A responsive teacher attends to and addresses any difficulties expressed by students in using language to mediate the learning of the discipline. Although any student can encounter difficulties associated with language in science classrooms, this linguistic challenge is particularly difficult for multilingual students who have to learn science in English-privileged learning environments. In our data set, we found that a student who showed linguistic challenges often simultaneously manifested relational challenges. Three pedagogical actions were observed to address linguistic challenges:

- Paring English learners with a friend who can help (translate).
- Connecting to everyday language/experiences to help students generate meaning of the academic language.
- Adjusting a task to students’ capabilities and needs on the linguistic level.

**FIGURE 1**

**Attending to and addressing relational challenges in the moment**

A teacher’s interactions with a 10th grade girl, Alison [pseudonym]

Alison: Sorry, my cousin texted me and her son is going into his first chemo today.

The teacher: Oh… [makes eye contact while expressing her empathy]

Alison: ‘Cause she wanted to tell me how it is.

The teacher: Oh, OK. How is it going?

Alison: He’s doing fine. He’s like, they caught it in stage one, so he’s doing OK. But they did the surgery to remove the tumor and stuff and then they’re putting him in one session of chemo to see how that does and see if that clears up, and then she was just like telling me, “He’s going into chemo like right now” and when it’ll be over.

The teacher: OK [signals that she would not take Alison’s phone]

Alison: I am also wondering if I can charge my phone over there…

The teacher: You can, and I hope that everything goes well… If you have to use your phone occasionally during the lab, you can. Just step outside and use it.

Alison: Alright. Thank you.

The teacher: [Smiles at Alison]
Although any student can encounter difficulties associated with language in science classrooms, this linguistic challenge is particularly difficult for multilingual students who have to learn science in English-privileged learning environments.

In a life science lesson about microbes, for example, a teacher paired Tien, who just moved to the United States a few weeks prior and spoke no English, with Hanh, a multilingual, Vietnamese girl who had improved her English significantly (see the details of the interactions in Figure 2).

In this interaction, the teacher recognized and validated Tien’s efforts (showing appreciation for her efforts) while affirming her good progress (encouraging/reassuring the good progress). These pedagogical actions addressed both linguistic and relational challenges that Tien showed by helping Tien see her presence in this classroom space despite her linguistic challenges.

What are the big takeaways?
Teacher responsiveness is a core feature of justice- and equity-centered instruction. Guiding questions for increasing teachers’ responsiveness that promotes equity could include:

- How are students from nondominant communities (i.e., students of color, students from racially, linguistically and socio-economically disadvantaged communities, and their behaviors narrated in my community? How are they positioned either intentionally or unintentionally through such dominant discourses and normalized practices? How can I disrupt and challenge deficit or negative discourses toward the students who have been historically and are currently underserved in the public education system?

- How can I leverage marginalized students’ interests, experiences, or concerns when I design a unit? How can I use them to frame the investigation of a unit or the unit’s driving question, so students feel studying science in the unit matters to them and the people they care about?

- How can I modify aspects of the upcoming lesson design (e.g., task design, discourse moves or questions, use of tools or scaffolds, participation structure) to address the difficulties that students manifested in the prior lesson?

- How can I deliberately attend to and address students’ challenges in engaging in academic tasks and being successful?

- How can I facilitate the students who have been historically marginalized at schools to relate themselves to the discipline, people in the classroom (peers and the teacher), and the place (science classroom, school)? How can I help them to restore, build, and/or expand their relationships with the disciplines, people, and the place?

One can expand minoritized students’ opportunities to learn by attending to and addressing students’ intellectual, relational, and linguistic difficulties when designing a unit or a lesson or during in-the-moment interactions.

REFERENCE

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