

21. Bridging Theory to Practice: Conducting Culturally Responsive Interviews With Historically Marginalized Youth in STEM

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Abstract: The goal of this paper is to move beyond theoretical explorations of culturally responsive research to instead offer researchers concrete examples and effective strategies for designing culturally responsive instruments and protocols in STEM educational research. As a Black female researcher from a multiply marginalized background, I intentionally leverage minoritized funds of knowledge, cultural intuition, and experiential insight to offer a validated model of culturally responsive interview methods. In doing so, I propose tangible means of enacting critical theories of race, gender, and cultural responsiveness into research practice. This practice-based articulation of culturally responsive research stems from a rigorous analysis of 1 large-scale, multisite study on race, education, and STEM equity. Data from the study include protocols and subsequent revisions, sample interview questions, participant quotes, and research memos.

Introduction

I think it's important for [researchers] to give students this platform to speak and formalize our thoughts ... make it real, make it research, put it on paper, document it. [Underrepresented students] talk about these issues in a lot of informal spaces, but then we just go back and deal with it. Nothing ever changes. (Evelyn, Black female college student)

This opening quote by a former study participant beautifully summarizes the purpose and promise of culturally responsive interview methods in studies of race, identity, and educational inequity. As a young Black woman attending a predominantly White institution (PWI), Evelyn regularly experienced interlocking systems of oppression that not only created harsh and inequitable learning experiences, but that also left her feeling overlooked, undervalued, and unheard. At the close of her interview, Evelyn shared that she was grateful to not only have a chance to share her experiences with intersectional inequality on campus, but also an opportunity to draw upon her personal, communal, and cultural knowledge to offer potential solutions to the problems she regularly experienced in college. For Evelyn, there was something powerful and transformative about being positioned as a co-constructor of knowledge rather than a subject to be studied or a problem to fix. Ultimately, her willingness to speak candidly about her uncomfortable experiences with race and racism on campus stemmed from a desire to leverage cultural knowledge and personal experience into transformative change for students like her. As she puts it, a researcher can transform her story into “something researchable, a real article, something that people are really going to read for information.”

I believe that Evelyn's empowering interview experience was the product of carefully devised, critically informed research protocols that worked to make her feel safe and heard. Several leading theories note the transformative potential of centering students' voices and cultural identities in the research process, particularly when the goal is to eradicate institutional inequity. The organizing logic behind many of these culturally situated frameworks is that in order to disrupt oppressive systems that continually create inequitable learning conditions, more research methods must be developed and deployed that can uncloak the obscure ways that systematic subjugation manifests in schools and classrooms. By uplifting the cultural, communal, and personal knowledge of minoritized students, these methods

work to disrupt deficit assumptions about students' lived experiences with inequity that re-create oppressive systems of silence and erasure.

Innumerable theories work to center students' voices and dismantle White supremacist power structures that pervade educational spaces, but one particular framework gaining popularity in STEM educational research is culturally responsive praxis. Culturally responsive praxis (CRP) is an epistemological standpoint that aims to create a more socially just education system by centering the voices, cultures, and lived experiences of minoritized students as indispensable sources of knowledge (Moll, Amanti, Neff, & Gonzalez, 1992). As such, culturally responsive methods work to leverage students' personal interests, community connections, and cultural knowledge to foster more empowering reciprocal relationships between researchers and participants. It is important to note that culturally responsive research positions students as stakeholders in their education, and in doing so requires the use of research methods that can amplify students' voices, identities, and experiences with oppression in safe, meaningful, and transformative ways.

Although there is an extensive body of research on culturally responsive praxis and its theoretical underpinnings, there remains a critical dearth in practice-oriented research that provides concrete examples of data-collection instruments and protocols that can be leveraged in everyday educational research settings. Thus the goal of this paper is to move beyond theoretical explorations of culturally responsive research and its epistemological tenets to instead offer researchers practice-oriented and tested strategies to develop culturally responsive instruments and protocols.

Conceptual Framework

By positioning minoritized youth as community experts capable of analyzing the roots of their own educational oppression, culturally responsive research collaboratively leverages both minoritized and majoritarian funds of knowledge to produce transformational change in both formal and informal learning spaces. Although culturally responsive theory explicitly requires students to collaboratively analyze systems of power and subjugation to work toward greater social justice (Gay, 2002; Ladson-Billings, 2014), this particular tenet often gets overlooked in praxis. Unfortunately, critical examinations of power and oppression in the experiences of underrepresented students are most often deployed in the theoretical and analytical phases of research, wherein researchers use critical theory to create initial research questions or construct coding schemas. In these instances, researchers are neither centering nor amplifying student voices but are rather speaking for them. It is not enough to submerge participant narratives into bodies of critical scholarship after the data-collection phase has commenced; in order to strive toward authentic social justice, researchers must collaborate with youth participants to coanalyze how race, power, and oppression shape their everyday experiences during the interviews.

While existing scholarship detailing CRP's theoretical tenets are helpful in thinking broadly about what culturally responsive research is, a question still remains about how to construct research protocols that ensure these tenets are practically enacted with student participants. How exactly do we, as culturally responsive researchers, design instruments and protocols that effectively connect theory to praxis? Despite the growing use and popularity of CRP in the field of STEM equity research, few studies have empirically investigated CRP methodologies to assess if implementation is aligned with theory, and even fewer provide concrete examples of how to design and develop protocols that bridge theory to praxis in meaningful and transformative ways. In order to ensure that culturally responsive research is indeed happening, we need more practice-oriented resources that can bridge this important theoretical framework to everyday research practices in meaningful and accessible ways. Thus, the primary goal of this paper is to move beyond theoretical explorations of culturally responsive research and its epistemological tenets to instead offer practice-oriented and empirically tested examples of culturally responsive instruments that can begin to answer this question.

Methods

This study uses critical reflexive praxis to analyze one large-scale, qualitative research study focusing on issues of race, education, and STEM equity for minoritized students. The study, Advancing Informal STEM Learning (AISL), which received funding from the National Science Foundation, focused on youth mentorship in informal STEM learning spaces. Data analyzed in this paper include interview protocols, research team notes, field notes, and participant interviews.

Findings

Using a grounded theory approach, I reviewed analytical memos, participant transcripts, and field notes for instances in which I was able to foster a sense of trust and safety that enabled participants to speak openly and honestly about identity and educational inequality. Broadly, strategies that explicitly disrupted oppressive power structures—both in the research and in the school context—were the most successful at fostering students' sense of trust. Thus, three subthemes for conducting critical, culturally responsive research with students of color emerged from the data: (a) establish meaningful and reciprocal relationships with the students via culturally responsive rapport building; (b) disrupt power hierarchies between researcher and participant; and (c) identify and challenge systems of power and oppression that affect students' learning experiences in STEM.

Critical Reflections on Power and Positionality

At the onset of the AISL study, the research team employed strategies that were aimed at building relationships with students. These strategies, however, were more typical of “cultural rapport building” than culturally responsive praxis, which has an explicit commitment to disrupting systems of power and oppression. For instance, before employing CRP, we began our semistructured interviews with broad, open-ended questions that simply asked students to “tell me about yourself.” The implicit assumption in this protocol design was that trust and safety could be fostered during the interview by using everyday, race-neutral conversational etiquette. We hoped that asking them to “tell us about themselves” would be an opening to share relevant background, including issues of race and identity. Moreover, when it got to tough questions about persistence and inequality in STEM, we hoped that if we asked students “are there barriers to your participation in STEM?” students would describe racial, gender, or class inequalities that they regularly experience. We learned, however, that in order for students to feel safe talking about systems of power, we had to explicitly and unapologetically challenge these invisible systems—even if it made us uncomfortable. Thus, an important revision to our interview protocol was using explicit language to talk about race, racism, and oppression in STEM. A comparison analysis between our race-neutral pilot protocol and our race-conscious culturally responsive protocol revealed that using explicit language about discrimination and racial inequality signaled to youth that it was “OK” to identify and resist hegemony.

Reviewing weekly research team memos made it clear how power and positionality play a crucial role in determining the depth of relationships we built with students and the richness of the stories they decided to share with us. Over and over again, I found that my willingness to speak candidly about my positionality—as a researcher, as a Black woman, and as a person pushed out of STEM—helped foster feelings of trust and support that enabled students to do the same. It is important that sharing my own stories of “life on the margins” disrupted power in two invaluable ways. On the one hand, it disrupted traditional power structures that exist between researcher and participants in which the interview is unidirectional and the student learns little to nothing about the person conducting the study. On the other hand, it

invites students to identify and challenge systems of power that affect their learning experiences in hopes of generating transformative change.

Strategies for Designing CRP Protocols

The goal of this paper was to offer researchers practice-oriented and tested strategies to develop culturally responsive instruments and protocols (see Tables 1, 2, and 3).

Strategy	Example
Give more specific information about your positionality - your racial identity, why you're involved in this research.	<p>A quote from a NSF AISL interview reads:</p> <p>"I'm just going to start with like a general question, and it's going to be, tell me about yourself. I'll open up by telling you a little bit about me so that it's probably a little less awkward."</p>
Build in instructions about trust and rapport building into the protocols	<p>Instructions at the top of the interview protocol state:</p> <p>"Open the interview telling the student about yourself. Then invite them to share about themselves. For the follow up questions, work to build a sense of trust and openness by providing your own answers. Tell them what you're "into" nowadays, what you do in your free time, etc."</p>
Share stories about you that build trust, show shared experience and show some degree of vulnerability.	<p>Interviewer: Mine too. Mine too. We have like, the same goal. Like, I keep saying I want to save up money so I can get a house so that my parents can live there when they retire so that they don't have to like, work until they're 90.</p> <p>Student: Yeah, because my parents work really hard, and sometimes they work really hard, and sometimes I don't see them. Sometimes they're sleepy, and then they're like, not there.</p>

Table 1. Establish meaningful and reciprocal relationships with the students.

Strategy	Example
<p>Position the Students as Experts & Co-Constructors of Knowledge.</p> <p>Explicitly describe them as “research consultants” or “content experts.”</p>	<p>A line from a recruitment script for the NSF AISL study reads:</p> <p>“We are very interested in hearing from you about what works and isn’t working to keep you interested in and persisting in STEM. Instead of trying to come up with suggestions and solutions from an outside perspective, we think it makes more sense to draw upon your expert opinion. No one knows how this STEM course/program works better than you and we want to hear what you think about it”</p>
<p>Prior to starting the interview, reiterate to the student that they are being asked to give their candid perspectives and insights on your research questions because they have experiential knowledge that adults don’t have.</p>	<p>A quote from a youth interview from the NSF AISL study reads:</p> <p>“No one knows more about the experiences of youth STEM than you and your peers. That’s why we want to hear from you”</p>
<p>Share interview questions prior to conducting the interview (e.g. during the recruitment process)</p>	<p>An excerpt from a field note from the NSF AISL study reads:</p> <p>“Some examples of the questions you’ll be asked are: What types of STEM activities are you interested in doing here or at home? Who supports you when it comes to doing STEM? What keeps you coming back to this program? Are there any obstacles to you participating in this program? Have you ever considered dropping out of this program? How could we change this program so that all kids - kids of color, girls, kids that speak languages other than English - can be successful?”</p>
<p>Reassure your participants that the interview is a conversation that goes both ways. You are asking them to be vulnerable about their experiences, and to show them respect and appreciate you must be willing to be vulnerable as well.</p>	<p>A note from an interview transcript reads:</p> <p>“Any question I ask you about your experience, you can ask me. I’m happy to share more about me and I think it’s important that this is a conversation - not an interview - where you feel comfortable probing for more information about me. If you have any questions or want to know more about something I said, feel free to ask!”</p>

Table 2. Disrupt power hierarchies between researcher and participant.

Strategy	Example
<p>Part of viewing students as experts is believing that they are fully capable of theorizing answers to your research questions. Rather than asking vague, tangential interview questions and then making your own postulations about the ways identity or power inform their experience, ask the students to theorize it themselves.</p>	<p>Instead of asking “tell me about your experiences in STEM,” and then waiting for issues of identity and power to originally emerge in the response, be direct. Explicitly tell the student that you’re interested in knowing more about their experiences with race, identity and power.</p> <p>A quote from a student interview in the AISL study reads:</p> <p>“How do you think your experience in STEM is shaped by your racial identity? Do you think your race or ethnicity impacts your experience in this STEM program?”</p>
<p>Ask explicit questions about persistence, race/gender stereotypes, and cultural relevance in the program.</p>	<p>“Okay, so something that we’re interested in, in the study is how kids persist through things that are challenging. Like, what makes you want to push through and not want to give up?”</p> <p>“You’re really impressive. I’m wondering like, have you ever heard these stereotypes about like, girls can’t do robotics and stuff, like people believe that? “</p>

Table 3. Identify and challenge systems of power and oppression that affect students’ learning experiences in STEM.

Conclusion

Interviews can be a powerful tool to gain insights into issues of race, identity, and educational equity in STEM through understanding the perspectives of students who regularly navigate these oppressive and exclusionary spaces. Yet interviews can prove to be an ineffective and oppressive means of collecting data when issues of power, privilege, and positionality are not explicitly addressed. Minoritized students are less likely to open up about the pedagogies, practices, and policies that hinder their experiences in STEM to someone they perceive as a community outsider. Fully aware of the risks of speaking about power and suppression, students of color are necessarily wary about sharing stories from the margins with just anyone.

References

- Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education*, 53(2), 106–116.
- Ladson-Billings, G. (2014). Culturally relevant pedagogy 2.0: Aka the remix. *Harvard Educational Review*, 84(1), 74–84.
- Moll, L. C., Amanti, C., Neff, D., & Gonzalez, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory Into Practice*, 31(2), 132–141.