

# “So, the world isn’t just old White guys?”: Student and Teacher Experiences in a Culturally Relevant Advanced Placement Chemistry Class

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## ABSTRACT

This action research case study investigates the integration a culturally and socially diverse curriculum in an Advanced Placement Chemistry course. Motivated by a recognition of limited multicultural teaching practices, four thematic units grounded in culturally relevant pedagogy and social reconstructionism were created and implemented. The use of surveys, reflection logs, observations, and focus group interviews provided data exploring both student and teacher experiences. Findings revealed increased student engagement, deeper understanding of content, improved relationships among students, and meaningful personal connections to the curriculum. As the teacher-researcher, I also experienced enhanced student relationships, increased confidence, and greater awareness of cultural bias. These outcomes support the use of culturally relevant pedagogy and critically reflective practices to transform science education into a more inclusive and empowering experience.

## KEYWORDS

*culturally relevant pedagogy, action research, science education, student engagement, social reconstructionism*

For many years, I followed the same template for success, my belief of what a responsible science classroom should be. My highest priorities were strict alignment to state and district standards and facilitating a rich understanding of scientific principles and content. However, my focus on facts and subject matter inhibited my ability to create meaningful learning experiences for all students. Although my approach laid the foundations for their content knowledge, it was not conducive to the sort of relevant experiences that can prepare the next generation for real-world complexities. In a world that is intricate and unique, my narrow, monochromatic perspective likely robbed students of opportunities to immerse themselves and explore the content in meaningful and relatable ways and excluded the diverse perspectives in my classroom.

Creating equitable learning opportunities to support students' unique perspectives and experiences is crucial because U.S. classrooms have become increasingly diverse (National Center for Education Statistics, 2019). Learners are unique individuals with complex identities and histories (Ginsberg & Wlodkowski, 2019), so educators must commit to more culturally relevant practices and pedagogy, which can improve student motivation, academic success, and cultural competence (Gay, 2002; Ladson-Billings, 1995a, 1995b). Analyzing my past experiences as a White male educator and applying lessons from my ongoing study of EdD-activism, I realized a need for a more inclusive and diverse Advanced Placement (AP) classroom. Reflection grounded in the critical application of knowledge, theory, and research catalyzed my efforts to bridge the disconnect between students' social identities and the lack of diversity in both my content and pedagogy. Through action research, I hoped my students would be better equipped to frame and address problems in their daily lives. Such a commitment

prompted a reconstruction of my definition of success to extend beyond my previous benchmark of academic success and instead target the development of culturally and critically minded students.

A commitment to culturally relevant teaching goes beyond making students feel good; rather, success comes when students choose to pursue academic excellence (Ladson-Billings, 1995a). My end-of-course averages and passing rate on the AP exam suggested my students were academically excellent, but I wondered how many of them made a conscious choice to pursue excellence. Beyond preparation for a standardized test, my charge as a teacher should be to inspire students to think deeply on connections between their experiences and scientific knowledge. Lessons that are critically and socially mindful of student perspectives create a classroom that embodies cultural competence and models an atmosphere of respect for the values and perspectives of others (Ladson-Billings, 2013). This article describes how I implemented such insights in my dissertation in practice (Sox, 2023).

## RESEARCH QUESTIONS

The University of South Carolina's commitment to EdD-activism heavily influenced the design of my study and development of research questions. The program's focus on critical reflection and creation of practice-based knowledge pushed me to rethink current practices and empowered me to implement more intentional and impactful changes for my students. My rich and transformative experiences studying social justice and activism supported the cyclical process of action and reflection, generating transformative insights throughout my study. Additionally, ongoing discussions with



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This journal is published by Pitt Open Library Publishing.



impactinged.pitt.edu  
Vol.10 No. 4 (2025)

This journal is supported by the Carnegie Project on the Education Doctorate: A Knowledge Forum on the EdD (CPED) [cpedinitiative.org](http://cpedinitiative.org)

ISSN 2472-5889 (online)  
DOI 10.5195/ie.2025.586

students in my classroom and fellow cohort members provided diverse perspectives, encouraging decisions rooted in evidence and empathy that aligned with my broader goals of educational transformation.

My critical action research aimed to create a more inclusive, critically conscious classroom. I hoped to provide equitable learning opportunities for students and support diverse perspectives while sustaining high levels of rigor and academic success. My research also required me to challenge myself to be more reflective and critically conscious. Intentionally pursuing cultural diversity while designing lessons, I sought to advance my own cultural awareness and empathy toward my students—vital attributes for teaching in diverse classrooms. I investigated the following research questions to improve not only my instructional pedagogy, but also to foster a supportive environment and culture that values the contributions of each individual student:

1. How do my students experience a more culturally and socially relevant science curriculum?
2. How does planning and implementing a culturally and socially relevant science curriculum impact my experiences as a teacher?

Immersing my students in culturally relevant and rich pedagogy could support their racial, ethnic, and gender identities, which, in turn, could promote the sense of belonging critical to academic success (Brown, 2004). Question 1 sought evidence of that anticipated outcome while documenting the extent to which my adapted classroom environment promoted students' thinking critically about social justice and advocating for change in their everyday communities. While Question 1 focused on the outward change in my classroom, Question 2 focused on the internal change in me. Addressing a complementary aspect of my multifaceted purpose, Question 2 captured evidence of my self-reflection as I addressed existing biases that shaped my instruction and worked toward developing my cultural competence and cultural awareness.

## LITERATURE REVIEW

Culturally relevant pedagogy (CRP) was an appropriate lens for my action research because it framed my efforts to connect the inner workings of my classroom and the academic success of my students with their culture and identity (Gay, 2002, 2013, 2018; Ladson-Billings, 1995a, 1995b). Lessons grounded in CRP prioritize representations of students' individual culture, identity, and personal experience. Teachers who regularly consider these factors enable students to engage in authentic learning as valued members of the classroom (Howard, 1999; Paris & Alim, 2014, 2017). Such lessons serve two simultaneous purposes. First, they invite meaningful engagement from students whom curriculum writers have traditionally ignored. When students feel connected to the content, educators can attend to their academic needs and propel them toward excellence (García & Guerra, 2004; Ladson Billings, 1995b; Robinson & Biran, 2006). Second, CRP also broadens White students' education, improving their ability to embrace diversity, respect cultural and racial differences, and advocate for social justice reform (Pan, 2006). Thus, CRP promoted a more inclusive approach, seeking perspectives and contributions from all community members. In this way, my students could become aware of alternative viewpoints and begin to develop their cultural and critical consciousness.

As CRP stimulates students' critical consciousness by prompting them to critically examine their beliefs, students may discover the need for social justice reform. Outlining how students can apply their learning to that end, social reconstructionism is an ideology that focuses on repairing the status quo by addressing social questions and injustices. Schiro (2013) described it as a drive for "the 'masses of humanity' to critically analyze themselves in relation to their society, understand the ills of their society, develop a vision of a better world based on a conception of social justice, and actualize that vision" (p. 151). Education is the key to achieving this vision and action (i.e., change). Acknowledging that society is inherently unhealthy, social reconstructionist educators view schools as a tool for solving social problems and advocate for student-centered curriculum that facilitates critically examining world events and controversial issues. For example, opportunities for inquiry, dialogue, and sharing diverse perspectives allow students to consider real-world problems and develop new and better solutions (St. Norbert College, 2015). Like CRP, a social reconstructionist approach was also appropriate for my action research because it offered a powerful pedagogical model. I wanted to shift my students and myself from the perspective of "knowledge as a product to knowing as a process" (Jones & Brader-Araje, 2002, p. 7).

Through critical action research framed by principles of CRP and social reconstructionism, I sought to understand how my students and I experienced a transformed chemistry curriculum. CRP served as the focal lens in the design of my instructional units and guided adaptations to my teaching methods to align with the goals of this study. Social reconstructionism provided the model for reform and inspiration for change that I sought for my students and myself. Thus, both lenses played important and complementary roles in this study.

Expanding on the nature of CRP, Gay (2002) advocated for specific and targeted methods of culturally responsive teaching. These techniques equip teachers to build better relationships, which supports students as they construct "a better understanding of themselves, others, and society" (Cullen, 2014, p. 25). Culturally responsive educators initiate positive changes on multiple levels, including instructional techniques, instructional materials, student-teacher relationships, classroom climate, and self-awareness (Gay, 2018). Aligned with CRP, culturally responsive teaching allows students to think critically about the inequities in their own experiences and those of their peers.

Just as I explored the roots of my framework, I also reviewed historical perspectives to improve my understanding of the barriers marginalized students face. Researching the underpinnings of topics like racism, inequity, and underrepresentation in education proved valuable for my critical action research study. Suppressing students' culture robs them of learning in schools where the content, instruction, and climate are exclusive in nature and serve as impediments for success (Ladson-Billings, 1995b). Thus, a more inclusive science curriculum in concert with culturally relevant teaching can decrease the achievement gap by promoting marginalized students' success. Ford (2015) suggested closing the achievement gap would require African American students to have equal footing and representation in gifted and accelerated programs. Access to programs such as my AP course can lead to greater achievement and improved motivation for African American students, promoting a positive growth mindset (Hanson et al., 2016). These goals align with the goals of this study as a curriculum grounded in



CRP embraces a multicultural approach that seeks to engage and support students of color.

A common misconception is that scientific knowledge is value-free, and by extension, science education should also avoid any subjective biases and values, thus being completely objective (Sutrop, 2015). In reality, all scientific knowledge is socially constructed (Fuller, 1997), and thus marked by “the interest, motivations and aspirations both of the scientists that carry out such work and those who fund them” (Reiss, 2003, p. 3). Therefore, educators and students should examine incoming information for embedded political and social influences—a first step in addressing social justice in science education.

Social justice is both a goal and a process, aiming for “full and equal participation for all groups in a society that is mutually shaped to meet their needs” (Bell, 1997, p. 3), while remaining “inclusive and affirming of human agency and human capacities for working collaboratively to create change” (p. 4). An increasingly diverse science classroom requires opportunities for students not only to access knowledge, but also to question, challenge, and reconstruct that knowledge in a way that leads to new understanding. As Moje (2007) argued, classrooms seeking equity must “offer possibilities for transformation, not only of the learner but also of the social and political contexts in which learning and other social action take place” (p. 4). Students must be aware that their actions not only directly impact themselves and their peers but also can have long-lasting repercussions on others outside of their immediate sphere. Taking up a topic of social justice in the science classroom can lead to explorations of social equity as students recognize their social influence on others and implications for taking action.

## METHODS

Consistent with my problem of practice and aligned with CRP and social reconstruction, critical action research was an appropriate design for this study. Action research is a systematic, reflective approach to addressing areas of need within researchers’ respective domains (Hine, 2013). For teachers, action research challenges their assumptions and classroom practices and incorporates components necessary for change: research, action, and reflection (Merriam & Tisdell, 2016). Critical action research in the classroom is characterized by continual reform in hopes of a new kind of school and a new society (Carson, 1990). Due to the critical nature of my research, an authentic portrayal of participants’ experiences was especially important (Patton, 2015). Thus, I collected several qualitative data sources, inviting participants to express their feelings, concerns, and ideas related to their experiences with my curriculum. Surveys, classroom observations, reflection logs, and a focus group were appropriate tools for describing and understanding my students’ experiences, as well as my own (Merriam & Tisdell, 2016), aligned with my research questions. Collectively, these data sources supported the study’s validity by spanning a spectrum of assignments and, through triangulation, lending trustworthiness to my findings (Merriam & Tisdell, 2016; Patton, 2015).

Table 1 illustrates my intervention plan and general timeline of four thematic units designed to address the lack of cultural, social, and personal relevance in my AP Chemistry course.

**Table 1. Intervention Plan**

Unit	Topic	Data source(s)
Pre-intervention		pre survey
1	Leaders in STEM	observations, reflection logs
2	Flint Water Crisis	observations, reflection logs
3	Getting Electrons Excited	observations, reflection logs
4	Material Science	observations, reflection logs
Post-intervention		post survey, focus group

Unit 1, Leaders in Science, Technology, Engineering, and Mathematics (STEM), began with an exploration of the history of the atom and highlighted several important discoveries that led to the currently accepted model of the atom. Critical reflection with students identified that only White, male, European scientists were celebrated, which contrasted with the diversity of students enrolled in my classes. In response, I tasked students with identifying an individual from a traditionally underrepresented group within a STEM field and learning more about their significant contributions. Students concluded the assignment with presentations of their chosen individual to the class, which included a review of personal details, notable accomplishments, and why the student admired or respected their chosen individual.

Unit 2 focused on solution-based chemistry, so the water crisis in Flint, Michigan served as a relevant and real-world application of solution chemistry and provided a platform to discuss both social and environmental justice. Students oscillated between an in-depth analysis of the crisis, including personal testimonies and interviews of local citizens, with a broad exploration toward engineering a solution to the problem. Students used their knowledge of single replacement relations and selective precipitation to design experiments for removing dissolved lead ions from samples of water. After conducting their experimental procedures and discussing the validity of their designs as real-world solutions, students concluded the unit by discussing whether a similar water crisis could occur in their local community. By considering their own experiences, students could make a personal connection to the people of Flint and compare the inequities in their own lives and surrounding communities to those of the largely marginalized population in Flint.

Unit 3 coincided with instruction regarding the significance of electrons, their roles relating to chemical reactions and phenomena, their configuration within the electron cloud, and creation of light emissions. The history, use, and design of fireworks was the underlying theme for this unit, providing real-world applications of the concepts discussed in class. Most students could personally relate, having used fireworks to celebrate many national holidays, and the topic also provided opportunities to explore diverse cultural groups. Students investigated this relationship in greater detail through several laboratory investigations while also considering the personal and cultural connections that fireworks have in celebratory holidays. Students supported these endeavors by investigating Chinese culture and the Chinese New Year, as well as how citizens in less developed countries use alternatives to fireworks to celebrate significant cultural holidays.



Unit 4 aligned with the study of intermolecular forces and their influence on the physical properties of materials. Creating memorable laboratory experiences was a goal throughout this unit, allowing students unique ways to connect with the content. These activities included studying water-locking compounds and non-Newtonian fluids, tie-dying shirts, and making homemade peanut brittle. To reinforce personal connections with the content, students investigated unique materials in STEM-related fields relevant to intended career options after high school or a particular hobby or activity they enjoyed. Students concluded this unit with presentations featuring their chosen material and discussed connections between molecular design and intermolecular influences on its physical properties and practical applications.

Pre–post surveys assessed students' opinions in response to the new teaching methods and curriculum materials. Given my goal to measure the culturally and socially relevant curriculum's impact on student experiences, the surveys allowed me to evaluate changes in students' thoughts, opinions, and experiences. Students received the pre-intervention survey before the start of Unit 1, targeting demographic information and establishing a baseline for comparing student experiences in their previous science classes to the curriculum I implemented. The post-intervention survey consisted of similar questions and prompts, enabling me to detect and evaluate changes in student experiences as a result of experiencing the modified curriculum. Several additional questions allowed participants to consider the effectiveness of the modified curriculum and share their thoughts on how the lessons and activities in each unit could better suit the needs and interests of diverse student populations.

## FINDINGS

Each data collection tool yielded a plethora of data, leading to important discoveries throughout the intervention. I identified several recurring and relevant themes pertaining to my two research questions. This section aligns with those questions by describing the students' experiences before elaborating on the intervention's impact on me.

### Finding Related to Student Experiences

First, my modified curriculum surfaced participants' belief that teachers and students should consider cultural differences in their day-to-day interactions. Participants indicated they expect teachers to consider their perspectives and find meaningful ways to make the content relevant, regardless of cultural differences. Participants acknowledged that feelings of acceptance and belonging were critical to their academic success in the classroom and shared the expectation that teachers consider and embrace the cultural and personal differences of each single student in their classrooms. These findings suggest that when teachers adopt inclusive mindsets, they establish safe, supportive classrooms where students can thrive and further develop their cultural competencies.

Second, the modified curriculum supported students' understanding of chemistry content. This finding was particularly important to me because I feared students would perceive the change in pedagogy as a disruption of their normal learning practices. Throughout the intervention period, students continued to score high marks on academic assessments while also noting activities were "fun." After our study of the Flint water crisis, one

student stated, "I think that learning about the water crisis and experimenting on possible solutions was really interesting. I like that we connected chemistry to real life because I never really did that in my last Chemistry class." At the conclusion of each unit, participants had opportunities to discuss both the positive and negative aspects. While not every single activity and lesson was completely successful, none of the participants indicated their instruction suffered due to the modified curriculum. Considering the advanced level of the course and typical academic mindset of students in my community, I believe this outcome is a significant achievement. It provides further evidence of the value of CRP and my ability to infuse the academic curriculum with meaningful experiences for students of diverse backgrounds.

Third, I discovered students were engaged during culturally and socially relevant lessons. Evidence of engagement was consistent in participant reflection logs and observation notes throughout the intervention. Students described lessons as fun, interactive, interesting, and relevant. In addition to being engaged during classroom activities, participants indicated the socially and culturally relevant themes resonated both in classroom discourse before activities and at the conclusion where many students took the opportunity to share what they had learned with one another. One student noted, "I really like the articles that you gave us because it allowed us to first [consider] how we would perceive it, and then it would give the perspective of someone else and how it affected them in their situations." The intentional use of chemistry related articles, think-pair-share discussions, laboratory investigations, and student presentations supported a more engaging classroom environment and laid a foundation for future learning.

A fourth discovery centered on improved student relationships with one another. Students shared instances when peers embraced their individual cultures, resulting in their improved comfort and sense of belonging in the classroom. For example, during the focus group, a student commented, "When I shared my traditions, [classmates] were genuinely interested and willing to learn, not disrespectful even with their differences of culture." Improved relationships among students also proved to be an asset during laboratory investigations as students supported one another's ideas in critical settings. As the complex nature of many AP Chemistry investigations required students to brainstorm and share ideas, the success of shared dialogue and improved communication during these activities can be attributed to improved equity and unity of culturally relevant classrooms.

### Findings Related to Researcher Experiences

Reflecting on Question 2 regarding my experiences while designing and implementing a modified curriculum encouraged me to consider my own beliefs and their influence on my teaching practice. Just as open and supportive relationships were essential to student experiences, meaningful relationships with students were important to my own experience. A deviation from my traditional and comfortable pedagogy elicited feelings of nervousness, yet the trusting and open-ended conversations I had with my students throughout the intervention empowered and encouraged me to keep going even when things did not go exactly as planned. Despite my insecurities, participants eagerly engaged in activities and regularly asked how the study was progressing, even inquiring about what I was learning. I do not believe I would have been as motivated or successful if participants had not been genuinely interested in the outcomes of my research.



Another discovery related to my own experiences is the implementation of the modified curriculum became easier over time. As I became acquainted with CRP and implemented multiple critically mindful lessons, I became more confident and more importantly, more flexible. Flexibility was central to my instructional design because I could not predict exactly which topics and events would be meaningful. This discovery was important for me—and likely for other teachers—as it demonstrates perfection is not required for improvement. I believe I succeeded in my goal to improve my pedagogy through strategic lesson planning, open-minded reflection, and trial-and-error implementation. Congruent with reflective practices conducive to EdD-activism, each activity yielded new knowledge and experience, which informed my design and execution of the next activity. In this way, I grew as an educator and my ability to facilitate critically mindful lessons continued to improve.

A final discovery of implementing the modified curriculum resulted in an increased awareness of cultural biases in my own instruction. This discovery emerged from analysis of my teacher reflection logs. At the completion of each unit, I challenged myself to consider how my positionality and biases influenced my instructional design and interpretations. During Unit 1, I noted the strong relationships female participants formed when researching and presenting on underrepresented scientists as “not something that I expected to come out of this unit of study.” As a White man, I had not considered the importance of empowering my female students and thus revealed a blind spot in the design of my research study. Even with this deficiency, this study’s critical approach yielded meaningful findings, particularly in recognizing the need for greater diversity in science curriculum and instruction. This outcome aligns with the central ideas of EdD-activism, which emphasizes critical reflection on one’s positionality and biases to create a more inclusive and transformative educational experience. In this way, I continue to learn from my students and improve as a critically mindful educator.

## RECOMMENDATIONS FOR PRACTICE

Action research provides a unique framework and lens, fostering collaborative and systemic inquiry rooted in the lived experiences of practitioners that can create meaningful, context-specific reforms with the potential for larger organizational reform (Herr & Anderson, 2005). When teachers critically assess their own practices and share their findings, they not only enhance the individual classroom environments but also contribute to the development of more inclusive, responsive, and effective educational systems (Cochran-Smith & Lytle, 2009). In alignment with the reflective nature of action research, sharing my recommendations for future practitioners can continue the cycle of improvement to create more dynamic, adaptive, and inclusive learning environments that meet the needs of all students. As my problem of practice centered on my experiences while implementing my modified curriculum, my recommendations for practice center on the use of more culturally relevant teaching practices in science.

First, practitioners should consider problem-solving approaches while implementing culturally relevant lessons. A problem-based approach enables students to investigate real, open-ended problems; formulate questions; and develop solutions to authentic challenging situations (Allen et al., 2011; Torp & Sage, 2002). Inviting students to solve meaningful problems supports critical thinking and student engagement, both necessary for challenging injustice and inequity (Ladson-Billings, 2001).

Second, I recommend normalizing the use of student presentations. When designing my modified curriculum, I was unsure if the time dedicated for presentations would be valuable; however, my observations and students’ responses suggested incorporating presentations might be the most worthwhile change I implemented. Students emphasized that freedom and choice regarding the topic and design of their presentations afforded them the opportunity to self-reflect and include personally meaningful features. In this way, assignments become more relevant, useful, and engaging.

Third, I recommend expanding my use of culturally relevant lessons by integrating a STEAM-centered design that features multilayered thinking, combining the best of arts and technical elements. When used intentionally, art can anchor students in the design process, promoting a more holistic and valuable approach to learning (Gess, 2017). Research further suggests a STEAM framework and design supports deeper critical thinking and opportunities to explore personally relevant connections among materials, design, society, and the environment (Perignat & Katz-Buonincontro, 2019; Sochacka & Walther, 2016). Such diverse instructional strategies could strengthen personal and cultural connections in science disciplines.

My final recommendation is for curriculum designers and district leaders responsible for approving curriculum. The value-added nature of CRP leverages students’ strengths to make learning more relevant and effective, working to reverse patterns of underachievement for students of color (Gay, 2013; Ladson-Billings, 1995a, 1995b, 2001). Supporting the adoption of culturally responsive teaching is a major investment and a foundational step that district and state leaders can take to bolster teacher preparation and development. Not only would such efforts provide teachers with guidance on the necessary skills and mindsets to be culturally responsive in their careers, they would also affirm teachers’ choosing to adopt culturally responsive teaching practices in their classrooms.

## IMPLEMENTATION PLAN

Consistent with the principles of action research (Merriam & Tisdell, 2016), the knowledge I gained through this study informs my ongoing efforts to develop more culturally and socially relevant AP Chemistry curriculum. The iterative process of action research, encouraging reflection and adaptation, continues to reshape my approach. Leaning into the transformative experience, I plan to extend this work to a modified AP Physics curriculum, where I have encountered similar culture-neutral challenges. Despite the field’s technical focus and reliance on mathematical calculations, the action research process and culturally responsive lens has equipped me to bring responsive practices and instructional reforms into this class and enhance students’ engagement with rigorous science curriculum. By modeling culturally responsive teaching within a technical discipline, I hope to advocate for more systemic changes within my school and district, aligning with the broader goals of equity and social justice in education (Ladson-Billings, 2014).

A critical aspect of my implementation plan relies on action research as a guide for ongoing modification of my curriculum. My curriculum design is structured around four strategic elements: cultural connections, personal connections, social justice connections, and content connections. These pillars guide both the overall unit design and the specific lessons within each unit. While my initial approach sought to incorporate all four elements in every lesson, I soon realized that achieving this balance in every instance



may not always be possible or necessary. The action research process helped me understand that these themes need not be present simultaneously, provided I address them throughout the course. Repeated exposure to these elements can foster students' deeper understanding of how cultural relevance, social justice, and content knowledge intersect. With repetition and adjustments, I believe students will gain a more robust understanding of the curriculum, and this ongoing process of reflection and change will help create a more inclusive and responsive learning environment. Furthermore, this model has the potential to drive not only classroom transformation but also contribute to broader systemic shifts in how we approach education at the institutional level.

## RECOMMENDATIONS FOR FUTURE RESEARCH

Additional research is needed to understand how students and teachers experience culturally mindful curriculum. More generalizable research could advance our understanding of this phenomenon. For example, given the flexibility of CRP and culturally sustaining pedagogy for use in any domain, extending the approach I used in my study could be beneficial and elicit new discoveries in other locations, schools, grade levels, and subjects, supporting the work of the next generation of teachers. The benefits of more culturally relevant classrooms are not limited to science classrooms. In fact, participant responses suggest interdisciplinary aspects enhanced their ability to form real-world connections. Every content area has something unique to offer in terms of incorporating diverse cultures.

In addition to illuminating student and teacher experiences in other disciplines, enlisting a wider range of students would surface greater insight into multicultural instruction. Further, if every course in a student's schedule exhibited culturally relevant teaching, exploring whether student experiences shifted due to it being a more normative learning approach would be interesting. Either way, such studies could improve teachers' ability to craft lessons appropriate for diverse audiences and build upon the strengths of multiple perspectives.

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