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Original Research Article

Racial Noticing in Mathematics Teacher Education: Unpacking Southern White Christian Teacher Candidates' Reflections on Data Investigations of Issues of Systemic Racism

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ABSTRACT: In this article, we examine how southern white Christian secondary mathematics teacher candidates reflected on racial inequities in academic opportunities and school discipline after engaging with data sets highlighting such disparities. Using a lens of racial noticing, informed by Leonardo's (2009) conceptualization of whiteness as a racial discourse that normalizes white dominance, we analyze candidates' written reflections to identify how they interpreted and responded to issues of race in mathematics education. Two dominant themes emerged: the normalization of implicit biases and the tensions between aspiring to objectivity and acknowledging subjectivity in educational practices. Both patterns aligned with whiteness by obscuring systemic inequities. Notably, while many candidates avoided overt deficit views of students of color, their reflections often framed inequities as personal or inevitable rather than structural. We conjecture that their Christian commitments reinforced color-evasive framings while also discouraging overtly deficit interpretations. Statistical investigations, however, created openings for naming race and bias, suggesting both the potential and the limits of such approaches. Findings underscore the need for teacher education to explicitly confront whiteness, with data investigations that highlight racial disparities as being a promising avenue to develop racial literacy and promote systemic change.

KEYWORDS: race, statistics, whiteness, racial noticing, pre-service teacher education

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In the United States, the national reckoning on systemic racism after the murder of George Floyd and the subsequent backlash from Trump's second term in office has underscored the urgent need for educational reforms that promote racial equity and justice as well as the challenges in doing so in politically charged times. Within the field of mathematics education, racial disparities in academic opportunities and school discipline persist, creating inequitable outcomes for students of color (Diamond & Gomez, 2023; Gregory et al., 2010). These disparities are not due to differences in behavior but are instead often driven by systemic biases and differential treatment in schools (Huang, 2018). Dominant racial narratives shape how mathematics teachers perceive and hold expectations for students, which in turn affects their mathematical identities (Gutiérrez et al., 2023).

In terms of academic opportunities, white students across the country are 1.8 times more likely than Black students to be enrolled in Advanced Placement classes (ProPublica, 2023). When it comes to school discipline, Black students are suspended at a rate 3.9 times higher than their white counterparts nationwide (Groeger et al., 2023; U.S. Department of Education Office for Civil Rights, 2014). These racial disparities in academic opportunities and school discipline are deeply intertwined, as biased perceptions can influence both the expectations teachers set for students and their actions, ultimately shaping students' mathematical identities (Aguirre et al., 2013; Bondurant, 2024; Gilliam et al., 2016; Huang, 2018; Shah, 2017).

Mathematics teacher education can play a pivotal role in equipping teacher candidates (TCs) to critically examine racial disparities through statistical investigations of inequities, fostering a deeper understanding of systemic issues and their implications (Bondurant & Somersille, 2024; Bondurant et al., 2024; Casey & Ross, 2022; Casey et al., 2023; Fernandes et al., 2025; Mortan, 2024; Shah & Coles, 2020; Shah, 2021). Given that approximately 80% of U.S. teachers identify as white (National Center for Education Statistics, 2023), it is crucial to provide opportunities for teachers to reflect on implicit biases, foster understanding, begin to develop critical consciousness, and catalyze shifts in not only ideologies, but also actions regarding racial inequities in both academic opportunities and school discipline (Shah & Coles, 2020).

In this study, we worked with a cohort of twelve southern white Christian TCs enrolled in a secondary mathematics methods course. Their shared racial and religious identities influenced how they interpreted and responded to statistical evidence of systemic racism and the types of tensions that emerged in their reflections. This context is particularly important because Christian identity in the Deep South often intersects with color-evasive ideologies (Jones & Williams, 2017), potentially complicating the recognition of structural racism. At the same time, faith-based commitments to service and morality may also inspire antiracist orientations. Attending to these intersecting influences provides a richer understanding of how TCs make sense of data on racial inequities.

This study aims to explore these issues through the lens of racial noticing, focusing on TCs' reflections on their roles as educators in confronting systemic inequities after engaging in data investigations of issues of systemic racism. The aim of this study was to address the following research questions:

1. How do TCs interpret and respond to statistical data that highlight racial disparities in education after engaging in data investigations?
2. What are some tensions that arise as a consequence of this engagement?

Theoretical Framework

For our study, we draw upon Shah and Coles' (2020) framework of racial noticing. Before we discuss this framework, we situate our study in Leonardo's (2009) analysis of whiteness, which he

describes as a racial discourse rather than a fixed identity. In his words, "'Whiteness' is a racial discourse, whereas the category 'white people' represents a socially constructed identity, usually based on skin colour" (p. 169). This framing highlights whiteness as a system of meaning-making that organizes institutions, norms, and practices in ways that normalize white dominance. Leonardo (2009) also identifies the ideological, ontological, and epistemological dimensions of whiteness, which sustain its power across multiple levels of education. For example, whiteness can shape ideology through deficit explanations of student outcomes, ontology through the presumed neutrality of white teachers, and epistemology through privileging ways of knowing that align with white experiences.

Foregrounding Leonardo's conceptualization makes it clear how whiteness manifests in what it means to do school. Whiteness upholds racial hierarchies by shaping perceptions, decisions, and institutional norms, particularly in predominantly white spaces. Within U.S. schools, students are often expected to conform and comply with white, middle-class, heterosexual, monolingual English-speaking culture (Battey & Leyva, 2016). As such, students who do conform and comply, turning in homework, being quiet in class, and using "acceptable" language, may be more likely to be afforded academic opportunities, and those who do not may be more likely to be disciplined. Disentangling student compliance and assimilation from their mathematical ability requires a rejection of whiteness. This conceptualization anchors our analysis in the broader literature on whiteness while connecting to mathematics education scholarship documenting its manifestations in curricular content, teacher expectations, and classroom discourse (Battey & Leyva, 2016; Ladson-Billings, 1998).

Drawing upon the notion of whiteness and the body of literature on teacher noticing (Sherin et al., 2011; Sherin & van Es, 2009; van Es & Sherin, 2002), Shah and Coles (2020) develop the idea of racial noticing in teaching. Whereas traditional teacher noticing work focuses on the practices of attending to, interpreting, and formulating responses to student thinking, Shah and Coles (2020) consider those same three practices but in relation to racial phenomena. They also provide illustrative categories, shown in Table 1, that are not meant to be an exhaustive list, as we expand upon them later in this paper. These practices are positioned as important for all TCs to learn as race and racism deeply intersect with teaching beliefs and practices. Furthermore, as discussed earlier, our teaching workforce in the U.S. is still predominantly white while the population of public schools is increasingly not. Emphasizing racial noticing also helps to push the conversation of race and racism beyond a single course focused on the foundations of education or on equity into TC's methods courses and internships, where such practices play out in the context of teaching mathematics.

Table 1. *Shah and Coles (2020) Racial Noticing Framework*

Attending to racial phenomenon	Interpreting racial phenomenon	Responding to racial phenomenon
• Identify and positionality • Social Interactional • Structural practices, artifacts, and norms	• Deficit/dismissive • Recognizing indexed racial narratives • Understanding implications for racially minoritized students	• Verbal responses • Practice-based responses

Previous studies show that classrooms using statistical investigations can serve as transformative spaces for developing racial literacy and catalyzing social change if students engage with datasets that reveal racial disproportionalities, reflect on the implications of their beliefs and actions, and consider the systemic factors that could contribute to these inequities (Casey & Ross,

2022; Casey et al., 2023, Fernandes et al., 2025; Philip et al., 2016; Terry, 2010). Navigating these spaces requires intentional pedagogical approaches that affirm the identities of racially minoritized students and other marginalized groups while also creating space for white TCs to critically reflect on how their own racial and religious identities shape their interpretations and practices (Fernandes et al., 2025; Frankenstein, 1994; Gutstein, 2006; Lesser, 2007; Weiland, 2017, 2019).

Methods

Setting and Participants

This study took place in an undergraduate secondary mathematics methods course during the fall 2024 semester at a large research institution in the south-central United States. The course is designed for TCs pursuing certification in grades 7-12 mathematics education. The course is the first in a two-course sequence focusing on mathematics teaching methods. The study participants included 12 TCs who consented to have their coursework and reflections analyzed as part of this research. I (Liza) served as the instructor of record. Anthony and Travis designed the statistical investigations. Together, we (Liza, Anthony, and Travis) analyzed the TCs' written reflections and discussions.

The 12 TCs were all white, self-identified Christians, born and raised in the Deep South, and had consistent histories of academic success. Three identified as men and nine as women. They differed in their stage within the teacher preparation program and the types of extracurricular activities they were involved in.

We discuss the religious involvement of the TCs because it is a significant theme they brought up throughout the course, and we saw connections to it in the data. All 12 openly discussed their Christianity and involvement in church-affiliated activities. For example, Demi spent her summers working as a camp counselor at Christian summer camps that focus on spiritual growth and discipleship through Bible study, worship, recreation, and mission work. Additionally, Karen was on the leadership team of the Baptist Student Union, a student-led campus ministry dedicated to helping students "know Christ and make Him known" through evangelism, discipleship, missions, and building relationships within a Christian community. Finally, Calvin worked at a local Baptist church as a youth minister. Religious identity was a visible and recurring part of participants' lives, providing important context for understanding how they engaged with course activities and reflected on issues of race.

Four of the 12 TCs, Amy, Demi, Garret, and Ava, participated in a highly competitive scholarship and honors program designed to recruit top students into the teaching profession in the state. We discuss the high academic expectations and benefits of this program here because they may contribute to these four TCs' strong investment in academic achievement and alignment with dominant norms in schooling. Funded by a foundation, the program provides full financial support, including tuition, books, housing, and a meal plan, along with a $1,000 technology stipend. Scholars also benefit from study abroad experiences, professional development opportunities such as attending national conferences, and specialized seminars. The program is jointly administered by the two largest universities in the state and features cross-campus visits and a summer residential institute. Moreover, the scholars have a private suite with comfortable seating and refreshments at the university where they can study between classes. Admission to the program is based on academic achievement, service, and a demonstrated commitment to teaching in the state, with a required five-year teaching commitment to receive full loan forgiveness.

Next, we discuss the courses the TCs had completed to provide information about their prior knowledge, skills, and dispositions. In terms of program progression, the TCs were all juniors and seniors. TCs had all completed at least 44 hours of the general education core, which includes a

modern United States history course, during which they studied the Civil War, Reconstruction, the Civil Rights Movement, and other topics related to race and racism in American history. TCs had also completed most of the 36 mathematics and statistics content courses required in the program. Therefore, they all should presumably have had the knowledge and skills needed to complete the statistical investigation described in this article. Moreover, all TCs had completed teacher preparation courses on the social foundations of education, individualizing instruction for exceptional children, principles of secondary education, and human development and learning strategies in education. Each of these teacher preparation courses had objectives aligned with culturally and linguistically responsive pedagogy. However, at the time we are preparing this manuscript, none of the syllabi mentioned race. This may be due to a federal mandate that led to university administration requiring faculty to remove all mention of diversity, equity, and inclusion (DEI) during the spring 2025 semester. Given this DEI purge, it is difficult to discern whether TCs discussed race in these courses, because we don't have access to syllabi from before the DEI purge to know for sure what was being taught in these courses when the TCs took them. Our review of the syllabi of the courses in the program suggests that although PSTs had some theoretical exposure to inclusive teaching, explicit discussions about race and racial equity may have been largely absent from their formal coursework. Finally, PSTs had previously completed 50 hours of field experience in public schools and were obtaining an additional 25 hours during the methods course. These schools served majority-Black student populations (approximately 70%), offering frequent, though not necessarily critically framed, opportunities to observe racialized patterns in schooling.

Researcher Positionalities

As the instructor, researcher, and author, I (Liza) occupied a dual role that shaped both the design and interpretation of this study. My thirteen years of experience teaching mathematics methods courses in the Deep South, along with prior work leading TCs in statistical investigations of racial disparities in school funding (Casey et al., 2023) and discipline (Bondurant et al., 2024), informed the structure of the activity. Teaching in Mississippi, a state with a long history of racial injustice, has deeply influenced my understanding of how systemic racism continues to shape educational opportunities. Importantly, my own learning about racism and the need for antiracist teacher education has been shaped by data. Through collaborative investigations using real-world statistics, I came to see how inequities are embedded in structures and policies. A podcast (Teaching Math Teaching, 2023) introduced me to the Statistical Investigations of Systemic Racism project (https://pages.charlotte.edu/datamodulesandsystemicracism/), which inspired this collaboration. Because data played a pivotal role in my own learning, I sought to provide similar opportunities for TCs to engage directly with statistical evidence as a means of developing racial noticing. These positionalities guided both the choice of datasets and the scaffolding of activities to foreground systemic racism in ways that were accessible to white TCs.

As a white Christian mathematics teacher educator in the Deep South, I approached this work with a reflexive stance, recognizing how my positionality shaped what I noticed, how I facilitated discussion, and how I interpreted TCs' engagement with race. In addition, my identity as a Christian who has regularly attended church for more than four decades gave me insight into the belief systems and perspectives of many TCs, which I drew on as a lens when interpreting their responses. My whiteness afforded me institutional legitimacy in leading conversations about race in a predominantly white teacher education program, but it also limited what I could perceive and how students positioned me. For instance, I may have unintentionally centered perspectives that felt more comfortable to white TCs or overlooked forms of resistance that scholars of color might have recognized differently. My racial identity influenced both curricular choices, such as

foregrounding statistical investigations as an entry point into conversations about systemic racism, and collaborative analysis decisions, including how we coded for deficit framings and attended to nuanced resistance. To address these limitations, our team engaged in collaborative coding to check interpretations, surface multiple perspectives, and uplift voices that challenged normative assumptions.

I (Anthony) am an East Asian man who has lived in the U.S. for 23 years. Over time, I have come to understand the permeation of race in all aspects of life in the U.S.. I have had some experience with racism (e.g., "Go back to your country") but have not experienced the level of racism faced by Black people, and, like the other authors, I engage in the process of learning through reading and discussions. My positionality influenced the collaborative interpretation of students' engagement with race and how we attended to nuanced forms of resistance in coding and analysis. Though I knew about and occasionally did social justice activities in my content course for middle grades preservice teachers, the murder of George Floyd prompted me to engage further in understanding race, racism, and racialization, and incorporate these ideas into my statistics course for preservice teachers. Since May 2020, I have consistently been designing and testing activities that push preservice teachers to engage with how race operates as a system.

I (Travis) am a former high school mathematics teacher and currently teach statistics and teacher education courses for mathematics teachers. I draw upon these experiences to think about how to use data investigations to bring sociopolitical issues into mathematics classrooms that are often positioned as neutral, objective spaces. As a white, middle-class, man, I acknowledge that I do not have first-hand experiences facing racism, sexism, or poverty. This positionality shaped my contributions to collaborative analysis, including how we interpreted TCs' engagement and checked for potential blind spots related to whiteness and deficit framings. To reflect on that privilege, I try to do the work of learning about and investigating such issues. I try to use such learning in my work by creating space for others to reflect on their notions of race and racism, including by collaborating on designing the modules taught in this study. Because race is so prevalent in the data we collect in the U.S., I have discussed issues of race and racism in data in all of my courses since starting to work in post-secondary education, which is why I was so interested in working on designing the modules. I also try to reflect on my own journey of becoming aware of the issues I now try to incorporate into my instruction to think about what support other instructors might need to start that journey. Because of my lack of first-hand experiences with racism, I find it important to rely on the frameworks of others who have and to analyze data in collaboration to try and mitigate my blind spots to whiteness and racism. Part of my past experiences that pushed my thinking in the analysis was looking for explicit mention of race and racism, as that has power, particularly in spaces where it is often left unsaid or implied. Related to our specific findings, considering the religious affiliation or beliefs of students was never a part of the design process in creating the modules. However, based on my own personal experiences having taught the modules and pre-service teachers in general, the finding resonated with me as I have also observed my students identify strongly with religion and bring that into their identities as future teachers. The finding also resonated with me as someone whose interests in social justice work are rooted in my Jesuit secondary education, where I was introduced to Freire and the social justice movement in Latin America, though I consider myself more of an agnostic currently.

Overview of the Module

In the methods course, a one-week module (two, 75-minute in-person classes, and approximately three hours of out-of-class assignments) with a structured sequence of activities was dedicated to TCs learning about the statistical investigation cycle and how to integrate technology into their mathematics teaching. During the first 75-minute in-person class, I (Liza) posed the

framing question, "I know none of y'all have ever gotten in trouble at school, but think of a friend who was suspended. Was the punishment fair?" Next, I (Liza) facilitated a discussion about how some of the same student behaviors could be interpreted differently depending on whether the educator has a deficit or asset orientation about the student (Kobett & Karp, 2020). I provided TCs with several concrete examples (see Table 2).

Table 2. *Different Interpretations of Behavior*

Deficit Orientation	Asset Orientation
Bossy	Natural leader, visionary
Defiant	Holds strong beliefs, bold, determined
Demanding	Knows what they want, outspoken
Dramatic	Expressive, passionate
Fearful	Cautious, careful
Fussy	Has strong preferences
Hyperactive	Energetic, enthusiastic, on the go
Impulsive	Spontaneous, instinctive
Oppositional	Advocates for a different perspective
Rebellious	Is finding their way
Stubborn	Persistent, determined, steadfast
Talkative	Enjoys communicating
Tattletale	Seeks justice, respects rules
Unfocused	Multitasks, pays attention to many
Wants attention	Advocates for needs, seeks connection

Subsequently, the TCs were asked to read the local high school's policies for out-of-school suspension (OSS) and admission to honors mathematics in the student handbook. The class discussed how subjective biases may influence these seemingly objective policies. Next, the instructor facilitated a discussion about race, levels of racism (Nth Education Partners, 2023), and how/why there is no such thing as a neutral stance regarding racism (A3IMS, 2024). This was the first explicit class discussion about race.

Then, to frame the investigation of racial disparities in Advanced Placement (AP) mathematics enrollment, I (Liza) facilitated a discussion about the myth of meritocracy. I stated, "I know y'all are hard workers and earned your spots in advanced math classes, but can you think of classmates who may have been weeded out instead of weaved in?" (Carpenter, 2022). I shared the fact that nationally, high-achieving Black, Latinx, and low-income students who take and pass Algebra I in eighth grade still end up taking advanced math courses at lower rates than their peers (Baker et al., 2023; Faulkner et al., 2014). In total, these framing discussions lasted about 10 minutes.

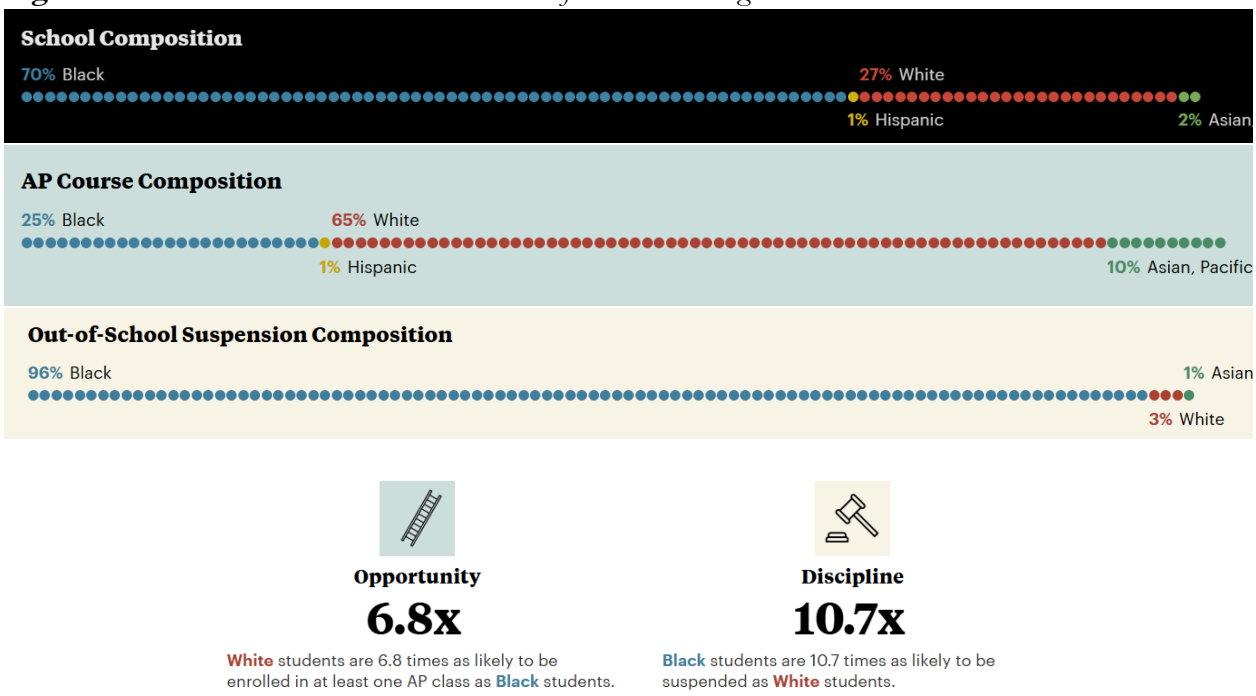
Next, I (Liza) led the TCs on a guided exploration of ProPublica's Miseducation website (Groeger et al., 2018). I asked the TCs to search the website for the local high school, where they were currently completing field experiences, and look at the data dashboard for that school (see Figure 1 for an example of a data dashboard). I posed the following questions to guide TCs' exploration of the interactive data dashboard:

1. What is the racial composition of students at the school?
2. What racial divide comparison for 'opportunity' is provided?
3. What racial divide comparison for 'discipline' is provided?
4. What is the racial composition of students who received OSS? How does this composition compare to the composition of the school?

5. What is the racial composition of students in AP mathematics? How does this composition compare to the composition of the school?

I (Liza) purposefully included race in each prompt because in previous semesters, when race was not included in the prompts, TCs focused on other variables, like gender. Though we acknowledge that race intersects with other variables like gender and SES, the purpose of this exploration was for TCs to develop an understanding of what racial disproportionality is and why it's an important issue in the US public school system. We chose this data dashboard specifically because TCs could locate data points of personal interest to them and that they had personal experiences with to make connections between racial data and their lived experience. The Miseducation data dashboard also provides data visualizations that allow TCs to make comparisons between the racial composition in different settings as compared to the school population, which facilitated sample to population comparisons to provoke discussion about racial inequalities.

Figure 1. *ProPublica Interactive Data Dashboard for the Local High School*



During the class discussion, TCs discussed that they noticed the dashboard included how many times more likely a white student was to be in AP mathematics and how many times more likely a Black student was to receive OSS. TCs asked how these figures were calculated, so I (Liza) shared the relative risk ratio formula with the TCs.

Relative risk is the risk of one subgroup in comparison to the risk of all other subgroups to experience any disproportionate outcome. A risk ratio of one means a subgroup faces no disproportionality, less than one means underrepresentation, and more than one means overrepresentation of a subgroup. I (Liza) illustrated the following example, if about 15% of Black students receive OSS and about 5% of white students do, the relative risk ratio would be 0.15/0.05 = 3. This means that Black students are about three times more likely to receive OSS (Skiba et al., 2011). Finally, I shared slides from the state department of education showing the number of school districts that exceeded the state's risk ratio threshold (Mississippi Department of Education,

2019, slide 24). I explained that states were required to report this information by IDEA section 618(d).

Statistical Investigation. Subsequently, TCs learned about the steps in a statistical investigation cycle, namely formulating a statistical question, collecting data, analyzing data, and interpreting the results (Bargagliotti et al., 2020), and engaged in a statistical investigation that had an integrated focus on developing their critical statistical literacy (Weiland, 2017). The statistical question that the class focused on was: Are there racial disproportionalities in OSS?

The complete materials for the statistical investigations can be accessed freely (https://pages.charlotte.edu/datamodulesandsystemicracism/). The data was derived from the Civil Rights Data Collection (CRDC) and includes information on overall student enrollment and OSS rates. OSS rates served as a proxy for school discipline. The data uncovers well-documented patterns of racial disparities in OSS rates. During class, I (Liza) facilitated discussions about the implications of these racial disparities, including the "school-to-prison pipeline" and lost learning opportunities (Blad, 2023; Epstein et al., 2017; Gregory et al., 2017; Fabelo et al., 2011; Terry, 2010).

Article continues on the next page.

Table 3. *Module Timeline*

Day/Session	Activity	Description	Tools/Materials	Learning Goals
Day 1 - Opening Discussion	Framing the Inquiry	Instructor posed the question: "Was the punishment fair?" to introduce equity in school discipline	Verbal prompt	Engage TCs in reflective thinking about fairness and subjectivity in disciplinary actions
Day 1 - Orientation to Asset-Based Lens	Deficit vs. Asset Orientations	Class discussion on how the same student behavior can be interpreted through different lenses (e.g., "bossy" vs. "leader")	Table of behavior interpretations (Table 2)	Promote critical awareness of teacher bias in behavior interpretation
Day 1 - Policy Reading	Policy Analysis	TCs read local school handbook policies on OSS and honors math admission	School handbook	Identify how policies may appear neutral but embed biases
Day 1 - Race & Racism Primer	Conceptual Framing	Class discussion about race, levels of racism (Nth Education Partners, 2023), and rejecting neutrality (A3IMS, 2024)	Selected frameworks and visuals	Build shared vocabulary and orientation for discussing racism explicitly
Day 1 - Myth of Meritocracy	Critical Conversation	Instructor introduced research on unequal access to advanced math and prompted reflection on weeding out vs. weaving in (Carpenter, 2022)	National statistics (Baker et al., 2023; Faulkner et al., 2014)	Disrupt assumptions about fairness in academic advancement
Day 2 - Data Exploration	Guided Inquiry with School-Level Data	TCs explored racial disparities in AP math and OSS at local high school using ProPublica's Miseducation dashboard	ProPublica interactive dashboard	Develop data literacy focused on racial disproportionality
Day 2 - Relative Risk Instruction	Mathematical Framing	Instructor introduced relative risk ratio and modeled a national example	Skiba et al. (2011); State Ed. Dept. slides	Understand statistical concepts relevant to equity (risk ratio)
Day 2 - Investigation Launch	Intro to Statistical Investigation Cycle	Instructor introduced the cycle (formulate question, collect, analyze, interpret)	Bargagliotti et al. (2020)	Develop understanding of statistical reasoning
Day 2 - Tool Introduction	CODAP Tutorial	Instructor modeled opening CRDC data in CODAP, creating plots, and computing summary statistics	CODAP; Mississippi OSS dataset; CRDC	Build fluency with data analysis tools
Day 2 - Data Analysis & Interpretation	Collaborative Statistical Investigation	TCs investigated OSS data for racial disparities using box plots, relative risk, etc.	CODAP; relative risk formula	Apply statistical tools to investigate equity issues
Post-Class - Reflection	Online Written Reflection	TCs submitted individual reflections about their findings and insights	LMS	Deepen personal understanding of the connections between math, race, and justice

I (Liza) provided the TCs with the Mississippi data file that included all schools in the 2017-2018 school year and showed them how to open it in the Common Online Data Analysis Platform (CODAP; The Concord Consortium, 2020). The TCs were guided through a basic CODAP tutorial on how to create dot plots, histograms, and box plots. I also demonstrated how and why to determine the shape, spread, center, and outliers in CODAP. Finally, given that the TCs were new to CODAP, I showed TCs how to create a variable in CODAP that calculated the relative risk ratio, under the conditions that a minimum of 11 students of each race were enrolled and received OSS.

For the remainder of the class, TCs engaged in a statistical investigation to examine racial disparities in education, using mathematical concepts such as relative risk ratio, the statistical investigation cycle, measures of shape, center, and spread, identification of outliers, and five-number summaries. This investigation served as a means to explore their interpretations of data and to prompt discussions about equity in discipline practices. Through analyzing the data and discussing their interpretations, TCs considered how statistical evidence informs equitable decision-making. After class, they completed the aforementioned online reflection assignment. An overview of the instructional module can be found in Table 3.

Data Source

The data sources for this study included instructor field notes documenting TCs' engagement with the investigation and moments of resistance or shifts in thinking, as well as written reflections from TCs analyzing their statistical findings. The following prompts guided the TCs' written reflections:

1. In what ways could our discipline decisions, as defined by our discipline referrals, lead to school suspensions being objective or subjective?
2. In what ways could our academic opportunity decisions, as defined by our sorting (recommending for honors sections, the ways we group students in our classes) and rankings (grading) be objective or subjective?
3. What did you learn about
    - statistics?
    - racial disparities in school discipline or academic opportunity?
4. What actions could you, as a math teacher, take to impact change related to what you learned?

These prompts were designed based on a conceptualization of whiteness as a system of social, cultural, and institutional advantages that shapes norms, perspectives, and interactions (Leonardo, 2009), to reveal TCs' perspectives. Questions one and two focus on TCs' perspectives on whether a mathematics teacher can be objective in their academic and discipline decisions. Question one addresses TCs' views regarding the behavior of students of color. Question two explores TCs' views about the myth of meritocracy. Questions three and four are intended to target the effectiveness of the activities in addressing our goals of advancing TCs' equity literacy and critical statistical literacy. All names used in this manuscript are pseudonyms to protect the TCs' identities.

Instructor Intentions and Reflections

I (Liza) did not anticipate significant pushback during class discussions, in part because they were highly motivated to succeed academically, and, more importantly, because I had established positive relationships with the TCs. The TCs consistently engaged seriously with course assignments and had never challenged me in overt or disruptive ways during class time. However, I was concerned that they might raise complaints outside of class with faculty, staff, or administrators if they felt offended, for example that I was accusing the TC of racism, or perceived

the material as unrelated to mathematics or teacher preparation. I feared that such complaints could result in administrative scrutiny or disciplinary meetings.

These concerns were not hypothetical. In the previous semester, while implementing an earlier version of this module, one TC repeatedly left the room during class sessions focused on race, propped the door open during discussions, as if to invite observation from outside, and later submitted a letter challenging the focus of the module. In the letter, the student argued that racial disparities in school discipline were explainable through cultural differences, particularly by contrasting music preferences between Black and white artists. He suggested that Black youth were more influenced by music promoting unlawful behavior and, therefore, more likely to act disruptively in school, concluding that teachers should intervene to prevent students from engaging in behaviors that could lead to incarceration. Although the letter acknowledged that not all students were influenced in the same way, the overall message reduced complex systemic issues to essentialized cultural explanations and sidestepped institutional or structural critique. In the wake of this experience, I became acutely aware that I am always being watched, even when I'm not, because, as Foucault describes, schools function as panopticons where power relations and social norms are constructed and maintained (Johnson et al., 2022). This dynamic is amplified in the digital age, where omnipresent smartphones turn everyone into potential surveillants, leading me to internalize this constant gaze and self-regulate out of an ever-present, if unspoken, fear.

To reduce the likelihood of such conflicts recurring, I (Liza) deliberately framed all activities related to race and disproportionality within topics explicitly aligned to the course syllabus. These included the state's mathematical content and practice standards addressed (Mississippi Department of Education, 2016), mathematics education technology (using CODAP), classroom management (discipline systems), assessment policies and practices (honors placement), and professionalism. By grounding these discussions in core course topics, I aimed to protect the integrity of the module while reducing the risk of pushback. At the same time, the language of race remained explicit in both the datasets and the written prompts (e.g., suspension rates disaggregated by race, enrollment patterns for Black and white students, and questions that directly named race as a factor), which meant that conversations could not be reduced to generic notions of "diversity." This framing allowed me to maintain curricular alignment while also creating space for TCs to engage with my antiracist teacher education goals, which included: (1) Raising TCs' awareness, through real data from across the state, of racial disproportionalities in school suspensions and honors math enrollment, (2) Using racial noticing tool to explicitly name and analyze how whiteness and systemic racism shape math classrooms, while prompting TCs to consider how their everyday actions could reinforce or disrupt these patterns, and (3) Planting seeds that might grow into sustained antiracist action in how they approach discipline and academic opportunity in their future classrooms. Although this alignment with course topics provided some protection, the explicit naming of race still placed the work at risk in a politically charged climate.

Instructor Intentions and Reflections

Our analysis aimed to answer the following research questions: How do TCs interpret and respond to statistical data that highlight racial disparities in education after engaging in data investigations of issues of systemic racism? What are some tensions that arise as a consequence of this engagement? By engaging in the statistical investigation, TCs were not only responding to abstract questions but also reflecting on their experiences grappling with real-world local data that required them to apply mathematical reasoning in service of equity-oriented decision-making. We identified recurring patterns, themes, and categories within the data to generate insights into TCs' perspectives (Braun & Clarke, 2006). Our analysis process began with the steps of familiarization, coding, theme development, and interpretation, ensuring the rigor and trustworthiness of the

findings (Nowell et al., 2017) to respond to the first research question. My (Liza's) positionality as both an instructor and researcher played a key role in shaping the analytical process. Having facilitated TCs' statistical investigations in real time, I brought an insider perspective to the data analysis, recognizing patterns in their reflections that aligned with my prior experiences engaging teacher candidates in discussions of racial inequities (Ball, 2012). At the same time, I remained mindful of the potential influence of my own interpretations, engaging in collaborative coding discussions to ensure that the findings were grounded in the TCs' expressed perspectives rather than my own expectations.

During the open coding phase, we read the data thoroughly, identified concepts or themes related to Whiteness and race and racism in the students' responses. Based on the themes that came up during open coding and discussion we shifted to deductive coding (Bingham & Witkowsky, 2022) to categorize responses. The deductive codes were guided by Shah and Cole's (2020) racial noticing framework, but we adapted the "interpreting" and "responding" categories slightly to better capture our data. For interpreting, our codes included I1 (deficit/dismissive), I2 (recognizing others' deficit narratives), and I3 (understanding implications for racially minoritized students). For responding, our codes included six practices (R1-R6), ranging from individual recognition of bias without action to social advocacy beyond the classroom. Doing so allowed us to organize data based on key themes identified in previous analyses. The unit of analysis was students' responses to each prompt listed earlier. When responses included multiple sentences, we coded the response as a whole. Each response could have multiple codes as the categories in the framework are highly interrelated.. Each of the three coders coded their data independently on a spreadsheet and had regular meetings to discuss particular instances to determine boundaries and resolve disparities in the coding. Next, we analyzed data for representative and exceptional quotes to enhance our understanding of the TCs' perspectives. We coded independently and then met to reconcile our coding and discussed the codes and coding until we reached consensus (Saldaña, 2013).

To analyze the data to respond to the first research question, we decided to use the racial noticing framework of Shah and Coles (2020), which best captured the themes we were seeing in the data. We chunked the data by TC and response to each question, and we designed different questions to prompt different ways of reflecting. We then coded the data for attending, interpreting, and responding independently and then came together to review our codes. In that process, we found that coding for attending was not very useful as we purposefully prompted them to attend to situations of systemic racism, so every response was coded as attending. We instead focused on the interpreting and responding codes, using the adapted scheme described in Table 4.

Findings

Using the lens of racial noticing from Shah and Coles (2020), we explored how TCs interpreted and responded to statistical investigations that revealed racial disproportionality in discipline and opportunity. Our analysis was guided by our research questions: (1) How do TCs interpret and respond to statistical data that highlight racial disparities in education after engaging in data investigations? (2) What are some tensions that arise as a consequence of this engagement? As our questions and analysis are deeply intertwined, we will present the findings for both questions together rather than parsing them out. We have organized the findings into two sections based on the two types of racial noticing we coded for the first research question and then talk about the tensions relative to the second research question in each of those sections.

Table 4. *Interpreting and Responding Codes Drawing from Shah and Coles' (2020) Racial Noticing Framework in Dialogue With Our Data*

Code Description	Example Responses
I1: Interpreting - Deficit/dismissive, deny deficit narrative, prescribe to deficit narratives, downplaying or ignoring racial incidents, devaluing cultural capital, thinking Black children have lower mathematical ability	**Demi**- *"I was not very surprised by the statistics as they fit most stereotypes of schools in Mississippi regarding racial mold."*
I2: Interpreting - Recognizing that other people prescribe to deficit narratives = biases, Asians are good at math, African Americans are not good at math	**Garret**- *"Everyone does have inherent biases and as such may treat two people completely differently based on a factor (such as race)."* **Amy**- *"An older teacher may still hold racist prejudices and see one behavior as okay from a white student and a major problem from a black student."*
I3: Interpreting - Understanding implications for racially minoritized students, the ability to grasp the potential negative consequences of racial narratives, suffering, face harsher consequences, disengagement, reduced learning opportunities, and feeling less capable, math identity	**Garret**- *"So, when it comes to discipline, we may accidentally discipline one student harsher than another for the same offense. We may view minority students as having major problem behaviors but white students as having more positive traits. If this is the case, then minority students will be disciplined harsher than the majority. Discipline is always going to be up to the discretion of the teacher so in that sense it will be subjective."* **Adam**- *"As bad as school systems try to avoid this in the public eye I believe it is still happening because for the most part here in the South I feel like there are many more white people in these honors classes in high school knowing good and well I know some others that are more than capable of taking these classes that are not white."*
R1: Responding - Individual, recognize that they prescribe to deficit narratives = biases, practice-based, do not take action	**Hailey**- *"We all have implicit biases, whether we would like to admit it or not, and this plays a role in our actions and decisions."* **Jane**- *"Recognizing and mitigating the impact of these influences is essential for promoting fairness and equity in disciplinary practices."*
R2: Responding - Individual, actions teachers can take to reduce the influence of their biases, go to training/PD, self-evaluate using stats, practice-based, take action including self-reflection	**Karen**- *"As we discussed in class, I find that it is very important to self-reflect on many levels. One area that teachers should always be willing to self-reflect on is if they are holding any biases whether they be explicit or implicit."* **Demi**- *"Ways to avoid this involve implementing standardized grading criteria, seeking input from colleagues to minimize bias, and attending professional development on biases."*
R3: Responding - Individual, be objective, transparent and "proper" criteria (such as test	**Megan**- *"Subjectively can enter when interpreting those criteria such as deciding what constitutes "good"*

score, participation), based on facts/data, discipline based on behavior, track based on ability, blinded grading, practice-based	*participation. Objectivity can come from using clear criteria like test scores or participation levels."* **Karen**- *"In the case of grading, I could also see this becoming an issue in the amount of partial credit that is offered to students. If we allow "favoritism" or other biases to be present, we might be guilty of awarding one of our "gifted" students more points than another student, and this would be subjective. One way that this could be avoided is to cover up a student's name while grading their papers to ensure we are treating every student equally and giving all students fair treatment."*
R4: Responding - Individual, strive for fairness, and equality, treat all the same, a color-blind approach, actually reproducing racism	**Jane**- *"Recognizing and mitigating these biases is crucial for promoting fairness and equity in educational practices."* **Karen**- *"It is important to enter the classroom to treat each student equally. This statement does not just apply to treating a "difficult" student the same as the rest of the class, but it also applies to treating a "gifted" student the same as the rest of the class."*
R5: Responding - Individual, strive for equity, understanding the contextual factors that influence student experiences, random sorting, have students move in and out of tracks, based on stats change actions, get to know students, social/emotional, mentoring	**Demi**- *"It is crucial to be proactive in providing support and resources for marginalized students who may be impacted by discipline bias or lack of opportunities. I can do this by being a mentor, connecting students with academic or social-emotional support services, and advocating for accommodations when necessary. Overall, creating a supportive and equal environment that raises all students up no matter their ability or where they come from is a top priority for me."* **Karen**- *"While the numbers point to the fact that there are more behavioral issues with black students, this should not be written off just with the idea that these students do not behave as well. I believe many other factors should be considered such as the student's home life, struggles they are dealing with, and implicit or explicit biases that could be present."*
R6: Responding - Social, advocate for equitable policies and practices beyond the individual classroom level	**Alan**- *"I think the best way to go about impacting change is to first self-evaluate. We all have SOME kind of bias whether we want to admit it or not. I think the best thing to do is work daily at mitigating that bias while drawing attention to key issues and giving other educators that push in the direction to self-evaluate as well."* **Megan**- *"I will try and be aware and demonstrate fair discipline and be an advocate for equitable practices within the school system."*

Interpreting

Much of the focus of TCs' noticing in the first three prompts was centered on interpreting the statistical data. Tables 5 and 6 show the frequency of statements we coded for each racial noticing practice to provide evidence of what practices were common and which were less common or absent, which we reflect on in the discussion. Many TCs engaged in making sense of the racial disparities presented, describing patterns in the data using mathematical language related to relative risk ratios. However, while they could articulate disparities, their interpretations varied in depth.

Some TCs acknowledged structural inequities contributing to the data trends, while others focused on numerical comparisons without deeper engagement with systemic factors. For example, Garret noted, "We may view minority students as having major problem behaviors but white students as having more positive traits," indicating an awareness of how racial biases shape disciplinary decisions. Similarly, Demi stated, "In my opinion, 'major problem behaviors' could definitely be interpreted differently based on implicit biases, prejudices, and various forms of discrimination," demonstrating an understanding that racialized interpretations influence discipline outcomes.

Table 5. *The proportion of participants (out of 12) who had evidence of each type of noticing by question.*

Question	I1	I2	I3	R1	R2	R3	R4	R5	R6
In what ways could a teacher's discipline decisions be objective or subjective?	0	1 (12)	0.583 (7)	0.417 (5)	0.167 (2)	0.167 (2)	0.333 (4)	0	0
In what ways could a teacher's sorting (recommending for honors sections, the ways we group students in our classes) and rankings (grading) be objective or subjective?	0	0.833 (10)	0.750 (9)	0.167 (2)	0.167 (2)	0.583 (7)	0.250 (3)	0.167 (2)	0.083 (1)
What did you learn about: statistics, racial disparities in school discipline or opportunity, and math technology?	0.083 (1)	0.667 (8)	0.250 (3)	0.083 (1)	0.167 (2)	0.083 (1)	0.083 (1)	0.083 (1)	0
What actions could you, as a math teacher, take to impact change related to what you learned?	0	0	0	0.500 (6)	0.333 (4)	0.167 (2)	0.250 (3)	0.333 (4)	0.333 (4)

Encouragingly, TCs avoided deficit-based explanations in their interpretations. Based on my (Liza's) prior experiences, this finding was surprising given the racial and political context in Mississippi, where narratives that individualize or pathologize racial disparities are common. None of the TCs explicitly attributed disparities to cultural differences and several pushed back on such narratives. Karen, for example, critically questioned the assumption that Black students inherently misbehave more, stating, "I was taken aback by the claim that Black students are more likely to be expelled because Black students behave worse than other students. While the numbers point to the fact that there are more behavioral issues with Black students, this should not be written off just with the idea that these students do not behave as well." It is important to note that the student who wrote the letter objecting to the module was not included in the dataset, as they had taken the course in a previous semester when a different version of the module, less carefully aligned with the course syllabus, was implemented..

However, very few TCs named racism explicitly in their interpretations. Across all of the TCs' responses, only two TCs used the word "racism," and only seven TCs used the word "race." This means five TCs never mentioned "race" or "racism" at all. In addition, just four TCs used the word "white" in five statements (Garret once, Amy twice, Jance once, and Karen twice), and four TCs used the word "Black" in five statements (Garret once, Amy once, Jance once, and Karen twice). Some TCs pushed back on racism without explicitly naming it. For example, Karen's quotes in Table 4 include only one mention of race even though she challenges deficit framings. This raises the question of whether TCs can meaningfully push back on racism without naming it. Calvin stated, "According to the statistics given, there are lots of racial differences and prejudices that happen in the classroom based on students' skin color and social status." Although Calvin did not explicitly name racism, his use of the term "prejudices" could be a stand in for racism. The reluctance of some TCs to explicitly name racism may indicate the influence of color-evasive ideologies (Bonilla-Silva, 2021), in which individuals acknowledge inequities but avoid directly addressing systemic racism as a causal factor. Although we would not necessarily expect TCs to be consistently identifying systemic racism after one module, we are hopeful they would at least have a better understanding of what racism is for continued work in the future. I (Liza) found TCs' hesitancy to discuss racism mirrored patterns I observed in previous semesters when engaging TCs in discussions of racial disparities in school funding. Despite presenting clear statistical evidence of systemic racial inequities, several TCs framed disparities as unfortunate rather than unjust, stopping short of explicitly naming racism as a systemic problem. This is a tension that is important to address. This finding underscores the need for mathematics teacher education to not only incorporate statistical investigations of racial inequities but also to provide ongoing, structured opportunities for TCs to critically examine their own racialized understandings of educational data.

Responding

While interpreting was done widely by the TCs, responding was less common, as shown in Table 6. Additionally, Table 6 illustrates how we did not see the use of specific responding practices identified in our coding scheme (R1-R6 in Table 4) consistently across TCs. These ranged from recognizing but not acting on deficit narratives (R1), to individual-level actions such as PD or self-reflection (R2), to color-blind fairness approaches (R4), to equity-oriented classroom practices (R5), and, less frequently, to social advocacy beyond the classroom (R6). We observed a shift toward responding in the final prompt, which explicitly asked TCs to propose actionable next steps. This emphasis on classroom-level responses suggests that many TCs were in "teacher mode," centering what they perceived to be within their locus of control rather than broader systemic advocacy. While earlier responses contained some reflection, the fourth question elicited a stronger focus on identifying changes TCs could make in their own classrooms. For clarity, the

numbers in Table 6 represent the count of responses coded for each practice across all prompts. For example, Hailey's "4" under R1 indicates that four of her responses across different prompts were coded as R1. However, relatively few responses extended beyond individual actions to advocate for systemic change or broader policy shifts. The two most common types of responses were personal reflection and an emphasis on objectivity vs. subjectivity.

Table 6. *Count of responses by participant where noticing was coded*

	I1	I2	I3	R1	R2	R3	R4	R5	R6
Amy	0	3	1	1	0	1	1	0	0
Megan	0	2	2	1	0	1	2	0	1
Demi	1	3	1	2	3	1	2	2	1
Karen	0	3	2	2	1	2	3	1	0
Garret	0	2	3	1	0	1	0	1	0
Ava	0	2	3	0	0	1	0	2	2
Jane	0	2	0	1	1	1	2	0	0
Tami	0	2	0	0	1	1	1	0	0
Alan	0	3	2	0	2	0	0	0	1
Calvin	0	3	1	2	2	0	0	0	0
Adam	0	2	2	0	0	2	0	0	0
Hailey	0	3	2	4	0	1	0	1	0

Personal reflection came up where TCs recognized their own implicit biases and ways they may have previously subscribed to deficit narratives. These reflections emerged in response to prompts in the module that encouraged TCs to consider their own beliefs and behaviors in light of the statistical data, though the module did not provide explicit instruction on strategies for addressing biases. For instance, Hailey admitted, "We all have implicit biases, whether we would like to admit it or not, and this plays a role in our actions and decisions," highlighting a growing self-awareness. Similarly, Megan wrote that she thought it was important to, "be mindful of what our biases are," reflecting the module's emphasis on self-awareness rather than explicit methods for bias reduction, indicating an intent to monitor personal prejudices but without specifying concrete strategies for change.

TCs responses revealed a tension between their acknowledgement of implicit biases that led them to make subjective judgements and their desire to attempt to be objective in their decision making. Some responses emphasized objectivity, with TCs expressing commitments to using "fact-based," "transparent," or "fair" approaches in decision-making. For example, Adam advocated for removing subjectivity, stating, "We as educators shouldn't look at the person but look at the scores and numbers," suggesting that he believed neutral metrics could counteract bias. Similarly, Amy proposed, "If proper grading is used, then the student's work is being looked at for what it is rather than whose it is," reinforcing the idea that objective measures could eliminate bias.

While the TCs' responses suggest an awareness of the need for equitable practices, they may also reflect dominant ideologies that position neutrality and individual responsibility as sufficient responses to systemic inequities or focus on what is within their perceived locus of control, rather than engaging with deeper structural critiques (Battey & Leyva, 2016). Additionally, trends in interpreting and responding differed by participant. Some TCs engaged in multiple forms of interpretation and response, demonstrating a range of reflective stances, while others exhibited more limited engagement.

We observed varying degrees of depth in TCs' responses. For instance, while Demi demonstrated an awareness of a need to, "actively work to create an inclusive and equitable

classroom environment where all students feel valued and respected," the interpretation of her response depends on what she means by "equitable," as it could also be considered color-evasive if it assumes uniform treatment rather than responding to students' distinct needs. Others, such as Jane, took a more neutral approach, saying, "Just treat everyone the same and always respect my students," reflecting a color-evasive stance that assumes equity is achieved through uniform treatment rather than a responsive approach based on each student's needs. The varying degrees of depth in TCs' responses could be related to the prompts they were asked to answer. Alternatively, their responses could reflect their differing ideological orientations towards equity.

While most TCs responded in ways mainly consistent with what they consider within their locus of control, a few TCs discussed systemic advocacy in their responses. For example, Megan stated, "I will try and be aware and demonstrate fair discipline and be an advocate for equitable practices within the school system," which moves beyond personal reflection to systemic intervention. Ava even envisioned structural change at a policy level, stating, "If there was a dream job that I could have, I would work for the state's Department of Education to help rewrite the state curriculum and restructure the social climate in the school systems." It seems Ava used the term "social climate" to discuss systemic inequities without explicitly naming race. These responses indicate a range of engagement levels, from internal self-reflection to a commitment to institutional change.

Overall, these findings reveal that while many TCs acknowledged biases and inequities, there was a hesitancy to name racism explicitly, engage in deeper structural critiques, or propose systemic solutions. As Hailey summarized, "Seeing these results was important in helping me recognize that I need to be very aware of my actions as a teacher," reinforcing the idea that many TCs' responses remained centered on personal responsibility rather than systemic transformation. This suggests that TCs are on a trajectory of developing critical consciousness that moves beyond individual awareness towards structural understanding and require consistent support in their preparation programs.

Conclusion and Discussion

In this study, we used Shah and Coles (2020) racial noticing framework as a lens to explore how TCs interpret and respond to statistical investigations revealing racial disproportionality in academic opportunities and school discipline. Additionally, we explored the tensions that surfaced as a result of engaging in the instructional activities. In applying the framework, we found it valuable for organizing patterns of interpreting and responding, yet we also extended it in ways specific to our context. For example, we differentiated subcodes within interpreting and responding (I1-I3 and R1-R6 in our coding) to capture the nuances in how TCs engaged with the data. This suggests that while the framework was generative, future adaptations might further specify different forms of practice-based responses, clarify how color-evasive stances fit within interpreting, and provide more guidance for tracing movement between individual and systemic levels of response.

The design of the reflection assignment likely influenced the forms of noticing evident in TCs' responses. While early prompts focused on data interpretation, the final prompt encouraged actionable responses. Many TCs demonstrated mathematical awareness of disparities, and their interpretations varied in depth. Importantly, none attributed disparities to student deficits, and several acknowledged biases and inequities, an encouraging foundation given their limited formal preparation in antiracist pedagogy. This absence of deficit explanations is one of the most surprising findings of the study. We interpret it as partly a function of the module design, which foregrounded systemic explanations through statistical data and discussion prompts, thereby

narrowing the discursive space for individual or culture-based deficit framings. It may also reflect TCs' awareness of the course context and their positioning as future teachers, which could have prompted more cautious or equity-oriented responses. Seven of the 12 TCs used the word "race," two TCs used the word "racism," four referred to "Black" students, and four mentioned "white" students. We consider this a promising sign, especially in the Deep South, where naming race explicitly in educational settings remains fraught. This suggests the experience may have disrupted some silence around race and laid the groundwork for potential deeper engagement in the future. Sustained, scaffolded antiracist learning opportunities will be necessary to help TCs move beyond surface-level noticing and towards building their critical consciousnesses (Bonilla-Silva, 2021).

Although all TCs had completed coursework aligned with culturally and linguistically responsive pedagogy standards, our review of course syllabi revealed that race was not explicitly discussed. This may reflect broader programmatic and political constraints rather than a lack of capacity or will among TCs. Professional standards often foreground TCs' knowledge of mathematical concepts, practices, curriculum, pedagogy for teaching mathematics, and students as learners of mathematics. Therefore, social contexts of teaching and learning mathematics are often backgrounded (Thanheiser et al., 2024). Moreover, during this study (2023 - 2025), DEI language and programming was actively suppressed. Within such a context, the TCs' initial steps toward naming race and recognizing biases and inequities represent meaningful progress.

Consistent with prior research (e.g., King et al., 2023; Legette et al., 2023), few TCs proposed actions beyond the walls of their future classrooms. However, they did recognize personal bias and articulated commitments to fairness and transparency. Given that they are early in their preparation and focused on their immediate roles, this classroom-level emphasis reflects a developmentally appropriate starting point. TCs expressed different views regarding whether objective and neutral decision-making was obtainable. While some TCs believed they could be objective and set it as a goal, other TCs perceived teaching as inherently subjective and value-laden. These TCs expressed a need for constant self-awareness to attempt to combat inherent biases. These tensions reveal the complexity of their emerging professional identities and provide a foundation for future growth.

Many TCs expressed genuine commitments to faith and service. However, in a state where 77% of adults identify as Christians (Pew Research Center, 2023), for some, Christian identity may intersect with color-evasive ideologies in ways that complicate recognition of structural harm. For example, well-intentioned beliefs such as "we are all children of God" can unintentionally mask systemic injustice (Johnson et al., 2021), while at the same time helping some TCs avoid or reject deficit interpretations of students of color. In regions where Christianity is deeply tied to many teachers' identities and public lives, expressions of moral goodness may create a sense of moral impunity, making it harder to confront complicity in inequitable systems. For example, many white Christians in the Deep South pay approximately $20,000 a year to send their white children to almost completely white Christian schools rather than have them attend racially diverse public schools. Is this due to their Christian faith, their racism, or both? We do not make claims about individual TCs but raise the possibility that in contexts where religiosity is culturally dominant, Christian signaling, such as posting Bible verses or emphasizing a service mindset, may inadvertently reinforce color-evasive ideologies (Johnson et al., 2025). At the same time, faith commitments may also support antiracist tendencies, as seen historically in liberation theology and white Christian participation in the Student Nonviolent Coordinating Committee (SNCC). This is especially relevant when moral identity is framed in opposition to systemic critique. However, recognizing this tension can open up fruitful spaces for exploring how faith and justice can be mutually reinforcing rather than in conflict.

In addition, four TCs were members of a prestigious, state-funded scholarship program that emphasizes excellence, leadership, and a five-year teaching commitment. While this program cultivates a strong professional identity, its alignment with dominant norms and expectations of academic and behavioral success may further constrain critical engagement with structural inequity. These TCs may perceive their role as upholding standards rather than questioning them, potentially reinforcing normative discourses of meritocracy and neutrality (Ladson-Billings, 1998). For participants accustomed to academic success and institutional reward, the invitation to interrogate those same institutions may feel disorienting or even threatening. This may lead them to prioritize procedural fairness and personal achievement over systemic critique. These pressures are consistent with how socio-political ideologies and institutional surveillance shape mathematics teachers' beliefs and constrain equity work in the classroom (Johnson et al., 2022).

Taken together, our findings suggest that TCs are beginning to develop awareness of racial disparities and are attempting to respond within their current understandings and institutional roles. Rather than framing individual versus structural action as a binary, we see their responses as situated along a continuum, shaped by their positionality and locus of control. A key implication is that even classroom-level decisions can have structural implications. For example, a TC who notices that Black students are disproportionately excluded from honors math might advocate during placement meetings or design differentiated tasks that allow all students to demonstrate mathematical brilliance. Such actions, while localized, challenge broader institutional patterns. Framing structural change as something only possible at the policy level may limit TCs' sense of agency. Instead, helping TCs recognize how they can engage with structural issues through everyday decisions, curricular choices, grading policies, referral practices, can build their capacity for sustained equity work. Drawing from Gutiérrez (2013) and Martin (2009), we argue that building critical consciousness includes examining how policies, practices, and discourses shape students' opportunities to learn mathematics

This study also reinforces the value of researcher positionality in mathematics teacher education. As both instructor and researcher, I (Liza) witnessed the productive discomfort that can arise when TCs confront data about racial inequity. My prior work (Casey et al., 2023; Bondurant et al., 2024) informed this design, and I entered this study not expecting radical transformation but hoping to spark critical reflection. The TCs' responses suggest that this goal was met in meaningful ways.

While this study provides important insights, it has limitations. TCs' written responses may not capture the full nuance of their engagement, and we did not collect pre-intervention data on their racial ideologies. Furthermore, responses were shaped by the structure of the assignment. Future research could use interviews, classroom observations, or longitudinal designs to better understand how TCs' equity work evolves over time (Shah & Coles, 2020). Ultimately, equipping TCs to recognize and respond to systemic inequities requires sustained, scaffolded learning experiences that go beyond broad notions of inclusion. When given structured opportunities to analyze racialized patterns, even those early in their preparation can begin to shift from awareness toward advocacy. Supporting this journey means meeting TCs where they are, affirming the steps they've taken, and helping them imagine what is possible within, and beyond, the classroom.

Afterword: The Open Review Process

A unique feature of the *Journal for Theoretical & Marginal Mathematics* (JTM-ME) is that authors may choose between the traditional double-masked review process or an open review model in which reviewers and authors engage directly with one another. Based on Liza's positive prior

experiences with the open review process (Thanheiser et al., 2024) and the deeply personal and complex nature of racial noticing and whiteness, we chose the open review process.

Dr. Niral Shah, an author of the racial noticing framework (Shah & Coles, 2020), was our first choice for a reviewer, and we were honored that he agreed to serve as our open reviewer. After carefully reading our first draft, Niral met with us to share feedback. Niral's suggested revisions helped us focus, deepen, and clarify our arguments. In the first draft, we focused heavily on what the candidates did not do. During a meeting Niral asked us a poignant question: *What did you expect?* This question resonated with us for days. Given the context and nature of the intervention, we realized that we were actually quite pleased with the candidates' interpretations and responses.

We revised and resubmitted the manuscript. Again, Niral provided thoughtful suggestions, including encouraging us to read Zeus Leonardo's work on whiteness, and to highlight the tensions that the candidates may experience based on their identity markers as white Christians from the deep south. We are deeply appreciative of Niral for the time he dedicated to meeting with us and sharing thoughtful and thorough suggestions. We are also grateful to the editors of JTM-ME for making this kind of collaborative and transformative review process possible.

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