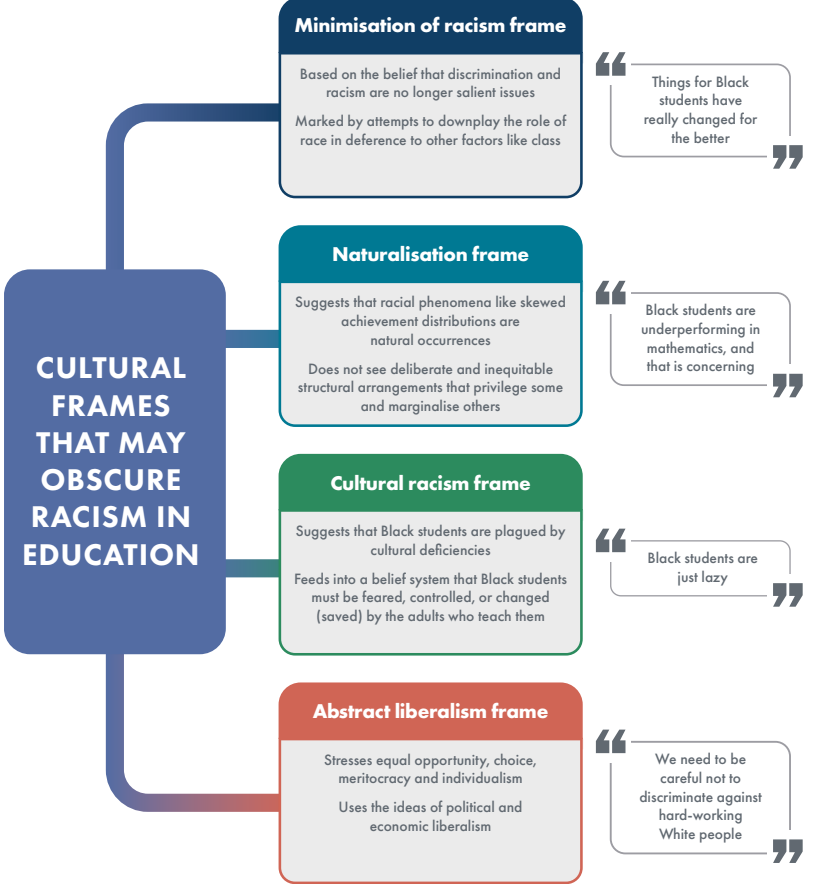




RESEARCH, FILTERED BY CAMBRIDGE MATHEMATICS
IN PARTNERSHIP WITH COASTAL CAROLINA UNIVERSITY

TALKING POINT:
WHAT DOES THE RESEARCH SUGGEST ABOUT RACIAL EQUITY ISSUES IN MATHEMATICS EDUCATION?

- IN SUMMARY**
- Research, and the experiences of minoritised students, challenge the common view that mathematics is neutral
 - Critical race theory may provide a useful lens with which to examine educational systems within which racism is systemically embedded in many cultural and day-to-day features of school life
 - Instead of using “colour-blind” or “race-neutral” approaches, explicit talk about race and the use of counter-narratives is suggested, centring the experiences of minoritised students in the mathematics classroom
 - Teachers rejecting deficit narratives surrounding Black and ethnically minoritised students allow space for these students to create their own mathematically successful identities
 - Statistics on achievement should be considered in the light of the barriers both within and outside school which may have contributed to differential patterns of mathematics success
 - Critical reflective practice that encourages teachers to examine their own assumptions and biases around issues of identity should form part of professional development for maths teachers



Adapted from Martin (2007)

1 Although maths is commonly seen as a “gender-neutral, color-blind, and culture-free” discipline,¹ a body of research in mathematics education, often using the lens of critical race theory, challenges this perception.² Racism exists and is “routinely embedded in the everyday mundane realities that shape society”³ and the day-to-day experiences of minoritised people (groups defined as “different” as a result of social constructs and who therefore have less power or representation compared to other members or groups in society) in Western cultures, including in the classroom; it is not merely the result of isolated individuals engaging in overt racist behaviours.^{4,5} Critical race theory has been used to gain insight into the ways educational systems maintain White supremacy through policies, institutional structures, classroom practices, and curricula,^{6,7} often through the use of cultural frames that may obscure underlying racism (see infographic).

IMPLICATIONS: Critical race theory may provide a useful lens with which to examine education systems and ideologies and the way that they support the continuation of White supremacy

Both research, and the experiences of minoritised students, challenge the view of mathematics education as neutral and culture-free

Examination of cultural and day-to-day features of school life could indicate the extent to which racism is embedded in systemic ways that are more than just individual behaviours or decisions, allowing those working in schools to listen, reflect and challenge such practices

2

Evidence suggests educational systems perpetuate racist inequities: for example, the characterisation of Black children as inherently mathematically deficient;⁸ or the practice of tracking or setting by attainment where disproportionate numbers of minoritised students tend to be placed in lower attaining groups, where they are taught by less experienced teachers, where less of the curriculum is covered, and where they make less academic progress.^{9,10} It is important to resist dominant deficit narratives about Black and ethnically minoritised students, which can unconsciously shape our understanding of the mathematical abilities of students of colour, often inhibiting their progress.¹¹ Minoritised students experience daily microaggressions in the mathematics classroom, from assumptions that high achievement on mathematics assessments is the result of cheating^{12,13} to the expectation that minoritised students in mathematics classrooms behave in ways that require them to abandon their own community cultures and comply with dominant White culture in order to be considered successful.¹⁴ Statistics on Black student achievement may be misrepresented and fail to tell the whole story; for example, studies that report metrics but fail to give attention to the barriers, both within school (lack of funding, lack of high-quality teachers, lack of books and equipment) and outside of school (racism, poverty, lack of community connections), that might affect mathematical motivation, engagement, and achievement.² Teacher beliefs associated with racial and cultural identifiers interfere with teachers' abilities to set and maintain high expectations for all students.¹⁵

IMPLICATIONS: The culture of educational institutions in the West often perpetuates racist inequities by constructing Black students as already mathematically deficient, and by the use of attainment setting, which disproportionately places Black students in lower sets

Minoritised students experience day-to-day patterns of behaviour towards them which are unfair and inequitable; for example, suggestions that they have cheated if they are mathematically successful

Examining teacher beliefs and biases may increase high expectations for all students and therefore mathematics classroom equity

When considering statistics on achievement separated by racial identity, careful consideration should be given to the barriers both within and outside school which may have contributed to discernible patterns

3

Ignoring or minimising the problem is ineffective; mathematics classrooms are highly racialised spaces and "colour-blind", "race-neutral" approaches to student identities (for example, saying "I don't see colour in my classroom") only perpetuate inequality.² Successful maths teachers do not accept poor performance from students as "just the way it is" but expect and enable all students to succeed, scaffolding progress appropriately. White mathematics teachers who are successful with Black students do not avoid race talk; rather these teachers "initiate discussions about race and incorporate them into their mathematics lessons."¹⁶ Teachers who trouble their own ideas and assumptions around race as part of professional development are able to develop more successful and thoughtful approaches to teaching diverse student populations.¹⁵

IMPLICATIONS: Evidence suggests "colour-blind" or "race-neutral" approaches to student identities in mathematics education can in fact perpetuate inequality

Teachers who resist dominant deficit narratives surrounding Black and ethnically minoritised students allow space for these students to create their own mathematically successful identities

Successful mathematics teachers believe and expect that all students can succeed in mathematics; these teachers are willing to scaffold content for all students

Explicit discussion of ideas around race in the mathematics classroom – as opposed to avoidance of discussion of these issues – is more likely to promote mathematical success for Black students

Schools should build a culture of reflective practice that encourages teachers to examine their own assumptions and biases around issues of identity

"No matter how rich the mathematics being discussed, a classroom in which a small number of students get most of the 'airtime' is not equitable"

Schoenfeld, 2014

"What's key is that we have to be active in our efforts to educate, and confident in addressing race in schools. We can't leave addressing race to chance"

Rollock, 2020

"Systemic racism, both historical and current, inevitably seeps into the classroom. And, when this marginalisation is normalised in children's minds – even in seemingly insignificant ways – it sticks"

Teach First report, 2020

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