



“Critical Math” Doesn’t Add Up: Race Consciousness and Radical Egalitarianism in the Curriculum

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Most people think that chess is a nonideological game. Soviet commissar Nikolai Krylenko did not think so. In 1932, in Stalin’s USSR, Krylenko declared that: “We must finish once and for all with the neutrality of chess. We must condemn once and for all the formula ‘chess for the sake of chess,’ like the formula ‘art for art’s sake.’”¹ Chess, Krylenko believed, was an ideological battlefield. Krylenko argued that since chess was “a weapon of cultural revolution,” it needed to be imbued with “political content,” and chess players must be “political workers” who were active participants in building a socialist society.²

Most people think that mathematics is a non-ideological discipline.³ They think of it as an objective discipline that is socially and politically neutral and independent of the society in which it is studied.⁴ But the promoters of “critical math” in the United States do not think so—they likewise see math as an ideological battlefield—and they are increasingly influential in schools of education and public K–12 classrooms.⁵

THE ROOTS OF CRITICAL MATHEMATICS

The advocates of critical mathematics argue that children can only make meaningful sense of math if they do so based on their own lives and social interactions.⁶ The advocates go on to argue that, outside school, math is used almost entirely “to advance or block a particular agenda.” Since, the advocates say, mathematics is inextricably bound up with social conflict, the duty of the math teacher is to prepare the student to challenge the use of math by those who dominate American society.⁷

Critical math advocates argue that mathematics is “inherently political” and “rife with issues of domination and power.”⁸ They maintain that conventional math education serves “nationalism, xenophobia, militarism, and racial capitalism.”⁹

Beginning in the 1980s, certain professors from university schools of education began to argue that teaching methods in the K–12 classroom needed to match (in whole or in part) the cultural practices in students’ home communities.¹⁰ Ethnomathematics, an anthropological view of math, began to develop at that time. Critical mathematics and teaching math for social justice then came to the fore in the early 1990s, followed by applying critical race theory to math instruction in the mid-1990s.

In 1992, Walter Secada (then a professor of mathematics education at the University of Wisconsin-Madison, now a professor and department chair of teaching and learning at the University of Miami), wrote that some math educators (including himself) take disparities in math achievement

among different groups as “evidence of deep structural injustices.” These math educators set about remedying what they described as “inequities.”¹¹ Secada pointed to the national curriculum reform efforts in science, technology, engineering, and math (STEM) in the 1980s and 1990s and suggested that, for certain groups, math teaching was not reformed or restructured enough.¹²

Secada also argued that math reform was designed with the general student population in mind (and then applied to minority students along with others), whereas it should instead be designed with minority groups in mind and then applied to others.¹³ Jeannie Oakes (an education theorist and founder of University of California, Los Angeles’ Institute for Democracy, Education and Access) and others proposed that “certain constructs from sociocultural perspectives on learning” should inform teachers’ general understanding of learning and contribute to “all students’ multiple ways of knowing math and science.”¹⁴

Senior research fellow at the Learning Policy Institute Gloria Ladson-Billings (who retired as professor of education at the University of Wisconsin-Madison in 2018 and was president of the American Educational Research Association in 2006) likewise wrote that by 1995, many teacher-training programs throughout the nation had already “coupled” their efforts at curriculum reform based on discovery learning with a commitment to “social justice and equity.”¹⁵

But Ladson-Billings and Eric Gutstein, an education professor at the University of Illinois-Chicago, objected that such culturally appropriate pedagogy as conventionally conceived just sought to improve minority students’ performance so that they could merely take an improved and warranted place in mainstream society and the existing meritocracy. Ladson-Billings complained that these efforts simply retained the current imperfect system. She speaks of the system with its “current inequities.”¹⁶

Gutstein complained that such efforts were being undertaken in order to improve worker

productivity and for the sake of the goal—which the authors of this chapter call mercantilist—of improving U.S. international competitiveness. A competitiveness focus, Gutstein argues, lessens the “moral imperative and urgency” of equity.¹⁷

Ladson-Billings and others of her persuasion argued that “the source of cultural mismatch” is to be found in the structure of the larger society and that schools mirror the unequal, nonutopian society and serve to slot students into the functional roles in that society. The only effective way to be culturally sensitive and the only solution to cultural mismatch was, these radical social justice activists thought, to embrace the politics of social transformation, not to teach pure math or even to include culturally appropriate contexts.¹⁸

What these woke activists wanted were teaching practices that improved student achievement and led students to embrace a politically sensitive cultural identity. At the same time and—more important—those favoring Critical Pedagogy wanted the students to engage in activities to radically change the existing social institutions, structure, and society as a whole.

Jean Anyon, the late professor of education at the City University of New York, and a Washington, DC, public school teacher, for example, wrote that as a critical educator, a goal of her teaching is “the politicization of students.” She wanted her lessons to push students to become involved in the “public contention” that is part of what she called “the political struggle for equity.”¹⁹

Progressives want teaching practices that lead to academic success and cultural and political change in a complementary way. They ask, “How can pedagogy promote the kind of student success that engages larger social structural issues in a critical way?”²⁰ Critical math has sought to train students and make them part of “the solution to injustice,” both as young people and later as adults. As these progressives argue, students must, as part of their math education, come to “deeply” understand the “sociopolitical dynamics” of the society in which they live.²¹

The favorite theoretical source for proponents of critical math is *Pedagogy of the Oppressed* by Brazilian radical Paulo Freire.²² The proponents of critical math cite, echo, and rephrase his ideas throughout their writings.²³ According to reliable sources, his book, with over a million copies sold, is—aside from a technical guide—the most widely assigned reading in teacher-training schools in the United States.²⁴

Freire contends that the oppressed in capitalist societies will create their own pedagogy out of their experience—a pedagogy that arms them with the consciousness needed to struggle for the overthrow of capitalism.²⁵ When Freire speaks of “pedagogy,” he does not mean teaching methods founded on careful research and designed to result in student academic gains. Rather, Freire’s approach focuses on raising the political consciousness of the oppressed. (His model for successful education is Mao Zedong’s socially destructive Cultural Revolution of the 1960s.)

Freire takes a strong stand against concentrating on student mastery of academic content, which he scorns as “official knowledge.” He contends that mastery of such knowledge changes nothing within the unequal capitalist society.

Freire rejects teacher-led classrooms as sites of passivity where students file facts into their minds as if they were depositing money in a bank. Instead of this “banking concept” of instruction, Freire recommends that teachers treat their students as equals and that they learn from each other through dialogue and projects.

Critical math advocates have sought to instill in students a critical consciousness so that they could participate in creating an egalitarian world.²⁶ As a leading Freire interpreter Antonia Darder, former professor of educational policy at the University of Illinois at Urbana-Champaign and current chair in Ethics and Moral Leadership in the School of Education at Loyola Marymount University, writes, “A revolutionary pedagogy discards the uncritical acceptance of the prevailing social order and its structures of capitalist exploitation, and embraces

the empowerment of the dispossessed populations as the primary purpose of schooling.”²⁷

To return to the form that critical math was taking in the United States, Michael Apple, former professor of curriculum and instruction at the University of Wisconsin-Madison, has said that the “principal purpose” in both the 1989 Curriculum Standards and the 1991 Professional Standards for Teaching Mathematics of the National Council of Teachers of Mathematics was “a just society.”²⁸ How, Apple asked, can K–12 teaching of mathematics serve this goal?²⁹ This approach came to have many names for virtually identical practices: equitable mathematics, equity-focused mathematics instruction, liberatory mathematics education, radical mathematics, critical mathematics education, culturally responsive or culturally relevant mathematics pedagogy, and teaching mathematics for social justice.³⁰

Critical race theory then came on the scene as a way to rework and reformulate critical math. The ideology of critical race theory sees everything through the lens of race. It argues that racism is omnipresent and permanent (absent an egalitarian revolution) and woven throughout current American institutions.³¹ It rejects assertions that those institutions are capable of neutrality and objectivity or capable of permitting a genuine meritocracy. It presumes that racism has contributed substantially to all disparate outcomes. It specifically dismisses any sort of liberalism that “holds that the purpose of government is to maximize liberty” and a liberalism that calls for equal rights before the law.³²

Critical race theory could also be useful, as legal scholar Randall Kennedy points out, to those who—merely as a stratagem—want to brand rivals and opponents as “racist,” or to those who seek special privilege and want to carve out protected jobs as professors, schoolteachers, or providers of teaching materials. Critical race theory can be a vehicle for grabbing and building out turf. Critical race theorists can use it as a device for protecting their market share and eliminating dissenters from job competition.³³

William F. Tate IV, the current president of the Louisiana State University system and a pioneer in applying critical race theory to education in general, and to the teaching of mathematics in particular, concurred with scholars who claimed that the curriculum and teaching of mathematics was too tied to “Eurocentric precepts” that were irrelevant to African American experiences.³⁴

Ladson-Billings summed up the critical math effort to prioritize political skills and consciousness over academic achievement quite outspokenly:

Parents, teachers, and neighbors need to help arm African American children with the knowledge, skills, and attitude needed to struggle successfully against oppression. These, more than test scores, more than high grade-point averages, are the crucial features of education for African Americans.³⁵

PUSHING CRITICAL MATH IN THE CLASSROOM

Progressives have made putting such teaching practices into effect their goal. And, they have decided that teachers’ beliefs and ideologies are key to having these teaching practices adopted.³⁶ As Ladson-Billings puts it, “Not only must teachers encourage academic success and cultural competence, they must help students to recognize, understand, and critique current social inequities. This notion presumes that teachers themselves recognize social inequities and their causes.”³⁷

They have also sought to have teachers discourage individualism and competition and encourage thoroughgoing egalitarianism in the classroom:

All of the [culturally relevant] teachers gave students opportunities to act as teachers. In one class, the teacher regularly sat at a student’s desk, while the student stood at the front of the room and explained a concept or some aspect of student culture. Another teacher highlighted the expertise of various students and required other students to consult those

students before coming to her for help....

The culturally relevant teachers encouraged a community of learners rather than competitive, individual achievement.³⁸

An influential critical race theory math document, “A Pathway to Equitable Math Instruction: Dismantling Racism in Mathematics Instruction,” has figured in curriculum controversies in Oregon and California.³⁹ This 82-page manual asserts that teachers pointing out students’ mistakes is a form of white supremacy. The manual provides indicators of “white supremacy culture in the mathematics classroom,” including a focus on “getting the right answer,” teaching math in a “linear fashion,” telling students to “show their work,” and grading them on demonstrated knowledge of the subject matter. “Upholding the idea that there are always right and wrong answers perpetuates ‘objectivity.’” Objectivity, of course, is another racist concept. “The concept of mathematics being purely objective is unequivocally false,” the manual originally explained, but this sentence was so controversial it has been deleted. According to the “Pathways” manual, teachers should investigate and oppose ways in which math is used “to uphold capitalist, imperialist, and racist views.”⁴⁰

PUSHING SOCIALISM AS PART OF CRITICAL MATH

For many of the leading figures in the critical math movement, the goal is a socialist society in the United States.⁴¹ At times, they reveal this explicitly. One of those figures, Marilyn Frankenstein, professor at the Center for Applied Language and Mathematics at the University of Massachusetts, Boston, writes that traditional math “supports the hegemonic ideologies of society.” Even a real-world math problem like adding up a grocery bill carries “the ideological message that paying for food is natural” and that a normal society is one in which “people buy food from grocery stores.”⁴²

Tate, another such leading figure, claims that in American society, the use of math is “almost

always” linked to “an attempt by one group or individual to secure control of property.”⁴³ This explicit advocacy of socialism comes out in actual proposed K–12 lessons:

- Marilyn Frankenstein bases some multiplication and division problems on an ideological manifesto by Cuban communist dictator Fidel Castro. John Rodden, a communications professor at the University of Texas, has conducted a detailed study of textbooks in communist East Germany; Frankenstein’s math problems are all too reminiscent of the propaganda-laden problems in East German textbooks.⁴⁴
- In another teacher’s sample lesson on distribution of wealth and income, those students “who are worried about socialism” are told that “they have nothing to fear.” The teacher asks students in his simulation why they do not “get organized to force a redistribution of wealth.” The teacher induces the students to make statements like “I want a revolution.”⁴⁵
- In still another lesson, designed by a different teacher, students looked at a photo of a billboard showing Che Guevara, one of the leaders of communist Cuba. The billboard read: “We are not a minority.” The purpose of the lesson is to have Latino students realize that there are far more non-white people in the world than there are white people.⁴⁶ (While that is certainly true, the term “minority” in this example applies to the United States, not the world.)

Why would a proponent of critical pedagogy deploy the image of Guevara? Peter McLaren, professor at UCLA’s School of Education & Information Studies, and “the poet laureate of the educational left,” explains why in his book *Che Guevara, Paulo Freire, and the Pedagogy of Revolution*. According to McLaren, the image of Guevara imbeds “the mythic” in the everyday and gathers the past and the future together in a “promise of redemption” and the “anticipation of a new order

of being and becoming.” The ideas and example of Che Guevara and Paulo Freire, McLaren contends, can play “a signal role” in helping teachers to remake schools into “sites for social justice and revolutionary socialist praxis.” McLaren maintains that this potential is particularly important for professors who work in teacher-training institutions.⁴⁷

McLaren says that efforts to reform school practices in existing societies in terms of curriculum and classroom pedagogy must be undertaken—in the spirit of Guevara and Freire—from “the overall perspective of the struggle against capitalist social relations.” The pedagogy of Guevara, according to McLaren, not only “shatters the welter of illusions and delirious and paranoiac fantasies” of the bourgeoisie, but also sets the stage for “the kind of intellectual labor and formation of political will” that can combine theory and practice “in the service of social justice.”⁴⁸

Holding up Che Guevara as an icon ignores both his vicious killings (he called himself “blood-thirsty”) and his relentless persecution of political opponents. As Peruvian intellectual Alvaro Vargas Llosa writes, Guevara possessed “a lust for totalitarian power.”⁴⁹ Guevara also, working as a Cuban official, helped to destroy the country’s economy in pursuit of an impossible utopia. (He favored an end to material incentives and creation of a moneyless economy.)⁵⁰ In the interpretation of a rival variety of socialists, Guevara worked to put in place a bureaucratic state run by an oligarchical party.⁵¹

CRITICAL MATH TEACHING PRACTICES

Praised by contemporary critical theorists for his contributions to the development of critical mathematics is influential curriculum specialist Eric Gutstein of the University of Illinois.⁵² According to Google Scholar, Gutstein’s academic papers have been cited over 4,400 times.⁵³ Gutstein says that analyzing the world by way of mathematics entails using math to understand “relations of power, resource inequalities, and disparate opportunities”

among different groups, and to understand “explicit discrimination” based on race, class, sex, and language.⁵⁴ All too often classes devoted to critical math, like those promoted by Gutstein, are notably mired in sloppy social science and deficient in math itself. The students are not told that they are being fed a political ideology, but they certainly are.

Gutstein’s Honors Math Class of Latino Seventh Graders Analyzed Racial Data on Traffic Stops.⁵⁵ The phrase “driving while black” has often been used since the 1990s to make claims about racial profiling of black drivers. But, as economist Thomas Sowell explained, racial-profiling statistics wrongly compare police stops to the percentage of blacks in the population, not to the percentage of blacks who “do the kinds of things that cause police to stop people and question them.” Sowell points to data from the book *Are Cops Racist?* by Heather Mac Donald in which she writes that a careful analysis of data does not show a systematic anti-black bias in traffic stops.⁵⁶

Gutstein’s Honors Class Analyzed Racial Data on Mortgage Lending.⁵⁷ Different political groups have long been concerned about affordable housing. Often progressives say they are worried about housing for the poor and minority groups—though they often support land-use planning and zoning that in effect excludes the poor.⁵⁸ Conservatives say that they want to foster the bourgeois values that are associated with home owning. However, these concerns about housing costs can lead to catastrophic policy decisions. Government pressure for lowered mortgage lending standards triggered the Great Recession of 2008.⁵⁹ Analysis of housing policy belongs in a college economics class, not a seventh-grade math class.

Gutstein’s Class Analyzed Different Kinds of “Map Projections” (Ways of Representing Parts of Earth’s Rounded Surface in a Flat Format), What the Projections Displayed, and Why. His students concluded that Mercator projection maps—the standard map for navigation, which shows “North” at the top and landmasses stretched

from the equator—were a deliberate lie meant to mislead them and that such maps were racist.⁶⁰ One might call this critical map theory. Gutstein is proud that, under his tutelage, a majority of his students said that they had been “lied to” by the hanging of Mercator projection maps in classrooms. Several students said that the use of Mercator projection maps was intended to teach students that whites are superior to Latinos.⁶¹

Gutstein deliberately misleads his students when he guides them to see racist intent in the Mercator map. He himself acknowledges that he does not care “whether or not Mercator meant consciously to diminish the [global] South.”⁶² All he cares about is making a misleading political point. Gutstein favors the Gall-Peters projection—which supposedly shows all landmasses as the correct size relative to other landmasses.

But cartography expert Mark Monmonier has criticized the embrace of the Gall-Peters projection by advocates for developing countries and political activists because they ignore the fact that Gall-Peters grossly deforms the shape of those same developing countries. Journalists who reported on this controversy in the 1970s and 1980s neglected alternative projections. Social justice activists who have promoted the Gall-Peters projection ludicrously exaggerate the power of maps.⁶³ Amazingly, Gutstein maintains that the supposedly innocuous “larger goal” of this classroom map project was to improve critical thinking skills, thus to assist students in gaining “a more critical outlook toward knowledge in general.” He congratulates himself that he does not want his students to take his word for something without questioning it.⁶⁴

But the students may not buy the teacher’s preferred theory of cartography. One critical math teacher found that after teaching Gutstein’s lesson, most of his students dismissed the idea that the design of the Mercator projection was founded in racism or Eurocentrism.⁶⁵

Gutstein’s Class Examined the Distribution of Wealth by World Continents and Within American Society.⁶⁶ One student contrasted his low

family income with that of professional basketball player Michael Jordan. Gutstein would think the student is wrong to accept the gap because Gutstein thinks all differences from a pattern of exact equality are unjust. The student’s comparison resembles nothing so much as philosopher Robert Nozick’s famous Wilt Chamberlain example, which Nozick uses to teach that the basis for justice in property holdings lies in the history of transactions.

Assume, Nozick says, that the pattern in which property is distributed in a hypothetical society is in accordance with one’s favorite theory of justice about property holdings. This could even be a pattern of the strict equality that social justice proponents appear to favor (but for which they never supply an explicit argument).⁶⁷ This pattern is the starting point for Nozick’s parable. In this society, Wilt Chamberlain is an outstanding basketball player (as he was in real life). Chamberlain signs up to play, with the agreement that anyone who goes to a game in which he plays puts a set small amount of money in a designated box at the gate, with these proceeds going to him.

During the season, a multitude of people attend the team’s games, and Chamberlain ends up with hundreds of thousands of dollars. The previous pattern of supposed justice (perhaps, strict equality) is now upset. Is this new distribution unjust? Chamberlain acquired his income by free agreement and with the consent of the attending fans. Nozick points out that any static theory of justice in property would be upset by normal and acceptable transactions like this hypothetical one of basketball player rewards. Nozick concludes that any society that tried to put into effect a concept of justice based on a static pattern would have to grossly and constantly invade the liberty of its inhabitants in order to compel the distribution it proclaims as just. “The socialist society,” as he puts it, “would have to forbid capitalist acts between consenting adults.”⁶⁸

Nozick teaches us through the Chamberlain example that the history of why an income comes about (here through a free agreement to exchange

money for Chamberlain’s athletic work) is what makes it just. In a free society, justice based on history can work. But socialist justice—which Gutstein wants—cannot work because it is based on a pattern that is supposedly strict, but is in practice always disintegrating. Attempting to enforce this pattern will be an excuse for socialist tyranny. The reality is that a rigid pattern will not work. Gutstein’s student, despite not having Nozick’s analysis, would be right to accept the income disparity between his family and Michael Jordan.

Students do not necessarily like bringing political philosophy into a math class, one critical math teacher noted, with some of his students saying, “This is not what we’re here for,” and “You should teach history if you want to discuss politics.”⁶⁹ In a critical math class on the unfairness of the distribution of income in the United States, some students “complained that neither writing about nor discussing social matters” was appropriate in a math class.⁷⁰

A Class of Black Middle-School Students in Dallas (Not Gutstein’s) Decided that the Heavy Presence of Liquor Stores in the Vicinity of Their School Constituted an “Inequity.” The students sought, using math in their endeavors, to remove the liquor stores by getting the existing zoning regulations changed.⁷¹ Suppressing the liquor trade and exorcising demon rum are time-honored goals of Victorian-era teetotalers, progressive reformers, and evangelical preachers, but such an anti-alcohol crusade does not belong in a middle-school math class.⁷²

Not only is the social science and the political thinking in critical math classes dubious, it also distracts from actual math. One high school teacher concludes that his students resisted critical math because they “did not see it as good preparation” for future study of math.⁷³

ETHNOMATHEMATICS

Ethnomathematics in its original meaning was simply a subfield of anthropology, the study of human societies and cultures. It investigated how

different cultures treated mathematics and performed simple mathematical operations—such as adding and subtracting, calculating change, or measuring weight, area, and volume. Ethnomathematics’ early goals were part of a general interest in observing how different cultures treated various mathematical subjects, not much different from archeology, linguistic, biological, and sociocultural anthropology, and had no particular ambitions of contributing to the body of mathematics itself.

Mathematics as a discipline already draws on multiple cultures over the centuries, from Greek geometry and logic to the Babylonian “base 60” counting method still present in Western notation of time (minutes in an hour, seconds in a minute) and angle measures, to the Arabic numerals used today and the notation of zero that came to math via India, to the name for algebra from mathematician Muhammad ibn Musa al-Khwarizmi’s Arabic book title. Many cultures contributed over time to mathematics, yet the real power of mathematics was not unveiled until standardized concepts and notations evolved, allowing math to be understood in multiple cultures, with multiple cultures contributing to its mainstream development. Fields Medal winners—“the Nobel Prize of mathematics”—include Japanese, Vietnamese, Indians, Chinese, Iranians, Kurds, Brazilians, and more, attesting to the universal culture of mathematics.

Early ethnomathematics studies in the 1980s and 1990s focused on issues of cognition: how different cultures “understand” mathematics. For example, how street vendors in Brazil or Lebanon, who lack any formal education, calculate the price of multiple items and know how to give correct change to the purchaser.⁷⁴ Another example is studying how Oksapmin children of Papua New Guinea, without any formal education, measure length, an important attribute of string bags that are a common cultural artifact in their society.⁷⁵ Yet, those culturally interesting observations were quickly transformed into explanations of why minority children fail to succeed in “American”

school mathematics, arguing that school mathematics does not offer support for “cultural understanding” of mathematics as practiced in students’ native cultures.⁷⁶

The proponents of this culturally deficient theory of school mathematics have ignored the fact that few if any students from those cultures in Western public schools were actually exposed to, not to mention steeped in, such rather exotic practice of mathematics. Another ignored aspect was the fact that immigrant students from challenging backgrounds often had to attend low-quality schools with low-quality teachers, particularly in the United States, where schools are allocated by ZIP code, which likely accounts for much of their academic lag. The support for those non-cultural explanations, rather than for ethnomathematical causes, can be seen among some successful minority students from South and East Asia and even some Caribbean and African societies despite their supposedly similar “cultural handicap.”

In recent years, ethnomathematics aligned itself with critical race theory, arguing not only that school mathematics is insensitive to some children’s cultural heritage, but also that the accepted values and methods of school mathematics are racist in nature and reflect what critical race theory calls “white oppression” and “white privilege.” For example, in 2020, the Smithsonian Institution’s National Museum of African American History and Culture listed “objective rational linear thinking,” “cause and effect relationships,” and “quantitative emphasis” among its assumptions of “white culture.”⁷⁷ One wonders how one can contribute anything to school mathematics if objective rational thinking, or quantitative emphasis, is to be discouraged, or how one can expect minority participation in a technological society to increase by peddling such counterproductive folly.

Rochelle Gutiérrez, a professor of curriculum and instruction at the University of Illinois at Urbana-Champaign, has established a high profile pushing such messages. She has been influential

in setting the math curriculum in Seattle, where “equity” takes precedence over knowing math, and similarly in California’s proposed 2022 Mathematics Framework, where she is cited. Here is what Gutiérrez has to say about her approach to teaching mathematics:

I’m not just interested in getting more diverse peoples to enter mathematics and do well in it.... Lately, that work has shifted to what I call *rehumanizing mathematics*, which aims to capture more of the connections with emotions, the body, and our relationships with each other on this planet.⁷⁸

It is difficult to understand what such psychobabble means in the context of mathematics, but whatever it means, it certainly has nothing to do with math as practiced by millions of mathematicians, scientists, and engineers. Yet such nonsense seems to spread among K–12 teachers like a brush fire.

Perhaps it is best to view ethnomathematics as a form of substitute cultural nationalism. Critical curriculum writers do not approve of the American political system or Western civilization, so they want students to identify with other cultures that contrast with America and the West.⁷⁹ They want to use the existence of mathematical practices in these other cultures to undermine any sense that a student might have that Western civilization (which readily uses symbols like Hindu-Arabic numerals) is a culture that should be sustained. Paul Ernest, emeritus professor of the philosophy of mathematics education at Exeter University in the United Kingdom, seems to have this goal and writes that a historical and ethno-mathematical approach can “serve to counter the received Eurocentric view and promote elements of a multicultural and anti-racist mathematics.”⁸⁰

Despite this allegedly progressive goal of many proponents of ethnomathematics, the approach is quite susceptible to illiberal use. As education professors Renuka Vithal and Ole Skovsmose point out, ethnomathematics with its rhetoric of

cultural differences could quite easily be used as part of Bantustan basics in a racially separatist mathematics curriculum in Apartheid-era South Africa⁸¹ or, one might add, any similar society—such as the segregated Jim Crow South in the United States.⁸²

THE ATTACKS ON EXCELLENCE

Public education has had potentially contradictory goals since its early days. On one hand, it had committed itself to educating the masses, and, on the other hand, it had recognized the need to provide a more elite education to the selected few, to develop the society’s leadership, whether political, social, or technological. K–12 education in the United States, as opposed to many “Old World” countries, did not have as strong a component of private education for the elite. Further, the stronger egalitarian ethos in early America militated against nonpublic education serving more than a small segment of the population, typically less than 10 percent, once public education was broadly established starting in the mid-19th century.⁸³ Consequently, the widespread expansion of public education in America created even larger tensions between education for the masses and education for the elites than existed in countries with more established private education or a less egalitarian ethos.

American public education tried to solve this constant tension in multiple meritocratic ways: school tracking; college-level electives, such as Advanced Placement (AP); special examination schools and other magnet schools; Gifted and Talented (GATE) programs; and general curricular acceleration. Some of these programs became highly successful—examination schools, such as Thomas Jefferson High School for Science and Technology in Virginia or Stuyvesant High School in New York City, acquired nationwide fame for their excellence. Over four million AP exams are taken every year by more than a million students.

Yet the recent push for equality of outcomes rather than increased opportunity—“equity” versus equality in “woke” lingo—created a backlash

against such successes as advanced educational programs clearly fly in the face of equal outcomes. In fact, they are structured to provide unequal outcomes that are tailored to the interest and talents of students. And yet it is an aspect of reality that students’ interests, talents, and willingness to do hard work vary.

TRACKING, LANING, AND HOMOGENOUS GROUPING

Until the second half of the 20th century, school *tracking* was commonly practiced. Students identified as gifted or talented were presumed to be gifted in all subject matter and hence were placed in special (“tracked”) classes with their similarly identified peers. This practice came under justified criticism for two reasons. First, a child gifted in one subject was placed in advanced classes in all subjects. Furthermore, giftedness frequently was not identified professionally, but by untrained teachers, often resulting in discriminatory patterns of assignment to tracked classes, with the untracked classes offering watered-down curricula and less-qualified teachers.

Tracking was really an effort to create more homogenous classes, known as *homogenous grouping*, to allow teachers to teach more effectively without the need to address students of widely differing abilities. Yet, as already mentioned, students are often talented in one or few subjects while their ability was average or below in others. Hence a solution to tracking came forward, where students were evaluated on their achievements in different subjects and placed in accelerated classes only in the subjects they excelled.

In contrast with tracking, this was called *laning*, and it eliminated most negative effects of tracking: students of similar abilities in a given subject were placed together and no one was automatically assigned to all accelerated or all regular classes. Yet here again the proponents of equal outcomes—the equity warriors—objected because it still allowed some students to excel over others. No matter that those students otherwise treaded water in regular

classes and often tuned out, or that teacher effectiveness in both regular and accelerated classes increased as teachers did not have to deal with such a wide spread of ability and achievement within a single class.

Laning has been used typically from middle grades and up, while, in high school, electives provide a similar mechanism—one can take honors biology and stay in regular English class. Yet the equity warriors try to clamp down on differentiated outcomes for students, so not only would they like to eliminate laning in middle school, but they also attempt to limit electives in high school. For example, the first draft of the 2022 Mathematics Framework in California suggested keeping all students together in the same math classes until grade 11, disingenuously arguing that this practice does not harm high-achieving students.⁸⁴

It is worth mentioning that when opponents of excellence in education attack *laning*, they tend to use the word *tracking* and *detracking* instead, hoping to confuse and evoke negative feelings that are associated with tracking—as if old-style tracking were still practiced.

PROGRAMS FOR GIFTED AND HIGH-ACHIEVING STUDENTS

For a long time, American education has recognized that some students have more than average talents in mathematics (among other subjects) and created programs for such students in grade schools. In recent years, such programs were attacked with claims of racial discrimination in their admissions, and, if true, rather than correcting admission procedures, the programs have been either completely eliminated or reworked to effectively admit students by racial quotas. For example, in 2013 the California state legislature took away dedicated funding for GATE as a categorical program and has folded the money into the general Local Control Fund, which allows districts to reduce or completely eliminate GATE programs.⁸⁵ Not surprisingly, in just one year, GATE participation in California dropped from 8.2 percent to 7.8 percent.⁸⁶

The AP program (and its associated test) promoted by the College Board and intended for high-achieving students, has a somewhat similar story. As the popularity of AP courses and tests grew among students, teachers—rather than parents—started to complain and attempt to limit students’ access to them, overtly in the name of “reducing stress.”⁸⁷ Another worrisome symptom is the addition of easier AP courses that draw the bulk of increases in AP taking, such as AP Statistics rather than AP Calculus, AP Computer Science Principles rather than AP Computer Science AB, or adding an undemanding AP Human Geography course, which is intended for ninth graders.⁸⁸ Despite such introduction of easier courses, the average scores on the AP examinations have dropped over the past 20 years.⁸⁹

But, in recent times, nothing shows the disdain for excellence more than the focused attacks on selective schools that have color-blind admissions that rely on qualifying examinations. The renowned Thomas Jefferson High School for Science and Technology in Virginia has recently removed its qualification by examination and replaced it with racial quotas.⁹⁰ A similar effort to replace academic testing with racial quotas took place in New York City.⁹¹ Then-Mayor Bill de Blasio unilaterally removed admission testing wherever he could, but in the case of the city’s nine specialized high schools (such as Stuyvesant and Brooklyn Tech), he could not stop such testing because their admissions criteria are codified in state law.⁹² An ongoing effort in the New York legislature is attempting to remove the legal protection those schools have.⁹³ San Francisco’s famous—and academically selective—Lowell High School also had to revise its admission policy in 2021 to allow admission based on racial quotas.⁹⁴

Those cases all reflect a concentrated attack on academic excellence in this country, attempting to replace it, in the name of equity, with—as Diane Ravitch puts it—“the political designs” of a self-selected group of teachers and professors.⁹⁵

CONCLUSION

Critiques of mathematics by racial justice activists and ethnomathematicians have little to do with actual mathematics or mathematical learning and everything to do with undermining the discipline of mathematics in the name of racial equity and combating an ideologically conceived “white privilege.” One can find nary a real mathematician or scientist who promotes such “critical” ideas. Instead, the criticism comes from math *educators* and from race activists from various social disciplines.

The reason for the attacks is reasonably understandable. Mathematics is the foundation underlying most of the progress in technology and economics of the modern world. Since the mathematical achievement of some preferred minorities—but not those from South and East Asia or Nigeria—is lagging in school, rather than focus on the question why public schools are ineffective, social justice activists are willing to destroy a “gatekeeper” of upward mobility, whatever the consequences.

Those “social justice” activists are joined by others who simply seem to hate the American ideal and, as such, have little compunction in undermining the principle of rewarding excellence and hard work in the education of all children. They seem either to hope that this undermining will eventually undermine the achievements of American society, or to believe that education has little importance and that society will keep developing on its own without the need for excellence and nurturing of particular talents.

Almost 40 years ago, an influential report read: “If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war.”⁹⁶ At the time, it was clear that the mediocrity was the result of ignorance, bad labor relations, and low-quality teaching. Forty years later, the picture is less clear—we do know much more about education, yet many refuse to apply that knowledge.⁹⁷ At the same time, strategically placed political activists within the education community are intentionally undermining the foundations of our society’s success.

NOTES

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- 2 Nikolai Krylenko. "The Main Goals of the Chess/Checkers Movement" (1931) <https://www.chess.com/blog/Spektrowski/nikolai-krylenko-the-main-goals-of-the-chess-checkers-movement-1931> (accessed Feb. 2, 2022).
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- 11 Walter G. Secada, "Race, Ethnicity, Social Class, Language, and Achievement in Mathematics," in Douglas A. Grouws, ed., *Handbook of Research on Mathematics Teaching and Learning* (New York: Macmillan 1992), p. 623.
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- 13 Ibid., p. 654.
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- 15 Ladson-Billings, "Toward a Theory of Culturally Relevant Pedagogy," p. 466. But see also S. T. Lubienski, who says that students from low-income households do not thrive in a discovery-learning setting: S. T. Lubienski, "Problem Solving as a Means Toward 'Mathematics for All': An Exploratory Look through a Class

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