REBUILDING
STUDENTS' LEARNING
POWER

Teaching for
Instructional Equity
and Cognitive Justice

ZARETTA HAMMOND

CORWIN

CORWIN

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This book isn't theoretical, although it rests on sound research. It is born from direct experience, mine as well as that of practitioners who have reached out with a question or dilemma and invited me into their classrooms to help solve them. Thank you to all the teachers, instructional coaches, and school leaders who have shared their practice, insights, questions, and breakthroughs with me. I appreciate the opportunity to be your thought partner as you wrestle with how to truly change the depth of learning our children experience daily. Thank you for being part of my community of practice.

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She is also the author of the bestselling book *Culturally Responsive Teaching and The Brain: Promoting Authentic Engagement and Rigor Among Culturally and Linguistically Diverse Students* (Corwin, 2015). In addition to her expertise in culturally responsive pedagogy, Ms. Hammond is a strong literacy practitioner. She is a member of the advisory board for UnboundEd's literacy organization, CORE Learning. She also sits on the Learning Policy Institute's science of learning and development research advisory committee.

DEDICATION

In Memory of William H. Hanson
1954–2022

A revolutionary thinker. A lover of freedom. My champion.

You will forever be the wind beneath my wings.

Introduction

March 2020 was a demarcation in education, a historical inflection point brought on by the pandemic that in decades to come we'll talk about like we do the 1906 San Francisco earthquake or New York's 9/11. There was a before and an after.

I remember vividly the day that would mark this defining moment in education. I was driving to the grocery store. I was waiting at a red light, about to make a left turn. The sky was a clear blue. The sun was shining, and spring was in the air. I remember turning my face toward the warmth of the sun. Then as the light changed and I started my turn, my phone began to buzz—not the "you got a text message from a friend" buzz or that "here's the latest Instagram post notification" buzz that makes your brain's dopamine center salivate. No, this was that piercing "pay attention" buzz of an emergency alert that sends you into fight or flight mode. When the light changed, I quickly pulled into the grocery store parking lot, stopped the car, and read the text message. It was the state's public health department telling everyone to shelter-in-place immediately until further notice due to the coronavirus. I went into the store and stocked up on a few extra things beyond what was on my original list, including extra toilet paper like everyone else, before heading home.

Soon after that first emergency alert in early March 2020, schools were ordered to close in an effort to slow community spread of the COVID-19 virus. School districts did a hard pivot to remote learning. Ed tech folks went into high gear getting teachers up to speed on remote collaboration applications like NearPod and Padlet, just to name a few. And we all learned that Zoom wasn't just an old 1980s song by Lionel Ritchie and the Commodores. Leaders organized computer and textbook distribution drive-through stations. It was all hands on deck.

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I was stuck at home like everyone else, but I sat in my home office thinking about how I could help. Most in-person professional development for school districts had been halted. So, I offered a series of free webinars to teachers to help them use culturally responsive instructional techniques to leverage at-home and community learning. I announced it in my regular monthly newsletter.

For the first Zoom webinar in April 2020, a staggering 30,000 educators registered. The webinar was filled to capacity. Those that couldn't get in watched the replay that I made available for free. Other instructional coaches and education support organizations were also offering webinars and ed tech coaching for teachers. Schools moved into deep, uncharted waters. Teachers and leaders were downright heroic in their effort to pivot to remote classrooms. Most teachers found their footing in providing distance learning, but everyone acknowledged that it wasn't the same. Many students opted to keep their cameras off. Others just didn't show up. Some parents with means, after watching the quality of teaching and learning, opted out and found alternative avenues to continue their child's education during the stay-at-home orders.

Millions of children lost at least a full year or more of schooling due to the pandemic because they weren't equipped to be independent learners. We hadn't taught them how to "learn in the wild" outside the confines of school. Honestly, we should have seen this coming.

Five months before the pandemic shuttered schools, the World Bank, a global organization that usually concerns itself with economic stability around the world, sounded the alarm about rising educational inequity. On October 17, 2019, while most of us were going about business as usual—teaching class, monitoring students during lunch duty, or attending our PLC meetings—the World Bank sent out a press release about its recent report on *learning poverty* and announced its newest initiative, *Cut Learning Poverty in Half by 2030* (2019). They defined learning poverty as the inability of ten-year-olds to decode text, comprehend a simple story, or do complex academic work. They named the lack of literacy and learning-how-to-learn skills as major contributors to human capital deficits that they believed would eventually disrupt economic systems around the world. They were sounding an alarm—*we have a learning crisis that undermines sustainable growth and poverty reduction for every country*, but especially for those with a history of colonization, like Australia, the United Kingdom, New Zealand, and the United States. According to the report,

prior to the pandemic, learning poverty was already at 53 percent globally, and it was initially estimated to rise to 63 percent.

Then the pandemic hit. The World Bank said that the pandemic created a "crisis within a crisis." For struggling learners from historically marginalized communities, their gaps only grew wider and deeper. Despite our best efforts during remote teaching, as educator and author Douglas Fisher says in *The Distance Learning Playbook*, what we experienced "wasn't really distance learning, but crisis teaching" (Fisher & Frey, 2020, p. 1).

Next came George Floyd's murder in the streets of Minneapolis that highlighted the severe racial disparities behind the criminal justice system and, by association, the education system that unwittingly feeds the school-to-prison pipeline. We marked the correlation between the type of treatment people of color receive in the criminal justice system that "others" them and a similar phenomenon in schools that leads to learning poverty. According to the Prison Policy Initiative (Michon, 2016), it is no secret that 75 percent of adult inmates are functionally illiterate, with a higher disproportionality among African Americans and Latinos. The reading company Lexia Learning (2019) reports that 85 percent of all youth who get caught up in the juvenile court system have very low functional literacy.

This is the bottom line: our response to the pandemic has only complicated and exacerbated the chronic achievement gaps we have been struggling with for decades. According to the World Bank, we are only going to see the numbers in learning poverty grow. Their latest data show we are on a trajectory to surpass their earlier projections as we move toward 70 percent learning poverty and climbing.

Why This Book Now?

Despite being more than five years past the pandemic, we are still squarely in the deep end of the learning crisis described by the World Bank. No matter how many years removed from March 2020 we are when you're reading this book, schools and families will still be struggling with the issue of learning recovery.

We had an opportunity to reimagine schooling and create something more equitable for all children. Then came a new set of constraints.

After decades of working toward educational equity, the Education Department's Office for Civil Rights has threatened to withhold funding from K–12 districts and schools that continue equity initiatives. There is an active, overt attack on diversity and inclusion efforts, including social-emotional learning and culturally responsive pedagogy.

How do we solve the looming learning poverty crisis within these constraints? To paraphrase Albert Einstein, the same thinking and practices that got us here won't solve the problem going forward, especially when those practices ignore a central mechanism that generates institutional inequity—the underdevelopment of historically marginalized students' cognition. Learning poverty, like economic poverty, is about the equal distribution of capital. In this case, it is cognitive capital.

Based on research and experience, I want to suggest that the path forward is twofold. First, we need to reorient ourselves around the student as the primary actor in teaching and learning. In the last decade we have overused the term *student-centered* to the point that it has come to mean engagement over deep learning. We have to reclaim this concept to mean that students become apprentices at learning and the teacher becomes the personal trainer of their cognitive development, especially for those students who are dependent learners without the skills to close their own growing learning gaps. Their status as dependent learners isn't due to their zip code, home life, lack of motivation, or low intelligence. This is more than giving them "voice and choice." The hard truth is that we grow these gaps in schools as a result of our policies and practices that direct what happens (or doesn't happen) in the classroom.

To reverse this trend, we have to lean into the science of learning through a culturally responsive lens to generate cognitive capital for our students. I call this cognitive capital *learning power*. That lens shows us how to become cognitive mediators of deep learning, not just facilitators of the mandated curriculum. Leaders get to reimagine how they create the conditions for teachers to build their capacity to coach students on how to increase their learning power. In reality, most teacher education programs don't teach future educators this process, nor is it part of our ongoing professional learning as classroom teachers and instructional coaches.

While high expectations and access to high-quality, grade-level materials are important to this effort, even more fundamental is providing instructional equity so that the curriculum is "watered up" rather than watered down; inviting students into this type of productive struggle builds dendrites that become overgrown into neural pathways, allowing them to take on more rigorous content. Dr. Edmund Gordon and his colleagues in Learning Point Associates' national study called this the development of "intellective competence" through "affirmation development of academic ability," another way of talking about building learning power (North Central Regional Educational Laboratory, 2004).

This idea of building students' cognitive capacity through learn-to-learn skills as a path toward equity isn't new. Researchers Barbara Means and her colleagues (1991) identified learning-to-learn skill development as the linchpin in their equity strategy in *Teaching Advanced Skills to At-Risk Students*. A. Wade Boykin and Dr. Pedro Noguera (2011) pointed it out in *Creating the Opportunity to Learn*. International educator Guy Claxton (2017) makes the point in *The Learning Power Approach: Teaching Learners to Teach Themselves*. Dr. Pam Cantor and David Osher (2021) in *The Science of Learning and Development: Enhancing the Lives of All Young People* bring to high relief the findings from social and cognitive neuroscience in the service of whole child thriving that we have thus far underutilized. Dr. Linda Darling-Hammond (2019) summarized the findings in the eight pillars of the science of learning and development.

That brings me to the second path we must walk. We will need to level up our professional learning processes and structures. We cannot PD our way out of this learning crisis. Why? Because *information isn't transformation.* Just having research findings and evidence-based practices doesn't mean we've learned to transmute that information into usable knowledge and skill. We must close the knowing-doing gap. This effort means that teachers are well-versed in collaborative inquiry processes to determine if the shifts in their teaching practice are helping students become the leaders of their learning. We will have to learn how to help teachers coach students to change their learning moves. That calls for learning by doing. That will require collaborative inquiry and collective efficacy to apply this body of knowledge effectively so we are responsive to the students in front of us. Notice I didn't say it will require new "strategies." It is going to take more than silver bullet strategies to

move the proverbial needle on the postpandemic learning gaps we are witnessing in classrooms.

That is why I wrote this book. In *Culturally Responsive Teaching and The Brain* (Hammond, 2014), I laid out the conceptual understanding we needed to get to instructional equity using culturally responsive pedagogies. *Rebuilding Students' Learning Power: Teaching for Instructional Equity and Cognitive Justice* is the complementary *how-to* part of that process. While it isn't about culturally responsive teaching, it does build on that body of research. Instead, this book is a roadmap into the interplay between instruction and learning. In education, we are fixated on how the teacher teaches but less so on how the students are learning. And only the learner learns.

We can use the science of learning as an equity lens to ensure every student, especially those who have been historically marginalized, has the opportunity to build their learning power. That means teachers must have the capacity to teach students essential learn-how-to-learn skills while also covering subject matter content and meeting grade-level standards. When it comes to liberatory education, learn-to-learn skills are the "hidden curriculum" some students get, and others don't (Apple, 2004; Giroux, 1978; Givens, 2021). Over time, this hidden curriculum has created a cognitive redline hiding in plain sight in too many schools.

Leaders and instructional coaches, like runners in a relay race, each do their part to bring their skill and expertise to create the necessary conditions for teachers to build their capacity at the instructional core (the classroom), not just in providing professional development but in creating the right policies to protect time for teaching and learning, treating the instructional core as sacred space, and not overloading teachers with noninstructional "administrivia." To make any significant changes, we will need to build collective efficacy among leadership, faculty, and coaches so that we are all teaching for instructional equity and cognitive justice.

How to Use This Book

This book serves several functions.

First, I envision it as a manifesto for cognitive justice. Many have put a spotlight on the systemic inequities plaguing education, such as

Dr. Bettina Love (2023) in *Punished for Dreaming: How School Reform Harms Black Children and How We Heal* and Michael Fullan (2025) in *The New Meaning of Educational Change*. My hope is to shine a light into the mysterious black box that is teaching and learning, within what Dr. Richard Elmore called the instructional core. It can provide shared language to educators working toward collective efficacy in professional learning communities (PLCs). It is a call to action to move beyond the favored programs, the singular focus on high-quality, grade-level materials, or the adoption of progressive pedagogical methods as equity silver bullets, and not ignore what the cognitive neuroscience and the science of learning tell us: only the learner learns.

The second function is as a how-to guide for the individual classroom teacher who wants to build their will, skill, knowledge, and capacity as a responsive educator who helps dependent learners rebuild their learning power. The focus is not on talking about the science of learning or equity but the small micromovements at the core of deep learning that help students level up their learning. Its third function is as a field guide for instructional coaches. I want to shrink us down like Marvel's Ant-Man and go into the quantum realm of instruction and deep learning that is often invisible to the naked eye. Real change that leads to liberatory education requires us to see with new eyes.

I want you to also use the book as a manual for building your skill and capacity to be the warm demander of students' cognitive development. I aim to help you learn to coach the student in understanding, mastering, and internalizing the skills of a good information processor. You will learn the fundamentals of how to get underprepared students to grow their learning power so that they are ready and able to take on more rigorous content independently.

Lastly, this book is designed to support building collective efficacy across your team; use it as a playbook for designing and conducting specific parts of your inquiry cycles inside your PLCs. The playbook is also helpful to instructional coaches who are looking to support teachers in building their instructional decision-making skills as a way to reduce overscaffolding and be more responsive to students' attempts at deep learning. As a playbook, it offers shared language and a process for focusing on the students' growth and development rather than on implementation fidelity of one-off strategies. Use it to do what DuFour et al. (2024) called "learn by doing" as you and your team develop

your own context-specific recipes for moving students from dependent learning toward more cognitively independent learning behaviors.

To that end, this book is designed to be a three-in-one text:

- A manifesto to call us to action, starting with developing shared language and understanding for collective efficacy
- A playbook for classroom teachers to begin unpacking the micromovements that rebuild students' learning power
- A guide for instructional coaches who support teachers embracing this approach

How This Book Is Organized

Paulo Freire (1970) argues that change that shifts oppression happens through intentional, iterative practice grounded in reflection and critical analysis. In *Pedagogy of the Oppressed,* he calls **praxis** our "reflection and action upon the world in order to transform it." This book is organized around the three phases of praxis (Figure 0.1) to position and prepare us for reimagining teaching and learning for liberatory education: *conceptual understanding, informed action*, and *critical analysis through reflective practice.*

Figure 0.1 • The Praxis Cycle
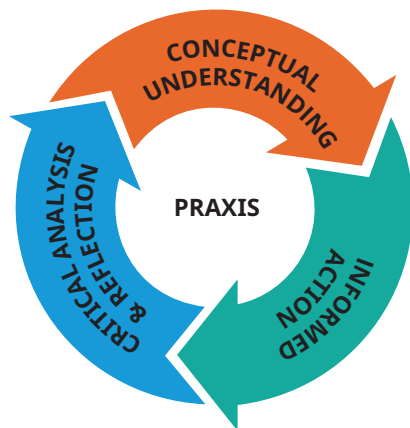
These three parts build on each other. While you'll find concrete, practical tools and strategies, the magic isn't in any one strategy. The magic is in sharpening your responsiveness as you learn to coach each student to embrace new learning habits and practices in a deliberate effort to grow their learning power.

Conceptual Understanding

We ground ourselves in the context and conditions that have historically created dependent learners. It offers an opportunity to develop a shared understanding for why we have a disproportionate number of dependent learners from historically marginalized communities. In many ways, it articulates our collective problem of practice.

Chapter 1 provides a historical overview of cognitive redlining within education. In this opening chapter, I lay out the timeline of the deliberate underdevelopment of students' cognitive development as a strategy for using education as a tool for social reproduction that creates societal stratification across race, ethnicity, class, and language. It aims to dispel the common narrative that students are dependent learners because low-income families don't value education or that these students are less motivated.

Chapter 2 lays out the argument that educational reparations for past inequities must focus on helping students reclaim their learning power by improving their skills as a good information processor. The chapter lays out the skills and dispositions of a good information processor.

Chapter 3 examines the all-too-common pedagogy of compliance that dominates the educational experience of the majority of low-performing students that stalls cognitive growth. It only offers a steady diet of low-rigor, unchallenging work that fails to grow learning power. Despite a focus on equity, many schools still use these practices because they have become instructional habits. The chapter offers a gap analysis between our aspiration to help students become good information processors and the reality of the pedagogy of compliance that reinforces dependent learning. It ends with the five-step process to help dependent learners build their learning power to become cognitively independent that we will explore in Part II.

Informed Action

In these chapters we set ourselves up for taking informed action. We dig into the teacher moves that help coach students to become good information processors. The chapters in Part II introduce an integrated process grounded in what we know about the characteristics of a good information processor and the type of instructional practice that invites

students to level up their learning moves. We begin with understanding what a different approach to change management is going to require of us as we set up a cognitive apprenticeship model in your classroom. This approach benefits all students but especially your lowest performing students who have been historically marginalized.

Chapter 4 lays out what we need to understand up front about how change happens before we delve into the five-step process for moving from a pedagogy of compliance toward a pedagogy of possibility. This chapter sets us up to close the knowing-doing gap between theory and practice.

Chapter 5 introduces the first step in the process: decolonize and rematriate the classroom. It sets you up to create the right conditions in the instructional core that will allow you to transform the classroom into a space for students to practice growing their brain power.

Chapter 6 introduces the second step in the process: teach students the five learn-to-learn skills within a cognitive apprenticeship. In this step, we focus on both teaching students the five learning-to-learn skills within a cognitive apprenticeship and building teacher capacity to become the personal trainer of students' cognitive development.

Chapter 7 takes us deeper into the complexities of teaching and learning. I introduce the third step in the process: create regular opportunities for students to develop their metacognitive ability and become more meta-strategic through productive struggle. This is an opportunity for teachers and coaches to develop specific skills as cognitive mediators who can integrate content coverage and learning-to-learn skill development.

Chapter 8 introduces the fourth step in the process: coaching students to be metacognitive and metastrategic through instructional conversation as they move through their information processing cycle more effectively.

Reflection and Critical Analysis

The third element of praxis—critical analysis and reflection—sets us up for the final reflective chapter. Chapter 9 turns our attention to the final step in the process: creating the right system supports to build and buffer the instructional core. We explore what leaders and instructional coaches need to do to help teachers focus on coaching students and not just implementing novel strategies.

Author's Note

The examples I use throughout the book are composites of real teachers, students, leaders, and instructional coaches. In most cases, the individuals' names and schools' identifying elements have been changed.

This book is both an invitation and a provocation to change. It isn't a collection of turnkey strategies that can be stripped away from their conceptual understanding or from the iterative process necessary for getting to impact. My goal isn't to teach a few new strategies to add to your teaching repertoire. My goal is much more ambitious. It is to teach you to coach your students to higher levels of cognition so they will be ready to take on rigorous learning throughout their academic career. I believe this approach can be a powerful tool in the fight against learning poverty and a move toward student agency and liberatory education.

Instead, think of it as your user manual. Make it your playbook. Write in it, mark it up, and tab it with color-coded Post-it notes if you like. It's your operational handbook for how to increase your ability to be responsive to each student in the service of instructional equity and cognitive justice.

Let's go!

Part I

Conceptual Understanding

Instructional Equity, the Science of Learning, and the Quest for Cognitive Justice

"In order to see where we going, we not only must remember where we have been but we must *understand* where we have been."

—Ella Baker
civil rights organizer and human rights activist

It was 2018. I was preparing to kick off a four-month learning series with an education collaborative in a suburban community outside of Boston. Ninety-five percent of the educators gathered that morning were white. For most, I learned later, their schools were undergoing rapid racial and linguistic shifts as more families of color moved into their districts. Unfortunately, most were also experiencing achievement gaps between their white and Asian American students, who were performing on grade level or above and African-American and Latino students, where large numbers were underperforming. When I asked if any of them had read my first book, *Culturally Responsive Teaching and The Brain,* most said they'd read excerpts in other professional development sessions in their districts. "Which parts?" I asked. Turns out the majority had been given

those parts about relationships and not the most important sections around instruction and information processing.

To open our learning day, I asked the teachers to engage in a process I called *assess current reality* and articulate the reasons they believed the opportunity gaps in their schools were growing despite their past improvement efforts. I chose to use a Chalk Talk protocol to get them started. With a little music to energize the room, they wrote their responses on the large pieces of sticky chart paper posted around the room. We began to see a theme emerge in their answers—lack of student engagement, lack of a growth mindset, stress at home, family devaluing education because it wasn't relevant to their racial identity (*yes, someone wrote that and several others co-signed to it. We'll revisit this statement more closely later*).

Each of these statements, participants believed, reflected the reasons why large numbers of students of color were disengaged from active learning, resulting in below grade-level academic performance.

Their responses matched a 2020 *Education Week* survey, "Who's to Blame for the Black-White Achievement Gap?," which asked teachers what they believe are the factors that explain why white students, overall, perform better academically than Black students (Samuels, 2020). (The survey respondents were predominantly white, like the teaching population, with a collective twenty to thirty years in the classroom.) The surveyed teachers were given several factors to choose from: genetics, discrimination, school quality, student motivation, parenting, income levels, home environments, and neighborhood environments.

- More than 75 percent of respondents said student performance rests primarily with the students and their parents. They said that motivation, parenting, income, home environments, and neighborhood environments explained student academic gaps "somewhat," "quite a lot," or "extremely."

- Seventy-two percent of teachers said "school quality" was a major factor.

- A little less than 50 percent said that discrimination played a major role, meaning more than 50 percent do not believe inequity is a

factor in why white students perform better academically than students of color.

- A sizable 29 percent said that genetics are *"somewhat* to *extremely significant"* in explaining academic gaps between Black students and white students.

- In the survey, 38 percent said genetics are a significant reason why Asian American students in the aggregate have better academic outcomes than their white peers (Samuels, 2020).

The *Ed Week* survey results and the statements those Massachusetts educators shared are consistent with what I encountered when I traveled to schools and hosted conference sessions for teachers, leaders, and coaches interested in understanding how to use culturally responsive teaching to close opportunity gaps and, eventually, chronic achievement gaps.

A prevailing belief is that the persistent achievement gap between Black, Latino, Indigenous students, and low-income students and white and Asian American students is due to a lack of student motivation. The motivation issues, many believe, are exacerbated by the lack of meaningful relationships for students of color with teachers, which translates into a low sense of belonging in the classroom. Some connect this sense of relational disconnection to lack of student "voice and choice," as well as a lack of authentic representation in the curriculum. There's a seed of truth in this line of thinking.

But we take this narrative as the central problem. Consequently, our equity efforts narrowly revolve around improving relationships through cultural affirmation and advocating grit rather than a focus on instruction that improves students' cognitive abilities. We obsess about how to engage students across racial, ethnic, and linguistic differences. Yet, we haven't considered that students' disengagement isn't due to lack of motivation but is a form of self-protection from "othering" narratives that diminish them as capable learners.

The teachers and I debriefed the Chalk Talk and looked at their collective narratives that achievement gaps are the result of lack of student motivation, poor learner identity, and low self-esteem. I invited them to

"widen their aperture," that is, to broaden their perspective, as we looked at historical events and research that offered counternarratives to the "they just are not motivated" or "the family doesn't value education" stories teachers too often repeat.

Together we looked at the historical record that highlighted the original intention of public education was to underdevelop the cognitive capacity of Black and Brown students through a separate but unequal strategy. In *Savage Inequalities,* Jonathan Kozol (2012) pulled back the curtain on how embedded the structural mechanisms of inequity were in schooling. In the era preceding the No Child Left Behind educational policy, Jeannie Oakes (2005) sounded a similar alarm in *Keeping Track: How Schools Structure Inequality,* documenting the pervasiveness of tracking as a mechanism for creating different academic outcomes for different kids based on zip code. What Kozol and Oakes uncovered has been underscored and corroborated by the research of noted social justice educators such as Angela Valenzuela (1999) and researchers Linda Darling Hammond and Janel George (2021). Dr. Jeffrey Andrade-Duncan in *The Art of Critical Pedagogy* suggests that failure to educate students of color and poor students is not a bug in our education system but a key feature of the system (Andrade-Duncan & Morell, 2008).

Too often, we want to ignore our country's deliberate effort to engineer inequity through schooling. We see this feature in school systems in other parts of the world that have experienced colonization. For example, South Africa, under apartheid, created three entirely separate education systems, each with its own infrastructure for each racial class—one for "coloreds" who were of South Asian descent, the main system for white South Africans, and one for the Indigenous Black African population.

Despite education reform and school redesign efforts of 1970–2000 in the United States, school systems continue to produce the racially stratified outcomes they were designed to create. Education reform efforts embraced equity and led with desperately needed implicit bias training. We ignored instruction in the first wave of equity initiatives, and we continued to see large numbers of historically marginalized students underprepared to take on complex content and engage in rigorous
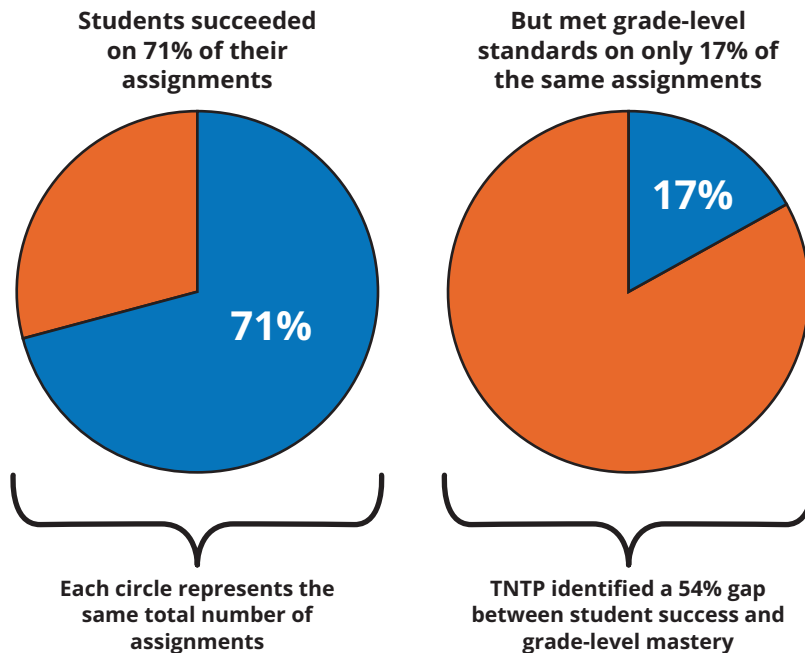
instruction. The second wave of equity-focused education reform incorporated social justice themes into the curriculum alongside implicit bias training. All the while, we continued to point to lack of student motivation, family devaluing of education, and impoverished communities as the explanations for achievement data that barely budged.

In many ways, these explanations have allowed us to normalize low reading proficiency among upper elementary and secondary students. We've put the blame and responsibility on them, not on our teaching or educational policies that have roots in early public education's charge to underdevelop the cognitive capacity of Black, Indigenous, and Latino students. In her seminal work, *We Want to Do More Than Survive,* Dr. Bettina Love (2017) makes a keen observation: "American public education focuses on the gap while conveniently never mentioning America's role in creating the gap" (p. 10). We then become unresponsive to students entering middle school without the foundational arithmetic skills to qualify for algebra, a key prerequisite for upper-level math courses such as calculus, required for college admission.

Learning Gaps Create Opportunity Gaps

Some might say, *How can this be when we've spent millions on equity initiatives in reading and math?* Others might point to our detracking efforts to close opportunity gaps for historically marginalized students by opening up advanced courses and gifted programs. In the 2010s, we turned our full attention to closing opportunity gaps as the solution. In 2018, TNTP published the research brief "The Opportunity Myth" to expose the myth of equitable opportunity for students who graduated under past reforms such as No Child Left Behind. The report stated that, on average, 71 percent of students complete their assignments, meaning they complete the assigned task and hand it in to the teacher. But when those same assignments are graded against content standards, only 17 percent of those students did the work at a proficient enough level to hit the assignment's learning target (Figure 1.1). This reality exposed the fallacy that increasing access will improve outcomes. We learned this lesson decades earlier during the heyday of detracking—just allowing students into honors classes or higher math courses didn't prepare them for rigorous instruction.

Figure 1.1 • Difference Between Completing Assignments and Meeting Assignment Standards

Students succeeded on 71% of their assignments

But met grade-level standards on only 17% of the same assignments

71%

17%

Each circle represents the same total number of assignments

TNTP identified a 54% gap between student success and grade-level mastery

Source: Adapted from TNTP. (2018). *The Opportunity Myth: What Students Can Show Us About How School Is Letting Them Down—and How to Fix It*. https://tntp.org/tntp_the-opportunity-myth_web/

As damning as this statistic from "The Opportunity Myth" is, it fails to reveal the connection between widening opportunity gaps and the invisible mechanisms that routinely underdevelop Black and Brown students' cognitive skills, leading to significant learning gaps that leave them routinely operating at the low end of Bloom's taxonomy or Webb's Depth of Knowledge wheel. Think of it as a vicious cycle. For example, in math, a student's learning gaps fuel their opportunity gaps because the student hasn't mastered automaticity with number sense and doesn't qualify to take Algebra in middle school. Without completing Algebra with a passing grade, a student cannot qualify to take calculus in high school. Without calculus, a student will have a harder time getting into college or making it through freshman year.

Cognitive underdevelopment for deeper learning is at the root of our chronic achievement gaps for most historically marginalized student groups. The lack of motivation is simply a symptom. As early as the 1990s, Dr. Asa Hilliard (1995), a scholar in the education of African

American children, made explicit connections between segregation and cognitive underdevelopment. In recent years, Lewis and Diamond (2017) in *Despite the Best Intentions: How Racial Inequality Thrives in Good Schools* and Dr. Bettina Love (2023) in *Punished for Dreaming* continue to shine a bright light on what many refuse to see. Jarvis Givens (2021) in *Fugitive Pedagogy: Carter G. Woodson and the Art of Black Teaching* traces the tradition of underresourcing segregated schools in terms of both textbooks and funding. What Kozol (2012), Oakes (2005), and Hilliard (1995) each respectively point out wasn't just the phenomenon of physically segregating schools by neighborhood but the deliberate underdevelopment of Black, Indigenous, and Latino students' brain power that was going on inside schools.

In their report, "Brown at 67: Segregation, Resegregation, and the Promise of Federal Policy," George and Darling-Hammond make the point that although characterized by many as a problem of the distant past and confined to southern schools, school segregation continues to persist across the United States. The report highlights schools have been quietly resegregating at rates that rival those that preceded the landmark school desegregation case in 1954—at times, with little attention from the public, policymakers, and the media (George & Darling-Hammond, 2021).

That finding gave me chills.

Researchers at the National Center for Analysis of Longitudinal Data in Education Research (CALDER Institute) found that as racial segregation *between schools went down*, the racial *isolation within the classrooms inside those schools went up*. In their report, "School Segregation at the Classroom Level in a Southern 'New Destination' State," Clotfelter and colleagues (2021) analyzed North Carolina classrooms over a nearly twenty-year period and highlighted the fact that for all students of color, within-school segregation intensified as they moved from elementary school to higher grades in middle and high schools.

Nationwide studies have found Black and Latino students lack access to advanced courses, especially in math and science. In part, this is because they cannot take prerequisite courses early enough in secondary school to qualify for college-prep courses in high school. An analysis of federal civil rights data found that calculus is offered in only a third of U.S. high schools with high concentrations of Black students, versus more than

half of those with low Black student populations. In schools that have detracked advanced courses, we see higher numbers of students opting to leave voluntarily and drop the course. When asked by most teachers why this happens, they tell me, "These kids can't handle the rigors of the course," or their reading skills are not on grade level, or they aren't cut out for higher-level math.

Acknowledging Cognitive Redlining

Resegregation within the school building is happening as learning gaps turn into opportunity gaps. We are experiencing what I call ***cognitive redlining*** across a school building.

What is "cognitive redlining"? The idea of "redlining" is borrowed from the real estate industry. Redlining was the color-coding practice real estate mortgage lenders and banks used on maps to indicate where they would not invest money in community infrastructure or business development. Sometimes, rather than shading in the area, they simply drew a bold red line around the area—hence the term *redline*. The outline on the map noted the zip codes, based on racial makeup, where they would not lend residents money for a mortgage or to open a business (Figure 1.2).

In the 1930s, the federal government began to adopt the *de facto* (not legal but social custom) redlining practice as policy, marking neighborhoods as "risky" for federal mortgages or business loans based on the racial makeup of a particular community, marking its borders with a distinctive red line.

Over time, minority neighborhoods became low-income neighborhoods because of redlining. This set up a vicious cycle. The poorer the neighborhood became, the "riskier" banks said it was to invest in it, which plunged the neighborhood deeper into poverty, creating food deserts, scarce jobs, low maternal health outcomes, and so on. In the 1960s, sociologist John McKnight actually coined the term *redlining* to describe the government's discriminatory practice that aligned with the red shading of investment maps.

Figure 1.2 • Historic Map of Denver With Redlining
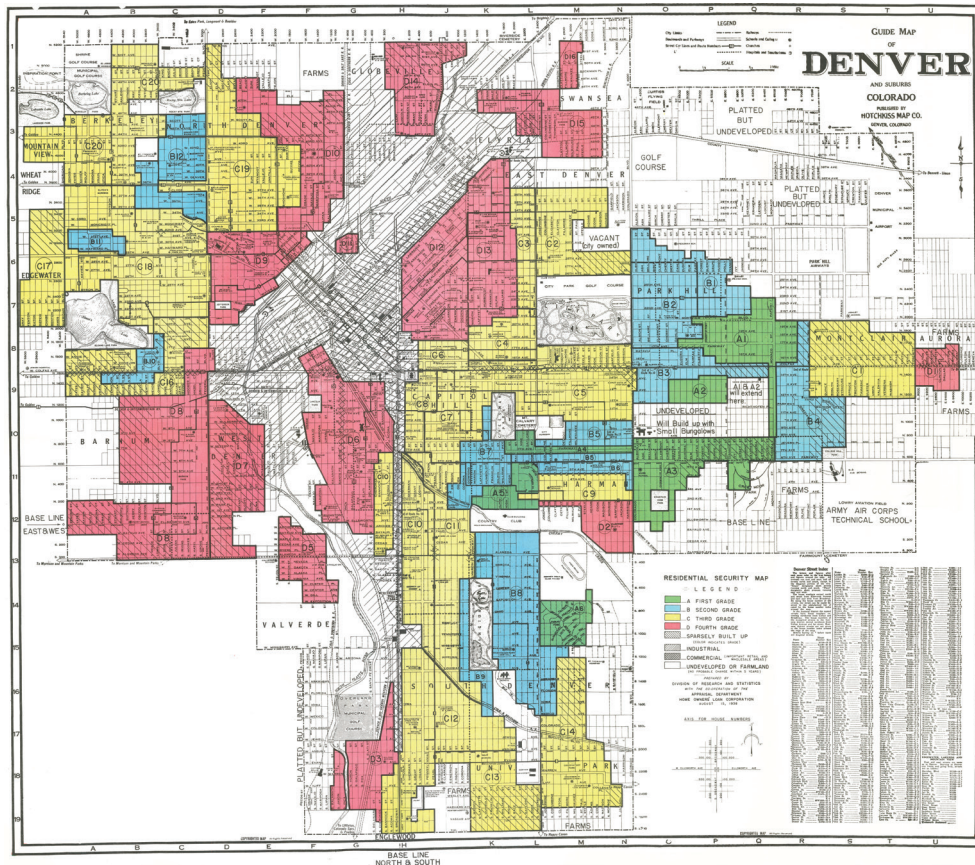
Courtesy of Mapping Inequality, https://dsl.richmond.edu/panorama/redlining, Public Domain

In his essay "Resisting Redlining in the Classroom: A Collaborative Approach to Racial Spaces Analysis," Dr. Benjamin Blaisdell (2017) brings the concept of redlining into the classroom as a lens for thinking about how we racialize spaces occupied by Black, Brown, and Indigenous children. He points out that in schools, the first area where we see divestment is in providing quality materials and safe school facilities. The second area of divestment is in teacher preparedness to provide high-quality and rigorous instruction to historically marginalized student populations. The neediest students too often get the least prepared or novice teachers.

Just as banks drew a red line around the neighborhoods and communities of color with the intent of keeping out the type of resources that will build a strong community, we see the same tactics used in education with goods and services. As I discussed earlier in this chapter, public education was set up to ration learning for students of color as part of the process of maintaining racial stratification, especially when it comes to the type of learning that builds a child's cognitive capacity that prepares them to progressively carry more and more of the cognitive load as they advance through the grades.

Using Blaisdell's (2017) critical race spatial analysis lens, I began to look at how we unknowingly end up redlining learning through our policies guiding Tier 1 instruction and everyday teaching practices. These practices undermine our ongoing equity efforts and become the main engine for reproducing inequity in our achievement data.

Recognizing Cognitive Redlining

Back to my professional development session with the Massachusetts teachers. After I laid out the research supporting the fact that Black and Brown students were still being underprepared for college despite our mantras about developing "scholars" who are college and career-ready, the room broke into a low murmur. These teachers who considered themselves equity advocates (many of whom had been certified as "equity fellows" with expertise in culturally responsive and sustaining teaching) were experiencing serious cognitive dissonance.

I invited them to grab a partner for a pair share to process their thoughts and feelings. Afterward, a teacher, still early in her career, raised her hand to share a new insight. She pointed out that she'd gone through a teacher education program that was very social justice–oriented and understood the nation's history but hadn't made the connection between the deliberate underdevelopment of diverse students' cognitive abilities and the legacy of segregation. The high level of cognitive dissonance I witnessed that day, unfortunately, is typical of my experience when introducing teachers and school leaders to the idea that restoring academic prowess is the primary purpose of culturally responsive instruction.
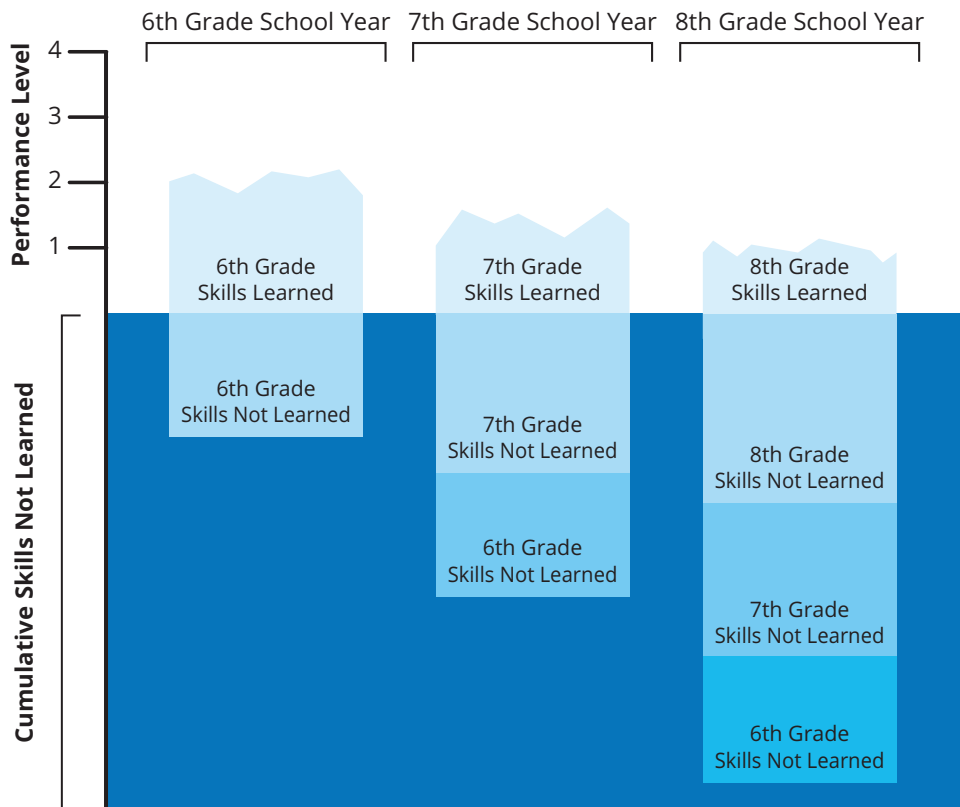
This idea that the underdevelopment of diverse students' cognition was the main engine of inequity is often met with resistance. There's a refusal to see the cognitive redlining happening in our classrooms, right under our noses. Instead, we prefer to build programs solely around growth mindset and relationship-building without interrogating our instructional decisions, practices, and policies. This refusal to acknowledge this phenomenon is grounded in what Dr. Joyce E. King (1991) calls *dysconscious racism*, which she defines as "an uncritical habit of mind that justifies inequity and exploitation by accepting the existing order of things as given" (p. 135).

While we have long acknowledged inequity in education, we have been "uncritical" in interrogating the "existing order of things given" around how educational inequity is reproduced and maintained through invisible mechanisms rather than overtly racist individuals. In our efforts to answer the question of why we have chronic academic gaps among Black and Brown students we lean into racialized narratives about lack of grit, lack of motivation, and low self-esteem as the root causes. When in reality, they are just the symptoms of inequity by design. We have slowly come to accept chronic achievement gaps as the "existing order of things" and have chosen to focus on betterment of Black children through character education or trying to make them feel "better about themselves" through social-emotional programs as the remedy for disrupting inequity to closing gaps.

But we don't address the fact that large numbers of racially, linguistically, and low-income children are reading well below grade level and, therefore, cannot access grade-level materials without extensive overscaffolding that we justify as an equity move to provide access. Consequently, our students grow into dependent learners and are unable to do complex, rigorous work independently. This is a phenomenon that Joel Rose of New Classrooms calls the "iceberg problem" (Figure 1.3) because the residue of cognitive redlining is the accumulation of unfinished learning that grows under the surface of our students' daily learning experiences.

Figure 1.3 • The Iceberg Problem of Unfinished Learning

| 6th Grade School Year | 7th Grade School Year | 8th Grade School Year |

Performance Level
4
3
2
1

6th Grade Skills Learned
7th Grade Skills Learned
8th Grade Skills Learned

Cumulative Skills Not Learned

6th Grade Skills Not Learned

7th Grade Skills Not Learned

6th Grade Skills Not Learned

8th Grade Skills Not Learned

7th Grade Skills Not Learned

6th Grade Skills Not Learned

Source: Rose, J. (2019). *The iceberg problem: How assessment and accountability policies cause learning gaps in math to persist below the surface . . . and what to do about it.* New Classroom.

Cognitive Justice and the Educational Debt

Dr. Richard Elmore says our inattention to the complexities of instructional practice that slow down student learning has become like "unexamined wallpaper," where after living with the same wallpaper for a certain number of years, one ceases to see it (2002, p. 4; City et al., 2009). Dr. Joyce King (1991) might point to the phenomenon of the unexamined wallpaper as an example of *dysconsious racism* because we choose to oversimplify our solutions by focusing on what is easiest and most comfortable.

In her 2006 address as she became president of American Education Research Academy, Dr. Gloria Ladson-Billings noted that there is an "education debt" owed to historically marginalized communities because of the past overt efforts to create separate and unequal schools. In order

to pay that debt, we need a **cognitive justice** movement that places liberatory education that gets every student ready for rigor at the center. Education that is truly liberatory focuses on helping students build what Edmund Gordon calls "intellective competence" so that they become cognitively independent learners, not just compliant, dependent learners (North Central Regional Educational Laboratory, 2004). We cannot "undesign" cognitive redlining or build intellectual competence through antiracism and implicit bias training alone. We have to understand how instruction grounded in the science of learning coupled with culturally responsive practices and culturally relevant content help grow students' learning power.

Erasing the education debt begins with improving students' information processing skills. Dismantling cognitive redlining starts in our classrooms—the instructional core—by strengthening these three pillars of liberatory education:

- Personhood: Whole child thriving where multiple identities are integrated and learning environments are humanized

- Information Processing Prowess: Mastery of learn-to-learn skills and processes that lay the foundation for deeper learning, critical literacy, and creative thinking

- Agency: Self-determination that flows from one's ability to cultivate self-directed learning and advocate for the kinds of learning experiences that are meaningful

Educators across the country are doing good work at advocating for whole child thriving (Cantor & Osher, 2021) and providing social-emotionally safe learning environments. We are striving to provide students with more authentic opportunities for agency through voice and choice. But we have not focused on improving information processing skills, the basis of all other higher-order thinking skills and deeper learning.

It is not enough that we offer different modalities of instruction like project-based learning, student-centered learning, blended learning, or maker-centered learning. Nor is curriculum redesign by itself enough. These elements don't guarantee the development of information processing skills. They can be implemented in ways that are shallow, performative, and are still grounded in a pedagogy of compliance.

My argument in this book is simple—when we use the science of learning coupled with culturally responsive instruction (not one-off strategies), we begin shifting our practice so that we are equipped to coach students over an eighteen-month period to cultivate their information processing skills in such a way that they are able to strengthen and extend their learning power, shift their learner identity, and adopt the dispositions and mindsets that allow them to engage in productive struggle that grows the new cognitive structures.

This is no simple task. We cannot PD our way to erasing cognitive redlines. Change begins within the instructional core, but it also requires a number of supports at a systems level. Dr. Richard Elmore (2002) says it best: "Instructional practice that improves student learning is complex and requires high levels of knowledge and skills across a number of important domains—the subject matter, how learners master the content, the attitudes that learners bring to the subject, the pedagogy for connecting content to how students learn" (p. 5).

We need a process of collaborative inquiry within a healthy, high-functioning, professional learning community to determine the right mix of coaching supports, structures, and tools to actually help students shift their learning behaviors toward becoming cognitively independent.