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Outdated by Design: Reimagining Schools for Real-World Skills

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Abstract

The last major overhaul of the U.S. education system came in the late 19th-century, when the Committee of Ten called for a standardized curriculum segmented by age, ability, and subject. While this model was suitable for the needs of the industrial era, today's world demands the ability to problem-solve, adapt to new contexts, and work in teams. This shift in skills is compounded by a startling socio-emotional skill gap fueled by the chronic stress associated with adverse childhood experiences (ACEs). I examine literature on the skills children need to develop and visit schools with transformative skill-building practices already underway. I call for a fundamental shift in the landscape of education models from the content-rooted curriculum of the 20th century to the skills-driven pedagogy necessary for the educational, economic, and personal flourishing of the 21st century.

Dedication

This project is dedicated to the teachers who fight tirelessly each day for their students, and to the creative, brilliant, sweet students who make this work worth it.

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“The ultimate hidden truth of the world is that it is something that we make, and could just as easily make differently” – David Graeber, *The Ultimate Hidden Truth of the World*¹

I discovered my post-graduate plans in a documentary. *Most Likely to Succeed*² was an optional film on the syllabus for EDSO 23008: Approaches to K-12 Teaching & Learning. I was the only student in the class to watch it. And I was hooked.

At High Tech High, the public charter network featured in the documentary, instead of sitting in lectures on the Pythagorean Theorem or ancient Greek civilizations, school centers projects grounded in equity and justice. Sixth graders design video game controllers for people with disabilities, and eighth graders work with the California Innocence Project to exonerate wrongfully convicted prisoners.³ I knew this was the educational movement I wanted to join, and when I discovered that they had a Graduate School of Education with a teaching residency program, I applied without looking back.

Historical Context

I was astonished to learn from the documentary that the most recent major overhaul in American public education took place in 1892. Horace Mann spent the bulk of his 1843 European honeymoon not recreationally, but visiting schools. Mann was particularly impressed by the system in Prussia, in which instruction was divided according to age, ability and subject

¹ Graeber, David. *The Ultimate Hidden Truth of the World...: Essays*. Signal, 2025.

² Greg Whiteley, *Most Likely to Succeed*. 2015.

³ Explore these projects and more at <https://www.hightechhigh.org/student-work/projects/>.

matter. Revolutionary at the time, Mann called for universal education in which the rich and the poor are educated side by side.⁴

Philosophical debate over the nature of such universal schooling was abound. In 1892, the Committee of Ten, a group of ten school principals and university presidents, were charged with determining a set of standards that students across all states should meet in order to produce efficient factory workers, prescribing a set of subjects that were to be taken sequentially. The Committee of Ten recommended nine subjects that would prepare students for higher education: Latin; Greek; English; Other Modern Languages; Mathematics; Physics, Astronomy, and Chemistry; Natural History (including biology); History, Civil Government, and Political Economy; and Geography. The Committee outlined when course of study should commence, the number of hours per week spent on each subject, and even lesson plans to meet targeted outcomes.⁵ The Committee unanimously agreed that no matter whether the student was bound for college or directly to the workforce, all students, “regardless of destination, were entitled to the best ways of teaching the various subjects.”⁶ While emphasis on studying Latin and Greek has declined, the delineation of content into discrete subjects remains today.

In the industrial era of the late 19th and early 20th centuries, standardization was practical. Efficient factory workers needed to have an identical set of skills for the assembly lines. In using tax dollars for public education, school administrators were tasked with designing

⁴ Mary Tyler Peabody Mann, *Life of Horace Mann*. Centennial ed., in facsimile. Washington, D.C.: National Education Association of the United States, 1937.

⁵ National Education Association of the United States. Committee of Ten on Secondary School Studies and United States. Bureau of Education. *Report of the Committee [of Ten] on Secondary School Studies Appointed at the Meeting of the National Educational Association July 9, 1892: With the Reports of the Conferences Arranged by This Committee and Held December 28-30, 1892*. Washington, D.C.: Government Printing Off., 1893. Somewhat prophetically, this gathering occurred on my birthday.

⁶ Herbert M. Kliebard. *The struggle for the American curriculum, 1893-1958*. (Routledge, 2004), 10.

their classrooms to prepare students for a factory economy. Rooted in John Locke’s philosophy, children were seen as empty vessels with which to fill the right knowledge.⁷

At the same time, philosophers like John Dewey began advocating for progressive education. These philosophers believed that schools served not just an academic purpose but held an obligation to prepare children for the social and moral realities they would face. Progressivists founded schools that integrated formal academics with practical training and emotional development through introspection and the arts. However, the movement fizzled in the post-WWII era as schisms developed, the country swung towards conservatism, and it “failed to keep pace with the continuing transformation of American society.”⁸

As late as 1970, 74 percent of the middle class was made up of high school graduates and dropouts, and the top three skills employers valued were reading, writing, and arithmetic. Today, employers search for complex problem-solving, critical thinking, and creativity in a world tackling complex global problems like climate change and extreme economic inequality.⁹ Standardization prepares students for a world that no longer exists, in which we don’t know what jobs future leaders will take on. Furthermore, creativity is declining with age.¹⁰ DuFour and DuFour write: “The system is doing a better job than ever of preparing students... *for the 1960s.*”¹¹ Meanwhile, non-cognitive skills, also known as social-emotional skills, have been

⁷ Angeline Stoll Lillard, *Montessori: The Science Behind the Genius*. Third Edition. (New York: Oxford University Press, 2017).

⁸ Lawrence A. Cremin, *The Transformation of the School: Progressivism in American Education, 1876-1957*. [1st ed.]. New York: Knopf, 1961, 350.

⁹ Richard DuFour and Rebecca DuFour, “Deeper Learning for Students Requires Deeper Learning for Educators,” in *Deeper Learning: Beyond 21st Century Skills*, ed. James A. Bellanca (Solution Tree Press, 2015); Jal Mehta and Sarah M. Fine. *In Search of Deeper Learning: The Quest to Remake the American High School*. Cambridge, Massachusetts: Harvard University Press, 2019.

¹⁰ Yong Zhao, “Paradigm Shift: Educating Creative and Entrepreneurial Students,” in *Deeper Learning: Beyond 21st Century Skills*, ed. James A. Bellanca (Solution Tree Press, 2015).

¹¹ DuFour and DuFour, “Deeper Learning for Students Requires Deeper Learning for Educators,” 22.

shown to predict life outcomes such as educational achievement, labor market outcomes, health, and criminality at the same or higher levels as cognitive skills.¹²

If children are not empty vessels in which to instill conformity, but young people with hearts and minds learning about the world they will inherit, what should they be learning in school? I argue that it is time for another overhaul in public education, one that prioritizes the development of cognitive and social-emotional skills over content, in pursuit of flourishing in the present world.

21st Century Skills or Timeless Skills?

Myriad frameworks exist to capture the types of skills that people develop. Kautz et al. (2015) present a framework consisting of cognitive skills and non-cognitive skills, also known as social-emotional skills.¹³ Pellegrino and Hilton further divide social-emotional skills into those that are intrapersonal and those that are interpersonal. Cognitive skills include those typically associated with school – such as mathematical reasoning or reading comprehension – but also include higher-order skills like the transfer of information to new contexts, critical thinking, problem-solving, and creativity. Intrapersonal skills involve “the capacity to manage one’s behavior and emotions to achieve one’s goals,” such as conscientiousness, self-regulation, openness to new experience, and resilience against adversity. Interpersonal skills involve

¹² Tim Kautz, James J. Heckman, Ron Diris, Bas ter Weel, and Lex Borghans. “Fostering and Measuring Skills: Improving Cognitive and Non-Cognitive Skills to Promote Lifetime Success.” *National Bureau of Economic Research*. 2015.

¹³ Kautz et al, “Fostering and Measuring Skills.” These terms are used interchangeably throughout this paper depending upon sources cited.

“expressing ideas, and interpreting and responding to messages from others,” such as communication, empathy, and conflict resolution.¹⁴

Schools have an obligation to promote the development of all three types of skills if they are committed to developing personal and societal wellbeing. However, schooling has historically focused on measuring and, subsequently, teaching cognitive skills. Even within the cognitive domain, school achievement tests typically measure only crystallized intelligence, which accounts for acquired knowledge, such as mathematical procedures or biological facts learned in school. Crystallized intelligence is often correlated with yet distinct from fluid intelligence, defined as the rate at which people learn and often measured by IQ tests.¹⁵

Social-emotional skills, on the other hand, include traits such as perseverance, conscientiousness, self-control, resilience to adversity, openness to experience and diverse opinions, and empathy.¹⁶ These skills are not measured on achievement tests but remain critical skills both in the workforce and in life. Contrary to the implications of most contemporary curricula and assessment, these skills are actually more malleable than cognitive skills through adolescence due to the slow development of the prefrontal cortex in the brain.

We live in a world in which content is ubiquitous: ChatGPT can ace most K-12 exams, and professionals can access any knowledge they do not possess on the Internet or from a peer. Indeed, *Most Likely to Succeed* cites a study undertaken by the prestigious Lawrenceville Academy boarding school in which students returning from summer vacation were re-administered their science final exams; just three months after their course was completed, the

¹⁴ National Research Council. Committee on Defining Deeper Learning and 21st Century Skills, James W. Pellegrino, Margaret L. Hilton, National Research Council. Center for Education, National Research Council. Division of Behavioral and Social Sciences and Education, and National Research Council. Center for Education. Board on Testing and Assessment. *Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century*. Washington, D.C.: The National Academies Press, 2012, 3.

¹⁵ Kautz et al, “Fostering and Measuring Skills.”

¹⁶ Kautz et al, “Fostering and Measuring Skills,” 2.

average grade fell from a B+ to an F. Linda Darling Hammond, an education researcher at Stanford, explains that 90 percent of inert knowledge, memorized for the purpose of recall on a test, disappears soon after. It is counterproductive to maximize content over skills when this content is forgotten, waiting on the Internet to be needed in the future.¹⁷

The World Economic Forum Future of Jobs Report finds that the top five core skills in 2025, as determined by employers, include analytical thinking; resilience, flexibility, and agility; leadership and social influence; creative thinking; and motivation and self-awareness.¹⁸ Of those five, the Forum only categorizes analytical and creative thinking as cognitive skills; the other three are categorized as self-efficacy and working with others, speaking to the value of the intrapersonal and interpersonal skills outlined by Pellegrino and Hilton.¹⁹ Reading, writing, and mathematics, on the other hand, comes in at number 21, with a small net decrease in perceived performance by employers.

The demand for soft skills is further compounded by a crisis in social-emotional skill development in the United States. In the 2022-2023 school year, 53.3 percent of public school-aged children qualify for free or reduced-price lunch, a metric often used as a proxy for low-income status.²⁰ Increasingly, research suggests that the adverse experiences of children growing up in poverty hinder the development of social-emotional skills, producing a social-emotional skill gap that is equally if not more dangerous than the achievement gap.²¹ Indeed, the Center for Disease Control found in 2024 that 76 percent of students have

¹⁷ Whiteley, Greg. *Most Likely to Succeed*. 2015.

¹⁸ Attilio Di Battista, Sam Grayling, Ximena Játiva, Till Leopold, Ricky Li, Shuvasish Sharma, and Saadia Zahidi. "Future of jobs report 2025." *In World Economic Forum, Geneva, Switzerland*. <https://www.weforum.org/reports/the-future-of-jobs-report-2025>. 2025.

¹⁹ Pellegrino and Hilton, *Education for life and work*.

²⁰ "Digest of Education Statistics." National Center for Education Statistics, 2023.

²¹ For a discussion on the relationship between poverty, adverse experiences, and chronic stress, see Paul Tough, *Helping Children Succeed: What Works and Why*. Boston: Houghton Mifflin Harcourt, 2016.

experienced at least one adverse childhood experience, such as emotional abuse, physical abuse, and poor household mental health, and 18.5 percent have experienced four or more.²²

Environmental stressors like poor housing quality, economic strain, and poor parenting have been associated with disruption of the hypothalamic-pituitary-adrenocortical (HPA) axis of the neuroendocrine system, resulting in elevated cortisol that mobilizes energy and suppression of immune function. This often manifests as heightened vigilance to threat and self-regulatory issues such as poor coping, attention and memory challenges, and poor emotional regulation. Repeated stress, also known as chronic stress, produces a stress response system that is constantly activated and difficult to deactivate. This phenomenon, called allostatic load, imposes “wear and tear” on biological systems that increases susceptibility to physical and mental health problems. There is also evidence that chronic stress can impact individuals at the epigenetic level, such that it can impact gene expression, or the ways in which genes are turned on and off, which is potentially responsible for some of these patterns. These effects can then be passed on through generations.²³

For children whose adverse experiences have impeded executive functioning, compounded by constant vigilance against threat, the school setting can be challenging. Trouble concentrating can hinder the process of learning to read, which may produce anxiety about school and lead to behavioral problems. While vigilance and reactivity may be adaptive in threatening situations, it is counterproductive in a school environment, where perceived threat may provoke misbehavior due to poor self-regulation, such that by the time the child reaches high school they are perceived as having problems of “attitude” or motivation. As such, the organization Turnaround for Children suggests that what is most needed for children who have

²² Swedo, Elizabeth A. "Adverse childhood experiences and health conditions and risk behaviors among high school students—Youth Risk Behavior Survey, United States, 2023." *MMWR supplements* 73 (2024).

²³ Ross A. Thompson. "Stress and child development." *The future of children* (2014): 41-59.

been exposed to significant adversity in school is “the opportunity to develop skills that may have been affected by their stress responses — meaning the ability to attach and bond, the ability to modulate stress, and most of all the ability to self-regulate.”²⁴

The implications of these biopsychosocial challenges are worrisome: externalizing behavior, based on the frequency with which a child argues, fights, gets angry, acts impulsively, or disturbs ongoing activities, is the strongest predictor of 8th grade suspension, which in turn is predictive of college enrollment and completion. This effect is particularly pronounced in boys, who are observed to be more responsive to variations in parental inputs.²⁵ Because 40 percent of babies are born to unmarried mothers, and 60 percent of unmarried relationships terminate by the child’s fifth birthday, inconsistent parenting is a concern for a large proportion of children.²⁶ As men’s employability has declined in connection to reduced social-emotional skills, some women are reluctant to marry, reproducing single-parent households.²⁷ This contributes to a frightening cycle of perpetuating intergenerational social-emotional challenges among both children and adults.

The consequences of the social-emotional skill gap are dire, but the brain is plastic, especially in children, indicating that effective intervention is possible.²⁸ Multiple studies show that children who experience positive life outcomes despite adversity tend to have a stable relationship with at least one supportive caregiver, which buffers stress and teaches key

²⁴ Paul Tough, *Helping Children Succeed: What Works and Why*. Boston: Houghton Mifflin Harcourt, 2016, 62-69.

²⁵ Marianne Bertrand and Jessica Pan. "The trouble with boys: Social influences and the gender gap in disruptive behavior." *American economic journal: applied economics* 5, no. 1 (2013): 32-64.

²⁶ Data from Fragile Families & Child Wellbeing Surveys Waves 1-4, 2023. Presented by Ariel Kalil, “Family structure, child development, and public policy,” Lecture in Raising Futures: Narrowing the Skill Gap Between Advantaged and Disadvantaged Children, 2024.

²⁷ Haskins, Ron. "Marriage, parenthood, and public policy." *National Affairs* 19, no. 1 (2014): 55-72.; Daniel Schneider. "Lessons learned from non-marriage experiments." *The Future of Children* (2015): 155-178.; Edin, Kathryn, and Maria Kefalas. "Unmarried with children." *Contexts* 4, no. 2 (2005): 16-22.

²⁸ Ross A. Thompson. "Stress and child development."

capacities such as self-regulation and adaptation.²⁹ Career and technical education (CTE) programs have been shown to give high schoolers the skills they need to pursue stable employment and, subsequently, stable lives.³⁰ Programs such as these provide hints that curricular alternatives could foster deeper cognitive and social-emotional growth. A radical restructuring of school models could have the potential to nurture the skills that children need to flourish in the 21st century.

Reimagining by Example: How Schools Are Defining What Is Possible

Knowing the critical need for systemic public school transformation from content-driven rooted in skills, it is essential to consider what schools can and should do. Across the country, I find schools that challenge the status quo by reimagining what is possible for their students – in their education, the labor force, and life. Many of these schools are charter schools, given that public schools often are much more restricted in their ability to manage teachers, use resources, select curricula and instructional techniques, and in their capacity to innovate.³¹ However, many are also deeply committed to disseminating their practices to the larger public education community.

Meticulous, Grassroots Change: William H. Prescott Elementary School

²⁹ Ariel Kalil, “Parental inputs,” Lecture in Raising Futures: Narrowing the Skill Gap Between Advantaged and Disadvantaged Children, 2024.

³⁰ James J. Kemple, Cynthia J. Willner, and MDRC. *Career Academies: Long-term Impacts on Labor Market Outcomes, Educational Attainment, and Transitions to Adulthood*. New York, NY: MDRC, 2008.

³¹ Peter C. Weitzel and Christopher A. Lubienski, “Grading Charter Schools: Access, Innovation, and Competition” in *The Charter School Experiment: Expectations, Evidence, and Implications*, ed. Christopher A. Lubienski and Peter C. Weitzel, (Harvard Education Press, 2010).

I began my search with an email to Nate Pietrini, the instructor of the course that had introduced me to HTH, and long-time teacher and administrator in Chicago Public Schools (CPS). Nate introduced me to Principal Erin Roche of Prescott Elementary School, a Nate-proclaimed “rockstar principal” committed to research-backed strategies for improving teaching and learning and social-emotional learning (SEL). CPS benefits from hyperlocal governance, in which school curriculum choices and discretionary spending is determined by local school councils (LSCs) consisting of parents, teachers, community members, and a student. As such, individual schools in Chicago have considerable autonomy to innovate relative to public schools in more centralized, controlled districts.³²

Located in the Lincoln Park neighborhood of Chicago, Prescott is decorated with awards: top 10 percent in the state of Illinois in 2022. National Blue Ribbon awardee from the U.S. Department of Education in 2019. One of 13 schools among over 700 to be named a Fully Healthy School.³³ In his office, Principal Roche began with his pitch for parents: Prescott is a school focused on holistic education, where students learn to become strong readers and accrue math skills, but also learn to be good people. He asserted the importance of setting students up to fail: “if you don’t learn how to stretch yourself and fall down, you’ll never know how to pick yourself back up.” At Prescott, failure is not intended to be debilitating; the grading policy states that students are permitted to retake assessments, an exercise in analyzing areas for improvement, stretching beyond one’s comfort zone, and building resilience.³⁴

At Prescott, SEL is integrated into the day-to-day, in alignment with Tough’s argument that SEL is best internalized when such skills are picked up implicitly.³⁵ Students learn active

³² For a discussion on LSCs and school improvement in Chicago, see Anthony S. Bryk, Sharon Greenberg, Albert Bertani, Penny Sebring, Steven E. Tozer, and Timothy Knowles. *How a city learned to improve its schools*. Harvard Education Press, 2023.

³³ <https://prescottparents.com/prescott-elementary/>.

³⁴ Erin Roche (principal) in discussion with the author, April 2025.

³⁵ Paul Tough, *Helping Children Succeed*.

listening skills through “Turn and Talks” with their seat neighbors during whole-class instruction. Kindergarteners learn to delay gratification by receiving a menu of activities to complete each week, deciding when to go to their favorite centers and how to negotiate when centers are full. Family conferences are student-led, delegating responsibility to the student to evaluate their performance over a given quarter, and determine what they need to work on and how.

Prescott’s social emotional protocol includes both proactive and reactive systems. The Responsive Classroom program trains teachers on classroom management with an emphasis on proactive and positive discipline, and the Second Step curriculum provides 15 minutes of daily social-emotional learning.³⁶ For reactive support, Prescott uses practices rooted in restorative justice, a method for conflict resolution and relationship repair, such as mediation and harm-repair circles. Such practices have been shown to increase academic achievement, reduce disciplinary issues, and improve student behavior and school safety, with particularly pronounced effects on Black and Latine students.³⁷ When students have a conflict, they first turn to the skills they have built in Second Step to restore it on their own. If they are unable to do so, the school’s designated interventionist steps in. This interventionist works with the student and the teacher to develop a restorative lesson plan, which may provide anywhere from an hour up to a year’s worth of guidance. This SEL interventionist role is fairly unique to Prescott in the world of CPS; the hyperlocal governance of CPS allows Prescott to make this hiring decision on its own.

³⁶ Read more about these programs at <https://www.responsiveclassroom.org/> and <https://www.secondstep.org/>.

³⁷ For a literature review on restorative justice, see Menkel-Meadow, Carrie. "Restorative justice: What is it and does it work?." *Annu. Rev. Law Soc. Sci.* 3, no. 1 (2007): 161-187. For an overview on restorative justice in schools, see Darling-Hammond, Sean. "Fostering Belonging, Transforming Schools: The Impact of Restorative Practices." *Learning Policy Institute* (2023).

Principal Roche is meticulous with his school improvement initiatives. When he has an idea, he brings it to other staff members, finds supporters, and revises based on input. He brings the idea to team meetings, carefully building a web of support before bringing it to the whole school, building in ample time to plan, pilot, and refine the initiative to ensure it takes root effectively. He lamented the pervasiveness of change that does not come from the ground-up: “that’s one of the big problems with school change, it’s top-down ‘okay here’s what we’re doing.’” Indeed, the principals with the greatest capacities for change are the ones who are actively engaged in instructional improvement from the ground-up.³⁸

Principal Roche’s efforts seem to be working: Prescott is making its way towards the goals set in the *Prescott 2026 Strategic Plan* adopted by the LSC in 2022, crafted around their portrait of a graduate. The first few pages of the document outline plans for improvement of climate and classroom culture, the arts, and physical education and holistic wellness before diving into more traditional academic disciplines, suggesting the prioritization of non-cognitive skill development.³⁹ When teachers came to Principal Roche with frustrations with the math curriculum, his initial skepticism waned when he saw the data, and the school transitioned to the Illustrative Mathematics curriculum,⁴⁰ which he reported to be going “very well.” Prescott also fully implemented its new social studies curriculum, including lessons from new curricula like Facing History & Ourselves, whose mission is to use “lessons of history to challenge teachers and their students to stand up to racism, antisemitism, and other forms of bigotry and hate.”⁴¹ Ten new afterschool programs have been launched, including the Gender and Sexuality Alliance, Future Problem Solving, and yoga.

³⁸ Karin Chenoweth and Christina Theokas. *Getting It Done: Leading Academic Success in Unexpected Schools*. Cambridge, Mass.: Harvard Education Press, 2011.

³⁹ “*Prescott 2026 Strategic Plan*,” 2022. <https://prescottparents.com/prescotts-strategic-plan/>

⁴⁰ See <https://illustrativemathematics.org/>.

⁴¹ “Facing History & Ourselves.” <https://www.facinghistory.org/>

Prescott is not as radical as the schools that follow. It is, however, an example of a school with a meticulous leader deeply connected to his staff, students, and their experiences on the ground. It is a place where policy approaches from grading to conflict resolution are student-centered and informed by research, where school culture is cultivated proactively and conflicts are addressed using a restorative approach. Next, I explore schools experimenting with curricula rooted in real-world projects, widening the scope of what learning can be.

“Hands On, Minds On”⁴²: Project-Based Learning and Career and Technical Education

High Tech High was founded by Larry Rosenstock, a law school dropout whose job teaching carpentry in Boston made him realize that students would willingly learn and retain geometry if it was necessary to build a chair.⁴³ The network of sixteen schools now serves over 6,000 students, selected through a zip code-based lottery intending to serve students from every neighborhood in San Diego. Instead of the traditional, Committee of Ten-style division of subjects and grade bands, the curriculum is delivered through interdisciplinary projects and guided by four design principles: equity, personalization, authentic work, and collaborative design.⁴⁴ Parental concerns about college preparation may be assuaged: the network boasts the highest college enrollment rate of all public school districts in San Diego County at 82 percent.⁴⁵

Most Likely to Succeed features a cohort of ninth graders, enrolled exclusively in a humanities course and a physics/engineering course. In humanities, students explore civilizations

⁴² This references terminology used by a project-based learning school discussed in Mehta, Jal, and Sarah Fine. *In search of deeper learning: The quest to remake the American high school*. Harvard University Press, 2019.

⁴³ Greg Whiteley, *Most Likely to Succeed*.

⁴⁴ High Tech High, “About Us,” <https://www.hightechhigh.org/about/>.

⁴⁵ HTH Communications, “HTH’s Outstanding Record in College Admissions,” High Tech High, 2023. <https://www.hightechhigh.org/hths-outstanding-record-in-college-admissions/#:~:text=96%25%20graduation%20rate%20among%20all,districts%20in%20San%20Diego%20County>.

throughout history to develop their own theories to explain why civilizations rise and fall. In physics, they work in groups to create a mechanical representation of their civilizational theories, learning new software and principles of torque and angular velocity to build slices of a massive civilization wheel (Figure 1). Rather than taking an end-of-unit test, these students present their knowledge the way all HTH students do: through an Exhibition for school staff, families, and community members.⁴⁶



Figure 1: HTH ninth graders design a massive wheel that represents their theories for the rise and fall of civilizations.

Under a project-based learning (PBL) system, the teachers in the documentary argue, there is little reason for a student to groan “*Why are we learning this?*” Students create bilingual telenovelas examining the human experience of natural disasters, research the distribution of book access and build libraries, and become poets reflecting on their own resilience and the individuality of those around them after learning how to skateboard.⁴⁷ “You think you’ll get it done?” a teacher asks a project member in the film. “Yeah, if I stay late every day,” the student

⁴⁶ Greg Whiteley, *Most Likely to Succeed*.

⁴⁷ See <https://www.hightechhigh.org/student-work/projects/>.

responds nonchalantly.⁴⁸ When there is a product to complete, staying after school is a no-brainer.

While some volume of content is arguably foregone in project-based learning, the message of *Most Likely to Succeed* is that the tradeoff is priceless. “You realize that you are capable of things that you were not capable of before,” one teacher says. “I saw so many transitions, so many students who started out uninvolved, or socially impaired, or really academically challenged, and they came out as different people. Not perfect, but better than they came in,” says another.⁴⁹ At the end of the year, one student admits, “I came [to HTH] and found out I’m a little more nerdy than I thought I was.”⁵⁰ Students may not have memorized when specific civilizations were at their peak or who led each battle, but the development of their own theories allows for knowledge retention that lasts, and instills excitement for learning that was not there before. Moreover, the act of producing something new and presenting it to the community contributes to the very social-emotional skills that are not necessarily taught explicitly but inherently develop through such work: skills such as persistence, resilience, and collaboration.

HTH is not the only public school program to offer hands-on learning to students. Iowa BIG, for example, is a program in Cedar Rapids, IA that partners students with projects with local businesses, nonprofits, and government agencies, targeting the “high achievers” and “disengaged” students alike. Through “The Billy Madison Project” named after the Adam Sandler film of the same name, 60 community members returned to school as students, discovering that the Committee of Ten discrete subject model made classes boring for students and challenging to foster engagement for teachers. Their new program centered student passions,

⁴⁸ Greg Whiteley, *Most Likely to Succeed*, 28:45.

⁴⁹ Greg Whiteley, *Most Likely to Succeed*, 1:10:00.

⁵⁰ Greg Whiteley, *Most Likely to Succeed*, 1:17:20.

real-world projects, and roots in a community to open doors for post-graduate opportunities.⁵¹ In 11 years, the program has partnered over 1,000 high schoolers with over 400 projects that compose a substantial portion of their course schedule.⁵² School districts in the area have noticed the demand and started implementing PBL on their own, suggesting that success of a program such as Iowa BIG may inspire communities to proliferate new pedagogy like PBL.⁵³

Hands-on learning has also been the norm in career and technical education (CTE) for decades. MDRC has consistently found positive long-term outcomes associated with Career Academies, which are small learning communities that combine academic and technical curricula around a career theme, partnering with local employers for work opportunities. In its most recent randomized control trial of Career Academies in 2008, which followed 1400 young people eight years after their high school graduation, MDRC found that participants earned 11 percent more yearly on average than non-participants, with a particularly pronounced effect on young men, who earned 17 percent more. Men were also more likely to marry or be custodial parents,⁵⁴ suggesting a reduction in single-parent households, alleviating the resulting strain on child development.⁵⁵

An article published by the Hechinger Report one month prior to the writing of this paper profiles the Academies of Louisville program implemented in all of the main Jefferson County Public Schools, the district including Louisville, KY. The program calls for a “CTE for all” high school curriculum that operates alongside the existing “college for all” paradigm. In some of the schools, CTE courses are offered separately from traditional academic courses; in others, the two

⁵¹ See <https://iowabig.org/>.

⁵² Iowa BIG, “What is Iowa BIG?”, <https://iowabig.org/about-iowa-big/>.

⁵³ Grace King, “Project-based learning remains paramount at Iowa BIG,” *The Gazette*, 2024. <https://www.thegazette.com/k/project-based-learning-remains-paramount-at-iowa-big/>

⁵⁴ Kemple, Willner, and MDRC. *Career Academies: Long-term Impacts on Labor Market Outcomes, Educational Attainment, and Transitions to Adulthood*.

⁵⁵ Daniel Schneider. "Lessons learned from non-marriage experiments."

are integrated. Across the district’s 15 high schools, 56 career academies are offered, housing 155 industry pathways. These pathways do not necessarily replace traditional subjects but can complement them: one Advanced Placement Biology teacher recounts being able to use examples from computer science, fire science, and plumbing to connect the content to students’ real-world experiences within their pathways.⁵⁶

PBL and CTE present exciting new structures for students to engage in real-life, inquiry-driven learning that is self-motivating, fulfilling, strong preparation for the workforce, and a constant lesson in resilience. Next, I visit a century-old pedagogy in a relatively new context: The Montessori School of Englewood.

The Montessori School of Englewood (MSE)

The Montessori method is not new, but its availability to CPS students and teachers is. While Maria Montessori opened her first school in the high-poverty neighborhood of San Lorenzo in Rome and targeted her pedagogy towards low-income kids, today only 500 of the 5000 Montessori schools in the United States are public.⁵⁷ Founded in 2012, the Montessori School of Englewood (MSE) aims to “[bring] Montessori education back to its roots... as it was originally created: for underserved communities” by working with hands, heads, and hearts to uplift the community.⁵⁸

The Montessori method prioritizes three main capacities that Dr. Montessori saw as essential to development: exercises of practical life, sensory training, and language

⁵⁶ Javeria Salman, “Schools push career ed classes ‘for all,’ even kids heading to college,” *The Hechinger Report*, 2025. <https://hechingerreport.org/schools-push-career-ed-classes-for-all-even-kids-heading-to-college>.

⁵⁷ American Montessori Society: “Fast Facts: Public Montessori Schools.” <https://amshq.org/about-montessori/press-kit/public-schools/>.

⁵⁸ <https://www.tmsoe.org/>

development.⁵⁹ Students explore these three capacities by using tools in the classroom to pursue their own interests. Dr. Montessori emphasized deep connections with nature and prescribed a set of special manipulatives, often made from natural materials, that students can use to gain motor skills or explore principles of mathematics.⁶⁰

Upon my arrival to MSE, I met with Director of Operations/Compliance Felicia Lang, whose previous experience working on bilingual education, assessments, and multi-tiered systems of supports at the school gave her a comprehensive understanding of student/teacher life and the behind-the-scenes. The building itself looked not unlike the more traditional CPS school in which I work – it was long and rectangular, with high ceilings, brightly painted walls, and dark wood doorways. The classrooms, however, were organized into stations, where one teacher would lead instruction of a small group, while remaining students pursued their own independent work. In a Head Start classroom, where Head Start curriculum blends with Montessori pedagogy, students were not stationed at desks, plodding through worksheets, but playing with wooden manipulatives, true to Montessori form.⁶¹ One young child was even bathing a baby doll in a small tub, imitating the practical life tasks she has likely observed at home, just as Dr. Montessori had advocated.⁶² Outside, a small playground sat beside a large swath of concrete; Ms. Lang explained that fundraising was in the works for a nature-based playground that had already been designed by the students themselves in partnership with nonprofit Depave Chicago.

⁵⁹ Maria Montessori, Williams H. Kilpatrick, and Gerald Lee Gutek. *The Montessori Method: The Origins of an Educational Innovation, Including an Abridged and Annotated Edition of Maria Montessori's The Montessori Method*. Lanham, MD: Rowman & Littlefield Publishers, 2004.

⁶⁰ Angeline Stoll Lillard, *Montessori: The Science Behind the Genius*.

⁶¹ Head Start is a federally funded early childhood education program targeting children from low-income backgrounds. For a recent review, see Martha J. Bailey, Shuqiao Sun, and Brenden Timpe. "Prep school for poor kids: The long-run impacts of Head Start on human capital and economic self-sufficiency." *American Economic Review* 111, no. 12 (2021): 3963-4001. Head Start has received some criticism for focusing on elementary school preparatory reading and mathematics skills at the expense of social-emotional development; see Erika Christakis, "The New Preschool is Crushing Kids," *The Atlantic*, 2016.

⁶² Maria Montessori et al.. *The Montessori Method: The Origins of an Educational Innovation, Including an Abridged and Annotated Edition of Maria Montessori's The Montessori Method*.

In another area, plots of growing vegetables were arranged in rows, where, come spring, students and community members could make salads with their produce.

In her office, Ms. Lang walked me through the SEL support structure of the school. While at many schools, therapy is primarily provided for students with Individualized Education Plans (IEPs), about half of MSE students are provided with therapeutic services.⁶³ Assessments conducted through a service called FastBridge assess students' social, academic, and emotional needs, which the principal organizes into charts by classroom. Alongside the school's designated Dean of Culture, she meets with each teacher to discuss the needs revealed in the data, and the teacher can respond with their own observations of day-to-day life in the classroom. Teachers can also submit referral forms for counseling needs that are not identified via assessment.

While fundraising does help to support these programs, MSE primarily relies on three partnerships to maintain such robust support systems. By sourcing therapists through these partnerships, including the Chicago Psychoanalytic Institute, Children's Research Triangle, and Stepping Stones Mental Health Solutions, personnel can be supplied through grants and pro bono work to provide individual therapy, group therapy, family therapy, teacher support and consultation, and drop-in clinic hours.⁶⁴ "We don't get funding for these things; we allocate it because that's what we need for our students. That's how you change student lives," Ms. Lang told me.

Montessori has been around for a long time, I acknowledged, but it is innovative in a public school setting. Where MSE is innovative for its accessibility to Chicago students, Ms. Lang pointed out, it also is innovative in making Montessori training accessible to Chicago

⁶³ Felicia Lang (Director of Operations/Compliance at The Montessori School of Englewood) in discussion with the author, April 2024.

⁶⁴ See MSE's behavioral health services at https://irp.cdn-website.com/5c3b5a38/files/uploaded/TMSOE_BHS_2023-2024_%281%29.pdf.

teachers. MSE operates the Montessori Residency of Chicago, which provides an opportunity for teachers of color to obtain Montessori teaching certification. This allows MSE to hire Montessori teachers that look like their predominantly Black student body.

A large proportion of teachers have been with MSE since its founding, and in the elementary years students have the same teacher for three consecutive years, building strong ties with them through their growth. In her previous role, Felicia was Director of Bilingual Programming, Assessments, and MTSS, and students of all ages waved hello to her as she showed me around the school. Ms. Lang emphasized the community woven through MSE: “At our school, family is the energy.” The school is rooted in the Englewood community, too – hundreds attend the annual Back to School event, and MSE was the primary provider of meals to the Englewood community during the Covid-19 pandemic.⁶⁵

MSE is unique in its return of the Montessori method to the population for which it was originally created: under-resourced youth.⁶⁶ By situating individualized exploration deeply within a community context, students can learn at their own pace, rather than at the whims of a teacher and the pace of the “average” student, while still gaining the interpersonal skills associated with a tightly-knit community. By partnering with external organizations, MSE is able to meet the mental health needs of its student population without fronting the cost, providing an important possible pathway for addressing the adverse impacts of chronic stress that low-income students often face.

Character Development as Curriculum: Polaris Charter Academy

⁶⁵ Felicia Lang (Director of Operations/Compliance at The Montessori School of Englewood) in discussion with the author, April 2024.

⁶⁶ “Our School,” The Montessori School of Englewood, <https://www.tmsoe.org/school>.

My final stop on my tour was Polaris Charter Academy, a K-8 charter school in Chicago’s West Humboldt Park neighborhood, where I was invited to attend their re-credentialing presentation with their nonprofit partner organization, EL Education. Founded in 2007 by three award-winning teachers “who believed that deep and rich character development coupled with experiential learning that was connected to real world issues of social justice is how school should be,” Polaris is guided by the EL’s three dimensions of student achievement: character, mastery of knowledge and skills, and high quality work. The school aims to broaden its impact not by replicating the small school but by disseminating its practices to schools across the country.⁶⁷

In designing the school in 2007, Polaris founders brainstormed the qualities they would like to see in their graduates, creating a framework called the Points of Polaris: compassion, active citizenship, creative thinking, integrity, and exploration. These Points are reinforced daily through rituals, traditions, and celebrations. Crew, an advisory that “circles up” daily and is often led by the same teacher for years, serves as the grounding force for these Points and habits of mind, launching each day with SEL guided by character conversations and reflection. Crew extends beyond this daily advisory but seems to take on this deeper role as a unifying force for the school. Founder and Principal Francesca Peck explains: “We crew up in grade level bands in the hallway. We crew up as an entire community in the gym. And also weekly, we crew up as a staff.”⁶⁸ Crew is not just a noun but a verb, an active practice embodied by the whole school.

By having consistent and explicit terminology for the social-emotional skill buckets that Polaris seeks to instill, students are able to clearly reflect on their actions and goals with deep

⁶⁷ Michelle Navarre (Founder and Executive Director of Polaris), in POLARIS: EL Education Credential Renewal Presentation, May 2025.

⁶⁸ Francesca Peck (Principal of Polaris), in POLARIS: EL Education Credential Renewal Presentation, May 2025.

intentionality. When students were asked to share a Point of Polaris that they are working on, one middle schooler shared:

A Point of Polaris that I've been working on like, the past year and a half is integrity. I kind of struggled last year with integrity, but I've been improving, and I still want to improve to even go further. I think integrity comes with leadership as well, because I can't be a great leader without having integrity. [It means] other people being able to count on you to do things and, like, just being a great leader that people could look up to.

Having attended Polaris for six years, this middle schooler had clear language to describe complex character development, with the goal of being a leader for his community.

An alumna who now works at the school shared that she had struggled in three schools before entering Polaris in fifth grade, so much so that she was chalked up to an “attitude problem” where “nobody expected change from me”:

When I first came to Polaris, I was kind of an angry kid, just because at home, I didn't really have nobody to, like, talk through my emotions with me.. So when I came to Polaris and I seen that it's actually people willing to, like, help me talk through my problems, or like, help me reflect... So when I can sit down and reflect and really be like, ‘Okay, these are things I need to work on’... I feel like I have a little bit more control, like, over myself and over my school too... Reflection, it made me a more calmer and more focused person. Like, it helps me focus on what the problem is. Instead of being angry, I'm able to actually pinpoint what's going on with me.

Now, this alumna starts each day with reflection and goal-setting, and asks her middle school students to do the same, which they are readily able to do using the Points of Polaris as their toolkit. This student, who had previously struggled markedly with school and self-regulation, learned powerful strategies for introspection that gave her the tools to deal with challenges in her life. The Polaris character toolkit allows students to develop both intrapersonal skills such as reflection and self-regulation as well as interpersonal skills such as empathy and teamwork.

This alumna was not the only one to express feeling safe and supported at Polaris.

Principal Peck launched the character development portion of the presentation with data from the

5Essentials school culture survey developed by the University of Chicago Consortium on School Research; revealing that the school received a score of 99/100 for a supportive environment, far above the CPS average, which sits just below a score 50. Furthermore, the vast majority of students report having at least one adult in the building that they feel safe talking to.⁶⁹ Indeed, Kraft et al. (2023) find that one of the crucial ways that schools contribute to human capital development is through informal mentoring relationships between students and staff, which are more prevalent under supportive conditions such as a strong sense of belonging. These effects are largest for students of low socioeconomic status, and predict higher college attendance rates and increased years of education.⁷⁰ School, then, can be a place for students to build nurturing relationships with adults, which can buffer against stress and help children build key capacities, including resilience against adversity.⁷¹ With a constantly reinforced and explicit toolkit for social-emotional learning, tightly-knit crew, and school-wide celebrations of growth, character development at Polaris is a north star towards which to strive. Schools, if operated as intentionally as Polaris, have the power to instill in students trusting relationships with adults, language for personal growth, and a commitment to bettering the tightly-knit community of which they are a part.

Implications for Change

The time has come for a fundamental transformation in school models, replacing the content-driven approach of the 20th century with a 21st-century pedagogy rooted in skill

⁶⁹ Dataset referenced in POLARIS: EL Education Credential Renewal Presentation, May 2025.

⁷⁰ Kraft, Matthew A., Alexander J. Bolves, and Noelle M. Hurd. "How informal mentoring by teachers, counselors, and coaches supports students' long-run academic success." *Economics of Education Review* 95 (2023): 102411.

⁷¹ Ariel Kalil, "Parental inputs."

development. The variety of schools I explored, among countless others, are thriving proof that change is possible.

The curriculum of the future must feature real-world-grounded, active forms of learning. That may look like a project-based learning approach, in which traditional delineations of subjects are eliminated completely in favor of multi-disciplinary projects deeply rooted in community. It could also look like the individual exploration of Montessori or the career training of CTE programs. More research is needed to determine the costs and benefits of each approach, but the plummeting relevance of a content-heavy curriculum suggests that a skills-driven curriculum is the only sensible path forward.

It is also time for U.S. public schools to address the social-emotional skill gap if it is to fulfill its responsibility to prepare children for an economically and personally stable life. Each of the schools I visited hold different approaches to SEL. Polaris strongly emphasizes both intrapersonal and interpersonal skill development through daily reflection time in communities consistent across years, providing students with explicit language for personal and group growth with frequent celebration for constant positive reinforcement. Prescott's designated interventionist on staff allows for deliberate restorative practices and lesson plans to complement proactive SEL happening in classrooms, promoting interpersonal development. MSE's partnerships allow the school to provide targeted therapeutic services to its students. HTH, too, teaches skills like persistence and teamwork implicitly through PBL, just as important as explicit SEL instruction, and also incorporates SEL directly into projects that involve identity or community exploration, like the skateboard project.⁷² I argue that the best SEL curriculum will prioritize both intrapersonal and interpersonal skill development: schools shall be a place for

⁷² Paul Tough, *Helping Children Succeed*.

consistent reflection and teambuilding, as it is in crew at Polaris, meet individual mental health and self-regulation needs, as at MSE, and teach restorative conflict resolution, as at Prescott.

Critically, the development of cognitive and social-emotional skills must come hand-in-hand. Revision and critique, persistence at long-term projects, and the frustrations of hands-on experimentation develop content knowledge as well as perseverance and resilience. Building skills like resilience can equip students with the persistence needed to face struggles with content knowledge. No form of skills exist in a vacuum; indeed, “skills beget skills”⁷³ in a self-perpetuating cycle.

The prominence of innovation within charter schools and locally-operated schools suggests that continued innovation will best evolve within schools with some degree of autonomy. Principal Roche’s ground-up change at Prescott Elementary in Chicago and the flexibility afforded to charter schools both show that when school leaders are empowered to act, they can create substantive change. Critically, structural change beyond isolated experiments depends upon dissemination of practices, as HTH employs at their annual Deeper Learning Conference and as Polaris does in hosting hundreds of educators at their site annually.⁷⁴ New programs such as these will also require additional and more creative uses of funding, such as the partnership program championed by The Montessori School of Englewood.

The Committee of Ten’s program, which provided standards of education that would reach children all across the United States, was revolutionary. It is time for another revolution in education, one that will meet cognitive, intrapersonal, and interpersonal skills humans need to flourish in the workplace and in life. The wellbeing of the next generation depends on it.

⁷³ Kautz et al. “Fostering and Measuring Skills,” 31.

⁷⁴ See <https://events.deeper-learning.org/events/deeper-learning-2025/> for Deeper Learning Conference. Polaris site visits discussed in POLARIS: EL Education Credential Renewal Presentation.