

Career and Technical Education for All

By exploring career pathways, students gain context to choose college—or not

By **MICHAEL B. HORN** and **DANIEL CURTIS**

THEY MAKE FOR GREAT SLOGANS and, on the surface, sound pretty good: “Computer Science for All!” and “College for All!” Let’s give every kid what they need to go to college or get a tech job someday!

But both movements have had tough transitions from ideas into action. To achieve Computer Science for All, schools needed to recruit knowledgeable educators to create and teach those courses or help staff learn computer science and embed those concepts in regular classes. In a society where computer science expertise is highly compensated outside of teaching, and where about 60 percent of teachers say they are stressed and burned out, this movement stalled because of supply.

College for All has struggled on the demand side. Not all students want—or need—to go to college, and many students stumble on this singular pathway. Nearly 37 million Americans under the age of 65 attended college but stopped

before earning any credential.

Now there’s another “for All” on the rise that has the potential to help more students, not to mention serve as a corrective to the limiting college-for-all narrative: Career and Technical Education for All. Career and technical education, or CTE, can avoid the problems that plagued vocational education—its historical antecedent—by including both career and postsecondary educational pathways. Rather than tracking students to work in a narrow set of trades, an effective CTE movement must focus on helping young people discover how their interests and abilities fit within a broad understanding of successful adulthood. CTE should help students learn what energizes them, how different kinds of work are valued, and how they can contribute so they can carve out a pathway after high school that fits their unique goals. That might be college, or it could be something else.



Into the breach created when “College for All” and “Computer Science for All” stumbled steps “CTE for All.” Earlier “for All” movements did not live up to their career-prep promises, but a growing number of K–12 programs connect learning with real careers.

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Ripe for a Reboot

When it issued *A Nation at Risk* in 1983, the National Commission on Excellence in Education framed increasing college attainment as imperative—not only to the country’s social welfare and international competitiveness, but also to its national security.

“The educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. . . . We have, in effect, been committing an act of unthinking, unilateral educational disarmament,” the commission famously declared.

Policymakers and school districts answered the call by pushing growing shares of high school students onto an academic track that would result in college matriculation. Meanwhile, funding and enrollment in vocational education programs dropped steadily over the next few decades. The overall number of vocational credits earned dropped by 14 percent between 1990 and 2009, or two-thirds of an academic year (see “Depth Over Breadth,” *research*, fall 2019).

But the college consensus has been weakening over the past few years. Just 36 percent of Americans reported having “quite a lot” or “a great deal” of confidence in higher education in 2023 compared to 57 percent in 2015. Meanwhile, fewer high school graduates are going to college. Back in 2018, roughly 69 percent of graduates enrolled in either a two- or four-year institution, a record high after four decades of steady increases. That number dropped to 62 percent by the fall of 2022.

Public discourse around college is tinged with disillusionment and doubts—from spiraling college costs and \$1.6 trillion in student loan debt to questions about what students learn while on campus, and from lackluster graduation rates to widespread underemployment. One year after graduation, 52 percent of graduates work in jobs that don’t require a degree. A decade later, 45 percent of degree-holders work in jobs that don’t require the credential.

What’s more, many Americans value something other than a prestigious alma mater. A 2019 survey about success found that individual respondents valued personal relationships as much as education and placed a higher priority on character and purpose than wealth or prestige. Attitudes about the purpose of education were similarly focused, with respondents placing higher values on equipping students with practical skills than preparing them for college admissions. Enrolling in college may not be the status symbol it once was, and for students who do go to college, having a good job afterward is imperative.

Putting College in Context

But under the surface, many American students have little sense of what jobs and careers are even possible and no

concrete understanding of how college might help. Although the return on investment from a college degree is positive on average, college remains a proposition filled with risk.

According to Jean Eddy, president and chief executive at American Student Assistance and author of *Crisis-Proofing Today’s Learners: Reimagining Career Education to Prepare Kids for Tomorrow’s World*, the college-for-all approach hasn’t taken that risk into account. It’s instead regarded college admission as an end in itself and largely neglected developing career goals to guide and motivate students to, through, and beyond college. Nor have most schools supported students who don’t or can’t choose college. With little opportunity to explore or prepare for alternative paths, students are left to figure it out for themselves.

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American Student Assistance, the organization Eddy leads, is a large non-profit working to improve the connection between K–12 education and the working world. It challenges that college-first default vision for life after high school graduation, including by expanding opportunities for all middle and high school students to explore, experiment with, and discover rewarding careers.

“I’m [most] worried about two populations of kids,” Eddy said in an interview. “The first is: they go to college, they can’t figure it out, they’ve stayed there long enough to accrue some debt, and now they leave college. They don’t really have a path to how they’re going to repay this loan, and they get into trouble early. The other population . . . are those kids who make choices about college being the default, but can’t afford it, so they do nothing.”

She argues that career exploration and discovery should start no later than middle school, when students are “like sponges for all the information we can provide. This is the time when they can really become self-aware.”

The purpose of this exposure isn’t so that students can pick a job and follow a narrow pathway to it. The world of work is changing much too rapidly for that to make sense. Instead, it’s to start to build students’ sense of purpose and possibility, so they can make more informed choices as they navigate big decisions about education and work.

Real-World Examples

There are a range of organizations working to tighten the K–12-to-workforce connection in different ways.

In 1995, two longtime teachers founded Big Picture Learning with a vision of a mentored, work-focused high school education where students’ interests were at the core of curriculum and assessment. What started in one school in Rhode Island has now expanded to more than 110 school partnerships across the U.S., through which students engage in significant chunks of real-world learning outside the classroom—up to twice a

week—with experts in their field of interest.

Dayvon, a student at a Big Picture Learning school in Nashville, said the program helps students with a variety of interests. “I have friends who want to be veterinarians, OB-GYNs, orthodontists, and the fact that they actually get to work in an orthodontist office or actually go to a vet clinic is very engaging,” he said.

A San Diego student named Izzy said that her Big Picture Learning school allows her to build an understanding of herself and the different pathways that exist, even though she doesn’t yet know what she wants to do in the future.

“There are so many different opportunities that the school provides for me to investigate,” she said. “And that’s really what drives me, because I am a little indecisive. So it really just shows me, ‘Hey, you don’t really want to do that,’ or ‘That’s a little too scary,’ or ‘Oh don’t go into being a doctor, you don’t like blood.’ Different things like that. I think that’s a lot of students as well, we just don’t know yet. So that we get to experience every single thing.”

Another career-focused program, “World of Work” was created and launched in 2017 by the Cajon Valley Union School District outside San Diego. Through the K–12 program, every student has the opportunity to explore more than 50 different careers to understand their passions and purpose and how they can best contribute in the world. The program starts with broad explorations of possible careers, including an interests and aptitudes test, followed by classroom simulations of the work that interests students most. Then, students meet professionals working in those fields to learn more about the day-to-day and build social capital. The program has grown beyond El Cajon; for example, four districts in the Pittsburgh area have adopted it.

Meanwhile, the Center for Advanced Professional Studies (CAPS) network has grown from a small group of students doing internships and projects for businesses in the Kansas City area to more than 170 school districts across 23 states. CAPS supports school districts to partner with local businesses to offer “profession-based learning,” where students study and sample various professional fields, both through their academic work in school and during immersive onsite learning experiences at partner companies. This model allows students to take classes in an academic track rather than opt for a full CTE experience, while also connecting academic learning to a possible career in fields like healthcare, engineering, business, biosciences, creative media, and technology.

These types of school-business partnerships solve one of the biggest challenges plaguing the Computer-Science-for-All movement. Rather than relying on certified teachers to build knowledge about in-demand industries, they tap actual employers who—in varying levels of involvement and intensity—mentor,

teach, and provide real-world learning opportunities for students.

While the benefits for schools and students are clear, for these partnerships to persist over the longer term, they’ll need to prove their worth to the employers and professionals whose time and expertise make them possible. There needs to be a clear payoff for employers’ partnership, such as added capacity against business goals, increased community awareness, or a stronger local workforce, where workers are better prepared to fill needed positions.

Looking Ahead

This points to a major challenge for the CTE-for-All movement: balancing real-world concrete learning with the foundational experiences that students need to quickly become skilled, and then reskilled, in the fast-changing careers of the future.

A narrow focus on career skills risks leaving students with superficial technical skills, which will likely become outdated or lock young people into a particular industry. That could mean risky and expensive upskilling later on, according to Alec Resnick, founder of Powderhouse, a research, design, and advocacy group that offers real-world learning in both school and professional environments. However, if CTE meaningfully unifies academic and technical learning, it can reveal the powerful ideas that shape every career.

It’s a tall order. But if we can figure out how to ensure electricians learn Maxwell’s equations and nurses understand the science behind CRISPR, then we might have a viable path forward for students. Higher education has done this for years—consider Northeastern University’s Cooperative Education program, which directly connects to the classroom-based learning students do and counts for credit.

Better yet, these types of programs help students make more informed choices, with a greater sense of purpose, about the effort they put into their schooling in high school and beyond. When young people learn about work at school and apply ideas from school to a workplace experience, they gain a sense of purpose and possibility for their learning. And at a moment when K–12 schools are struggling to get students to attend regularly, more opportunities to foster purpose and connect school with students’ personal and professional goals just may be what young people need most.

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