

CTE and Beyond: Expanding Opportunities for Students



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EDITOR’S NOTE

Career and Technical Education (CTE) plays a vital role in preparing students for the workforce and postsecondary success. This Spotlight explores innovative approaches to CTE, highlighting strategies for expanding access to college-level coursework and real-world learning experiences. From developing effective career pathway models to integrating workforce skills into academic classes, these articles offer valuable perspectives. Discover how districts are embracing career preparation and more.



Jamie Kelter Davis for Education Week

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This Leader Said All Kids Will Do College-Level Work. What It Took to Get There

By Sarah Schwartz

Aurora, Ill.

From the time she was a teenager, Jennifer Norrell understood that other kids had educational opportunities her own school didn't provide.

Though both of her parents were professionals, Norrell, now the superintendent of the East Aurora school district in Aurora, Ill., grew up attending what she called a "rough" high school outside of Chicago.

Rigorous courses weren't the norm—the school offered fewer Advanced Placement classes than neighboring districts, and only a small group of students took them.

And though Norrell was among them, she still remembers kids from her church who went to different schools openly doubting her academic abilities.

"Your high school AP is like our regular," she recalls them saying.

Fighting these persistent low expectations—the assumption that those kids, in those neighborhoods, could never do college-level work—is what has driven Norrell to vastly expand East Aurora's AP program, more than doubling the percentage of high schoolers taking these courses over the past six years.

Now, in one of the six districts that draw from Illinois' second-largest city, where 70 percent of students come from low-income families and just over half are English learners, nearly 1 in 3 high school students takes at least one AP course.

Even as East Aurora has opened up access, the passing rate on AP tests has held steady. During the 2023-24 school year, about 38 percent of students in the district who took AP exams received a 3 or higher on at least one. (This is still much lower than the Illinois average; about 72 percent of students statewide who take AP tests score a 3 on at least one.) At the same time, graduation rates in the district have increased.

The results are proof, Norrell, a 2025 Ed-Week Leaders To Learn From honoree, said, that "kids will rise to the challenge."

"They rise to the occasion over, and over, and over, and over again, if you have people



Jamie Kelter Davis for Education Week

Jennifer Norrell, superintendent of East Aurora School District 131, visits students at a recording studio at the district's new Resilience Education Center in Aurora, Ill.

who believe in them and people who remove barriers and put opportunities in front of them," she said.

AP courses, along with similar programs such as the International Baccalaureate and the Cambridge Curriculum can be a powerful tool for expanding postsecondary options, as they can grant college credit and signify to universities that students are ready for rigorous work, said Kristen Hengtgen, the policy lead for college and career readiness at EdTrust, a research and advocacy organization.

Still, large inequities exist in which students benefit the most from the program.

Nationally, AP course-taking rates are increasing for students of color and English learners, in part due to a campaign by the College Board, the organization that creates the program and sells the tests. But Black and Latino students are less likely to take the end-of-course exams than their white and Asian peers and less likely to pass them when they do.

Enabling students in East Aurora to take AP classes—and pushing them to succeed—has meant changing school schedules and course progressions. And it's required changing mindsets.

Educators often think that AP classes are only "for a certain type of student," said Asa

Gordon, the director of middle and secondary college and career readiness in the district. When a district broadens that definition, he said, "you change the dynamic of who students are and what they can become."

Focusing on academics '100 percent'

Transforming mindsets around rigorous coursework meant undoing years of entrenched prejudice about which of Aurora's schools are "good"—and why.

The other five school systems within city limits have fewer students of color, much lower percentages of English learners, and draw from higher-income neighborhoods. That makes some in East Aurora feel that neighboring communities see their schools as lesser.

East Aurora's one high school, serving nearly 4,000 students, sits among Mexican grocery stores and bakeries and car repair shops advertising services in Spanish.

A billboard five minutes from the school broadcasts a district slogan: "Respect guides us. Our why drives us. El respeto nos guía. Nuestro por que nos dirige."

"We believe in our students. We know they can succeed," said Jalitza Martinez, East Aurora's associate superintendent for school

leadership. But Martinez, who herself graduated from East Aurora's schools, said that people outside the community don't always hold those same expectations. "We were the black eye of the city through the perception of others," she said.

When Norrell arrived in the district in 2018, she wanted to prove that East Aurora's kids could handle college-level work, just as those from other parts of the city are expected to. "For me, that's what it's always been about," she said. "It's been about forcing educators in certain systems where they would not normally push kids to push kids."

The daughter of a Chicago public school teacher, Norrell, now 50, didn't originally plan to be in the classroom. She wanted to be a podiatrist. But after witnessing a foot surgery turned her stomach, she started subbing in a high school chemistry class while she figured out her next move. She ended up staying.

"I would totally geek out over being able to get kids who were super disinterested to actually engage," Norrell said.

After stints in other districts as a middle and high school director and assistant superintendent, Norrell still sees students' academic engagement as her primary goal.

"I'm over my [chief financial officer], and I'm over human resources, and I'm over community engagement. But for me, I am clear: The rubber meets the road in the classroom," she said. "That is the only reason that all the other departments exist."

In East Aurora, Norrell has spearheaded several big academic projects in addition to the AP expansion—switching the high school to a block schedule to prepare students for the length of college seminars and labs, for example, and implementing a districtwide elementary dual-language program.

The response hasn't been all positive. Teachers, parents, even students spoke against policy changes at board meetings—arguing that newly proposed course requirements designed to prepare students for AP would cut into opportunities for electives or that a planned shift to block scheduling would tax students' attention spans, according to board documents.

Annette Johnson, the school board president, said Norrell has been there to listen and respond to her critics—something not every superintendent in East Aurora has done. ("That's how I win all the battles," Norrell said. "You've got to let them scream at your face.")

At times, Norrell said, she has worried that teachers would petition the board for her dismissal.

"But I figure, I've got to make change, or the board should get rid of me anyway," she said. "And so I'm going to go with this thing at 100 percent."

Fostering teacher buy-in for big curriculum changes

Going at it 100 percent meant making sure that students had the tools to be successful in AP—because simply expanding access doesn't necessarily mean students will do well.

A 2023 investigation from The New York Times highlighted how many Black, Latino, and low-income students score too low on the tests to obtain college credit, even as the College Board brings in tens of millions of dollars in test fees paid by state and local education funding.

Norrell didn't want to set up kids to "face plant," she said. (In 2022, after Norrell had prioritized AP expansion in the district, she was elected to the College Board's board of trustees. The trustees are volunteers, and their schools don't receive compensation or special access to programs, Sara Sympson, a spokeswoman for the College Board, said in an email.)

Norrell turned 9th grade core-academic courses, and some 10th grade courses, into pre-AP classes—a shift in curriculum designed to align with the content students would later encounter in AP subjects.

To ensure that kids could handle the heavy literacy demands that AP courses pose, she mandated that all students take a reading class, in addition to their English/language arts block.

There were some early successes: The district started to more actively promote AP Spanish Language and Culture, and more than 90 percent of students who took the test in the 2018-19 school year received a 3 or above, Norrell said.

But East Aurora also had some early setbacks. Leadership pushed AP Computer Science, but teachers without a strong science, technology, engineering, and mathematics background didn't feel prepared to lead the course, said Gordon. The experience demonstrated that teacher buy-in was crucial, he said.

It's a lesson Norrell internalized when she made the biggest shift to the program: putting an AP twist on the English courses almost all sophomores take.

For the first time this year, the district offered AP Seminar as its default English option for 10th graders—a move that the College Board has begun promoting nationally. The class—

which is built around developing research questions and arguments, analyzing sources, writing, and presenting—is portfolio-based. There's no standardized test at the end, making it a manageable entry point for kids who hadn't taken AP classes before, Norrell said.

Tenth grade teachers, though, were nervous.

Because many students' essays and presentations throughout the year are part of a scored portfolio, teachers can't offer students—many of whom are taking their first college-level course—much "hands-on" support, said Melanie Kleimola, a 10th grade English teacher at East Aurora High School.

"It's a long time of balancing the student autonomy while supporting them as learners. That was one of the scariest things for us," she said.

To address these concerns, Norrell brought in coaches from the College Board to work with teachers. She sat in on 10th grade English professional learning community meetings to talk with teachers about their questions.

"I know people are like, 'Oh my God, she's out of her lane.' And I'm out of my lane a lot," Norrell said. "But I really believe I can't sit here, in this three-story district office, and make rules and say yes or no, and I don't really know what's happening."

'All of us are starting somewhere'

On a gray Wednesday afternoon in early December, two dozen students in this year's first AP Seminar cohort were putting the finishing touches on their end-of-semester presentation.

Students in Kleimola's 4th block English class had developed a broad range of research projects related to wealth and the economy—for instance, investigating the question, does urbanization reduce inequality?

The first group of presenters would be up on Monday. Kleimola, sensing tension in the room, tried to allay students' fears.

"We're going to get up and we're going to do our best, OK? I'm not expecting perfection. I'm expecting the best you can do on Monday," she said. Experiences like this one build your confidence, she said. "Your voice and your contribution is important."

At desks clustered in groups of four and five, students scrolled journal articles on laptops, jotting down points that would support their argument in a graphic organizer. At the front of the room, Kleimola met one-on-one with students who had questions.

"I had my second source, but I didn't really understand it," said one boy. Kleimola opened

up a new browser on her own laptop, and they started to look for another, more comprehensive source together.

“In an ideal world, all of the students are using academic, scholarly articles for their research. If you want to get a 5, that’s the route you should go,” Kleimola said, in an interview later in December. She teaches students how to find these articles, what parts to focus on, and how to summarize.

“But for some students, even with the support and the strategies that we show them, those articles are outside of their reading level or language abilities,” she said. “For those students, and really as a class, we will teach them how to use other credible sources that are still trustworthy but maybe a little bit more accessible.”

This approach to sources is just one way that Kleimola differentiates for her students.

“All of us are starting somewhere, and what we want for all of our students is to grow,” she said. “If they are willing and they are present, within a supportive community, exposing them to this high level of content is almost always a win.”

Still, some teachers say encouraging all students to take AP Seminar isn’t the right call.

Some students would be better served in the district’s other option for 10th grade English, a pre-AP course for students who teachers decide need more support before taking on an AP class, said Jamey Bouwmeester, another AP Seminar teacher at East Aurora High School.

“Sometimes, you get halfway through a class and you realize, ‘Oh, maybe we’ve made a mistake here,’” he said. Students who refuse to engage with the topics or talk to Bouwmeester at all might be overwhelmed by the challenging material, he added. But kids who are motivated—even if they haven’t done similarly rigorous work before—can do well.

“I think there are some kids who this is not the right class for,” Bouwmeester said. “But that’s not to say that your ordinary, average kid couldn’t succeed in this class.”

Measuring change—in test scores and attitudes

Back in Kleimola’s classroom, two girls compared notes on their organizers. The class is a lot more work than 9th grade English, they said. There are tons of deadlines. Still, they will probably take more AP classes. Maybe AP Literature or AP Psychology, they said.

As of this year, East Aurora offers 28 AP courses total. But another change is on the horizon.

Next school year, Norrell will leave East Aurora to assume the superintendency in the Homewood-Flossmoor Community High School District. She has strong personal ties to the community, which is close to where she grew up in suburban Chicago. The high school district is smaller than East Aurora, with about 2,800 students enrolled at its one school, and serves a higher-income population.

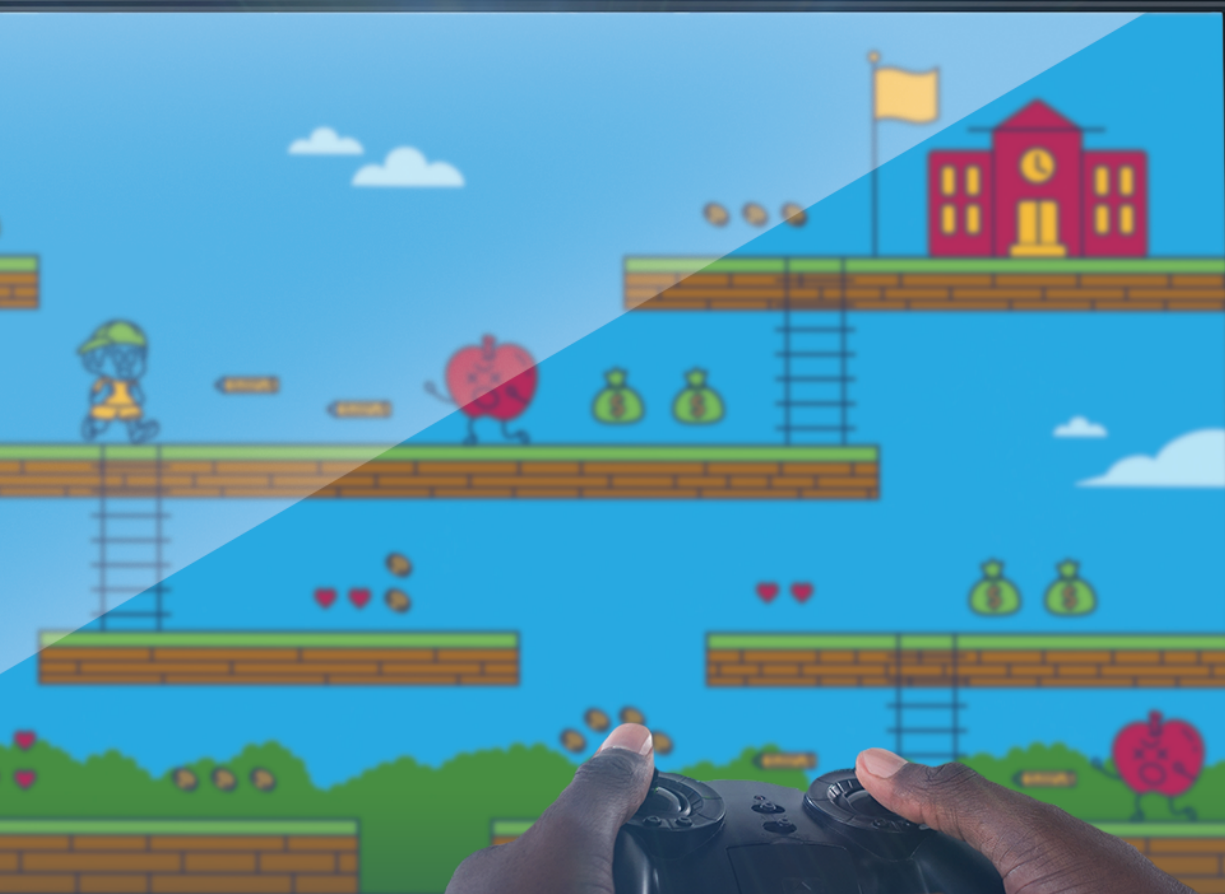
Norrell is confident that the college-ready coursework in East Aurora will still be available to students after she leaves. “We’ve put them in place so that they can’t be stripped away,” Norrell said.

And she’s quick to say that there’s still work to do. There are still lots of kids getting 1s and 2s on the AP tests they take.

But the district is seeing the number of students passing the tests tick up year after year. And there’s been a more intangible—but just as powerful—shift in attitudes.

“I think the work is in when we say, ‘All. Every kid. We don’t care—you’ve had three fights this year, but you know what? I need to know how you’re going to pass AP Sem.’”

“We are far from hitting a plateau,” Norrell said. “We are still on the climb.” ■



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This Leader Made the Tagline 'Discover Your Future' Real for Students. Here's How

By Lauraine Langreo

Lazaro Lopez spent the decade after barely graduating from high school feeling lost.

He spent some time in the Army. He worked as a real estate agent. He conducted new-hire training for American Airlines.

He tried to figure out where he belonged.

It wasn't until his late 20s that Lopez realized the common thread in the jobs he'd been drawn to: teaching. He decided to go to college to get a degree in education. At almost 30, he began as an English teacher at John Hersey High School in Arlington Heights, Ill.

"I did not have navigators or mentors or the context for me to explore what's possible or for me to even know that I should go to college," said Lopez, who was the first in his family to graduate from college.

His parents, who emigrated from Cuba to Florida, only spoke Spanish. It wasn't until Lopez was held back in 2nd grade that a teacher took the time to help him learn English. By the time he graduated high school with a 1.6 GPA, he was living on his own and working to support himself.

Now, Lopez, 57, is the associate superintendent overseeing curriculum and instruction for Township High School District 214 outside Chicago. He's made it his mission to make sure none of its 12,000 students feel lost after high school graduation.

Early on in his career as an educator, Lopez, a 2025 EdWeek Leaders To Learn From honoree, was determined to increase the value of a high school diploma. He wanted to create a system in which students could explore and pursue their career interests through challenging coursework and individualized work-based learning experiences, all with the goal of graduating armed with information about their path forward.

His decade-plus work on a framework he calls "college-ready by design" at one of the largest high school districts in Illinois is paying off.

In the 2023-24 school year, 84 percent of the district's graduating students earned early college credits, with 65 percent earning at least eight credit hours. That same year, 59 percent of juniors and seniors participated in



Jamie Kelter Davis for Education Week

Lazaro Lopez, associate superintendent for teaching and learning at High School District 214, visits the manufacturing lab at Wheeling High School, where he talks with students and their instructor, in Wheeling, Ill.

an internship and/or apprenticeship.

By contrast, fewer than a quarter of 11th and 12th graders nationally participated in dual-enrollment or dual-credit programs during the 2020-21 school year, according to the most recent data available from the National Center for Education Statistics.

This work has become a top priority for District 214 over the years, said Superintendent Scott Rowe.

"The entire system is built to guide [students] in pursuit of what they say they're interested in," he said. "That's to Laz's credit."

The district is a national model for creating coherence among high school, college, and industry, said Kyle Hartung, the associate vice president in education practice at Jobs for the Future, a nonprofit that focuses on education and workforce alignment.

Lopez "deeply understands and believes in what this work is all about and why it's critical," he said.

Students explore core academics through a career-oriented lens

Lopez's push to transform how District 214 prepares students for college and careers began

in 2007 when he became the principal of Wheeling High, one of the district's six comprehensive high schools.

About a year after stepping into a school leadership role, "Laz came to me with his vision for a complete redesign of the entire school," said David Schuler, the District 214 superintendent at the time and now the executive director of AASA, the School Superintendents Association. "From my perspective, what he was doing was only going to be beneficial to the students, the families, and the staff at Wheeling, so why would I say anything other than 'go for it'?"

Lopez's idea was to create a career pathways program to help students explore careers, while earning early college credit, industry credentials, and work-based learning experiences.

The effort put District 214 at the vanguard of a national trend. At the time, career academy models were gaining steam, but it wasn't until around 2011 that the more systematic approaches to career-connected learning that spanned high school and postsecondary came into the forefront, Hartung said.

In District 214, students don't take just the core classes required for graduation, such as

English and math. In fact, the district's academic handbook showcases career-specific electives as prominently as possible so students can immediately connect what they're learning in core subjects to the real world.

When he introduced the concept of career pathways, some teachers were worried that it would mean less focus on traditional academics, Lopez said. He explained the approach as another way for students to look at their English, math, science, and social studies classes through the lens of the pathway they've picked, making those subjects more relevant to them.

Here's an example of how it works: Ayana Solaka, a 12th grade student at Wheeling High School with dreams of becoming a surgeon, is in the pre-med pathway. Back in 9th grade, she started with a course called Intro to Health Care 1. In 10th grade, she took the second part of Intro to Health Care, as well as a class on medical terminology. In 11th grade, she took a college nursing assistant training course; at the end of the year, she took an exam to be a certified nursing assistant or CNA.

Now in 12th grade, she has a credit-bearing internship with Advocate Lutheran General Hospital in Park Ridge, Ill., putting her CNA training to use. After high school, she plans to attend a four-year university to double major in public health and neuroscience. Then it's on to medical school.

Fully implementing a pathway takes about three to five years, according to Lopez.

Before launching a particular pathway, the district considers a host of issues: Will students want to participate? Can the district find qualified teachers? What about higher education and industry partners? The district also needs to determine what the pathway sequence should look like, what college coursework could complement it, and what the internship or apprenticeship opportunities would be.

As principal at Wheeling, Lopez started with a manufacturing pathway. From there, he and his staff at the school created pathways for health care, research, business, and law.

When Lopez became associate superintendent in 2013, he started working on scaling the pathways throughout the entire district. Today, there are 40 career pathways districtwide that students can choose from. The most popular are engineering, business, and health sciences.

Starting when they're freshmen, students are asked by guidance counselors what pathways interest them, and then their high school

experience is tailored around that interest. Students can change their minds and switch pathways every semester or every year. Students aren't required to pick a pathway, but more than 90 percent choose to do so, Lopez said. Undecided students still receive career exploration experiences.

"The goal isn't that we think you're going to figure out what you're going to do for the rest of your life," Lopez said. Instead, the district seeks to give students the tools they need to "make more informed decisions about the next stage" after graduation.

But some students feel like there's an emphasis on following and finishing their pathway, said Ayana, who is on a student committee that provides feedback on district programs. Students might not feel like they could take an elective outside their pathway just for fun, she said.

"You can switch the pathway, but there's almost, like, a need to finish the pathway," Ayana said. "If you don't finish the pathway, it kind of just feels like unfinished business. That's how students feel about it. Some of them just want to explore rather than complete it, but they feel the need to complete it."

The way the pathways are advertised in the academic handbook leads students to assume that they're supposed to follow the sequence. They feel they can't deviate from it, she said.

Students are not expected to stay in a pathway and are encouraged to explore, and a majority of 9th and 10th graders do change pathways, Lopez said. But some pathway teachers might encourage students to finish because of the potential benefits; a pathway endorsement on an Illinois high school diploma could lead to scholarships, for example.

'Worth a million dollars to our community'

Part of Lopez's "college-ready by design" framework is providing students with opportunities to earn early college credit, including through a dual-credit program, so they can get a head start on their postsecondary career and save money on college tuition or workforce training.

Beyond serving as associate superintendent in District 214, Lopez is also the chair of the Illinois Community College Board and has a seat on the state's higher education board. He has also worked with state lawmakers on strengthening the connections between high school, college, and the workforce. Lopez expanded the dual-credit program at District 214 with the help of those connections.

The district partners with seven higher education institutions in and near Cook County, Ill., to provide more than 60 college-level courses that any student can take while in high school if they've met the prerequisites. Prior to the expansion, the dual-credit opportunities were limited to career and technical education students, Lopez said.

Lopez worked with state policymakers to make sure every community college has the same placement standards. Whether a student takes a college-level course through a dual-credit program or at a community college or university, credit is guaranteed. Lopez pushed to ensure that students who scored a 3 or above on a College Board Advanced Placement exam will receive corresponding college credit in every public institution in Illinois.

"That really is worth millions of dollars to our community," Lopez said.

Lopez's redesign of the district's college- and career-readiness system also includes the creation of the Center for Career Discovery, an office dedicated to ensuring every junior and senior in the district has work-based learning experiences, such as a 30-hour or 60-hour credit-bearing internship or a full-year paid apprenticeship.

The center, founded in 2016, acts like a matchmaking service, with staff dedicated to calling employers, screening students, and setting up and preparing students for interviews.

"We feel pretty strongly that coursework is only a component of that [career exploration] journey," said Barb Kain, the director of the center. "Once they've identified a career area or areas that are interesting based on coursework they've taken, we give students the opportunity to participate in an internship in an authentic setting, meeting connections in the industry, to see if it really feels like something they could see themselves doing."

Students who take the first few health-care pathway classes might find those courses interesting, for example, but when they do an internship at a hospital, they might realize they can't handle the sight of blood, Kain said. For other students, the work-based learning experience can cement their interest in a career.

One of the challenges is ensuring all students who want an internship or apprenticeship are placed with an employer, Lopez said.

The center has been able to meet the demand, facilitating experiences for more than 3,000 students annually, with the help of more than 1,500 employer partners. But it requires constant recruitment and management of potential hosts, Lopez said. Sometimes, the district struggles with placing

students, especially if they're younger than 18, because employers are concerned about liability.

Lopez and his team work hard on marketing the internship and apprenticeship programs to potential employers.

"I do a lot of public speaking, and my message to employers is: 80 percent of the students that are in our high schools right now are going to be coming back to this community," he said. "If you invest your time and energy in them, you're investing in our community's economic future and development."

Lopez and his staff also let the results do the talking. As one employer has a positive experience with a District 214 intern or apprentice, word spreads to others in the community, Lopez said.

Heidi Weiner, the vice president and human resources manager of plastic-manufacturing company Demgy Chicago, said she's been impressed with the students the district sends.

The apprentice her company had last year is now a full-time employee. The student currently in the role is also strong. If "you give him a project, he just takes it and runs with it," Weiner said.

The students "help bring fresh eyes" to what the company is doing, she said. They also "bring an energy" to the business because the staff enjoys "imparting their knowledge," Weiner added.

"I feel like we won the lottery with both of our apprentices," Weiner said. "They've really enhanced our business."

For students with the most significant disabilities, the district has a Vocational Lab, where students can explore their interests and develop job skills so they can find employment after graduation. One example is Forest Brew, a coffee shop in one of the district's specialized schools that serves employees, where students with disabilities operate the cash register and make lattes. Most students with Individualized Education Programs, or IEPs, are provided independent and embedded work-based learning experiences, Lopez said.

For Lopez, preparing students for college and careers is "simply a strategy for engagement." By making what students are learning relevant to their interests and their future, they're more likely to come to school, he said.

Some students show up to class because they want to play football, some because they're in band or choir, and others because of a teacher, Lopez said. Now, a career pathway could be a student's lever of engagement.

Ayana, the 12th grade student in the pre-med pathway, said she never really hated

school, but her pathway classes "made school more fun."

"I enjoyed going to these classes because it related to something that I wanted to do and it was something that I was interested in," she said. "I wouldn't want to miss the class."

'More powerful to drive your own ship'

The work to redesign the high school experience hasn't come without challenges for Lopez.

"It has been a career-long process" of trying to get buy-in from staff and the community, of building pathways from the ground up, of reallocating resources and funding, Lopez said. "What began as a single pathway in one school has grown beyond what I ever imagined, thanks to the shared vision and tireless dedication of our teachers, district staff, and school leaders."

After more than two decades, Lopez is still motivated by his mission to ensure students don't feel unmoored after graduation, especially in a rapidly evolving economy.

"I used to tell my students, 'If you choose nothing, then the world is going to take you where it takes you. Isn't it much more powerful if you drive your own ship and guide your own path, so that you can actively make those choices, as opposed to the world making the choices for you?'" Lopez said.

"Discover your future" isn't just District 214's tagline, said Lopez. "It's real." ■



Michelle Gustafson for Education Week

High schooler Aaron Bartsch, 17, helps unload tools from a work van before working in a customer's home as part of an internship with Barkley Heating and Air in Smyrna, Del. His high school offers career pathways so students can get a taste of real-world, experiential learning.

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Boys Think School Is a Waste of Time. Career Pathways Prove Them Wrong

By Elizabeth Heubeck

Aaron Bartsch, a senior at the rural Smyrna High School here, wears his Barkley Heating & Air sweatshirt to school with pride, the way many students might don their school's sports team attire.

It's 11 a.m. on a Tuesday, and he and his classmates have just completed their Agriculture Structures/Power and Engineering class where they're learning about electrical circuitry—both the vocabulary associated with it and how the different types of electrical circuitry work. The classroom door leads to an on-site workshop, where Aaron and his classmates practice what they've just learned.

In the afternoon, Aaron will head to Barkley Heating & Air where he's employed as an intern, learning the ins and outs of the heating, ventilation, air conditioning, or HVAC, industry. His employer has offered to pay his way to attend a local technical college to prepare for a career and earn relevant certifications he'll need to get his professional start in

the HVAC industry. But first he's got to graduate from high school.

Although Aaron, who is set to graduate in June, is not a fan of the classroom, he's begun to value its real-world applications.

"What I learn in here helps me figure out problems on the job," said Aaron, who admits that he finds class "boring" and says he can't wait to get school over with.

Aaron's attitude about school isn't unique among boys. Compared to girls, boys generally are less engaged in school. By age 15, boys are more than twice as likely than girls to express that "school is a waste of time."

Some experts blame the structure of traditional school which, starting as early as kindergarten, rewards students for quote-unquote good behavior, such as the ability to sit still for extended periods and focus. These behaviors tend to be more difficult for boys than girls at that age.

In turn, a greater share of boys receive punishments, get "tracked" into groups that purportedly represent lower academic ability, and are identified for special education services. Boys make up about two-thirds of

school-age children diagnosed with a specific learning disability, and 65 percent of students in special education placements. Boys lag behind girls on various measures of academic success, and they're more likely to drop out of high school.

There is little to no evidence of differences in general intelligence between the sexes, but being labeled less academically competent than one's peers probably does little to boost a student's drive to succeed. Nor does learning in an environment that emphasizes "teaching to the test"—a component central to many of today's traditional public schools.

The expectation that students learn in a vacuum is an age-old tension in K-12 education. John Dewey, an American philosopher and educator, argued in the 1930s against rote memorization with no broader purpose, saying that students "need to interact directly with the world to understand it, rather than just being exposed to information."

Administrators and staff at Smyrna High School have embraced an educational philosophy similar to Dewey's. They also recognize the importance, and leg work, required to help students like Aaron make the connections between what they learn in the classroom and how it can be applied outside of school.

"We pride ourselves on helping students find what they like to do," said Kate Marvel, Smyrna's supervisor of instruction. "And we recognize there are things you can't learn in a classroom."

So, too, do state education department officials in Delaware, which is leading the nation in transforming career and technical education. In 2014, the state launched Delaware Pathways, a robust initiative introducing high school (and even middle school) students to high-quality career pathways that they can explore through relevant coursework and opportunities for experiential learning—and that don't necessarily lead to any one particular post-high school route.

Students who complete these pathways might go directly into the workforce or might pursue an advanced degree. Formerly, CTE tended to be a direct and singular path to accruing a particular set of trade skills, such as welding or automotive repair.

"CTE really covers the gamut: health science careers, business and marketing, hospitality. It's just a really broad umbrella," said Catherine Imperatore, research and content director for the Association for Career and Technical Education. "Increasingly, we've been more focused on a college and career model where [CTE] prepares students for

further education as well as careers beyond high school—whether that’s getting industry certifications or licenses, associate’s or bachelor’s degrees, or going into the workforce.”

Smyrna, a school system in Delaware with a single high school of approximately 1,800 students, has embraced the Delaware Pathways initiative and serves as a model of how real-world, experiential learning can transform students’ futures.

The initiative aims to give both male and female students a head start on career exploration and experiential opportunities. But its design—with hands-on learning and direct links to real-world applications—appeals to how boys tend to learn best, according to experts.

“The career pathways programs get at the question, ‘Why are we here [in school]?’” Marvel said.

Career pathways keep students on track to graduate

About 90 percent of students who graduate from Smyrna complete one of the school’s six different career programs, or Schools of CTE: agricultural and natural resources; business, finance, and marketing; education; leadership studies; performing and visual arts; and STEM and professional studies. Completing a pathway requires students to pass at least three related courses and gives them the opportunity during 12th grade to complete an internship or similar “real-world” experience tied to their chosen pathway, which about a third of eligible students do.

Female and male students at Smyrna enroll in the pathway program at about equal rates. But teachers at Smyrna seem to feel a greater sense of urgency about getting boys hooked on one of the career pathways.

Without the hands-on, experiential component of those programs, “a lot of them would simply drop out,” said Rebecca Moore, an agriscience teacher at Smyrna.

It’s a valid concern. Nationally, girls graduate from high school at higher rates than their male counterparts. Further, statistics show that students from lower socioeconomic backgrounds are more likely to drop out of high school and less likely to attain a college degree.

In Smyrna, 45 minutes outside of Wilmington, the average household income was \$68,260 in 2022, compared to the national average of \$74,580. That same year, just 21.3 percent of adults 25 and older in Smyrna had

obtained a bachelor’s degree, compared to the national average of 37.9 percent.

District administrators, led by Marvel, are working hard to set a much higher bar than simply ensuring students graduate from high school. Marvel and her staff educate local professionals on the school’s career-related pathways, introduce them to their internship program, and gauge potential work placement opportunities for students.

The community outreach is critical to growing awareness of the program and expanding experiential opportunities for students. But Marvel notes that teachers’ commitment to supporting students in the work-based program drives its success.

“There are many times I’ve walked into a teacher’s classroom at lunch time, and they are helping students explore colleges, places of employment, or scholarships” related to career pathways, she said.

This summer, Moore, the agriscience teacher, spent 11 days in an unairconditioned workshop during a 100-plus-degree heat spell at Texas State University’s Agricultural Mechanics Academy in order to learn how to teach small engine and related mechanical techniques. Now she’s trained to certify her students in Smyrna’s Agriculture and Natural Resources pathway to become small engine master service technicians during high school.

“It will give students a leg up,” she said, if they don’t have to commit to taking and paying for a certification program outside of school on their own.

Moore also recently became certified as a National Teacher Ambassador for FFA, a global student organization that supports training and hosts competitions for high school students interested in careers in agriculture and leadership. In October, Moore took four students to the National FFA Convention in Indianapolis after they’d placed first in a statewide competition.

The students, some of whom flew on an airplane for the first time to reach the convention, walked away with a bronze medal, plus exposure to sponsors from John Deere, Caterpillar, Lincoln Electric, and other potential employers. One of those students was Aaron Bartsch, whose future is coming into focus.

“It’s fun when you’ve got to problem-solve on the job, when you have to figure out why it’s not working, and what’s wrong,” said Aaron. “Once you get it accomplished, it kind of makes you feel a little better about yourself.” ■

More Like This



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Students Want to Learn More About Careers. Will High Schools Step Up?



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3 WAYS TO HIGHLIGHT CAREER PATHS to K-8 Students

By: Tina Leslie, Career and Technical Education Coordinator

When I began my career 16 years ago, I taught a course to middle school students called Career Research and Decision Making. This course allowed students to explore careers, take surveys to understand what interested them, and plan for their futures. One of my go-to questions during my initial calls with students was, "What do you want to be when you grow up?"

The answers I received were often predictable: veterinarian, doctor, professional athlete, singer, or, increasingly popular today, influencer. These careers share one thing - they are familiar to students. Their reasoning was equally straightforward: "I love animals," "I love helping people," or "I enjoy playing basketball." While these are great career choices, I realized I was asking the wrong question.

Instead of asking, "What do you want to be when you grow up?" I should have asked:

- What problems do you want to solve?
- What are you passionate about?
- What are your strengths, and how can they translate into a career?

By shifting the focus, we can inspire students to think beyond the obvious and discover a broader range of career possibilities.

Introducing Careers to Younger Students

1. Start Early with Elementary Students

In elementary school, students should understand what a career is and why people work. Educators can help them identify their strengths and interests through simple, relatable activities like assigning "classroom jobs" or household responsibilities. For example, if a child dreams of being a veterinarian, they can take responsibility for feeding and caring for a family pet.

Expose them to different careers through:

- **Guest speakers** and **field trips**.
- **Career fairs**, even those designed for older students.
- **Community engagement opportunities** to meet professionals in various fields.

The goal is to help students recognize their skills, interests, and potential career paths in a fun and exploratory way.



2. Transitioning to Middle School

As students progress to middle school, educators can have them:

- Take interest inventory exams that assess their strengths and interests to help guide decisions about education and careers.
- Research career clusters, which help organize CTE related curriculum, programs, activities, and instruction for schools and districts. They also represent career pathways to help students discover what career or major in college they're most interested in.
- Set long-term goals and explore high school and post-secondary options.

This is also a great time to help them understand how they learn best. For instance, a kinesthetic learner might thrive in careers requiring physical activity or hands-on work. Focus on building soft skills such as teamwork, communication, goal setting, and adaptability, which are qualities that employers value.

3 Ways to Highlight Career Paths to K-8 Students, continued



3. Preparing High School Students for the Future

By starting career exploration early, students will gain the preparation and confidence to make informed decisions. This “fail fast” approach allows them to explore a wide range of careers and rule out those that don’t align with their interests or strengths. For example, a student who dreams of becoming a nurse might discover through a guest speaker or field trip that they are uncomfortable around blood. Learning this early can save time and effort later.

By the time students reach high school, they should have a clear plan that aligns with their goals. This might include:

- Selecting relevant courses, certifications, and electives.
- Joining clubs and extracurricular activities.
- Pursuing internships, volunteer opportunities, or part-time jobs related to their interests.

How FlexPoint Supports Career Exploration

It is our priority to show and highlight diverse career paths to students from an early age. Our elementary digital courses incorporate:

- **Dramatic play**, books, field trips, and guest speakers.
- A **holistic curriculum** that integrates career and technical education through creative activities, such as using art to teach science or math games set to music.
- Emphasis on **soft skills** like communication, leadership, and critical thinking.
- A focus on **growth mindset** and grit, encouraging students to learn from mistakes and embrace the power of “yet.”

In our Elementary Art 5 course, students explore careers ranging from a web designer and architect to an entertainer, demonstrating how art can shape diverse futures. By middle school, students dive into career clusters, interest inventories, and research projects. High school students build on this foundation with career and technical student organizations, career clusters, and industry certifications.

Inspiring the Next Generation

Every student will have a job someday, but no two paths are the same. By shifting the focus from, “What do you want to be when you grow up?” to “What problems do you want to solve?” educators can encourage students to connect their passions and strengths with meaningful career opportunities. Together, we can prepare them to enter the workforce with confidence, purpose, and the skills needed to thrive.

Learn more about our PreKindergarten-12th grade online courses, including the Career and Technical Education courses we offer, at [FlexPointEducation.com](https://flexpointeducation.com).

About the Author: Tina Leslie is the Career and Technical Education (CTE) Coordinator for FlexPoint, who has more than 20 years of experience as a teacher and curriculum specialist. Her deep passion for CTE drives her mission to inspire students to discover their strengths, explore diverse career paths, and prepare for successful futures.



Published October 22, 2024

Can the AP Model Work for CTE? How the College Board Is Embracing Career Prep

It's deploying CTE courses using the Advanced Placement model and highlighting career options for SAT test takers

By Ileana Najarro

Whether it's through student surveys, higher rates of chronic absenteeism, or declining college enrollment, more and more evidence—especially since the start of the COVID-19 pandemic—points to students' growing disengagement with traditional high school and fundamentally questioning of the four-year college pathway as the norm.

It's a reality ever apparent to David Coleman, the chief executive of the nonprofit College Board, which runs two core institutions of the college-going world: the Advanced Placement program and the SAT assessment—both programs historically aimed at high schoolers with plans to attend college.

While most students say they need post-secondary education, and enrollment in AP courses and the number of SAT test takers continues to grow, Coleman recognizes a large subset of students are disengaged from high school and aren't proactively making post-secondary plans. At the same time, students say they want more opportunities to learn about career options and prepare directly for those possibilities.

It's why the College Board recently has taken a decisive turn into the career exploration and preparation space. The AP program, long dominated by traditional, core academic subjects, is expanding into career and technical education classes by piloting two such courses this year that could help students earn both college credit and industry credentials. And now, after students take the SAT, they're learning about potential career options that could be a match for them when they receive their score reports.

"For many students, they see high school life as middle school—once more with feeling," Coleman said on Oct. 21 at the opening session of the College Board's annual forum here in Austin. "If we are going to be relevant, if we're going to work together for a new level



Ileana Najarro/Education Week

David Coleman, CEO of the College Board, speaks at the organization's annual conference in Austin, Texas. Long an institution invested in preparing students for college, the College Board increasingly has an eye on illuminating career options.

of relevance, the College Board has to change fundamentally."

New program offers high school and college credit and industry credentials

While the percentage of high school students enrolling in college has generally declined over the last few years, the number of students in undergraduate certificate programs, which train students in industry-specific skills, has grown.

As a result, more high schools have been investing in helping students explore career pathways.

One such career exploration tool has been career and technical education, or CTE.

An EdWeek Research Center survey from June found that 66 percent of school and district leaders say their districts offer students access to CTE pathways that lead to industry-recognized credentials as a way to introduce students to career options.

And 62 percent of educators said their district offers more career and technical education courses now than 10 years ago.

In line with this national trend, the College Board's AP program is piloting the Career Kickstart program that extends the AP model to CTE.

The goal is to offer courses that satisfy high school credit requirements while also allowing students to earn college credit and an industry-recognized certification, said Clare Bertrand, executive director of career strategy for the College Board.

The CTE courses follow much of the format of traditional AP courses. The College Board sets a framework, teachers receive specialized training, and students can potentially earn college credit if they score well enough on an end-of-course exam.

The College Board is piloting two CTE courses this school year. AP Networking Fundamentals and AP Cybersecurity Fundamentals are full-year courses that

Career Insights Snapshot				
Your skills are in demand! Consider exploring these growing careers in your state that need skills like yours. These are examples, not recommendations, to help jump-start your career exploration.				
INTEREST AREA*	CAREER EXAMPLES	MEDIAN YEARLY INCOME IN MI	NUMBER OF JOBS	JOB GROWTH 2022-2028**
Doers	Industrial Production Managers	\$104,000	14,800	+3%
Creators	Fashion Designers	\$46,000	900	+19%
Helpers	Community Health Workers	\$41,800	1,900	+12%
Organizers	Logistics Engineers	\$86,000	9,300	+12%
Persuaders	Financial Managers	\$127,000	23,800	+13%
Thinkers	Behavioral/Organizational Psychologists	\$110,000	40	+11%

*For more information about career insights, including interest areas, visit sat.collegeboard.org/whatsnew.
 **Number of jobs reflects the expected number of new job openings in 2028. Percentage reflects the expected growth in new job openings between 2022 and 2028.
 (Data courtesy of Lightcast)

some schools across the country are trying out. They feature hands-on, problem-solving activities that cover fundamentals in the field and prepare students to tackle the current—and quickly evolving—cybersecurity landscape.

Students enrolled in the pilot this year can earn high school credit and, based on their AP exam scores, are eligible to earn a voucher to cover the cost of test prep and the exam for the related CompTIA industry-recognized certification.

“Does that student need to go into work right away? No, not at all. They may choose an internship, they may choose an apprenticeship, they may use that credential to actually get a higher-paying, part-time job while they go into a post-secondary program,” Bertrand said. “There’s a lot of flexibility in terms of how that credential will be used.”

The College Board is working to secure college-credit eligibility for the courses, in large part through partnerships with community colleges, Bertrand said.

While a CTE program by design, the College Board encourages schools to offer the Career Kickstart courses alongside existing AP courses, such as AP Computer Science Principles.

“We must end in high school and in college the unproductive divide between career education and general education,” Coleman said.

SAT becomes career conversation-starter

Students taking the College Board’s SAT last year may have noticed another way the organization is encouraging students to explore potential careers.

As the College Board prepared to turn the SAT digital, leaders heard from educators who were fielding questions from their communities about how the SAT’s assessment of student’s math and reading skills applied to careers and whether students should take the exam if they weren’t planning on a two- or four-year college pathway, said Priscilla Rodriguez, the senior vice president for college readiness assessments at the College Board.

In response, the College Board deployed a new tool with an eye toward highlighting potential careers for students.

The organization partnered with HumRRO, the Human Resources Research Organization, which matched skills tested on the SAT with skills needed in 1,000 careers in a U.S. Department of Labor database.

For the first time this past year, students could access a career insights tool in their SAT score report—a chart that maps out six different career interest areas based on students’ SAT scores. It includes information about the career paths, what post-secondary education the careers require, and how in demand these careers are in students’ home states.

The College Board doesn’t want students to think these are the only six careers the SAT recommends they pursue, Rodriguez said. Instead, the new tool is meant to serve as a conversation starter for students so they can explore a variety of careers.

“The fact of the matter is that all students are going into different places after high school,” Bertrand said. “So how do we make sure they have all the information about all of those different pathways? But again, college is a career pathway. It’s part of the multiple-pathways options for students.” ■



LEVEL UP CAREER AND TECHNICAL EDUCATION to Prepare the Future Workforce

According to the U.S. Department of Education, students who focused on Career and Technical Education (CTE) courses while in high school had higher median annual earnings eight years after their expected graduation date than students who didn't. A reason for this is that CTE courses gave them the opportunity to learn valuable workplace skills like communication and time management.

So, how can school and district leaders help ever-evolving student populations graduate from high school and enter high-demand, high-wage jobs or continue with postsecondary education? **Develop a long-term strategy for CTE that allows your program to grow and adapt over time.**

To help, we've put together **three ways you can enhance CTE offerings** to ensure your decisions are driven by what employers want to see paired with what students are excited about.

Provide Students with Opportunities to Gain Employability Skills and Industry Certifications

With fewer students interested in completing a four-year degree and high-demand, high-wage job opportunities more readily available, it's important that educators help students learn the technical skills needed while also teaching them the value of employability skills.

A great place to start is the U.S. Department of Education's Employability Skills Framework, which includes three overarching skill categories for employability - applied knowledge, effective relationships, and workplace skills. The best way to ensure your students are grasping these skills is through different assignments, quizzes, and more.

CTE courses can also prepare students for **industry certifications**. They're valuable to employers because they verify a job candidate's technical skillset - giving your students a leg up when applying for jobs.

Partner with Career and Technical Student Organizations (CTSOs)

CTSOs are an integral component of curriculum and instruction, building upon employability skills and concepts through the application and engagement of students in hands-on demonstrations and real-life and/or work experiences. There are eight CTOSs, including DECA (formerly Distributive Education Clubs of America), TSA (Technology Student Association), and FFA (Future Farmers of America).



Students within these organizations have the opportunity to gain real-world job experiences, including working with their peers, creating resumes, networking, and more.

Refine and Expand Your Career and Technical Education Course Catalog

Just like the employment landscape changes, so do your students' interests, which is why it's critical to refine your CTE offerings each year. The top three questions to ask yourself every year include:

- Over the next five years, what are the top three to five occupations for your county/state?
- What employability skills are employers most looking for in the next three years?
- How has your student population changed over the past year?

Once you answer these foundational questions, you can start looking at your current CTE course offerings. For example, if you're a rural school or district and the U.S. Bureau of Labor Statistics is estimating an increase in agriculture jobs over the next five years - do you have a program of study related to agriculture? If not, it may be time to start investing in that program of study.

To help school and district leaders take their CTE program to the next level, our team developed a free guide.

Download the Free Guide at [FlexPointEducation.com/CTEGuide](https://flexpointeducation.com/CTEGuide)



Published October 22, 2024

Even in Academic Classes, Schools Focus On Building Students' Workforce Skills

By Matthew Stone

One skill Kentucky students learn in elementary school is how to write an opinion backed up by reasons and details. So in the Bullitt County school district, south of Louisville, the 1st grade classes at Old Mill Elementary School last January approached opinion writing and related skills in a way that showed their potential to have a real community impact.

The four classes learned about the workings of the Kentucky Humane Society in Louisville and browsed the shelter's website to familiarize themselves with the dogs, cats, and horses up for adoption. Then, they chose their favorite animal and had the job of writing short plugs explaining why the pet should be adopted. The students recorded themselves reading what they'd written, incorporated the audio into an animated class presentation, and shared it with the shelter.

The students were satisfying Kentucky academic standards for 1st grade. But the project was also an example of the 13,000-student district's attempt to go beyond standards and equip students—even some of its youngest—with more general life skills, like collaboration, problem-solving, and communication, that community members and employers consistently say they want from students coming out of high school.

Bullitt County educators are hoping students emerge from 13 years of school with these skills in part through more project- and community-based learning like the Humane Society collaboration.

"We know content's important. We know standards are important. We know that there are certain things that are foundational, that students have to know and be able to do," said Jesse Bacon, the Bullitt County superintendent. "But outside of that, what else do students need in order to be successful?"

That question is at the heart of a comprehensive rethinking that's underway about how schools are set up, how students learn, what skills they're expected to acquire, and how they demonstrate what they've learned. Much of this work directly challenges the traditional concept of school as a place where students



Sam Mallon/Education Week

Students participate in reflections after a day of learning in Julia Kromenacker's 3rd grade classroom at Old Mill Elementary School in Mt. Washington, Ky. The Bullitt County district that includes Old Mill Elementary has incorporated a focus on building more general life skills, like collaboration, problem-solving, and communication, that community members and employers consistently say they want from students coming out of high school.

simply acquire knowledge, by asking them to take the next step and apply it in a real-world context. It's a big departure that's unlikely to happen quickly.

But the deliberate focus on universal workforce skills—often called durable, non-cognitive, soft, or transferable skills—is starting to take root as school districts and states develop so-called portraits of a graduate that lay out in graphical form the characteristics communities hope their students develop by the time they complete high school.

A network of education-focused nonprofit organizations are supporting this transition. But they concede they're doing this work without research to guide them on what's most effective.

And while a general consensus has emerged on the broader life skills community members want students to acquire—critical thinking, problem-solving, collaboration, and communication skills commonly appear

in these portraits of a graduate—there's similarly little research confirming which abilities actually set up students for the best chance of success in life.

"There's some strong intuition there, but I think it is resting a lot on that intuition," said Matt Chingos, the vice president of education data and policy at the Urban Institute, a non-profit research organization that's leading an effort called the Student Upward Mobility Initiative to fund academic research aimed at determining the skills students need to achieve economic success in life.

In addition to research, parallel efforts are underway to develop gauges that teachers and schools can use to judge whether students have acquired these skills.

Portraits of a graduate as an answer to, 'why are we learning this?'

To be sure, the drive to identify and inculcate these kinds of skills stretches back decades in American education, from the "life adjustment" movement of the mid-20th century through the push, in the early 2000s, for "21st century skills," all emphasizing many of the same basic ideas: collaboration, communication, and critical thinking.

Some of those former efforts, aimed mainly at non-college goers, smacked of classism. And experts have debated at length the extent to which critical thinking skills taught in one context can be transferred to another.

Still, the efforts today reflect a continued sense that schools haven't emphasized these skills enough. And although the end goal is to have students fluent in these skills by the end of high school, laying the foundation goes back to the early grades—like the 1st grade classrooms at Bullitt County's Old Mill Elementary.

In Bullitt County, the district's graduate profile was the result of strategic planning begun in 2017 that involved focus groups and community meetings with students, teachers, parents, residents, business leaders, and other community members.

Students were asked what they hoped to gain from their school experience and what they wanted to accomplish. Employers were asked what they looked for in prospective

hires. Parents were asked what experiences they hoped their children would have in school, and what they hoped they would gain from them, Bacon said.

The groups differed in their word choices, but they voiced consistent themes, he said.

From that process, the district developed its graduate profile, which lays out the broad characteristics, or competencies, Bullitt County students should develop by the time they graduate. The profile says they should be effective communicators, innovative problem solvers, productive collaborators, self-directed navigators, community contributors, and mastery learners.

To incorporate those competencies into instruction, educators then worked to define what it meant for students to display each one, and how it looked at different grade levels.

The district now emphasizes what it calls authentic learning experiences, like the Humane Society opinion-writing undertaking, that tend to include hands-on projects driven largely by students that might directly address a community need.

“We’ve focused for so long in the education space around the acquisition of content and knowledge when, today, our kids have more access to content and information than ever before, and that’s not going to slow down,” Bacon said. “And so it’s not enough now to have knowledge of facts or material or information or content or standards. You have to know how to be able to apply those things in truly authentic ways.”

In addition to fulfilling academic standards, each authentic learning experience addresses at least one of the six competencies outlined in the graduate profile, assistant superintendent Adrienne Usher said. Throughout the project, the teacher discusses that competency and how the lesson relates to it, and students reflect on what they learned.

The Humane Society project, for example, addressed the district’s “effective communicator” and “community contributor” competencies, said Ashley Byerley, an instructional coach who worked with Old Mill Elementary’s 1st grade teachers on it.

While individual districts and states have independently developed their portraits of a graduate, the final products have had striking similarities. Virtually all of them emphasize that students should emerge from school as critical thinkers, problem solvers, collaborators, self-starters, and community-minded citizens.

“It doesn’t matter, really, where you’re growing up, where your community is located,” Bacon said. “There are foundational, core

things that are part of the human development process that we have to foster and nurture as a part of the responsibility to educate kids and prepare them to be productive contributors to our world and society.”

At a time when artificial intelligence is burgeoning and can perform many tasks that previously required humans, the skills that portraits of a graduate identify are “so much about being human and leveraging these technologies and these supports, but being able to engage with each other and ourselves in very complex ways,” said Brooke Stafford-Brizard, vice president for innovation and impact at the Carnegie Foundation for the Advancement of Teaching, which is working to develop assessments that measure students’ progress toward mastering these broader competencies.

In Utah, education officials held more than 40 focus groups with different constituencies across the state and administered surveys to inform their development of a state-level portrait of a graduate. At the same time, the state board of education encouraged local districts to develop their own, expecting it would contribute to a consensus on what schools should prioritize beyond standardized test-oriented accountability metrics, said Sarah Young, the chief of staff to Utah’s state superintendent.

“We really felt strongly that most folks were going to arrive at a pretty similar outcome,” Young said.

Beyond simply developing the portrait of a graduate—which Young called the “North Star of education” for the state—Utah officials broke out the competencies it outlines by grade range to show what students should be able to do as they progress through school and develop the skills.

Simply determining the outcomes, Young said, “doesn’t necessarily tell a 3rd grade teacher, so how do I contribute to that vision?”

In Utah’s Juab district, the portrait of a graduate offers teachers some help in answering the age-old question: “When am I going to ever use this in real life?” said Natalie Darrington, an instructional coach in the 2,700-student system south of Provo that was one of the first in the state to develop a portrait of a graduate.

Students might never use some of the specific knowledge they learn in math class outside of school, Darrington said. But learning it contributes to something bigger—becoming a mathematical thinker and problem-solver—that corresponds with the broader skills in the portrait of a graduate, she said.

“It’s not about the content,” Darrington said. “It’s about all of these other things that

you’re developing about yourself that you’re going to be able to build on and carry and transfer to your English class or transfer to your science class.”

How will schools know if they’re successfully imparting durable skills?

The mechanisms for testing students’ understanding of math, reading, and other academic subjects are, if still hotly debated, well established.

But if the new “North Star” for schools is—in addition to rigorous academics—training students to become critical thinkers, collaborators, and problem solvers, how will they know if they’ve succeeded?

It’s a question to which some of the nation’s largest test developers are devoting attention.

The textbook publisher and test-maker Pearson has published a series of papers in recent years on teaching and assessing creativity, communication, critical thinking, and collaboration. The company also works with employers on cultivating “power skills” among workers.

And last year, the Carnegie Foundation for the Advancement of Teaching announced a collaboration with test-maker ETS, the former administrator of the SAT and developer of other major national tests like the GRE, to build assessment tools that measure precisely those skills states and districts are outlining in their portraits of a graduate.

“I think there’s never been more attention on these kinds of skills, and I’ve never seen the policy priority at a higher level,” said Chris Domaleski, associate director of the Center for Assessment, which works with state education departments on assessment and accountability systems.

But direct measures of students’ mastery of durable skills are still nascent, Domaleski said, and not something states are yet incorporating into the performance measures to which they hold schools accountable.

The Carnegie-ETS initiative is in its early stages, but the idea is to build tools that provide the same psychometric reliability as traditional academic tests while giving timely feedback to students and teachers. Students would submit projects and work products from outside learning experiences, such as internships and job shadows, and participate in gamified or experiential assessment modules, according to the Carnegie Foundation. That could happen at any time, rather than during a prescribed testing window.

“So it ends up being a very dynamic and robust picture of how to continue to support the student,” said Stafford-Brizard, the Carnegie vice president.

The high school transcript is another facet of K-12 education that could evolve.

The Mastery Transcript Consortium, which became an ETS subsidiary in May, has worked for years on a digital academic record through which students show how they’ve developed the competencies their districts prioritize in their portraits of a graduate.

The transcript lays out those competencies, and students supply evidence showing their progress—projects they’ve completed, internships, tournaments where they’ve competed. It doesn’t list grades.

Some 370 schools have joined the consortium, and nearly 500 colleges and universities have accepted students supplying the transcript since 2020, according to the group.

The transcript and competency-based assessments could help build currency for the model more widely, beyond the small number of school systems trying to make this shift, said Mike Flanagan, the Mastery Transcript Consortium’s CEO. So far, it’s been difficult for schools to implement because it’s so far outside the traditional K-12 infrastructure and largely unknown.

“We have to take these skills and make them legible in a way that they are not today, and also make them super easy to read and use,” he said, “so the people who have to make tough decisions about who goes where and does what have the best and most accurate information.” ■

OPINION

Published May 30, 2024

Can Mastery-Based Learning Replace Seat Time?

The Carnegie Foundation's pivot presents unique challenges

By Rick Hess

On Tuesday, I talked with Tim Knowles, the CEO of the Carnegie Foundation for the Advancement of Teaching, about replacing the century-old Carnegie unit of seat time with a mastery-based measurement of learning. It was a fascinating conversation that left me with more questions than answers. The thing I was most curious to ask Tim about was how he plans to put this shift into practice. Well, Tim was generous enough to agree to a second interview to answer some of these vexing questions. Here's what he had to say.

—Rick

Rick: OK, we've been talking about doing away with the Carnegie unit and broadening the definition of learning. I can't help but wonder whether doing so risks reducing attention to academic content and mastery. What do you think?

Tim: There is a tendency to fall victim to binary thinking in K-12 education. Much of the criticism associated with our work is grounded in a false dichotomy that suggests that a focus on student well-being will reduce focus on and time for academics or that an emphasis on skills will reduce academic rigor. Our work is rooted in a belief that paying more attention to learning experiences that happen beyond the four walls of a classroom doesn't need to come at the expense of core academics. Providing students with experiential learning opportunities helps them connect the abstract to the concrete, which makes learning more relevant and meaningful. This isn't new. Laboratory experiments and digital simulations have always played a key role in education as a way to reinforce underlying concepts and equations.

Rick: That sounds intriguing. Can you go a bit deeper on that?

Tim: Of course. In the corporate context, we might care whether someone has a certain academic pedigree, but their ability to translate that academic work into commercial outcomes is what unlocks mobility and success within the

enterprise. Adopting a broader frame for learning will complement and reinforce academic content and mastery. Within this framework, algebra still matters. The ability to read and analyze complex texts still matters. There are foundational elements, in terms of disciplinary knowledge, that we can agree upon and establish as universal expectations within our public K-12 schools. Building on this belief—and a significant body of academic research—the Carnegie Foundation has partnered with the XQ Institute to incentivize the creation of powerful, project-based-learning experiences that blend academic content and skills development in more seamless and compelling ways than traditional curricula. We will be testing these “unit-sized” learning experiences this year, with the goal of developing more comprehensive “course-sized” offerings in later years. Core to this is our commitment to giving teachers the resources they need to help students fall in love with learning, which will only improve their academic outcomes. They may even look away from their phones.

Rick: One big concern I have about mastery-based grading or assessments is the translation into practice. How have you approached the issue of implementation?

Tim: I'm not sure parents, educators, and leaders actually prefer the status quo. They want assurance that a different model of schooling will serve children better than the current model. The education sector is awash with ineffective silver bullets and failed efforts at transformation. But, as Disney CEO Bob Iger noted, “The riskiest thing we can do is maintain the status quo—whether out of fear or preference—requires thoughtful change management, patience, humility, and evidence of success. It starts with embracing and supporting the early adopters who are clamoring for change. These educators, leaders, and communities become champions and attract the next generation of adopters. But they must provide evidence of effectiveness, because that must rule the day. We aren't approaching state or system leaders

with a prescribed solution; we are approaching those that want change with an invitation to co-develop solutions. Demonstrating success with these early adopters is a critical step toward both persuading skeptics and building momentum for more effective modalities of teaching and learning.

Rick: You've said that what you're trying to do will be tough to do with our current assessments. Can you talk a bit about some of what it would take to address that?

Tim: We can't discard the Carnegie unit without developing an alternative, standard measure for student learning: a way to recognize student learning that has meaning for parents, educators, institutions of higher education, and employers. Advances in how we can assess students, along with the development of new portraits of graduates, present a path forward to address the assessment challenge. Over the past decade, nearly 20 states and countless schools and systems have engaged families, employers, and community members to develop profiles or portraits of what their graduates should know and be able to do when they leave high school. Across geographic and partisan divides, these profiles look similar and include traditional academic outcomes alongside durable skills that predict success and that employers, students, families, and educators value. However, state and district leaders have expressed frustration that they don't have any good ways to measure students' progress toward these graduate profiles, and the profiles themselves don't shape practice.

Rick: What kind of changes does all this mean for Carnegie?

Tim: Last year, the Carnegie Foundation partnered with the Education Testing Service to begin developing assessments that can measure academic knowledge and skills like collaboration, communication, and critical thinking. The goal isn't to create a new raft of standardized tests but rather to gather insights from authentic student tasks and capture evidence of

learning, whether that learning occurs inside or outside the classroom. We are still in the early days of this effort, but we are heartened by the number of states and districts that want to work with us to co-develop and pilot such approaches. We anticipate partnering with four or five states to initiate this work and using that pilot to inform us as we work toward developing and scaling these assessments. Similarly, as part of the math badging pilot I mentioned in our first conversation, schools in three states are co-developing and implementing new competency-based math assessments. Big picture, we need more innovation, more initiatives like these, and more flexibility from policymakers to give schools the freedom to explore these new approaches to assess student learning, wherever that learning occurs.

Rick: Last question. You and I have seen a lot of reform efforts come and go. What can you say to reassure educators out there who may be intrigued but leery of another grand effort that amounts to just another turn of the wheel?

Tim: Educators have every reason to be leery. Many have had their schools and classrooms disrupted—sometimes in not-so-good ways—by past grand efforts that didn’t achieve their promised outcomes, only to be replaced by other such schemes. I also can’t tell educators that this will be easy work—it will be difficult and disruptive. At its core, we are talking about moving from a system designed around time to one designed around the actual knowledge, skills, and dispositions young people develop over time. The alternative is to maintain a system that continues to fail students and educators and systematically undervalues what we know about how people learn. When I talk to leaders and educators in schools that are leading the work to replace the Carnegie unit, I hear the hope in their voices as they talk about their triumphs. This work is getting to the root of the problem—not just tinkering around the edges—so while there is reason to be skeptical, there is also the potential for extraordinary success, reason to be hopeful, and reason to think that we could create schools where learning is rigorous, engaging, joyful, and effective at preparing millions more young people for success. ■

Rick Hess is the director of Education Policy Studies at the American Enterprise Institute and the author of Education Week’s Rick Hess Straight Up opinion blog. He is the creator of the annual RHSU Edu-Scholar Rankings.

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