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# Harnessing Data to

# DRIVE EQUITY

By Ilene Kantrov & Katherine Shields

How can schools assess and increase progress  
on equity in CTE participation?





In 2009 on the 40th anniversary of the establishment of the first career academy in Philadelphia, Al Glassman vividly recalled 1968, the year he became principal of

Edison High School. The city had just experienced the violent protests that followed the assassination of Martin Luther King Jr. Urban students — most of them young people of color — were dropping out of high school at alarming rates (United States Congress, 1970). Glassman, together with Philadelphia's first African American deputy mayor, Charles Bowser, and the CEO of the Philadelphia Electric Company, selected a small group of students at the high school to become the first class of the first career academy.

“We identified 25 of the most at-risk students in the school we could,” said Glassman. “These were kids we felt if circumstances didn't change would surely not be there for the 11th grade. We invited them to be part of the Electrical Academy.” Students in the academy spent half their days in electric shop and took their math and English classes together.

“In addition to stringent but supportive academic coursework, they were in a work setting that reflected the state-of-the-art best practices of that industry,” Glassman recalled (National Educator Program, 2009–2010).

These pioneers of the career academy model were motivated by a passionate desire to keep the youth in their community motivated to succeed. According to the National Career Academy Coalition (NCAC), there are now about 7,000 academies serving approximately 1 million students in the United States (2019). Yet amid this success — and at least in part as a result of it — some students, such as those for whom Glassman and Bowser created the academy model, no longer have equal access to academies or other high-quality career and technical education (CTE) pathways.

Many districts that offer career academies and other high-quality CTE programs have found that their programs attract disproportionate numbers of students from families with higher socioeconomic status, white students, and students who have already demonstrated high academic performance. CTE student profiles vary across settings — National Academy Foundation (NAF) academies, for example, enroll a higher percentage of economically disadvantaged, African American, Hispanic/Latinx and English language learner students than other schools in their districts (Sun & Spinney, 2017). California CTE concentrators are more likely to be male, economically disadvantaged, Hispanic/Latinx, and English language learner students than non-CTE students, although there are sex and racial/ethnic imbalances by industry sector (Reed et al., 2018). In contrast, a higher percentage of white students than the school population at large attend Florida career academies (Kantrov, 2017) and participate in college-focused CTE in Texas (Giani, 2017). A recent study in North Carolina found that career academies enroll fewer special education students (along with their female, African American, Hispanic/Latinx, and English language learner peers) than male, white, non-English language learner and non-special education students (Hemelt, Lenard, & Paepflow, 2017).

Recognizing these pockets of disparities, the National Standards of Practice (NSOP) for career academies explicitly include a commitment to equity in terms of access, services and expectations. The CTE field more broadly is taking a hard look at equity (Advance CTE, 2018a & 2018b; Gewirtz, 2017; Hoffman, 2018; Rosen & Molina, 2019).

### What can districts do to promote equitable access to high-quality CTE programs and reduce barriers to entry?

“My freshman year, I messed up in a lot of classes, so I had to retake them. My schedule didn’t fit. I had to take core classes that I messed up on before I took [career academy classes].” – High school senior (Elk Grove Unified School District focus group, 2018).

While many students might benefit from high-quality career programs, school policies and student circumstances, such as academic and scheduling challenges, can make it difficult for some students to take advantage of them. Data can help districts identify and address obstacles that limit equitable access to career academies for students.

### Over time, data enables districts to progress from pinpointing imbalances in an academy’s enrollment to tracking the success of improvement efforts.

This article presents examples of information gathered in one district that pointed to barriers to career academy access and describes how the district is using data to guide its efforts to close gaps.

Education Development Center (EDC), a Massachusetts-based nonprofit that promotes education and health in the United States and internationally, is conducting a study of student outcomes associated with career academies and work-based learning experiences in Elk Grove Unified School District (EGUSD) in California, funded by the U.S. Department of Education’s Institute of Education Sciences. EGUSD serves

more than 20,000 secondary students in nine comprehensive high schools and has a long history of offering career academies as well as robust career pathways. Currently, the district has 17 academies and 47 CTE industry sector pathways. Some of the district’s academies date to the early 1990s, not long after the career academy model first spread to California, and academies have benefited from state funding via the California Partnership Academies (CPA) program. Elk Grove’s student population overall is diverse, with 13% African American students, 23% Asian and Pacific Islander students, 26% Hispanic/Latinx students, and 21% white students, representing 110 home languages.

As an initial part of the study, EDC compared students who enrolled in career academies when they entered high school with other students. Researchers worked with Elk Grove district’s data office to examine student characteristics in eighth grade, including sex, race/ethnicity, academic achievement and suspensions. Researchers also interviewed more than 60 students, 28 teachers and 16 administrators at four high schools about the student experience in career academies, allowing the team to dig behind the quantitative data and learn about factors that influenced career academy enrollment decisions. Findings from these interviews are helping the researchers and Elk Grove district-level administrators to better understand the variation in CTE program enrollment and are guiding the district in designing strategies to achieve greater equity in academy enrollment.

By comparing middle school data characteristics, the team found that academy students more often had markers of higher socioeconomic status (SES)



and cultural capital than non-academy students. For example, students who joined an academy in ninth grade were less likely to come from a low-income household and more likely to have a parent who attended college. They were also more likely to be Asian/Pacific Islander and less likely to be Hispanic/Latinx or African American.

Interviews with administrators suggested that dynamics affecting the engagement of lower-SES parents with schools may have played a role in their children's lower academy enrollment rates. Parents who work multiple jobs, speak a language other than English or feel disconnected from schools based on their own education experiences may have to navigate multiple complications in order to participate in school activities and may not be part of parent social networks exchanging information about school opportunities (Calabrese Barton et al., 2004; Ryan & Ream, 2016). As one administrator said, "I think it has more to do with family, parents, ... who is an advocate for that kid."

Some non-academy students said they wished they could have joined an academy, but they had entered the district in ninth grade or later. One student recalled, "From the middle school, I transferred from another district. When it was that time for course selection, I wasn't really here for that. And I didn't know about all these extracurricular classes. So I was kinda out of the loop for most of it." To the extent that lower-income families are more likely than their middle- and upper-income counterparts to experience job and housing instability and move between school districts (Kang, 2019), they may be especially at risk of not knowing about high school opportunities like academies in time to enroll.

**Interestingly, academy students and administrators cited family networks as a common way of learning about academies – sometimes a sibling or cousin had a good experience and encouraged them to apply.**

Although recruiting within family networks could perpetuate existing equity gaps by reaching more students with the same characteristics, academies might be able to turn that dynamic around by actively encouraging recruitment among underrepresented families.

Academy students were also more likely to have higher academic achievement in middle school, even though academies do not have explicit academic entry requirements. Academy students were more likely to have taken algebra by eighth grade and had higher average GPAs. Non-academy students, such as the senior quoted above, said that if they failed classes and needed to retake them, they faced scheduling challenges that made it hard to enroll in academy classes.

Participation in structured programs for English language learners or special education students was a barrier to academy enrollment, as well. Academy students were less likely to be current English language learners or to have an individualized education program in grade eight than other students. One administrator noted, "Some of our students are locked into a schedule, like our English learner program." It was a challenge to reconcile academy cohort schedules with courses for English language learner or special education students. However, former English language learner students who were no longer receiving services were enrolled in academies at higher than average rates,

demonstrating that these students were able to access the programs once they had exited services.

Finally, academy students had fewer absences and suspensions in grade eight than other CTE students. Students who are more consistently engaged and connected with the school may be more aware of high school program options and application deadlines for academies, a particular issue in schools where access to such programs is limited. As one high school senior who did not join a career academy noted about the need for accessing information, "I wish I [had] seen [the career academy] poster... I didn't know they were designing stuff with technology. I didn't know what [the academy] was. That's why I didn't join."

### Using Data to Drive Equity in Access

To address barriers highlighted in the study, Elk Grove has been implementing data-driven strategies designed to increase access to academies for students who have been underrepresented. The district is intensifying efforts to raise family and student awareness of career academies in middle school. They are collecting and mining information about students' career interests and using it to target recruitment — for example, current culinary career academy students write letters to eighth graders who expressed interest in culinary careers inviting them to learn more about the program.

To reach all members of the community, the district holds an annual "Map Your Future" event for middle school students and their families, where all the academies and other CTE programs showcase their offerings, including hands-on demonstrations by industry partners, such as local fire chiefs and

building contractors. Recruitment materials for such events are translated into the three most common languages after English (Spanish, Vietnamese, and Hmong) in the community. CTE programs also work with industry partners to send diverse representatives to the school and to offer special events like a building trades workshop just for girls.

To avoid the perception that academies are only for high-performing students, the district is moving away from requesting grade point average on the academy applications — this information was not used to screen out students, but its inclusion could send the wrong message. The district also offers more summer and after-school credit-recovery options so that retaking classes is less of a barrier to fitting academy classes into one's schedule. To attract students, the district has also created recruiting materials for counselors and students. The materials draw a clear connection between the CTE programs and success in college and careers, provide labor market data for related occupations, and list local college degree programs in the relevant career sectors.

After students enroll in academies and other high school CTE programs, the district continues to track their progress and provide supports so that the programs benefit students of all backgrounds. A new student information system allows the district to monitor completion rates in CTE pathways and compare those rates across different demographic groups, so that they can identify problem areas. Supports, such as free transportation to work-based learning events and internships, and offering experiences on campus, such as having sports medicine students help on

the sidelines at football games, also improve program accessibility. Finally, some schools have chosen to make academy courses a priority when building the master schedule, so that academy courses are among the earliest filled, alleviating the challenge of not being able to fit in the cohort-driven courses.

### Building a culture that supports equity is a long-term, comprehensive process.

Some additional steps toward this goal may include providing professional development for teachers and staff on cultural competence and recruiting and retaining a diverse teaching and administrative staff that reflects the student body (Advance CTE, 2017; Kantrov, 2017).

### What can your district do to harness data to drive equity?

The approach researchers and district partners used in this study offers a template for the kinds of data districts can gather to track equity of access to CTE programs and ways to use that data to reduce barriers to enrollment in academies and other high-quality CTE programs. To summarize:

- Set up a flag for specialized CTE program participation, such as an academy or high-quality pathway, in your student information system.
- Review your data comparing career academy and/or CTE students to nonparticipants on:
  - o Student demographic characteristics
  - o Middle school academic achievement
  - o English language learner status
  - o Special education status

- Track your students' progress: What percentage of students are reaching concentrator status (completing at least two courses in a CTE pathway) and going further? Do these rates differ across student demographic groups?
- Make data available to middle and high school counselors.
- Go beyond the numbers! Talk with teachers, students and their families to find out what they know about your CTE programs, and why they do or do not choose them. Talk with teachers and administrators to identify school policies that might present barriers to access.

As districts work toward achieving greater equity in access to and success for all students in their CTE programs, they will be fulfilling the promise of the visionary founders of that first Philadelphia career academy 50 years ago. ■

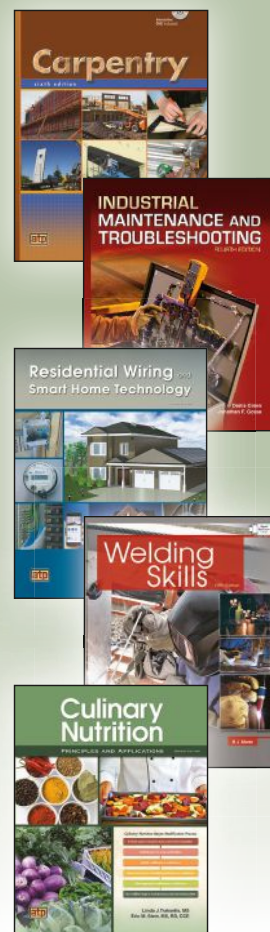
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