

## Research Brief

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# Preparing high school students for college and career: Evidence from Youth CareerConnect



In 2014, the U.S. Department of Labor awarded \$107 million in four-year grants to 24 applicants for the Youth CareerConnect (YCC) program. At its core, the YCC program was designed to strengthen America's talent pipeline by putting high school students on a pathway to complete postsecondary education, obtain industry-recognized credentials, and secure a job in middle- to high-skilled fields that often rely on foreign workers. The program included employer partnerships and engagement, integrated academic and career curricula, work-based learning and exposure to the world of work, individualized career and academic counseling, small learning communities, and professional development. In this brief, we summarize how the YCC program was implemented and the impact it had on students while they were still in high school.

### Highlights

An evaluation of the YCC program, which included an impact and an implementation study, showed that:

-  **The program had a broad reach.** The YCC program enrolled 31,019 students in 130 high schools that were located in 18 states and Puerto Rico. Common industries and occupations for the program's focus included health care and social assistance, architecture and engineering, professional services, and information technology.
-  **The program had small, yet statistically significant beneficial impacts on students' achievement in high school, which suggests it helps students progress toward educational and employment success.** The YCC program increased students' annual school attendance by 0.7 percentage points (from about 90.7 to 91.5) and accelerated the accumulation of credits for high school graduation (a student at the 50th percentile in accumulating credits without the YCC program would move to approximately the 54th percentile with it). The program might also increase proficiency in English language arts. No evidence exists that it had an effect on student progression in algebra.
-  **Receiving an internship, having a mentor, and completing an individual development plan (IDP) might have intensified YCC program impacts,** although future research should confirm this potential.
-  **Program maturation might have increased benefits;** impacts were larger for students who began participation at a later stage of program implementation.

## The YCC program used career preparation to build academic skills

Grantees shared information about their programs through surveys, small group and one-on-one interviews, and program administrative data (see sidebar).

The YCC program enrolled a diverse set of students from its initial offering in the 2014–2015 school year through September 30, 2018. About 44 percent of students were female, 43 percent Hispanic, and 23 percent Black (non-Hispanic). Almost half (47 percent) were eligible for free or reduced-price lunch. Almost half (47 percent) started the program in the 9th grade, with the remainder starting in either 10th or 11th grade.

### A career focus aimed to build students' academic and career-related skills

High schools implementing the YCC program used careers as themes upon which to organize YCC program services and activities. Common themes included health care and social assistance (24 percent of students pursued), architecture and engineering (20 percent), professional and technical services (19 percent), computer and mathematical sciences (16 percent), and information technology (11 percent). Services and activities offered around these themes fell into three program components:



### Learning about implementation: Design and data sources

- Two rounds of a **survey**, in 2015 and 2017, to all 24 YCC grantees about YCC activities and services offered in one of each grantee's high schools.
- **Discussions** with YCC program, school, and partner staff, in 2015, 2017, and 2018, for 10 grantees during three rounds of site visits and telephone interviews
- A **Participant-Tracking System** that captured characteristics of and service receipt for all students enrolled in the YCC program. Data analyzed are from April 1, 2014 to September 30, 2018.

1. Preparation for college and career
2. Connection to career-track employment
3. Academic and nonacademic supports

Services and activities in each component aimed to help youth succeed in high school in ways that would help them ultimately achieve education and employment success. Figure 1 highlights key services and activities students received through the YCC program by the end of the enrollment period.

**Figure 1. YCC services and activities and percentage of students receiving them**



#### Preparing for college and career

- **80%** took industry-specific courses



#### Connecting to career-track employment

- **63%** connected in the workplace: job shadowing, exposure to an industry, or world of work
- **19%** had an internship
- **45%** connected at school: career fairs, career exploration talks, or mock interviews
- **51%** participated in mentoring



#### Offering academic and nonacademic supports

- **63%** received career and academic counseling
- **53%** completed an individual development plan
- **52%** received support services

Source: Participant Tracking System.

During the first two years of funding, grantees focused on integrating program elements into existing district and school structures. They worked to offer students integrated coursework, courses leading to industry-recognized credentials, presentations by college representatives, and field trips to workplaces. Grantees took longer to implement services that required considerable planning and coordination with employer and postsecondary education partners, such as internships, mentoring, and dual-enrolled coursework. As these partnerships grew stronger over the course of the grant, schools reported being able to offer these more intensive college and career preparation activities.

*“As educators, we teach—we tell people things—but it was when we started listening and asking the employers what we could do for them that it all turned around.”*

—YCC teacher

### The YCC program offered services and activities that differed from other high school career-focused programs, but required partnerships and staff time

Staff were clearly able to explain ways in which the YCC program differed from other programs the school offered (Figure 2). Staff often articulated that both partnerships and YCC-funded staff were critical to offering many of these services and activities, particularly as they relate to work-based learning and dual enrollment. Staff voiced how a partner liaison was key to building the needed partnerships. Although the position had a variety of titles, individuals who filled it were dedicated to developing and maintaining partnerships with employers and institutions of higher education.

**Figure 2. Services and activities that differentiated the YCC program from other high school career-focused programs**



#### Preparing for college and career

- Instruction in work-readiness or occupational skills.
- Coursework structured in ways that lead to articulation to a two- or four-year college program or an industry-recognized credential
- Emphasis on active learning pedagogies



#### Connecting to career-track employment

- Work-based learning



#### Offering academic and nonacademic supports

- Small learning communities
- Individual development plans

Source: Grantee Survey, 2017.

Perhaps because staff were viewed as central in being able to offer key YCC services and activities, having limited time to devote to the program emerged as a major constraint for the YCC program. YCC staff often had competing demands, which made it challenging to collaborate and deliver program components. Counselors and liaisons often served in multiple roles, and teachers struggled to find time for collaboration, planning, and developing innovative coursework. Maintaining staff time after the end of grant funding was expected to be especially challenging. During the final year of the grant, staff indicated that YCC positions typically funded through the grant, such as the partner liaisons, were reported as more challenging to maintain than teachers, who were typically paid through other school or district funding. Staff expressed concerns about losing staff who brokered the critical partnerships with employers or other groups.

## The YCC program had positive impacts on high school outcomes

We assessed the impact of the YCC program on student outcomes with two rigorous designs—a large quasi-experimental design (QED) study in 16 districts and a small randomized controlled trial (RCT) in 4 districts (see sidebar). Because data collection ended in 2018 when most students were 16 or 17 years old and had not yet finished high school, program impacts were estimated for high school outcomes only. Our primary analysis focused on school attendance, credit accumulation, proficiency in English language arts, and progressing in algebra. Our general approach weighted districts equally for impact estimates combined across districts, but we also weighted students equally, which gave more weight to districts with larger samples and yielded more precise impact estimates.

### The YCC program had small positive impacts on school attendance, credit accumulation, and proficiency in English language arts

Two to four years after program enrollment, statistical tests for significance at the 5 percent level suggest that the YCC program (Figure 3, next page):

- **Produced a small increase in school attendance.** On average, students in the QED treatment group attended 91.5 percent of enrolled days, compared to 90.7 percent for the comparison group. This impact of 0.7 percentage points is robust to alternative estimation methods.
- **Produced a small increase in credit accumulation.** The estimated impact suggests that YCC program enrollment moved a student at the 50th percentile in credit accumulation to about the 54th percentile. The estimate was robust to alternative estimation methods.



### Estimating impacts: Design and data sources

#### Quasi-experimental design (QED) in 16 districts

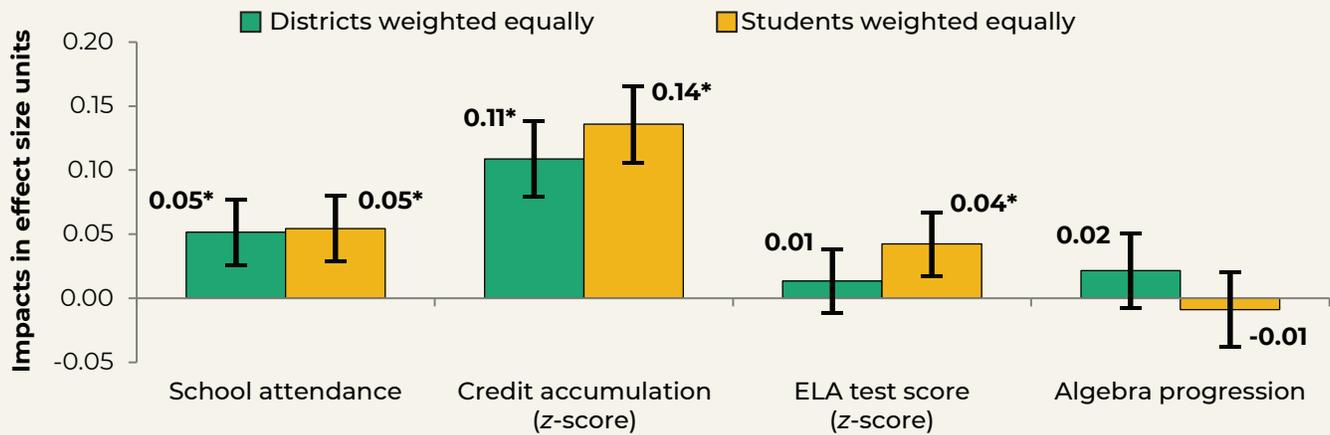
- Drew information from school records on YCC and non-YCC student characteristics and achievements in middle and high school
- Used propensity-score methods to form a comparison group of students who did not participate in the YCC program but were in the same school district—and often the same high school—as those who participated in it

#### Randomized controlled trial (RCT) in 4 districts

- Randomly assigned students who could enroll in the YCC program in 9th or 10th grade (the treatment group), or who could not enroll in it (the control group)
- Drew additional information from surveys in three districts on high school behaviors, postsecondary preparation, and employment readiness

- **Might have improved proficiency in English language arts.** When students are weighted equally, the estimated impact suggests that a YCC program enrollment moved a student at the 50th percentile in the distribution of English language arts to the 52nd percentile, an impact that was significant and positive in 10 of 15 districts. The impact was not significant when districts were weighted equally, however.
- **Had no effect on students completing algebra coursework.** Estimated impacts were not significant at the 5 percent level.

**Figure 3. Impacts on primary outcomes for the full sample (effect size units)**



Source: School records data from 16 QED districts.

\* Indicates significant impacts at the 5 percent level.

+ Indicates significant impacts at the 10 percent level.

**The short-term impact of the YCC program might have varied by program experiences and maturation of the program, but not by key student characteristics**

- Impacts tended to be larger for students who received an internship, had a mentor, or completed an IDP compared to those who did not. However, these effects could be partly driven by the possibility that students who were involved in these components were more likely to have good outcomes than students who were not. Our analysis did not allow us to identify which services generated the largest impact.
- The pattern of results suggest that the YCC program might have had a larger impact on accumulated credits, in English language arts proficiency, and algebra progression for students starting the YCC program in the last two years of the grant than those starting it earlier. This finding is consistent with reports by program staff that, as the program matured, the program offered more intensive and a higher dosage of services.

**The YCC program did not affect high school graduation and other measures such as high school behaviors, postsecondary preparation, and employment readiness among early cohorts**

By spring 2018, students who started the YCC program when it was first implemented could have graduated from high school if they had normal progression in school. About 88 percent of these students—both treatment and control group students—had graduated and the YCC program did not appear to affect the graduation rate. Because students who started the program later in the grant might have larger program effects, the YCC program could affect graduation rates for those who started the program later. However, we could not measure the effect for those groups, because the study ended when they were too young to have graduated.

We found that the YCC program did affect any of the 20 outcomes captured in a survey about two years after students started a program in the three RCT districts. Outcomes included (1) high school behaviors (school activities and engagement and substance abuse); (2) postsecondary preparation (credential expectations, advanced placement and dual enrollment coursework, and knowledge of requirements); and (3) employment readiness (work readiness skills and paid work experience). Our point estimates were all small and statistically insignificant at the 5 percent level. We note that the difficulties districts faced in generating sufficient demand to conduct random assignment left the RCT analysis not sufficiently powered to detect program effects

## Future research can assess long-term and component impacts

Taken together, our results indicate that the YCC program had small and statistically significant impacts on short-term successes students could achieve while in high school and that are associated with longer-term education and employment success. Future studies would need to assess whether these improvements translate into the long-term gains the program intended, an important link because previous research has shown that impacts of these types of high school interventions on employment can sometimes take years to surface. As well, future research might expand upon our finding that impacts might be larger for those who received an internship, had a mentor, or completed an IDP than those who did not. Because we attribute these impacts to the YCC program, future research should address whether these effects occur independently as well as whether they are enhanced when they are offered as a group or in certain combinations.

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## Research about the YCC program

Available at: <https://www.dol.gov/agencies/oasp/evaluation/completedstudies>

### Implementation

- **Early years.** Explores implementation through the 2015–2016 school year, after two years of YCC funding. Maxwell, Nan, Emilyn Whitesell, Jeanne Bellotti, Sucky Leshnick, Jennifer Henderson-Frakes, and Danielle Berman. “Youth CareerConnect: Early Implementation Findings.” Oakland, CA: Mathematica Policy Research, October 2017.
- **Implementation.** Explores the evolution of program implementation through the 2017–2018 school year, and the approaches grantees planned for sustaining the program after grant funding ended. Geckeler, Christian, Raquel González, Lea Folsom, Erin Dillon, and Nan Maxwell. “Youth CareerConnect: Evolution of Implementation over Time.” Princeton, NJ: Mathematica, 2019.
- **Employer and workforce agency partnerships.** Examines partnerships with employers and local workforce development system agencies. Dillon, Erin. “Youth CareerConnect: Engaging Employers and Workforce Agency Partners.” Cambridge, MA: Mathematica, 2019.

### Impacts

- **Impact findings.** Examines the impact of program participation on student success during high school. Maxwell, Nan, Jeanne Bellotti, Peter Schochet, Paul Burkander, Emilyn Whitesell, Erin Dillon, and Hande Inanc. “Building College and Career Pathways for High School Students: Youth CareerConnect Impact Findings Report.” Princeton, NJ: Mathematica, 2019.
- **Technical documentation.** Provides a technical discussion about the data, samples, and analysis that underlie the estimated impacts. Burkander, Paul, Nan Maxwell, Menbere Shiferaw, Matt Jacobus, Alma Vigil, Charles Tilley, Alicia Harrington, Erin Dillon, Hande Inanc, and Peter Schochet. “Building College and Career Pathways for High School Students: Youth CareerConnect Technical Report for the Impact Study.” Princeton, NJ: Mathematica, 2019.

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