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Nan L. Maxwell and Victor Rubin

High School Career Academies

Note: This article highlights findings from a study conducted by the authors with funding from the W.E. Upjohn Institute. The full study has been published as High School Career Academies: Pathways to Educational Reform in Urban School Districts?

Restructuring high school curricula has been the focal point of continual waves of reform strategies for many decades. Traditionally, U.S. students in high school encountered separate vocational education and college preparatory programs. Both programs are currently facing serious critiques for failing to equitably or effectively prepare students for the “new economy.” Both public and private sector leaders cite economic and labor market trends showing an increasing demand for workers with higher levels of skills and statistical evidence suggesting that our schools produce students who are unable to meet these requirements. With some notable exceptions, vocational students have become isolated from the newer technologies and employment opportunities, and many college-bound students have been seen as inadequately prepared for the rigor of higher education or of their future careers.

Various strategies known as school-to-work programs are intended to bring lessons from the workplace into the classroom for all kinds of students and to provide students with a first-hand, integrated understanding of the knowledge-based economy. We examined the potential of one school-to-work strategy, the career academy, to improve educational and work outcomes for students from inner city schools. The large urban school district that was the focus of our study included a diverse student body and a number of career academies with different characteristics. The district adopted an ambitious and comprehensive model for its academy programs, calling for creating a “school-within-a-school,” integrating academic and vocational learning around a specific focus (e.g., health, computer technology), building extensive employer involvement, and creating a cohort of students who take four core classes together throughout three years of high school, taught by a small group of teachers. Important differences existed, however, from site to site in the degree of model implementation.

The study focused on the potential of the career academy to facilitate educational outcomes in high school or in the labor market. Detailed data were collected from three cohorts of public high school students (about 10,000); about 14 percent of the students were in career academies. The information included complete transcripts and the results of a survey undertaken two or three years after the students had left high school. These data were used to assess, during high school and postsecondary endeavors, the performance of the students in academies relative to those who were not. The study also examined the district’s capacity to implement nine career academies at six high schools, using seven years of data on operations (e.g., budgets, enrollment, staffing, employer participation) and interviews of academy directors and principals.

Performance in High School

The career academy increased the academic knowledge and skills taken from high school (Table

1). The increase in grade point for many groups was particularly important because it crossed the critical threshold from a D/D+ average to a C average. Even though the average is still low and is hardly an indicator of postsecondary success, the increase suggests that the career academy increased the knowledge and skills that students took away from school.

The career academy also helped to keep students in school and to obtain high school degrees. We found that students who were not in academies had dropout rates that were over two times higher than those for students in career academies (results not shown here). Approximately two years after leaving high school, more than 92 percent of former academy students had a high school diploma or equivalent, compared with 82 percent of students from other programs (hence the 84 percent degree rate for all students in Table 1). However, our multivariate analysis showed that the career academy increased graduation rates for academy students only by building their academic knowledge and skills. That is, academy enrollment increased high school GPA, which in turn increased the probability of graduating.

Table 1 Influence of the Career Academy^a

Outcome	Average value for all students	Change associated with being in an academy ^b
High school		
High School GPA	2.12	0.176**
Graduated from high school (%)	84.5	1.0
Labor market		
Job related to high school (%)	4.9	1.0**
Average hours worked	27.8	3.27**
Average hourly wage (\$)	7.34	-0.71
Postsecondary		
Attending a 2-year or 4-year college (%)	74.7	0.6
Attending a 4-year college (%)	40.4	2.4**

^aOrdinary least squares analysis was used for GPA, hours worked, and hourly wage, and probit analysis was used for high school graduation, job related to high school, and attending 2- or 4-year college. ** = statistically significant at $p = 0.05$.

^bThe "Change" column gives the estimated change associated with being in an academy, all else being equal.

Three sets of interrelated factors explained the influence of the academy on students' achievement in high school: students' academic preparedness upon entering high school, their school environment, and their level of exposure to the career academy program. The career academy did not increase GPA in every high school, perhaps because of the differences in school resources and circumstances, and it did not increase GPA for students whose math preparation when they entered high school was in the bottom third of their cohort.

Short-Term Labor Market Outcomes

Although the hours worked increased significantly for career academy students, academies generally had little impact on labor market outcomes in the years immediately after students left high school (see Table 1). Only about 5 percent of former students had worked in a field related to the focus of their high school program, and the academy had no significant influence on wages.

Postsecondary Education

Former academy students were more likely than their counterparts to attend postsecondary education. The magnitude of the difference depends on whether the student went to a two- or a four-year institution. When attendance rates at community colleges and four-year institutions were combined, only about a 10 percent difference existed between academy and nonacademy students (results not shown here). When only four-year schools were considered, about 40 percent more academy students enrolled than did nonacademy students. However, under multivariate analysis, the statistically significant influence of the academy shown in Table 1 results from the two strongest sites. Most career academies did not independently increase the probability of attending college. Instead, they increased the probability of attending a four-year college by building academic knowledge in high school, which increased postsecondary education.

Strengths and Challenges

The greatest strength identified by our research was the sense of community the academy created among teachers and students. Many directors and administrators described a fundamental asset of the academy as being the network of social support that leads to better educational outcomes. Academy directors and students also saw the work-based learning component of the program as a major strength.

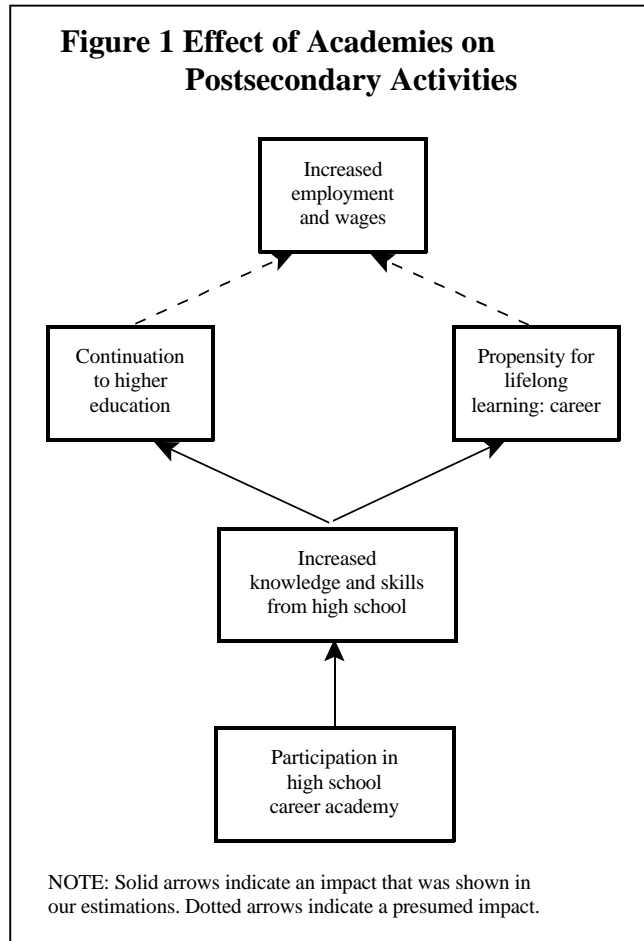
The most pressing problem facing academies may be scheduling, with institutional constraints often limiting students' and teachers' class assignments and the capacity to structure a school- within-a-school. Administrative support and leadership was another critical area, and most directors felt district support was not sufficiently integrated into their program. Finally, a major challenge for the academies was the need to raise funds to support their increased operating costs, such as paid internships and extra time for teachers to plan and design curricula.

Policy Implications

Career academies embody a potentially effective strategy for educational reform, and the approach was shown to facilitate postsecondary success for inner- city, public high school students from the district in our study. Despite a positive conclusion at this most general level, career academy programs and policies will not be effective unless the following issues are directly addressed at the level of the high school, the school district, and the state.

First, career academies are effective only when they build students' academic skills. In most cases, the career academies' positive influence on postsecondary education worked through

increased academic knowledge and skills in high school (Figure 1). Program designers should resist the quick-fix strategy that substitutes career exposure or work experience alone for serious academic preparation, or one that channels students into highly specialized job training without broad grounding in basic academic skills.



Second, not all career academies were equally effective at building students' academic knowledge, nor did their programs enhance learning for all students equally. This may change, but from current evidence, policies that universalize the academy approach "for all students" in a school or district should be viewed very cautiously, despite legislative calls for universality.

Third, successful academies need to have the numerous necessary program components and commitments in place, because partially implemented programs do not generally produce the desired outcomes. Policies aimed at proliferating academies should only proceed at a pace commensurate with a school district's capacity to recruit and train teachers, raise internal and community resources, and restructure the schools to accommodate the requirements of scheduling and other factors.

Finally, career academies cannot compensate for inadequate education prior to high school. Even where the career academy improved students' academic outcomes, these were relative gains. Overall performance indicators were still low by statewide or national standards.

In sum, because career academies are expensive undertakings that require additional funds and in-kind resources for implementation, the conditions for their success must be considered before they are implemented. However, they may be worth the effort, since there is evidence that the new curriculum, social support, and work experiences offered by the academies can make a very important, positive difference in the lives of many students. The challenge is to create and replicate the enabling circumstances for the right teachers and students, without losing academic rigor.

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