



The Role of Career Academies in Education Improvement

IN THIS BRIEF:

This Issue Brief will explore the central role that career academies can play in school improvement efforts. Career academies engage a cohort group of students and staff in a smaller learning community built on a foundation of rigorous college-prep academics and career and technical education. These programs integrate relevant career themes across the curriculum, engage business and industry leaders in the education process, and as a result, drive student academic achievement.

As economic development issues dominate policy debates around the country, it is critical that the focus on improving education and training opportunities for U.S. students does not wane. A well-educated and skilled workforce is the foundation for business growth and innovation, and sets individuals and communities on the path to self-sufficiency.

However, despite the attention paid to education reform in recent years, there has been no silver bullet to increasing student engagement, achievement, and transition to successful post-high school education and career opportunities. Education leaders continue to grapple with these complicated issues, and are beginning to realize the need to explore and adopt more innovative approaches to ensuring all students are prepared for their futures in the 21st century economy.

This brief introduces a major reform initiative celebrating its 40th anniversary in 2009. Called “career academies,” these small “schools within schools” bring together a team of teachers and a

cohort of students around a strong career- and college-prep theme. If well implemented, these programs offer remarkable results in both academic and technical skill outcomes and address many of the major educational concerns that exist today.

The Concerns

LAGGING STUDENT PERFORMANCE

April 2008 marked the 25th anniversary of *A Nation at Risk*, the seminal document that is often referenced as the beginning of the education reform movement in the United States.¹ Unfortunately, many of the problems and challenges referenced, such as low student achievement on international benchmarks, remain concerns today. While progress has been made in some areas, it is clear that U.S. students are underprepared to compete in the increasingly global economy.

The student dropout rate has only recently been acknowledged as a significant problem. More than one million students, or 7,000 pupils each day, are not reaching graduation, and only about 70 percent of students nationwide earn a diploma.² The problem is even more significant when considering minority populations. White students graduate at rates between 75 percent and 91 percent, African-American students graduate at rates between 50 percent and 86 percent, and Latino students graduate at rates between 52 percent and 74 percent.³

The differences in these secondary school graduation rates illustrate an additional issue that must be addressed, the achievement gaps between high- and low-achieving students that often are reflected along ethnic and racial lines. These gaps have improved slightly in recent decades, but continue. African-American and Latino students in the 12th grade today persist in achievement at levels approximately four years behind that of white students.⁴

Finally, students do not always possess the skills and knowledge needed to transition to postsecondary education and the workforce, even if they do hold high school diplomas. Literacy rates are an important indicator of a student's ability to reach future success. The National Assessment of Educational Progress indicates that two-thirds of the nation's secondary students cannot read at grade level. Nearly 6 million readers are struggling between grades seven and 12.⁵ Such low

performance translates into trouble for the workforce. Studies have found that the demand for skills is likely to grow much faster than the supply of skilled workers in the coming years.⁶

More jobs than ever before also require some type of postsecondary education in addition to a high school diploma, but many of the U.S. students who do graduate high school have not been able to make a smooth transition to college. Twenty-eight percent of four-year postsecondary freshmen and 42 percent of their two-year postsecondary colleagues require remedial coursework.⁷ Only slightly more than 50 percent of students entering postsecondary education are expected to graduate, one of the lowest rates for industrialized nations.⁸

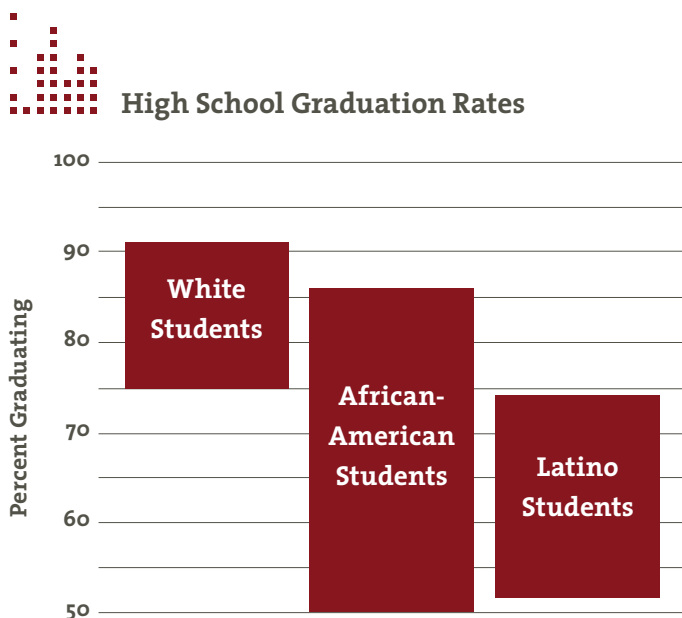
LACK OF EDUCATION RELEVANCE

While there are many factors that contribute to low student achievement, one critical element is a lack of education relevance, both to students' individual lives, and to the complex and diverse workplace that has emerged from the knowledge revolution. In 2005, Microsoft co-founder Bill Gates termed American high schools "obsolete" and stated that high schools could not "teach our kids what they need to know today."⁹

These concerns, still applicable, must be addressed if the United States is to continue to meet the needs of business and industry in today's challenging economic environment. If students are ever to graduate and meet their postsecondary and workforce aspirations, the educational disconnect and disinterest they experience must be addressed. In a word, school must become more "relevant."

Nearly half of individuals included in "The Silent Epidemic: Perspectives of High School Dropouts" report said that they were bored and not engaged in school.¹⁰ Schools of today provide no context for many students whose perception is of an institution that is ill-equipped to meet their learning needs. In some cases, their perceptions are correct.

Addressing students' individual learning needs is difficult, at best, considering that many schools are large and impersonal. Despite the fact that the recommended size of a high school unit is 600 students,



many schools are 4,000 students or more.¹¹ Students often get lost in these large education “factories” and most schools do not possess the number of guidance counselors and other supports required to ensure that there are meaningful connections to adult educators and mentors. For example, the average U.S. student/counselor ratio is 479 to 1, while the American School Counselor Association recommends a student/counselor ratio of 250 to 1 to meet the needs of all students.¹²

Other schools may be of a size and scope to adequately address student learning needs, but are detached from the realities of the communities and commerce surrounding them. The school of the 21st century should provide students with the same types of experiences and employ the same types of practices that they will encounter after graduation and in the workplace.

These skills include rigorous academics, technical know-how, and employability skills such as problem solving, critical thinking, the ability to work in a team environment, communication, entrepreneurship, flexibility and adaptability. The Partnership for 21st Century Skills has designed a *Framework for Learning in the 21st Century* which organizes the skills that students will need for success into six areas: core subject, 21st century content, learning and thinking skills, information and communication technology literacy, life skills, and 21st century assessments.¹³ Many times, a systematic focus on each of these important skill areas is absent from students’ educational experiences.

To reinforce the skills needed in the 21st century, students also need to be provided “real-world” experiences. All too often, classrooms provide concepts and theory without the option to test and practice those ideas. Relevance to concrete ideas and project- and community-based learning can further enhance the linkages between education and students’ future career and life goals, and as a result, increase overall student achievement.

Career Academies Provide Solutions

As many school reform initiatives ebb and wane, a lack of educational progress suggests a new direction and a broader role for career and technical education (CTE) in U.S. education. Specifically, the concept of “career academies” offers ways to expand CTE’s breadth and depth through a strong and growing comprehensive improvement model. Career academies provide a link among secondary CTE, strong academics and postsecondary education.

Formed 40 years ago by business and community leaders as a way to provide youth improved educational and career opportunities¹⁴, career academies provide college preparatory curricula that integrate academic and CTE courses, engaging students in applied learning in a setting that requires a cohort group of students and staff working together as a team.

At their inception, career academies were especially focused on addressing the needs of disenfranchised youth, but have a much broader role today. Career academies have expanded to number over 2,500¹⁵, serve hundreds of thousands of students, and can be found in the country’s highest performing school districts. Innovative career academies through programs like New York State’s New Visions provide students with advanced opportunities. In this program, Advanced Placement level high school seniors take their senior year courses at work sites like hospitals, environmental centers and law firms.

The success of these programs is due to strong evidence of improving student performance and the consistent



Career Academy Support Organizations

Associated General Contractors – www.agc.org/cs/k12/construction_career_academies

Career Academy Support Network – <http://casn.berkeley.edu>

Ford Partnership for Advanced Studies – Next Generation Learning Communities – www.FordPAS.org and www.FordNGLC.org

High Schools That Work – www.sreb.org/programs/hstw/hstwindex.asp

Johns Hopkins Talent Development – <http://web.jhu.edu/CSOS/tdhs/index.html>

National Academy Foundation – www.naf.org

National Career Academy Coalition – www.ncacinc.com

Small Schools Workshop – www.smallschoolsworkshop.org

involvement of business and industry to provide a critical link between student learning and workforce needs. The National Academy Foundation, which supports 529 academies in 49 states, reports that 90 percent of students enrolled in its programs graduate and 80 percent of those go on to college.¹⁶ Such statistics underscore the value of career academies as a relevant leverage point for today's education reform.

It is time to focus efforts to reform high school education in the United States on proven strategies like career academies. Academies can play a central role in high school improvement by integrating relevant career themes, engaging business and industry leaders in the education process, and as a result, driving academic achievement.



Common Features of Career Academies

A small learning community, comprised of a group of students within the larger high school, who take classes together for at least two years and are taught by a team of teachers from different disciplines

A college preparatory curriculum with a career theme, enabling students to identify relationships among academic subjects and their application to a broad field of work

Partnerships with employers, the community and local colleges that bring resources from outside the high school to improve student motivation and achievement

Use of the National Standards of Practice¹⁷ for career academies that were developed by an informal consortium of national career academy organizations and are framed around 10 key elements for successful, sustained implementation

INTEGRATING RELEVANT CAREER THEMES

One of the reasons career academies are viewed as successful high school reform models is the integration of broad career themes into academic courses and coordination of these themes across the curriculum. By including math, science, language arts, social science

and other academic courses under a central CTE theme ranging from finance to engineering, aerospace or medical sciences, coursework becomes more relevant and students understand why academics are necessary for post-high school life. Career academies offer some of the best examples of environments that blend academics with contextual and project-based learning. In career academies, all the most positive aspects of CTE have the ability to influence academic courses through both content and pedagogy.

Engaging a cohort of students in commonly scheduled classes and a team of teachers working together across subjects creates a truly integrated and personalized educational environment. Students in a construction academy might produce cement in their chemistry course to learn more about its properties, design bridges to learn physics principles and read articles out of trade publications in English. Marketing academy students might study popular media's influence on society in American History, while health care academy students learn how to calculate proper doses of medicine in Algebra.

Career academy staff members have better linkages to each other and the students they are teaching and are better able to meet individual learning needs, leading to further connections for students. Many career academies employ strategies like common planning time for all teachers, both CTE and academic, and externships for teachers to help them gain valuable business and industry insight that can benefit students.

The central career theme also provides students better career information and opportunities to access hands-on career experiences. This can occur in the classroom or through out-of-school work-based learning activities. The National Career Academy Coalition encourages schools to build career themes based on the needs of the local community. Such a focus ensures that students will have opportunities to learn and participate in activities including work-based learning, job shadowing and career exploration prior to entering postsecondary education and the workforce. It also allows students to have a much broader exposure to a variety of career opportunities that they might not have considered, such as in the high-need STEM (science, technology, engineering and math) areas.

Numerous research studies have shown that context is critical to the learning process. Context has been described as “the integral aspect of cognitive events,”¹⁸ and the National Academies of Science “encourage the design of engaging curricula that apply to real-world situations.”¹⁹ The National Research Center for Career and Technical Education has found that “the creation of explicit connections between situations is critical if students are to transfer their knowledge and skills outside the classroom, whether it is to another context or to an abstract testing situation.”²⁰ While the idea of teaching fundamental skills in context is not a new one, its potential can be greatly enhanced through career academies.

ENGAGING BUSINESS AND INDUSTRY

In many educational settings, business leaders don’t know how to be effectively involved, and are pulled in many different directions or toward low-intensity activities like advertising or event sponsorships that, while valuable, will not directly impact career and educational outcomes. Business and industry engagement takes on a new, more intensive meaning through career academies. Career academies link the education and workforce development systems and can lead to

senior business leaders’ broader participation in community decisions about the direction of schools and programs. This adds even more relevance for students and strengthens the impact on achievement.

The business community sees involvement with career academies as a path to academic and technical improvement, not just one or the other. As has been discussed throughout this brief, there are critical student performance issues that must be addressed if students are going to be successful in the 21st century economy. Collaboration between business and education through career academies can drive down the dropout rate, improve academic outcomes and enhance technical skills, leading to greater community prosperity.

Career academies can provide local business and industry with a steady stream of interested and well-qualified employees. A long-term MDRC study of career academies found that these programs produced substantial earnings gains for participants. Academy students in the study averaged an 11 percent salary increase per year (\$2,088), and for young men, the increases were significantly higher and totaled almost \$30,000 over eight years through a combination of increased wages, hours worked and employment stabil-



At Pedro Menendez High School in St. Augustine, Florida, education comes alive for students through the exploration of medical and health careers. The

Flagler Hospital Academy of Medical and Health Careers²¹ allows approximately 250 students to gain the skills and experience necessary for entry-level jobs in health care and continued education and training at the postsecondary level.

Nearby Flagler hospital provides classroom space, lab facilities and clinical opportunities such as job shadowing and internships for students, as well as externships for teachers to learn more about integrating health-related content into classroom curricula, all with a goal of increasing the community’s supply of skilled workers. Hospital staff members even teach some of the coursework.

Students have the opportunity to earn free college credit through dual enrollment at St. Johns River Community College (with some classes offered on site at the hospital), participate in Advanced Placement courses, and earn multiple industry certifications. They take Allied Health Assisting, Anatomy and

other advanced medical courses like Health Care Law, Medical Terminology and Concepts of Disease.

As an example of a truly integrated education approach, academy students in an honors English course produce a wellness newsletter called *The Fit Falcon* to apply their language arts and medical skills. Students write, edit and design the newsletter targeted toward their peers. Newsletter topics have included recipes, health and fitness tips, and information on the importance of the flu vaccine.

Numerous career opportunities are presented to students throughout the program, ranging from nursing assistant to radiology technician to doctor. One student in the academy explained the effect of the in-depth career exploration activities, “The Pedro Health Academy has helped me in so many different ways. Since I started shadowing in the OB Department at Flagler Hospital, I have actually changed what I want to major in. I always dreamed of being a registered nurse but now I have found out that I want to be an OB/GYN doctor.”

ity.²² These earnings increases were achieved after more than 90 percent of the academy students graduated from high school, and the results were most concentrated for at-risk populations that are often hard to impact.

This potential has led local Chambers of Commerce to take a leading role in the reform effort. The Jacksonville, Florida, regional Chamber of Commerce includes “Promoting the development, quality and relevance of career academies in high schools” as one of three ways it seeks to enhance the education level of the area.²³ Businesses, through their chambers, are locking arms with their high school districts to change the way high schools deliver academics.

Workforce Investment Boards and economic development agencies are also getting involved to show broad support for the integration inherent in career academies. Career academies in Volusia County, Florida, are led by a partnership among Volusia County Schools, Flagler County Schools, Daytona State College, the Workforce Development Board of Volusia/Flagler Counties, Inc., and other business and community leaders that is known as “Career Connection.” The Career Connection provides career awareness, exploration and training to students throughout the high school experience and beyond.²⁴

Once businesses understand that there is a clear role for them to play in the education system that will improve workforce development, and that they can have a distinct impact on outcomes through CTE and academic integration in career academies, the potential is limitless. This kind of engagement can become the engine of high school reform in communities across the country.

DRIVING ACADEMIC ACHIEVEMENT

Through workplace relevance coupled with rigorous academics and relationships with business and industry, career academies change the way that high schools prepare students – influencing both teaching methods and curriculum. To date, traditional academic remediation models have not been successful in raising the level of student academic achievement to the necessary levels for college and workplace success, but career academies are poised to take a leadership role by approaching the issue from a different angle – one that adds relevance to rigorous academics.

Career academies have been shown to increase attendance, grades, test scores, high school graduation rates and post-secondary transition rates.²⁶ Students are more motivated and engaged, and more successful on traditional academic indicators.



In Philadelphia, a unique partnership has emerged to support the efforts of career academies. Philadelphia Academies, Inc. (PAI)²⁵ works with more than 29 career academies educating 6,500 career academy students. It was initiated to leverage greater collaboration between the business community and school district. An independent, not-for-profit corporation, PAI also works closely with parents, labor and other education institutions to address Philadelphia’s low graduation and low college-going rates.

Three mechanisms form the foundation of the PAI support plan – Industry Advisories, Volunteers and CEO Ambassadors for 21st Century Skills. Industry Advisories involve curriculum and policy-level business involvement based on nine industry areas of importance to the Philadelphia region. The Industry Advisories help to integrate work-based competencies in the high school curriculum. These Advisories have policy influence at the school district level.

Volunteers are solicited from the community and support the academies and students in a number of ways. Functions include serving as guest lecturer, providing a career day presentation, helping students practice for interviews, assessing classroom equipment and providing professional development for teachers.

The Philadelphia academies are focused on making learning more relevant and aligning the curriculum with 21st century skills. The CEO Ambassadors for 21st Century Skills is an ad-hoc committee of CEO and executive-level partners who meet annually to set an agenda that will ensure that the work-based curriculum provides mentoring and career experiences for students. Committee members work side-by-side with Philadelphia school district personnel, attending meetings and advising on curriculum and policy matters. The committee also advocates for continued industry investment and involvement and is visible throughout the year related to significant announcements and activities.

In Philadelphia, where career academies serve approximately 10 percent of the city's high school students, increased academic achievement for career academy students is the result of the high-quality business engagement and leadership described above. Students



In 2003, Sacramento City Unified School District implemented wall-to-wall academies in its six high schools and was supported by the Bill and Melinda Gates Foundation in starting a number of new career-themed small high schools. Sacramento saw significant gains in student performance after implementing the change.

From 2004 to 2007, the dropout rate decreased from 24 percent to 14 percent and enrollment in career and technical preparation or regional occupation programs (ROP) increased from 33 sections of ROP in 2002 to 112 in 2007-2008. Changing the city's six comprehensive high schools into 36 career-themed academies also led to a \$54 million increase in the city's general revenue due to the significant decrease in the number of dropouts. Some of this was also due to the transfer of 700 out-of-district students into the Sacramento City schools since 2004.³⁰

A key part of the city's success was based on its innovative business recruitment model that uses business people to seek out funding, equipment and volunteers to support the program. Businesses are closely linked to the school district's programs, providing mentoring and opportunities for real-world experiences in the workplace.

The city's program was based on seven essential elements:

1. Small, caring, personalized learning communities
2. Student-centered system with student supports and safety nets
3. Student pathways to the world of work and post-secondary education
4. Rigorous, relevant, standards-driven teaching and learning
5. Culture of continuous learning
6. Collective responsibility
7. Home-school-community alliances

In 2007, Sacramento City Schools was identified by the Ford Motor Company Fund as a Ford Partnership for Advanced Studies – Next Generation Learning Community at the Leadership Level based on 12 indicators of success that are associated with helping a community self-assess the quality and thoroughness of its career academy implementation plan.

in Philadelphia's career academies achieve a 90 percent graduation rate and transition to postsecondary education at a rate of 60 percent.²⁷

A study of California's 290 Partnership Academies by Connect Ed and the Career Academy Support Network released in 2007 also found remarkable student results. Graduation rates for academy students were 96 percent, compared to 87 percent for all California students. On the state's 10th-grade assessment, 84 percent of academy students passed the English/language arts portion, compared to 76 percent of all students; and 80 percent of academy students passed the math portion, while this was true of only 74 percent of students overall. Seventy percent of seniors graduating from academies planned to attend postsecondary education, and 50 percent had met the University of California a-g requirements, compared with just 39 percent of all students.²⁸

Career academy students also tend to need less academic remediation when going on to community colleges, and gain English language proficiency more rapidly. Career academy students had GPAs nearly half a point higher and test scores that were 30-40 percent higher than non-academy students in a 2000 study of Bay Area, California, academies by Maxwell and Rubin.²⁹

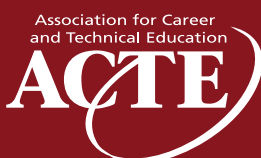
Conclusion

Through new and sustained investments in career academies, school districts and communities can reap the rewards of a school improvement model that works. At relatively little incremental cost, communities can leverage their investment in CTE and add value for students. Benefits of career academies include a more educated and stable workforce, a greater ability to attract new business to communities, reduced dropout rates, increased graduation rates, greater earnings among graduating students, and increased readiness for college.

Career academies can play a central role in high school improvement by integrating relevant career themes and engaging business and industry as leaders in the education process – resulting in the ultimate goal of increased student achievement.

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