

economic and workforce

DEVELOPMENT – K THROUGH 12 EDUCATION ISSUE

By Richard K. Delano and Katherine C. Hutton

Several workforce trends are converging which could represent a “perfect storm” for the economic growth of unprepared communities.

- 21st century workplace and technical skills have become more important than land and buildings. Critical, trained human capital must be developed through a complex educational system.
- 21st century workplace skills are becoming as or more important than basic technical skills. Educators are starting to recognize this and determining how to teach these skills.
- The retirement of baby boomers in key occupations is impacting the job market, resulting in potentially disruptive labor shortages.
- Many high-tax, high-cost communities will have to “grow their own” critical skilled workers as their markets become uncompetitive.
- Workforce and economic development is increasingly a K – 12 issue and many communities lag behind in understanding how business and schools must work together to make the K – 12 workforce connection.

This article will focus on workforce development and K – 12 education. It describes a leading high school redesign strategy called “career academies” and illustrates how economic and workforce development organizations are lining up behind this 21st century education redesign strategy.

THIS IS NOT YOUR FATHER’S VO-TECH EDUCATION

Forty years ago, the subject of K – 12 education would arise in economic development circles when discussing school quality for relocating managers. Then, employment demands were focused on line workers with a reasonably good work ethic. The



Business partners are an invaluable resource for career academies. High school students from Cathedral City, CA, were paired with adult mentors from the Coachella Valley Economic Partnership who arranged special programs like this tour of USC.

workforce development system, largely vo-tech and On-the-Job-Training, accommodated these needs.

In 2007, the global economy has clearly redefined the workforce skill set required for the 21st century workplace. Critical thinkers and problem solvers with attainment in reading and math are required for high-wage, high skill careers. Workforce development must be focused on literacy requirements needed to manage innovation through teams using advanced communication and problem-solving skills. Today’s workforce development system in most communities has not been fully mobilized and aligned to produce the employees with 21st century skills that expanding or relocating companies need and expect.

In many communities, business leaders and economic development officials are concerned about why the educational system can not deliver to the workplace job-ready employees or college-ready

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SMART DEVELOPMENT GROUPS ARE MAKING THE CONNECTION

The career academy is one of the most successful education-based models for developing the skills required for today’s workforce and developing a workforce that meets the needs of the local business community. The market’s need for high skilled, technology savvy workers and the exodus of boomers from the workplace sparked economic developers to become the catalyst for the creation of career academies. Economic developer driven, educator driven, and business partners models of career academies are examined with best practices for building and maintaining a career academy. Career academies are in 2,000 high schools nationwide and are viewed as key to education reform for both low performing schools and students.

students needed for our companies who are engaged in global competition and faced with a retiring workforce. This is particularly challenging because it is difficult to define and clarify a solution. Employers often blame education in general; colleges blame high schools, who blame middle schools, who blame elementary schools, who blame parents. The education establishment often looks at the business community, wondering why it is not doing more. Business points to the substantial investment it makes in remedial training for employees.

CAREER ACADEMIES SUPPORT ECONOMIC DEVELOPMENT AND WORKFORCE GOALS

Career academies differ from traditional academic and vocational education high schools by preparing students for both college and careers. Academies provide broad information about fields such as biosciences, finance, engineering, media, or health care. They weave the career themes into academic curricula that qualify students for admission to four-year colleges or universities and prepare them for the associated workplace. Students self select for the program and are typically moderate or marginal students in terms of academic performance. Studies have found that students in career academies perform better in high school and are more likely to continue into post secondary education, compared to similar students in the same schools.

Career Academy programs have a number of success stories in meeting the challenges previously described. Three examples of career academies illustrate how passionate educators along with business leaders can build this educational model necessary for the demanding 21st century workplace, achieve No Child Left Behind mandates, and reduce the remediation burden for schools and business alike. These examples illustrate how relevance and relationships can drive student engagement and success and are a clear option to remediation.

Each case is unique but all three build on several common themes:

- Urgency of the workforce situation. There is no greater motivator for prompting change than demand. These three communities realized the importance of fundamental change.
- Senior-level business and academic engagement. Certain roles can not be delegated. Leadership is one of them. In each case, leaders made a personal commitment.
- Alignment of business, institutional and philanthropic investment toward requirements defined by the school system's redesign strategy. Funding for effective programs can be redirected within the system toward a set of needs that K – 12 and post secondary leaders define.

- Selection of a successful secondary-school redesign strategy. Business and education need to come together around a redesign model proven to help educators meet the educational goals that local, state, and federal authorities define for them.

Coachella Valley Economic Partnership

The Coachella Valley Economic Partnership, located in the southern California desert, received a grant from the James Irvine Foundation to fund a career pathways initiative aimed at increasing the number of talented work force and college ready high school graduates in three fast-growing business clusters. Working closely with its three area school districts, it embarked upon improving the future workforce needed to attract its desired business base.

According to the Partnership's chairman, Bob Marra, "we found ourselves in a situation where we were outgrowing the capacity of our workforce here. It is hard to both fill the jobs that are needed to make this economy continue to tick, and to also attract the new companies we need to continue to grow. We need to do both."

With the grant, the Coachella Valley Economic Partnership is expanding the number of students learning in three high wage, high skill pathways that have been identified as essential to the valley's continued growth. These pathways are: health, energy and environmental technology, and multimedia.

Career academies are playing a central role in forging the link between the region's business community and its three school districts. According to Marra, "career academies are exactly what we need here in the Coachella Valley because young people in the region are looking for something where they can really dig into these career pathways...to see what it is like to be a nurse, to be an engineer."



High school students explore health careers at Eisenhower Medical Center, Rancho Mirage, CA.

Nashville Area Chamber of Commerce

The goal of Alignment Nashville in Tennessee is to create a system to bring community organizations and resources into alignment so that their coordi-

nated support to Metropolitan Nashville Public School's and District priorities has a positive impact on student achievement and public school success and the success of the community as a whole.

According to Tom Cigarran, operating board chair of Alignment Nashville and chairman of Healthways Inc., "aligning all this good will, people power, behind strategies of the school system will have a major impact on the success of our public schools."

This alignment of support behind Nashville Metro schools preceded a more recent development, the receipt of a \$6.75 million five-year Small Learning Communities grant from the US Department of Education. The grant provided the impetus for the creation of the Office of Redesign and Innovation.

One of this office's main charges is developing and implementing plans for the creation of career academies and other small learning communities in their comprehensive high schools. The Nashville Area Chamber of Commerce is responsible for economic development within the region and has defined target industries that, through Alignment Nashville, will assist Nashville Metro's Office of Redesign and Innovation in defining the types of career academies it will select.

Mesa School District

In Mesa, Arizona, Xan Simonson, a biology teacher at Mesa High School, saw the need for training high school students in biotechnology following the Translational Genomics Institute (TGen) decision to choose metropolitan Phoenix as its home in 2002. Arizona's bioscience efforts were accelerating at a significant pace with TGen's location decision and studies warned of a shortage of a qualified workforce in this now accelerated industry.

Simonson started a biosciences academy program at Mesa High School believing that her students' education should align with the state's biosciences initiatives and the increase in demand for workforce in the biosciences. In three short years, the program has grown from her grassroots efforts into a singular biosciences career academy in her classroom to biotechnology programs at three other Mesa district high schools and \$5.2 million in new labs and wet lab space being built by the district to support the biotechnology program.

The construct of the program allows for students, after two years, to make the transition to a two-year or four-year program. Mesa graduates may continue studies at Mesa Community College or one of the three Arizona universities. Recent studies conducted in conjunction with the state of Arizona show an immediate need for qualified bioscience laboratory technicians with demand outstripping supply by four-fold. Studies also reveal that the lack of skilled technicians coincides with the lack of a true "2+2+2 program" in which high school



Brittany Johnson, a senior at Mesa High School, works on cloning tissue from a fern in the school's biotechnology academy lab.

students are introduced to biotechnology and follow a seamless transition from high school to community college to universities.

Additionally, it was announced in late 2006 that some Mesa students in the academy will be working on a research project that involves decoding the genome of a bacteria and publishing the results. This project is a result of a \$900,000 grant from the National Science Foundation that will be conducted in conjunction with Arizona State University's Bidesign Institute and Polytechnic campus and Mesa Community College.

CAREER ACADEMIES

It is not enough for business and education to want to work together. They need a concrete plan built around a well-researched redesign strategy to make their time and energy pay off through a process they can manage. Each of the examples of business and academic engagement is being built around the career academy redesign model. Career academies bring together the dual benefits of a smaller learning community where students become part of a family with contextually-rich career themes that answer the question all high school students ask at one time or another: "Why do I need to know this stuff?"

Statistical evidence indicates that career academies improve high school attendance, grades, graduation rates, college going, and economic success after high school and college. Career academies are also believed to raise test scores, reduce remediation, and increase English language proficiency. Academies can be scaled up to any portion of or all of the student population.

The balance of this article provides an overview of career academies, describes the statistical improvement that is possible, and introduces a set of best practices for scaling up and sustaining a network of career academies. These “indicators of success” were developed by Social Marketing Services in 2006 with support from Ford Motor Company Fund and are being adopted by economic development agencies, chambers of commerce, and their education partners in communities across the country. In adopting these best practices, communities can qualify for a Ford Fund Career Academy Innovation Community (CAIC) status which brings technical support and modest grants. Career academy networks provide a new perspective and rich possibilities for communities regardless of location, size, or economic condition.

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THE EVOLUTION OF THE CAREER ACADEMY

The Academy Model was developed in Philadelphia in 1969 by Charles Bowser, the executive director of the Philadelphia Urban Coalition in alliance with the Philadelphia Electric Company and Bell of Pennsylvania. The goal was to create a program that would provide a new paradigm for students relative to the social and racial discontentment sweeping the community of Philadelphia and nation at that time. Career academies were implemented in order to create employment opportunities for students in Philadelphia’s disadvantaged ethnic groups and income groups while providing local employers with a qualified entry level workforce.

The original academy model reduced the scale of a high school student body into smaller learning communities – a school within a school. Course work is coordinated around a career theme and designed to prepare students with a full curriculum that supported the student in their career endeavors. This in-school effort was coupled with the creation of a linkage between the schools and area employers – proving employers with a skilled, localized workforce. Students self selected themselves for the program; additionally, the students were typically at-risk or marginal students. The academy

environment proved itself out as enrolled students improved and excelled.

In the past three decades, academies have both grown and evolved. There are active career academies in an estimated 25 percent of high schools according to the federal Department of Education. The nature of the curriculum has expanded to include everything from auto mechanic training and machine tooling to the biosciences, engineering, finance, and law. Today, academies exist not only in inner city schools but suburban schools in relatively affluent areas as well. In fact, an increasing number of elite high schools are adopting the academy model to improve the college/career choices their university-bound students are making.

CAREER ACADEMIES TODAY

Career academies need to be organized around trade and professional themes relative to the needs of and as defined by the community, with students self-selecting for application to academies. Most academies teach between 100 and 300 students in grades 9 or 10 to 12. Academy students are scheduled together with a team of teachers each academic year. In the best career academies, the team of academic and career teachers work together to enrich the academic courses through the integration of contextual projects and themes. Students enrolled in the academy typically participate in career-related experiences such as internships beyond the classroom instruction.

In 1995, career academy experts and their respective organizations agreed upon a common definition for career academies with three critical components:

- Small, safe, and supportive learning environments that are personalized and inclusive of all students.
- Challenging, rigorous, and relevant curriculum that prepares students for college, careers, and productive citizenship.
- Collaborative partnerships among educators, parents, businesses, and other community resources that broaden learning opportunities.

Several institutions support schools, districts, and businesses in developing career academies in their communities. The Career Academy Support Network at the Cal Berkeley’s Graduate School of Education (<http://casn.berkeley.edu/>), the National Career Academy Coalition (www.ncacinc.org), the National Academy Foundation (www.naf.org), and Career Academies (<http://www.careeracademies.net>) provide resources, information, advice, and support for career academies to utilize, access and contribute. An integral value to academies is the absence of hard rules for their creation, development, and management. Academies are designed to comply with local standards and policies defined by state education departments and local school districts. While this

design model is flexible, its success rests on fundamentals that must exist:

- Common planning time for academy teachers to discuss their students and how to integrate academic courses.
- Academy leaders should be provided release time to plan the activities of the academy students and build external relationships.
- Academy students should be scheduled together to the extent possible and consistently taught by the academic team in at least two academic courses.

The next horizon in career academy evolution is the creation of high-quality, integrated curriculum units. These units should be designed to teach appropriate academic standards for academic teachers through contextually based projects built around the career pathway.

STATISTICAL EVIDENCE OF SUCCESS

The academic challenges and need for change in today's high schools is part of today's social and political fabric. Low graduation rates and college-going rates are only two of the fault lines in public education. The promise of career academies can be measured by accounts from several career academies. Active since 1969, roughly 10 percent of Philadelphia's students attend 34 career academies. These students regularly achieve a 90 percent graduation rate with 60 percent moving on to college, year after year.

A study of Bay Area, CA, career academies by Maxwell and Rubin found that students enrolled in academies had the following success compared with non-academy students in the same schools:

- GPA nearly .5 of a grade higher
- Test scores 30 – 40 percent higher
- Drop out rate 50 percent lower
- 8.2 percent more continue to two- and four-year colleges
- 15.9 percent more go to four-year colleges

In the Sacramento City district, a Gates/Carnegie grant supported a district-wide system wherein nearly all students learn in small learning communities and career academies. What makes the following results particularly impressive is that all students, not just those who self select, learn in academies. We have the opportunity to observe the career academy "effect".

	2000/01	2004/05
Dropouts	24%	14%
Graduation Rate	79%	84%
Suspensions	1,852	1,292
Expulsions	44	5
Students sitting for the SAT	718	1,489

MDRC, a non-profit, research organization based in New York, determined that career academies substantially improved the labor market prospects of young men, a group that has experienced a severe decline in real earnings in recent years. Through a combination of increased wages, hours worked, and employment stability, the young men in the Academy group earned over \$10,000 (18 percent) more than those in the non-Academy control group over the four-year follow-up period. The sample of 1,400 students are 85 percent black and Hispanic. Full results can be obtained at: <http://www.mdrc.org/publications/366/overview.html>

STRATEGIES AND BEST PRACTICES

The best practices in career academies were observed in how education and external partners are working together in active career academy communities. The more successful career academies programs exist, the more defined the best practices are - providing a stronger foundation for developing a more effective design for and more effective career academies.

The strategies and best practices identified in career academies serve as the underpinning for the Ford Career Academy Innovation Community (Ford CAIC) recognition program designed to support academy communities. This Ford Motor Company Fund hopes, through its actions, to increase the number of students engaged in career academies and to sustain the students' career academies.

By focusing on communities and not on individual schools or districts, Ford Fund believes business, civic, and educational leaders can be engaged in the shared objectives of workforce and economic development. In 2005, Ford Fund provided the resources to determine strategies for building and sustaining career academies and best practices for career academies to provide guidance and information to existing and emerging career academy programs.

12 Best Practices for Scaling Up and Sustaining Career Academy Networks

1. Ensure the Establishment of a Career Academy Master Plan.

Career academy success requires the creation of a master plan that sets forth career academy annual and five-year growth goals. The master plan should be advised by economic development and community infrastructure needs and developed with the participation of the external and education partners.

2. Look to the Career Cluster Framework to Prioritize and Standardize Career and Technical Education

The State Directors for Career and Technical Education have organized all job specialties into 81 career pathways and 16 career clusters that

provide a useful framework for prioritizing career academy theme selection and helping students decide on career pathways. The framework provides the opportunity to clearly and visually explain the workplace to parents, students, educators, and business people.

3. Aim High – Seek out Growing Array of Academically Challenging Career and Tech Curricula

Take advantage of new developments in academically rigorous curricula. Ford Partnership for Advanced Studies and Project Lead the Way are excellent examples. Dubbed “new CTE”, these challenging new curricula provide a real opportunity to both integrate contextual content in academic courses and teach 21st century workplace skills.

4. Make Sure Career Academy Entrepreneurs Are Part of Master Plan

Career Academy Entrepreneurs are hired by the district or the local business community to fundraise for the career academies and ensure business participation. As career academy networks evolve, these entrepreneurs also balance support among academies and offer business a single point of contact.

5. Use Career Academy Evaluations for Continuous Improvement

A career academy evaluation rubric will ensure academies are successful. Academy leaders use the rubric to guide improvement. On-going evaluations also serve as a professional development tool for academy leaders, their administrators, and the business advisory community.

6. Centralize Magnet, Choice, Small Learning Communities, Career Academy and Career Technical Education Operations under One Leader

A career academy system should align all Career Technical Education and choice programs under a single district leader to focus reform energies toward a unified set of goals. Networks have failed because multiple points of contact within

a district provide conflicting communication channels and unneeded competition within a district for business attention.

7. Prioritize Funding Sources to Expand the Number of Career Academies and Increase the Quality of Existing Career Academies

Direct Perkins monies, small learning community grants, and foundation funding to launch of new career academies. Invest available new funding toward the expansion of your career academy system.

8. Look to Growing List of National Career Academy Supporters – Look for Resources from National Employer Associations

A growing set of National Employer Associations and leading businesses are supporting the career academy high school redesign strategy, providing a community with a set of prospective partners.

9. Develop Career Academy Marketing Plan

Everyone in the community needs to know about the academies...parents, students, business leaders and educators, particularly early in the academy's evolution. Great marketing plans reach down to elementary and middle schools, are presented in a variety of languages, and support academy visits by younger students.

10. Maintain Business Leaders Engagement

Keep business leaders at the table after the master plan is constructed. They have a vital role to play in creating a sustainable “culture” for academies. Great career academy networks need on-going, steady leadership from companies who understand the value of staying involved with educational leaders who value their commitment.

11. Understand, Defend, and Fund What Makes Career Academies Special

Develop a funding plan to ensure key academy ingredients remain a part of the career academy such as common planning time, release time for academy leaders, professional development, and priority scheduling. The improvement in graduation rates and all other measures is ultimately worth the minor “diseconomies of scale” which

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are likely when large, efficient, but often failing schools evolve into career academies.


12. Ensure Career Academy Provides Students with College Credit

A carefully designed plan provides students with a clear path to their future by ensuring that each high school career academy is affiliated with a post-secondary institution that will reward students with college credit. Encouraging close bonds between high schools and post secondary is a primary strategy in addressing our cycle of remediation.

CONCLUSION

Workforce and economic development are likely to face some of their most serious challenges in the next 10 years as the baby boom retires and global competition grows. A 21st century US workforce ready to meet this challenge is unlikely to evolve from a 20th century school system in which so many students are failing and even successful students are

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not making smart choices about the career choices when they go to college. The examples noted here provide solid evidence that business and education can unite around a high school redesign model that both prepares students for smart college and career choices and prepares a workforce locally that businesses can count on. 



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