

CLOSING THE SKILLS GAP

PREPARING OUR YOUTH FOR THE JOBS OF THE 21ST CENTURY



A policy brief from the Industry Workforce Needs Coalition, a business-lead initiative to *'increase the population of ready skilled workers in America through better alignment between the educational system and the opportunities created by industry.'*



ABOUT THE IWNC

The Industry Workforce Needs Coalition was created in 2012. Its mission is to increase the population of ready skilled workers in America through better alignment between the educational system and the opportunities created by industry. The Coalition's members represent both companies from a cross-section of industries, all of whom experience the skills gap in their hiring efforts, and educators concerned with providing students an education that will lead to fruitful opportunities. This policy brief is intended to open discussion about changes to the education system that would fulfill the IWNC's mission, both lessening the pain of the skills gap for employers and preparing the workforce for successful careers.

ABOUT THE AUTHOR

Michael H. Baum, principal of Sophia Consulting LLC, advises organizations on issues of education and management. A former high school English teacher, he spent two decades in management in the business sector before serving as CEO of Renaissance Learning from 1996 to 2002. He has since consulted in diverse areas including career education, math, writing, reading, assessment technology, science, parental engagement, and early childhood language development. He holds B.A. and M.A.T. degrees from Yale University and an M.B.A. from Northwestern. A board member of one of the firms involved in the IWNC, Mr. Baum volunteered his services in crafting this policy brief based on IWNC discussions and parallel research.

EXECUTIVE SUMMARY

Successfully coping with the challenges of our changing economy and persistent unemployment requires new approaches to education. Some of the biggest opportunities are in changing, on a national basis, the way that education is structured, funded, and delivered to students.

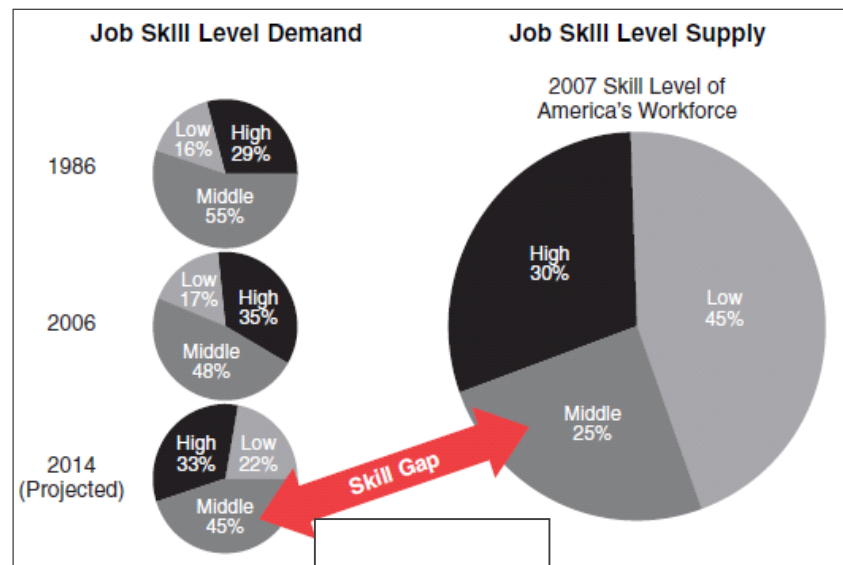
With participation from federal and state governments, educators and industry we can prepare students for high-wage, high-demand, high-skill jobs and improve the economy and international competitiveness. The IWNC – a business and industry collaborative – recommends the following initiatives:

1. Create an educational environment that encourages industry participation and support.
2. Collect, analyze and publicize industry needs for skilled workers, at national, state, and local levels, encouraging industry support for career and technical education (CTE) courses to prepare such workers.
3. Integrate CTE into overall education as broadly as possible, starting as early as possible with career development and exploration in each student's schooling, coordinating with STEM initiatives where feasible.
4. Acknowledge and encourage multiple pathways to postsecondary education, including four-year degrees, 1- and 2-year degrees from community and technical colleges, industry certifications, apprenticeships and employer-based learning
5. Discuss the value of CTE on the public stage through industry and governmental spokespeople and national media to change the perception of CTE among students and parents.

The IWNC believes that these initiatives will pay substantial short- and long-term dividends through more effective education, reduced dropout rates, higher participation and retention in postsecondary programs, and increased job placement.

WHAT INDUSTRY NEEDS TO PUT OUR POPULATION TO WORK

Today's struggle toward full employment is aggravated by the changing qualifications for good jobs, with which American education has not kept up. Compared to 30 years ago, our economy produces many more jobs requiring post-secondary education. But the workforce has lagged behind. We have only about half as many workers as needed to fill available "middle-skill" jobs – those requiring less than a four-year degree. This is a major and growing problem some call "the skills gap."



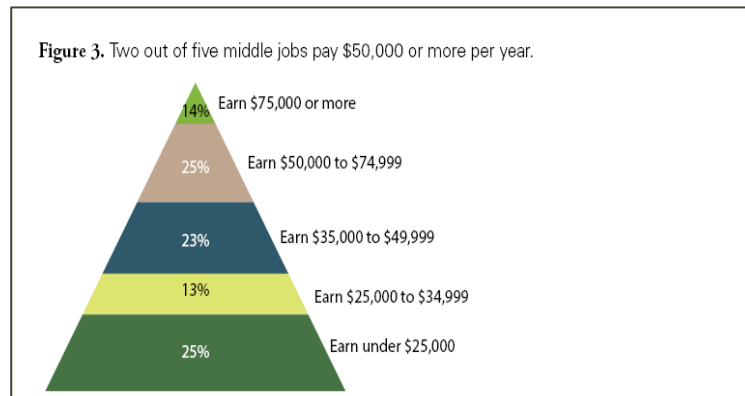
Growing industries in science and technology have twice as many openings as we have workers who can do the job.

– President Barack Obama, State of the Union address, January 24, 2012

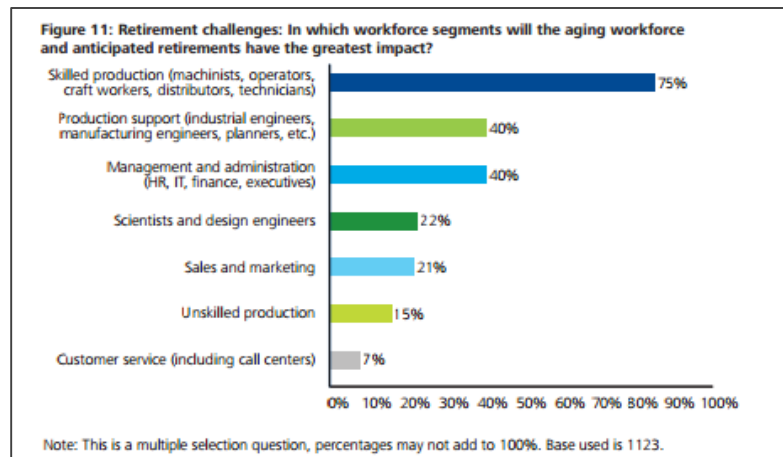
Skills in high demand vary by industry, but they share two common denominators: employability and technical skills. Need for technical skills cuts across a wide range of occupations, from "high tech" jobs such as web application development to traditionally "old tech" jobs like auto mechanics and steamfitting. Industries expected to generate fastest growth in well-paying, mid-level jobs include health care, information technology, manufacturing which, in their modern iterations, are heavily technology dependent. These are already areas of opportunity for workers and hiring difficulty for employers: they were listed among the top ten hardest jobs to fill in 2012, according to the seventh-annual Talent Shortage survey conducted by ManpowerGroup.

These jobs defy the stereotype that "non-professional" occupations are low-wage, menial, or dead-end. Most pay starting salaries at or above the living wage. Most offer potential for career growth. And all require and use

employability skills of critical thinking, creative reasoning, communication, collaboration, and fluency with media and information.



Unfortunately, too many youth emerge from our educational system lacking the technical and/or employability skills to take advantage of the job opportunities industry is trying to create. Unemployment rates among young adults 25-34 years old are the highest of any age group. This despite continued increases in college enrollment, now at an all-time high. The problem has begun to restrain economic growth and threaten our global competitiveness, with employers in many industries complaining they cannot find workers qualified to fill new openings or even, in some cases, to replace retiring skilled employees.



It is widely agreed that the goal of American education should be “college and career readiness.” It is time public policy emphasis included all three facets: academic skills, employability skills, and technical skills.

WHERE AND WHY OUR CURRENT EDUCATIONAL APPROACHES FALL SHORT

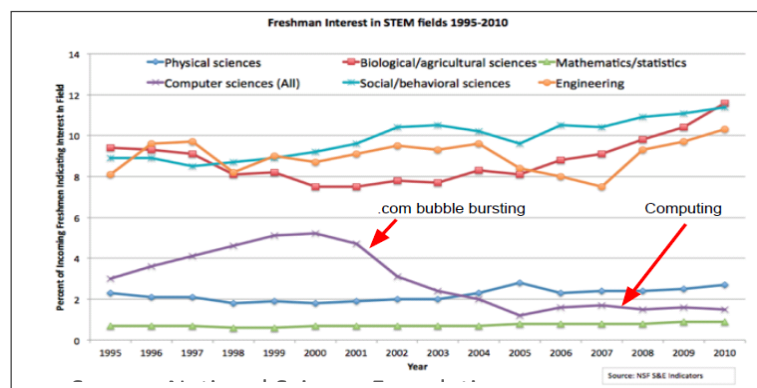
Students need the same set of skills for both college and the workplace....it's the job of the K-12 system to prepare them for both options.

-Secretary of Education Arne Duncan, 2011

Note that Secretary Duncan did *not* say that solely preparing students for four-year college automatically prepares them for the workplace. To solve the career readiness problem we must reevaluate and expand this definition to include the multiple paths to learning and earning students have today: career-based secondary programs including CTE, 1- and 2-year degrees from community and technical colleges, industry certifications and employer-based learning.

Four-year college degrees, of course, remain important as preparation for many professions, in addition to building students' ability to think and participate in society. But some students may choose not to or be unable to attend a four-year college immediately following high school.

Even students completing four-year programs may not find their degrees relating to career opportunities and may find themselves under heavy debt burdens while struggling to find gainful employment. For example, many of the fields that will produce the most jobs in coming years (see previous section) involve "STEM" skills – science, technology, engineering, and math. Of these, the biggest in terms of career potential are math and computing (information technology). These two majors are at the bottom of the list in terms of popularity with four-year college students.



Current initiatives to increase STEM teaching in K-12 are a very positive development that could be significantly enhanced by recognizing STEM's commonality with career and technical education. Promoting STEM together with focus on specific types of jobs, starting in elementary school, would have

the dual benefits of getting students thinking about career directions early plus teaching through real-world applications which improve student engagement.

Some rapprochement with core academics has recently begun at the state and local level and the Common Core State Standards' requirements for application of knowledge and skills in both teaching and assessment is further focusing on the need to better integrate academic education and CTE. But overall, CTE is still segregated, not universal, provided late in students' school experiences, and regarded with misunderstanding – sometimes suspicion – by parents.

The reality is that when career preparation is integrated into academics and vice versa – when “college and career readiness” becomes more than just a phrase – both areas gain.

It is past time that the benefits of career education be universal, starting earlier in students' lives, and focused on skills and jobs that align with the needs of industry and offer brighter futures to our graduates.

RECOMMENDATIONS FOR POLICY AND ACTION

After a year of discussion and deliberation among representatives from K-12 education, industry, academia, and media, the IWNC recommends adoption, at both federal and state levels, of initiatives to fully integrate education for careers into K-12 education nationwide – not just in isolated “movements” or select students, but for all students starting in early in their educations.

To attain this goal, we recommend the following five initiatives:

1. INDUSTRY SUPPORT

Encourage industry groups and individual firms to join a national organization (through IWNC or other) to participate in program development

Seek funding from industry for:

- Development of the balance of the initiatives
- Programs to be provided to schools to teach regionally-needed skills
- PR initiatives (below)

2. STUDY AND RESEARCH INDUSTRY NEEDS

Create a comprehensive survey, by region, of current and projected job opportunities matched to the supply of skilled workers, and generate:

- An annual State of the Workforce whitepaper
- A national database to match funding, courses, industry needs, student awareness

3. INTEGRATE CAREER PREPARATION INTO OVERALL EDUCATION

Break down the historical isolation of CTE from mainstream subjects and scheduling and start career exploration earlier in students' lives.

- Recognize how CTE is a continuation of goals of Common Core State Standards, with emphasis on hands-on learning, and integration of language arts and math in other subjects
- Recognize the natural affinity between STEM & CTE and implement both more widely and at earlier grades
- Create “playbooks” to guide both educators and local business people in creating business/education partnerships to support job-related courses as well as workplace-related activities and job placement

4. ACKNOWLEDGE AND ENCOURAGE ALTERNATIVE PATHS TO HIGHER EDUCATION

Shift the policy message at all levels from focus on 4-year-college diploma to focus on post-secondary education of various kinds depending on student need and aptitude and industry needs and employment opportunities, recognizing that post-secondary education should not be a single model or a one-time occurrence.

- Foster measures of secondary school success that include but go beyond graduation rates to include participation and completion of all forms of post-secondary credential
- Encourage secondary students to acquire credentials during or as an extension of high school
- Certification programs as outcomes of high school courses
- Dual-credit classes for 1- and 2-year degrees simultaneous with, or immediately following, diploma

5. POLICYMAKER AND PUBLIC AWARENESS

Discuss the value of CTE on the public stage through industry and governmental spokespeople and national media to change the perception of CTE among students and parents.

- Engage policymakers in the discussion and encourage their use of the bully pulpit to promote CTE
- Communicate the value of CTE to non-CTE educators
- Educate parents on the opportunities available to their students to reach gainful employment including CTE and the multiple post-secondary learning paths

A PARTNERSHIP FOR OUR FUTURE

Integrating and expanding career and technical education, with support from industry and alignment with industry's needs, can open new pathways to careers and fulfilling lives for our young people – while accelerating job creation and improving international competitiveness.

The timing has never been better. Changes in standards and educational technology in K-12 schools make integration more feasible than ever before. And industry, hungry for an appropriately educated workforce, is ready to help. Support of career preparation – as part of overall educational reform – is something everyone can agree on.

A partnership at all levels – federal and state, education and industry – is what we need now to seize the opportunity.

SELECTED REFERENCES

- ACT, Inc. (2010). A first look at the Common Core and college and career readiness. Iowa City, IA: author.
- ACT, Inc. (2011). Breaking new ground: Building a national workforce skills credentialing system. Iowa City, IA: author. Downloaded from www.act.org/workforce.
- Carnevale, A.P., Jayasundera, T., Hanson, A.R. (2012). Career and technical education: Five ways that pay. Washington, DC: Center on Education and the Workforce, Georgetown University.
- Complete College America. (2011). Time is the enemy. Washington, DC: author.
- Duncan, Arne. (2011). The new CTE. Prepared remarks at the release of the “Pathways to Prosperity” report from the Harvard Graduate School of Education Pathways to Prosperity Project, 2/2/11.
- Duncan, Arne. (2011). Rigor, relevance and the future of CTE. Prepared remarks for joint meeting of the National Association of State Directors of Career and Technical Education Consortium (NASDCTEc) and the U.S. Office of Vocational and Adult Education, 4/19/11.
- Grunwald Associates LLC. (2012). Tracing student performance in career and professional education: Technology coursework related to better attendance, higher GPAs in Florida. Bethesda, MD: author.
- Manpower Group. (2012). Manpower Group Annual Survey Reveals U.S. Talent Shortages Persist in Skilled Trades, Engineers and IT Staff [Press Release]. Retrieved from: <http://www.manpowergroup.com/investors/releasedetail.cfm?ReleaseID=677493>
- Mass Tech Hub. (2012). STEM and computing in MA. A proposal to the Governor’s STEM Advisory Council, December 2012. Boston, MA: author. Downloaded from <http://www.masstechhub.org/sites/default/files/TWG%20Computing%20in%20Mass%20Presentation%20v1.7.pdf>
- MetLife. (2010). Survey of the American teacher: Preparing students for college and careers. New York, NY: author.
- National Governors Association. (2011). Degrees for what jobs? Raising expectations for universities and colleges in a global economy. Washington, DC: author.
- Parker, Kim. (2012). The boomerang generation: Feeling OK about living with Mom & Dad. Washington, DC: Pew Research Center. Downloaded from <http://www.pewsocialtrends.org/2012/03/15/the-boomerang-generation/>
- Symonds, W.C., Schwartz, R.B., & Ferguson, R. (2011). Pathways to prosperity: Meeting the challenge of preparing young Americans for the 21st Century. Report issued February 2011 by the Pathways to Prosperity Project. Cambridge, MA: Harvard Graduate School of Education.