

**Higher Education Reform:
Overselling College and Underselling Learning
Citizens League Higher Education Committee Statement**

Preface: The following statement was put together by the Citizens League Phase I Higher Education Steering Committee. Our group was comprised of individuals with diverse perspectives on higher education and included representatives from the higher education community, K-12, employers and the general public/taxpayers. As we met over the course of several months it became very clear that the promise of higher education is something highly valued and deeply personal. While this statement may not represent precise perspectives articulated by individual committee members, it does represent the core of what we have come to believe is important to Minnesota's future. We offer it as a first important step in helping others think about and make progress in higher education reform.

The history of higher education parallels the history of our democracy and our economy. When Thomas Jefferson famously argued that an “informed electorate” was the foundation for self-governance in a democracy, he meant that we have a collective responsibility to produce an informed electorate capable of self-governance. He was not implying that only those with formal schooling were “informed.” Indeed, for generations, our democracy and our economy prospered with only a small percentage of the population attending (mostly private) post-secondary institutions.¹

Over the generations, the threshold for being “informed” has escalated, and accordingly, we took great leaps forward in post-secondary education: first with the establishment of Land Grant institutions, and then with the G.I. Bill. In each of these case, higher education was opened to more of the citizenry in revolutionary ways.²

We are at another turning point, and again need revolutionary changes. The movement to a fast-paced, global knowledge economy has catapulted what it means to be “informed.” Education—for *all* – is now indisputably the cornerstone of our economy and good citizenship. Post-secondary education is likely to be required for two-thirds of future jobs, and there is an increasing similarity between the skills that make someone a good citizen (decision-making, problem-solving, communications, discernment, perseverance, etc) and the skills that make a good employee or a good family member. The public vitality of our country and the private good of its citizens demand a higher level of skills and knowledge—a level traditionally associated with post-secondary education.³

All of us have a stake in educational outcomes, just as all of us—institutions and citizens alike—bear some of the responsibility for creating an informed citizenry. Our collective skills and knowledge set the parameters for how our democracy functions, how our economy grows, and how our communities prosper. It's no longer sufficient for higher education to work well for a segment of the population, which it does reasonably well in Minnesota. And while there is evidence of good work being done to improve post-secondary, it's not sufficient if it's not getting to the outcomes we need.

In this statement, we propose that higher education meet the following three challenges if it is to fulfill its role as facilitator of economic and cultural advancement.

1. 21st century workers must possess the skills to “invent, adapt and reinvent” – both on the job and their careers overall.

2. Citizens need to have easy access to learning opportunities over the course of their lifetime
3. Within the K-12 system (and beyond), students need help identifying, navigating and ultimately creating, career pathways.

The Purpose of Education

In this statement, we define “higher education” as any formal education past high school, i.e., post-secondary education. This includes 4-year colleges and universities, technical training, community colleges, certificate courses, continuing education, on-the-job training, etc. The purpose of learning beyond high school (higher education) is to advance society by preparing individuals with the knowledge, skills and abilities needed not only to manage, but thrive in, modern conditions.

For prior generations, an 8th grade education was the minimum amount of education necessary to be a “contributing” member of society. More recently, the minimum standard was a high school diploma. We believe the realities of life in the 21st-century require some learning beyond high school. Along with this reality, comes the imperative that all students graduate high school with the basic skills and knowledge needed to manage in, and contribute to, our society. As it is now, the PreK-12 system is not successfully establishing this foundation for far too many students.

A Matter of Urgency

We often hear of the importance of education to individuals’ lifetime earnings.⁴ However, education is also fundamental to American civic society, social-wellbeing, community vitality and economic growth. In addition to the private, individual benefits of higher education, there are numerous *societal* benefits to having an educated citizenry, many of which provide a financial return on the public’s investment in higher education. These societal returns include economic growth, increased tax revenues, lower public spending on social support and incarceration costs, more volunteerism, and healthier lifestyles.⁵

The outcomes we need from higher education are more important than ever. Yet the context in which higher education operates has changed mightily, in ways foundational to its role and how it functions. Moreover, these changes bring to bear an immediate and unrelenting pressure for *action*. The “societal premium” for advanced competencies, knowledge and skills is higher than ever, and we need these skill sets *now*.

- **Future economic growth is contingent on major productivity increases.** Minnesota is in the midst of a decline in the growth of the labor force, a decline that will continue for another twenty years. If Minnesota’s economy is to grow at all, the Minnesota workforce must become more productive. To replicate the average economic growth of the past four decades, we’ll need productivity growth that far surpasses what we’ve achieved over those same decades. This stark fact puts a premium on the productivity of each and every worker. But 75% of the 2030 labor force is already in the labor force. A pivotal path to greater productivity is to improve the educational levels of all workers.⁶
- **Segments of the population are un- or under-served.** Over the next twenty years, Minnesota’s nonwhite and Latino populations will grow at a far more rapid pace than the white population. Yet, the achievement gap in educational levels between whites and non-whites or Latinos in Minnesota is among the worst in the nation. If this continues, entire groups of people will fail to recognize their maximum

potential. While this achievement gap should be addressed no matter what percentage of the population is made up by nonwhite populations, their growing numbers place greater pressure on their success in order to promote individual well-being and economic growth for our state.⁷

- **Global competition is fierce.** The US economy is inextricably integrated into a single, global market for goods, information, workers and capital. Competitiveness matters; yet for example, in 2010 U.S. teens were 17th globally in science test scores and 25th in math. If we want our economy to grow, our workers need to have the skills set required to contribute and compete in the global economy.⁸
- **Technology and globalization have upended work—and life—as we know it.** The rapid transfer of information, greater human diversity and capability, partnerships with developing nations, competition for declining natural resources and rapid technologic innovation have resulted in a world that is much more interconnected than in prior generations. These changes have greatly impacted the nature and structure of technology and the economy, and therefore jobs, and make it unlikely that we can successfully predict the exact skills that will be needed in five or ten years. Lifelong employment in any given job, or even occupation, is increasingly uncertain. Many manufacturing jobs have disappeared and those that still exist increasingly require formal education beyond high school. Many middle-skilled white collar jobs are also becoming extinct. Expanding markets, in countries like China and India, offer easy access to labor (low- and high-skill) and capital at cheaper prices. Even jobs that remain will likely require a continual updating of knowledge and skill sets.⁹
- **Fiscal pressures on state governments will remain challenging for the foreseeable future.** Minnesota, like many states as well as the federal government, has a structurally imbalanced budget, primarily as a result of demographics— fewer workers paying taxes compared to retirees with health care costs. We can expect state sources of funding for higher education to be squeezed even more. All of the challenges outlined in this statement will be impacted by this.¹⁰
- **The cost and traditional structure of higher education no longer matches the needs of the student body.** While higher education used to serve the elite of our society, it now serves a broader population—roughly 70% of high school graduates enroll in post-secondary education. Furthermore, 70% of undergraduate students fit a “non-traditional” profile: they are older, single parents, financially independent, have dependents, and/or attend part-time or work full-time. Completion rates are low (about 30% finish a 4-year degree in six years) and costs are soaring. Since 1980, inflation-adjusted published tuition and fees have increased 286% in private colleges, 263% in public two-year colleges, and 359% in public four-year colleges. Student loan debt is at an all-time high, recently passing credit card debt in total volume. College is increasingly out of reach for many families, yet we must find ways to equip workers with critical workforce skills.¹¹
- **Employers are having difficulty finding workers with the right skills.** Even in the midst of a recession with the highest unemployment rates in decades, some jobs are going unfilled because employers are unable to find workers with the appropriate skill sets, and Minnesota is no exception. According to the 2011 Minnesota Skills Gap Survey, 45% of responding manufacturers considered the shortage of skilled workers to be a moderate or serious problem. In an economy driven by productivity gains, we can no longer afford such mismatches; individuals not only need the ability to find a viable career path, but also to switch to another when necessary.¹²

Three Key Challenges

Because the world, particularly the economy, is changing so radically, the only way education can continue to produce economic prosperity and social mobility is to reform the way we educate. If Minnesota is to have a workforce and citizenry equipped with the knowledge, skills and abilities to meet the future needs of our state, three strategic challenges must be met.

- (1) **21st-century workers must possess the skills to “invent, adapt and reinvent” – both on the job and in their careers overall.** We must ensure *all* students graduate from high school with a core set of “knowledge economy” skills, which includes critical thinking, problem solving and interpersonal skills. Institutions of higher education, in all their forms, must be able to depend on core skill sets, and advance that set of knowledge, skills and abilities to assure that people can indeed, “invent, adapt and reinvent” in the face of the 21st-century’s rapidly changing environment. To be sure, “hard”, technical knowledge and skills are important for many. But 21st-century, “knowledge economy” skills are critical for all. Excelling at work, citizenship and self-governance, whether in one’s personal life, community or globally, demands this set of thinking, coping and interpersonal skills.¹³
- (2) **Citizens need to have easy access to educational opportunities – both formal and informal –over the course of their lifetime.** Three issues converge here. First, lifetime employment is no longer a guarantee; many manufacturing and middle-skill jobs are moving to overseas markets or becoming automated. Second, approximately 75% of Minnesota’s 2030 workforce is already working, which means they are beyond the reach of the K-12 system. And third, an increasing share of today’s undergraduates have to balance formal education with families and/or jobs. This means we need to look not only to formal higher education, but also workforce training and other learning opportunities to play an exponentially larger role in ensuring our workforce is prepared to meet 21st-century needs. We need to develop a workforce and education system built around the idea that higher education is not a one-time, four-year experience, but, instead, is a continuum of educational experiences. We must create accessible entrance and exit ramps to affordable and productive learning opportunities.¹⁴
- (3) **Within the K-12 system (and beyond), students need help identifying, navigating and ultimately creating, career pathways.** Most career counseling consists of “go to college, you’ll earn more money.” This sort of advice is a disservice to our young people, our society and our workforce. While approximately 1/3rd of Minnesota’s jobs in 2018 will require a four-year degree, the majority (67%) will not. Pushing all students towards college could be *causing* some of the problems that plague our system of higher education – including longer times to completion, increased student debt, decreasing completion rates, lower overall attainment rates, etc. Students need more and better information about career and learning pathways that allows them to make sound choices and maximize their potential. This not only includes better information about post-secondary education options, but also more hands-on, experiential learning and work-learn partnerships with employers beginning in the K-12 system. The goal should be to cultivate and nurture human capital by helping young people find a meaningful direction that fits their unique profile and help them start on their way.¹⁵

Levers for Change

We believe that well-conceived actions in five key areas would possess the leverage required to bring about meaningful reforms in the challenge areas outlined above:

- (1) **Money.** Systems produce the results for which they are rewarded. All systems respond to the “rules” under which funds are allocated. If designed well, these allocation formulas provide powerful incentives that help create the outcomes we desire, or, if poorly designed, can produce negative consequences. If the goal of higher education is to produce a high-functioning worker and citizen, we must view financial resources holistically and also understand what types of incentives are being created. For example, if we are to place an emphasis on lifelong learning financial resources need to be deployed differently. The current system views money spent on K-12 education, higher education, job training and development and employer (on-the-job) training as distinct pots of money and each pot rewards different outcomes. How might we realign and reallocate public and private financing to support lifelong learning and re-learning?
- (2) **Credentials.** We have consistently hammered “college, college, college” into the heads of students for the past twenty-five years—repeating the statistic of how much more money they will make with a 4-year degree. Pushing college for all may not be in the best interests of individuals, society, our workforce or our democracy. What is in the best interests of all is producing *knowledge, skills, and the love of continuous learning*. How we credential this matters. The credential is supposed to mean that the holder does in fact possess a specific set of skills and knowledge. But there is increasing skepticism, especially among some employers and researchers, about the value of today’s BA.

Institutions of higher education currently have a virtual monopoly on credentialing. This heavily favors *completion* of degree programs as evidence that skills and knowledge have been acquired. This credentialing system also heavily favors the award of full degrees at the institution in question, rather than recognizing composite skills as well as knowledge and skills learned along the way from other institutions or life or work experiences. Alternative credentialing processes could be (in fact, already have been) established that would award a credential based on the demonstration of skills and knowledge, not seat time or credit hours. Institutions, such as Western Governors University and Open Educational Resources University, provide alternatives to traditional institutions and focus on outcomes. They allow students to move at their own pace and offer credentials for much lower costs than their traditional counterparts. Enabling a demonstration of competency in key skills sets could allow individuals to gain a credential at a lower cost, more quickly and respond to rapidly changing workforce expectations.

- (3) **Employers.** Students overwhelmingly say that the reason they attend postsecondary education is for jobs. Their goal is to be attractive to employers; in this respect employers play a pivotal role. While employers often provide training to employees once hired, they tend to leave the bulk of the heavy lifting to the K-12 and post-secondary systems. While some are beginning to express considerable dissatisfaction with the skill sets of graduating students, most continue to rely on the “degree” as a minimum requirement for hiring with little or no assurance of what the “degree” actually represents. Greater involvement in education by employers could go a long way in equipping young people with valuable skills and experience and meeting workforce needs. There are proven benefits in work-learn partnerships like apprenticeships and internships.

There is also considerable value in having employers state specifically what skills and knowledge they want in employees, unambiguously communicating that need and then assessing to be sure they are getting it. Employers cannot be passive in addressing the challenges facing higher education.

- (4) **Metrics.** What is measured matters to outcomes. Measuring the wrong thing is wrong headed. For example, “time to completion” has become a ubiquitous measure of the efficiency of higher education institutions. As a broader swath of society has entered post-secondary and students are less “traditional” the time to completion has been drawn out. As a result, measuring six and eight year completion rates is now commonplace. The number one reason for prolonged completion rates is that students must work to pay for college. The outdated focus on a “compact” education can lead to counterproductive policy choices, such as making the rates for part-time tuition more expensive than full-time tuition in an effort to incentivize students to complete faster. Rather than time to degree attainment, we should focus on the acquisition of skills, competencies and knowledge, which would offer a more concrete measure of educational effectiveness and better incentive progress.
- (5) **Students!** Student choices are a powerful market force in shaping higher education. Yet career advice to students consists almost exclusively of “go to college, get a degree.” As a result, many students are not very savvy consumers of education, or astute decision-makers about their career choices. It is imperative to provide students with a better understanding of career options, and the skills and knowledge required for those careers. Students need information on their aptitudes and interests, but also career and educational options, costs and outcomes. Informational signals between higher education, students and employers must become more immediate and clear. Some of the most successful ways to accomplish this include apprenticeships, on-the-job training, internships/mentorships and technical education in high schools. These give students a much richer view of their career options, improve the relevancy of their high school course work, and have also been shown to produce superior outcomes as measured by test scores, high school completion and college enrollment.

Those who share in the benefits of higher education (all of us) also have a share in the responsibility for reform. Individuals, students, institutions, employers and elected officials will all be needed to move the issue forward and ensure Minnesota is prepared to meet the oncoming demands of our state, our society and the global economy. Indeed it cannot be thought the job of others; we all play a role and we must do so in order to preserve and enhance the vitality of individuals and our communities.

Direction for Designing Reforms

It's easy to say that people need a broader skill set, lifelong learning, and more effective career guidance. Challenges such as these are typically addressed with more money. However, it's not clear that money is the answer. If funding formulas provide perverse incentives, or encourage outcomes different from those most needed by society, more money will not work.

In the next phase of this project, significant attention should be given to understanding the current incentives at work in institutions of higher education, among students, and among employers when they make hiring and training decisions. There may be legal or regulator barriers, cultural practices, or funding formulas to overcome. Reform of the scale and scope envisioned –that is, an entirely higher plateau of learning for all Minnesotans—

will require careful attention to understanding why the existing system behaves as it does. Critical questions include:

1. What are the basic skill, competency and knowledge sets required in a 21st-century knowledge economy that Pre-K-12 must impart?
2. What are the skills, competencies and knowledge sets required in a 21st-century knowledge economy that higher education must impart?
3. How is it possible to (validly) measure and certify the skills, competencies and knowledge in questions 1 and 2? By whom? How can we confirm that credentials mean what they claim to mean?
4. Are there barriers (institutional, legal, organizational) that have been imposed in credentialing that make the process of gaining the requisite and skills and knowledge for any given profession more time-consuming and expensive than is necessary?
5. By which standards and measures should Minnesota be gauge its educational outcomes?
6. What is the optimal relationship between formal institutions of post-secondary learning, publicly funded workforce training, employer-based training and individually initiated learning?
7. How do our funding formulas—for public colleges and universities, PSEO, worker training, and student grants and loans—encourage or discourage: a) the acquisition of the skills, knowledge and competencies in question 2; b) the opportunities for workers to access learning throughout their lifetimes; c) improving the information and educational choices available to our citizens.
8. How can employers play a more effective role in assuring that learning beyond high school meets the needs of the 21st-century?

The Citizens League will be initiating Phase II activities in the fall of 2011. While the exact shape of Phase II is still being determined, the goal of Phase II is twofold: (1) to answer a subset of the critical questions framed up in this document in order to better understand why the existing system behaves as it does so that we can (2) to design policies and/or products that begin to address the three challenges set forth in this statement. Anyone interested in Phase II should visit www.citizing.org/projects/highered for more information.

APPENDIX

¹The scope of the education provided has long changed in response to the needs of the economy and our political system. At the turn of the twentieth century, nearly 30% of high school graduates received their college degree four years later. But only six percent of 17-year olds had high school diplomas (National Center for Education Statistics, 2010). Most education was reserved for the elite of our society and the vast majority of “work” required no formal schooling.

²As our social, political and economic systems transitioned from being driven by a small elite, to those where the capacities provided by education were necessary in almost all aspects of society, the common school was born. High school graduation became important. As the economy became industrialized, firms viewed high school graduates as far superior to workers without secondary school training, and sought them as office and blue collar production workers.

In discussing the historical contributions of the educated masses, the online magazine, *Slate*, reported:

In the early part of the 20th century, office workers had to know how to operate typewriters and adding machines. They had to master bookkeeping, billing procedures, and stenography. These and other necessary skills were more easily acquired by high-school graduates. The need for high-school-educated employees was not confined, as you might suppose, to the rapidly growing white-collar workforce. Farmers had to master elementary genetics to grow hybrid corn. Factory workers often had to know algebra and geometry, how to read mechanical drawings, and at least the basics of how electricity worked. As early as 1902, the personnel chief at National Cash Register Company in Dayton, Ohio, said, "In the factory we like the boys to have a high school education if possible." The need for ever-more-educated workers persisted to the point that by the century's end, college displaced high school as a threshold requirement (Noah, T.).

As the U.S. economy changed, postsecondary education followed a trajectory separate that of K-12. The state provided a free public education through K-12, while the focus at the postsecondary level was to expand access to higher education by subsidizing costs. The Land Grant university was an early form of state interest in higher education. Likewise, the GI bill brought about greater participation levels in higher education.

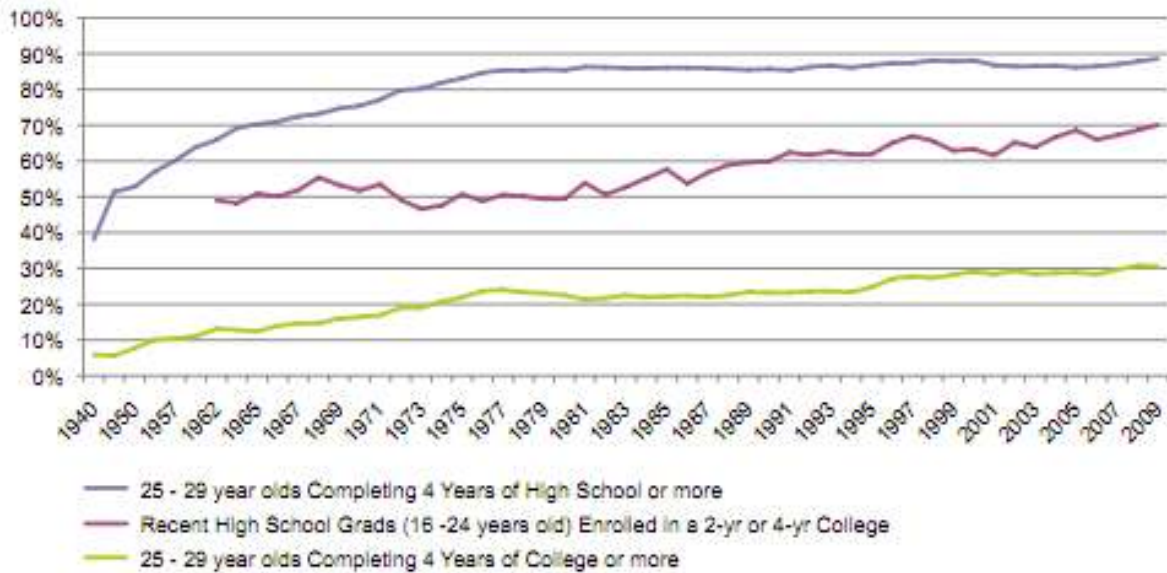
At a national level and here in Minnesota, the primary strategy over the last 50 years or so for raising the educational level of citizens has been to increase access to higher education—through subsidies, loans and grants, geographic dispersion of facilities, the introduction of remedial/preparatory coursework at the college level, and affirmative action programs. Roughly 70% of high school graduates attended some form of postsecondary education immediately after high school in 2005, compared with 58% in 1985 and 51% in 1965 (National Center for Economic Statistics, 2010). However, completion and attainment rates remain a national challenge.

- The growth in total college degrees is declining, particularly among men (see chart, page 3).
 - Nationwide, approximately 30% of the population obtains a college degree, despite decades and millions of dollars trying to increase this percentage (Complete College America, 2011).
 - Recent research suggests that this decline is occurring not because high school graduates are not entering postsecondary education, but because the number of high school dropouts is on the rise, especially among men. Some question whether the singular focus on college as the only post-secondary option leaves many students unable to find a path that fits their aptitudes, interests or circumstances (Pathways to Prosperity, 2011).
- Low completion rates
 - For every 100 9th graders in Minnesota; 85 graduate high school, 59 enroll in college the year after high school; 40 remain in college their sophomore year; 28 graduate within 150% of program time (NCHEMS2, 2011).
 - While the percentage of students attending postsecondary education has increased, attainment has remained flat for decades. (Complete College America, 2011)
- Longer times to completion
 - According to the Gates Foundation's *Complete College America*, just over half of students who enroll full-time in 4-year bachelor's degree programs graduate in six years and less than 30% students who enroll full-time at community colleges graduate with an associate degree in three years (Complete College America, 2011).
 - The most common reason for prolonged completion periods is that students must work to help pay for their college education, suggesting that "access" has many facets and must be geared to the realities of students' lives (Johnson & Rochkind, 2011).

At the same time, rapidly increasing college costs have presented another type of challenge to participation as well as completion.

- Since 1980, inflation-adjusted published tuition and fees have increased 286% in private colleges, 263% in public two-year colleges, and 359% in public four-year colleges (College Board, 2010).
- Some assert that government subsidies drive up the cost of college. The empirical evidence is mixed.
- Today, two-thirds of graduates have student loans, compared to about half 15 years ago, and the average debt is now double what it was then. In Minnesota in 2010, 71% of seniors graduating with a four-year degree had student debt at an average of \$29,000 (The Project on Student Debt, 2011).

GROWING ENROLLMENT HAS NOT PRODUCED NEARLY AS MANY DEGREES



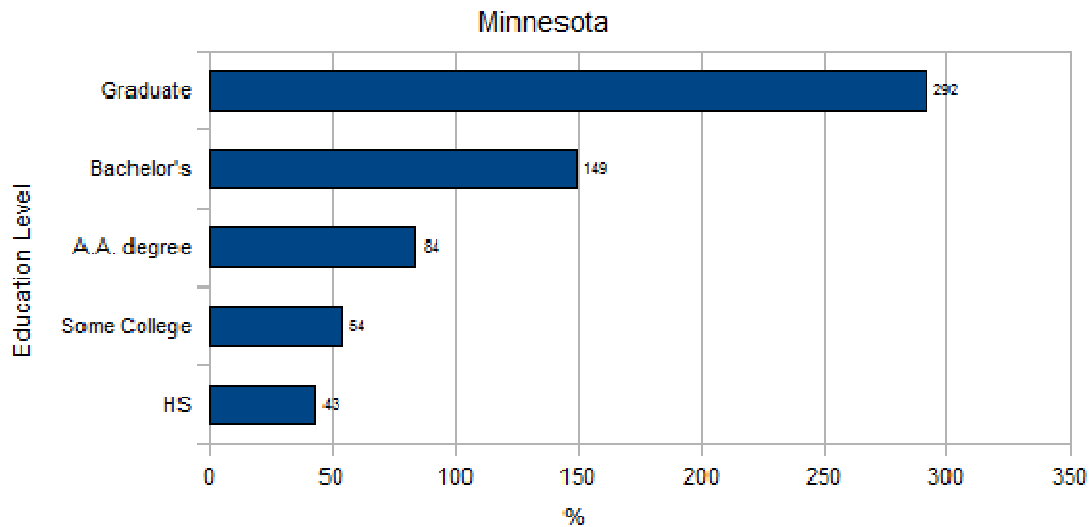
Source: Bridgeland, et. al., 2011

³ The importance of higher education to individual well-being, society, and economic growth is well established. Higher education, and education more generally, contributes to human capital formation—the lynchpin to productivity and innovation—and therefore to better wages, higher standards of living, upward economic mobility, economic growth and job creation.

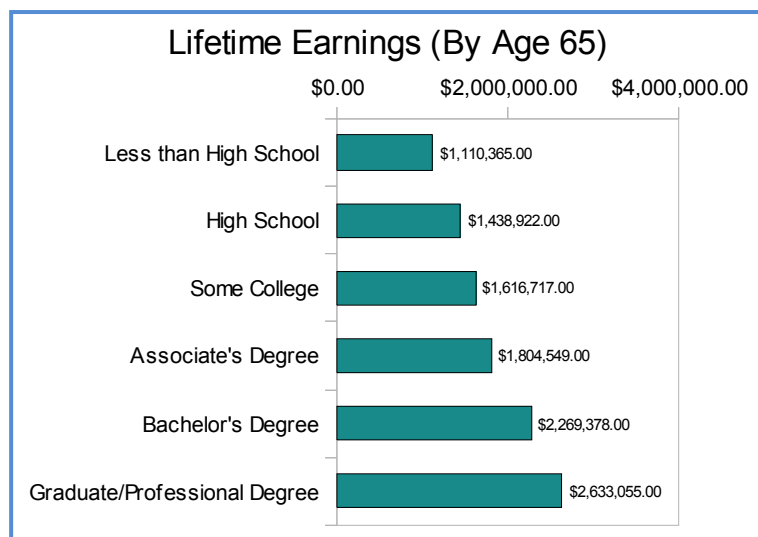
- ⁴ Students overwhelmingly say that the reason they attend postsecondary education is for jobs.
- 73% of freshmen “agree strongly” or “somewhat agree” that the chief benefit of a college education is the increase in earning power; and
 - 85% include the ability to get a better job as one of the very important reasons for attending college.

Workers with college degrees earn more than people with high school diplomas only. The evidence for the “college” premium is clear: *on average*, a bachelor’s degree recipient will earn about 66% more during a 40-year working life than the average high school graduate. The chart below shows the data for Minnesota.

Average earnings premium compared to less than high school



Source: Minnesota Private Colleges Research Foundation, 2010

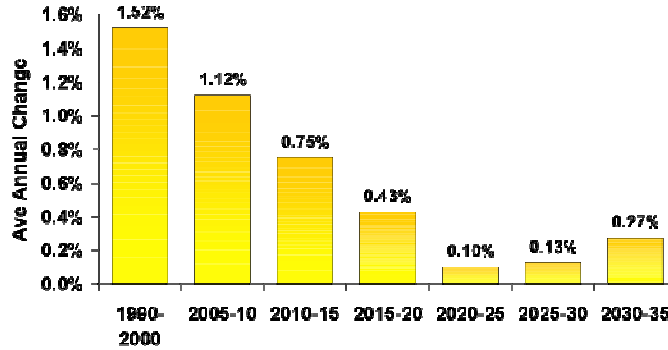


Source: Council for Adult and Experiential Learners, 2008

⁵In addition, there's the quintessential American pursuit of happiness: 42% of college graduates report being very happy, compared to 30% of people with a high school diploma or less (Shellenbarger, 2009).

⁶ During the 2000's, Minnesota added around 350,000 workers to its labor force. During the 2020's, the net new growth is projected to be only 50,000 workers. Economic growth is created from one of two sources: labor force growth or productivity growth. In order to maintain economic growth,

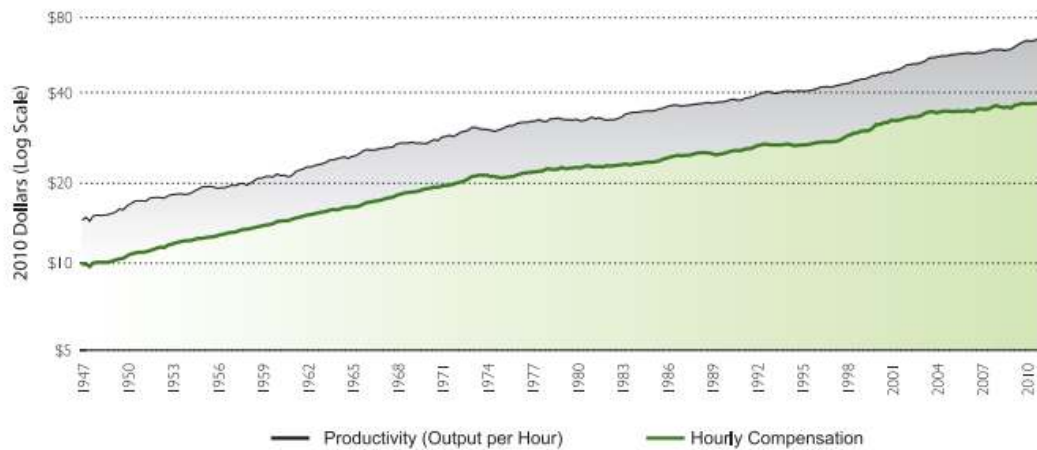
Minnesota workers will need to become more productive, and a central path to greater productivity is to improve the educational levels of all workers.



Source: Gillaspy, T., 2011

Furthermore, productivity is closely tied to individual compensation. As the chart below shows, wage gains have closely tracked productivity gains in the American economy. One of the major sources of productivity gains is improvement in human capital. Since 1973, the pace of U.S. innovation has slowed, and wage growth has lagged.

Productivity and Hourly Compensation



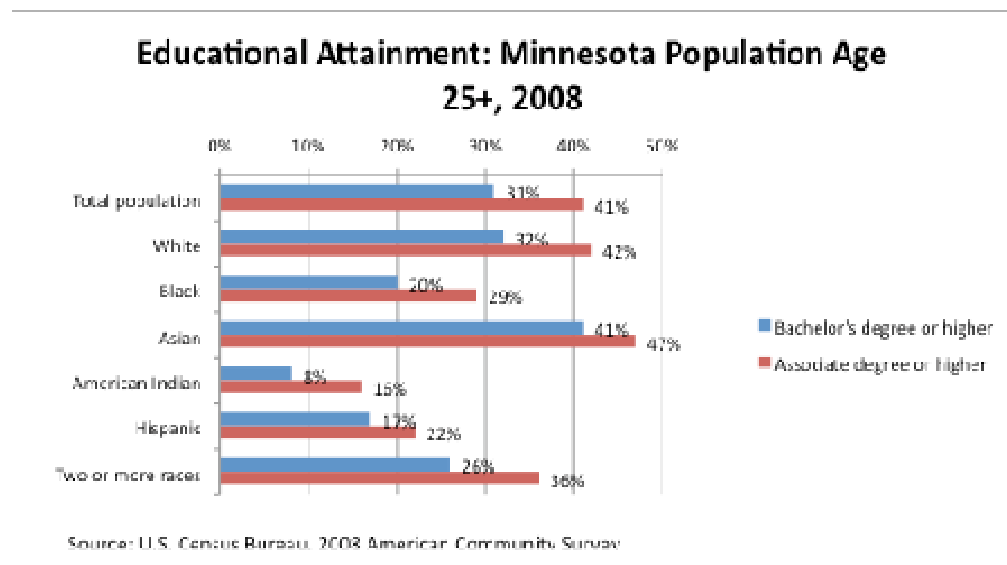
Source: Greenstone & Looney, 2011

National economic growth is linked to educational attainment. Numerous economic studies have connected economic growth with educational attainment. More recently, some economists have posited that cognitive skills provide the more salient measure of human capital than educational attainment (Hanushek, 2008).

Furthermore, innovation – a cornerstone of our economy – is driven by education. Education drives innovation and not only have the numbers of both men and women attending college decreased in recent years, but fewer people are entering into science, technology and math fields, long regarded as “innovation fields” (“Economic turmoil could spell trouble for innovation,” 2011).

⁷The fastest growing segments of Minnesota’s population are those that have been least well-served by the educational system. The productivity of each and every worker will matter heavily. Over the next twenty years, Minnesotans’ nonwhite and Latino populations will grow at a far more rapid pace than the white population. Yet, the achievement gap in educational levels between whites and non-whites or Latinos in Minnesota is well-documented. The future of Minnesota’s economic growth is dependent on the productivity, and therefore human capital development of, its non-white, non-Latino populations.

- In 2008, communities of color comprised about 14% of the population in Minnesota, but almost 25% of all K-12 education enrollments.
- People of color will be responsible for 50 percent of the projected 169,000-person population increase by 2030.
- On the 2008 statewide 8th Grade Math assessments 63% of White students measured proficient or above compared to 28% of American Indian, 34% of Latino, and 24% of African American students.
- On the 2008 statewide 10th Grade Reading assessment, 78% of White students measured proficient or above, compared to 58% of Asian/Pacific Islanders, 48% of American Indian, 36% of African Americans, and 42% of Latino students.



Source: U.S. Census Bureau, 2008 American Community Survey

⁸Data source: Pathways to Prosperity, 2011

⁹Two quotes that speak to the topic of technology and globalization:

“All my experience, what do I do with it? I gotta start all over. I gotta go back to school?” -- Mike Pesapane, a jet engine technician whose plant was shut down and most of its 1,000 jobs shipped overseas (CBS, 2011)

“It is clear to employers that the way we learned in the past is not going to give people all the skills they need for the future. The debate for the last 20 years has been about ‘skills’ versus ‘knowledge’ with the assumption that knowledge is an academic acquisition, and it is somehow superior to skills, which you get out of career technical courses. We need to discuss the fact that people need different knowledge and skills—some of them non-technical—than they used to in order to succeed in life, and we don’t have any real coherent way of making sure people get both.”—Karen Humphrey, Executive Director, California Postsecondary Education Commission (Bridgeland, et. al., 2011)

The acceleration of economic change means that the future demand for skills and jobs is unknowable. Rapid changes in the nature and structure of the economy, innovation, and therefore jobs that make it unlikely that we can successfully predict the exact skills that will be needed in five or ten years. Lifelong employment in any given job, or even occupation, is increasingly uncertain. In an interview with *The New York Times* Silicon Valley executive Reid Garrett Hoffman stated, “The old paradigm of climb up a stable career ladder is dead and gone. The uncertain, rapidly changing conditions in which entrepreneurs start companies is what it’s now like for all of us fashioning a career” (Friedman, 2011).

Consider the cost of performing a standardized set of computational tasks. In constant dollars, the labor cost of performing these calculations fell at least 1.7 trillion-fold between 1850 and 2006. Between 1980 and 2006, the real cost of performing a standardized set of computations fell by 60 to 75 percent annually (Autor, 2010).

Computerization has helped bring about the documented “polarization” of jobs in America, in which many medium-skilled middle class jobs have been eliminated. Prior to the 1990’s, computer technology largely substituted for non-college clerical and production tasks. But more recently, technology and global outsourcing have brought organizational changes that eliminate lower- and middle-paid college jobs (Goldin & Katz, 2007). Those with high-level skills have continued to fare very well, and those in low-paying service jobs (which computers cannot perform and/or that must be performed locally) have also seen their wages increase slightly. While middle-skill jobs in Minnesota is expected to dip only slightly in the proportion of jobs in Minnesota, we do know that the demand for higher skills jobs in on the rise (National Skills Coalition, 2010 and Carnavale, et. al., 2011).

Citizens cannot become productive workers and contributors to society unless they are educated to do so. Work and society are changing in radical ways, and therefore, education cannot remain static. It must become as dynamic as the world it serves. As the workplace thrusts more responsibility on workers to invent on the job, it also demands that workers *reinvent* the job and *reinvent* careers. Education will become a lifelong pursuit—of necessity.

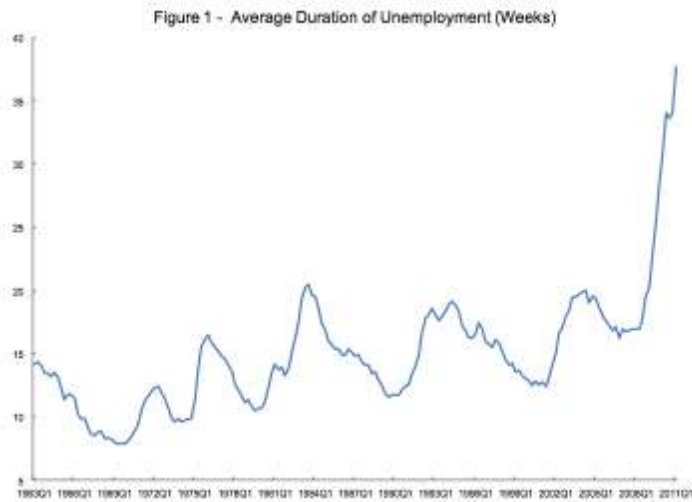
¹⁰Data source: State of Minnesota Budget Trends Study Commission, 2009.

¹¹Data sources: Minnesota Office of Higher Education, 2007; The Project on Student Debt, 2011; and College Board, 2010.

¹²In the report “Across the Great Divide,” the president of The State Higher Education Executive Officers Association explains a growing skills gap as follows:

“I see a growing skills gap, which is more severe now than in the past. I think it’s growing for two reasons. First, the skills and knowledge required, both in the workplace and just to be a citizen are growing. The sophistication and level of knowledge and skill required are more demanding than before. And secondly, we’ve been coasting as a nation on what we achieved in the last generation educationally. The education of our workforce is not keeping pace with the demands of the world.” —Dr. Paul E. Lingenfelter, President, The State Higher Education Executive Officers Association (Bridgeland, et. al, 2011)

This loss of middle-wage jobs, along with a pronounced spike in the average duration of unemployment (see chart below) has led some economists to wonder whether there is a growing skills mismatch, meaning that the skill set of workers doesn’t match exactly the skill sets needed by employers. Skill mismatches create a “structural” component to unemployment that persists beyond the cyclical unemployment that occurs during recessions and is not responsive to traditional economic stimulus measures. In 2010, 43% of the unemployed had been without jobs for more than 26 weeks—by far the highest level since the Great depression (Taylor, 2011).



Source: Chen, J., et. al., 2011

The findings across a number of studies suggest that the structural unemployment rate may range from 0.6% to 2.5% (Levine, 2011 and Chen, et. al., 2011). In Minnesota, for example, the proportion of the population aged twenty-five and older with low, semi- and high skill levels has been measured at 12.3%, 60.3%, and 27.4%, respectively. But the corresponding skill levels in the workforce are 4.3%, 46.9% and 48.8%, with the biggest oversupply of labor in the semi-skilled category. Minnesotan’s “skill mismatch index” is well below the national average; however it, and consequently structural unemployment, has been on the rise since the mid-2000’s.

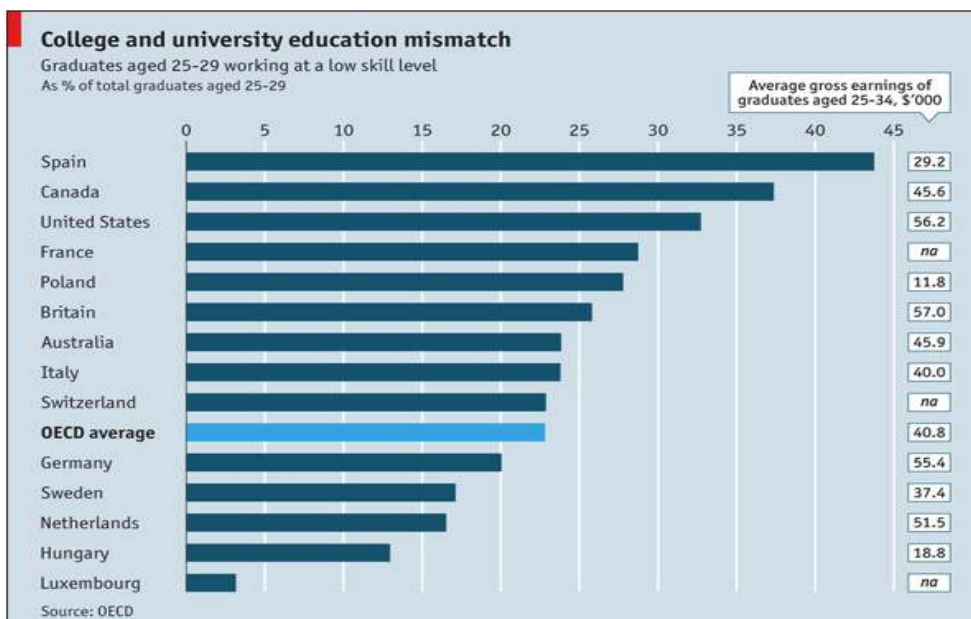
Skill mismatches may help explain why wages have stagnated. Displaced workers don’t always find jobs at their former earnings level, in part because some of those jobs are disappearing. Data show that those who lost their jobs in mass layoffs the early 1980s experienced significant and persistent earnings losses, with initial earnings losses of up to 33%, declining to 21-27% after ten years and remaining roughly the same to twenty years after a job loss (von Wachter, 2009).

Finally, skills mismatches may explain why some employers say they cannot fill good paying jobs. There are many examples throughout Minnesota, especially in Greater Minnesota, where employers are clamoring to find workers with the skills to fill good paying jobs in trades and manufacturing:

- In a 2007 survey of Minnesota manufacturing employers with 250 or fewer employees, 52% said that they had positions unfilled due to the lack of qualified workers, and faced a moderate to serious overall shortage of workers (Skills Gap Survey, 2007).
- In southwest Minnesota, nearly two of three manufacturers cited these problems (Skills Gap Survey, 2007).

- In 2011, the Star Tribune reported that job providers around Fergus Falls say 1,400 open positions, but locals often don't have the right skills to qualify for those jobs (Helgeson, 2011).
- Many trades employers in the Midwest offer signing bonuses and referral rewards for new hires.
- In an interview with the Star Tribune, General Mills' VP of Global Human Resources said the hardest positions to fill at General Mills are trained welders (Spencer, 2011).
- In Minnesota, five of the expected highest growth career fields will be management, computer specialties, education, community services, and marketing & sales. According to ACT, there is some interest among Minnesota high school students in pursuing these high-growth career fields, but not enough to meet the demand. They report, "Minnesota may be faced with potential labor shortfalls in fields where skilled individuals are most needed" (ACT, 2008).

At the other end of the spectrum, higher education appears to be producing far more degrees in some areas than there may be demand for. Empirical estimates for the "educational mismatch" in the United States range from 11 percent to more than 50 percent (Tsai, 2010). This would seem odd, given that the college premium (the amount a college graduation earns compared to a high school graduate) is historically very high suggesting a shortfall in the supply of college-educated workers. In many cases, it may be that graduates' fields of study are not matching up with available jobs. Take law degrees for example, in 2009, across the country – including here in Minnesota – there were twice as many people who passed the bar as there were job openings (Rampell, 2011). In the U.S., college graduates have lower unemployment rates than those with no post-secondary education, but there are still many who are underemployed (see chart below).



Source: The Economist, 2010

¹³ 21st-century workers must possess the skills; degrees and certificates are only a proxy for those skills. But employers are no longer certain what a diploma or degree buys them. (Nor are students for that matter.) Results of two employer surveys show:

- About 25% of employers think that 2-year colleges are “doing a good job” in preparing students for the challenges of the global economy; 28% say the same of 4-year colleges.
- 56% of CEOs and presidents have confidence that “all or most” college graduates will succeed in entry-level positions, however only 41% believe “all or most” have the skills to be promoted within their company.
- Employers gave college graduates the lowest ratings in their skills for adaptability, critical thinking, writing, self-direction and global knowledge.
- 67% of employers find college transcripts “just somewhat useful” or “not useful.”
- When asked to advise colleges on where to focus resources to assess student learning, 5% of employers said “multiple-choice tests of general content knowledge”; 50% said “faculty-evaluated internships or community-based learning experiences.”

(“Raising the Bar,” 2010 and “How Should Colleges Assess and Improve Student Success,” 2008)

¹⁴ The idea of post-secondary as a short, intensive burst of education presumably designed to provide skills for life may be outdated. Career paths, and the skills needed to support them, are becoming ever more unpredictable. Therefore, higher education must accept and create multiple lifelong paths to acquiring and validating higher skill levels.

As a broader swath of society has entered post-secondary (roughly 70% of Minnesota’s high school graduates now enter post-secondary right after high school) the time to completion has been drawn out (NCHEMS, 2011). Indeed, measuring six and eight year completion rates is now commonplace. Interestingly, the number one reason for prolonged completion rates is that students must work to pay for college (Johnson & Rochkind, 2011).

The process of acquiring a postsecondary degree has been described as a “pipeline” for traditional students who can afford to set aside four years of their life and the requisite financial resources, and a “swirl” for most others, who cycle in and out of the system for a multitude of reasons, most commonly because they cannot afford to acquire their degree in a single sitting or a single institution (Zemesky, et. al., 1998). Higher education continues to serve most of the pipeline students very well. But as the reach of higher education is extended to more and more students, the number of swirlers is growing to significant proportions and the efficacy of this type of interface with postsecondary institutions must be questioned. For evidence of this, slightly more than half of all students who enroll in a 4-year degree program full-time finish in six years; approximately one-third of students who start at community colleges full-time graduate with an associate’s degree in three years (Complete College America, 2011).

And only 51% of postsecondary students in Minnesota are under the age of 25 (Minnesota Office of Higher Education, 2011). The focus on a “compact” education sometimes leads to counterproductive policy choices, such as making the rates for part-time tuition more expensive than full-time tuition in an effort to incentivize students to complete faster.

This transformation of the delivery of higher education is already happening. Online universities and courses are springing up around the country. There is greater acceptance of credits and skills learned elsewhere, including on the job.

On the work side of the ledger, Minnesota’s workforce in 2030 will be comprised of 73% of the same people at work in 2010 (“All Hands on Deck,” 2011). How many of these 2.4 million workers would feel comfortable “going back to school”? In the meantime, the state’s workforce centers serve 20,000 Minnesotans a month. In an examination of the needs of these workers, the 2011 workforce center report “Working to Close the Skills Gap” said:

To position working learners for postsecondary success, the workforce development system can no longer be a crisis intervention system focused on short-term job placement. It must become a career development system that prepares working learners to be able to successfully select and complete quality training over their lifetime using a continuous—if episodic—relationship based model (“Working to Close the Skills Gap,” 2011).

¹⁵ The Georgetown Center on Education and the Workforce estimates that between 2008 and 2018, there will be 902,000 job vacancies in Minnesota, of which 620,000 will require some postsecondary credentials, 227,000 will require high school graduation and 55,000 will be available for high school graduates. Minnesota ranks 5th in the proportion of total jobs in 2018 that will require a bachelor’s degree or more (33%), and 47th in jobs for high school graduates or dropouts (31%) (Carnevale, et.al., 2010).

The Georgetown numbers suggest three things: 1) we need to increase the number of workers with a four year degree or more; 2) we have to find a way to motivate and train the 67% of people who will fill positions that don’t require four or more years of college; and 3) we may want to create more pathways for the nearly one million Minnesotans who will work in jobs requiring high school graduation or less.

The answer to all three challenges starts in K-12. Career counseling consists of “go to college” when 27 percent of people who acquire a vocational license or certificate after high school earn more than the average for those with bachelor’s degrees (“Pathways to Prosperity,” 2011).

As a result of a singular focus on college, some students end up in college and they have little idea why they are there, other than someone told them they should be. Research shows that these students are far more likely to drop out of college (Pathways, 2011).

The high school dropout rate is on the rise. Some speculate that it is in part because we have delegitimized vocationally-oriented interests. Graduation data show that 75 percent of students who start public high school graduate within four or five years, compared to more than 90 percent of those who concentrate in career-oriented courses (Rich, 2011).

The slowdown in college graduation rates is not due to a slowdown among high school graduates, but a decrease in high school graduation rates (Heckman & LaFontaine, 2007). Ironically, pushing all students toward college may be reducing, not increasing, college graduation rates.

The Jesuit high school Cristo Rey in Minneapolis provides an interesting example. Low-income students receive a college prep education while working five full week days per month at participating businesses. All students are trained for entry-level clerical positions and participate in a work-study program, which underwrites more than half of the cost of their education while exposing students to corporate work environments and the positive influences of the supervising professionals. As of April 2011, 80% of the first ever graduating class had been accepted to college (Cristo Ray, 2011). In comparison, the national rate for low-income students graduating from high school and going to college is only 51% (Cristo Ray). And corporate supervisors rated students' work performance very high in areas, "value of job performed," "accuracy of work" and "enthusiasm and motivation" (Cristo Ray).

The State of Massachusetts has invested heavily in a strategy of vocation-technical high schools. A review of these "VTE" schools notes that "With the support of research, vocational schools came to realize that the academic skills needed for entry-level career success are equal to those needed for college entrance: The manuals used by professional plumbers, major appliance repair people, auto mechanics, etc., are written at up to a grade 14 reading level." VTE schools, in which half of students' time is spent in shop classes, apprenticeships or career training, enroll more than 27,000 students and yet there is a waiting list. VTE dropout rates are significantly lower than state averages, 1.8 percent versus 3.8 percent. The pass rate for standardized testing is higher for VTE students. Over 50% of the graduates go on to post-secondary education (Fraser, 2008).

These examples illustrate that it is possible to equip young people with the skills they need in a rapidly changing workforce, by recognizing that they possess a wide array of interests and aptitudes and adapting our educational system accordingly. For example, of Minnesota students expressing interest in these high-growth career fields, approximately three-quarters are ready for first-year college English courses, and less than one-half are ready for college-level math or science courses (ACT, 2008). Work-learn partnerships with employers, where students can gain insight into and experience in actual job settings, should be an integral component of the high school curriculum.

The report, "Across the Great Divide," addresses the importance of linking education and career options by saying:

“If the direct link between one’s educational pursuits and their career opportunities was clarified I think you’d have more people understanding the importance of focusing on their education and graduating on time with skills that prepare them for employment. Identifying young people early and guiding them through the curriculum that you feel will most benefit them by linking that to an offer of post-graduation employment might be one way to bring such clarity.” Gray Kimel, President, Mideast Division (Bridgeland, et. al., 2011)

The *Pathways to Prosperity* report by the Harvard School of Education puts it another way:

We fail these young people not because we are indifferent, but because we have focused too exclusively on a few narrow pathways to success. It is time to widen our lens and to build a more finely articulated pathways system—one that is richly diversified to align with the needs and interests of today’s young people and better designed to meet the needs of a 21st century economy (Pathways to Prosperity, 2011).

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