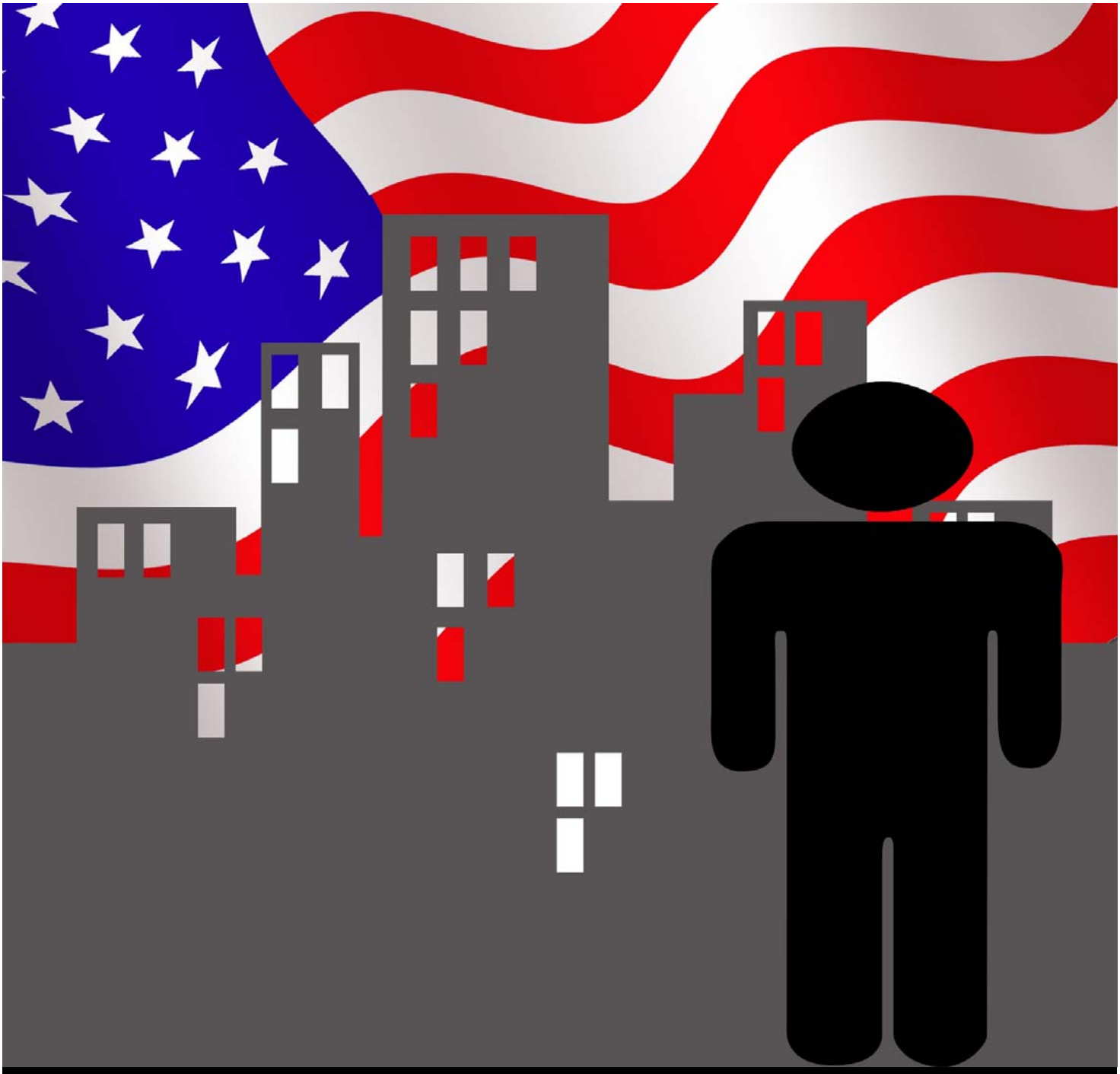

Recognizing the Critical Need for a Technically-Skilled Workforce in the Top of Utah, Barriers and Solutions

A Workforce Development White Paper

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Introduction - Northern Utah's Workforce Development Needs:

The purpose of this paper is to show how Northern Utah's continued economic growth is dependent on a highly skilled workforce, with the majority needed in technical fields. It will explore workforce development issues and conclude with an overview of some innovative solutions. According to Weber Economic Development Corporation, the number one issue of importance to companies looking to relocate in Northern Utah, and to existing businesses alike is the ability to hire skilled workers. Currently, the demand for skilled workers is outpacing the supply of people ready to fill even high-paying positions. To address this need, it is critical that the region improve its workforce readiness in critical economic clusters by increasing the number of technically-educated persons in those industries. A number of factors prevent workers from entering technical fields at the rate industry requires them. Consequently, changes are needed to remove barriers and increase awareness about how individual choices affect the broader economy.

Not Enough of a Good Thing - Skilled Labor Key to Growth in Top of Utah:

In April of 2000, the National Science and Technology Council issued a report entitled "Ensuring a Strong U.S. Scientific, Technical and Engineering Workforce in the 21st Century." The report noted that the increasing role of science, technology and engineering has, in turn, increased demand for all types of scientific, technical and engineering (ST&E) workers, from technicians to Ph.D. research scientists and engineers. In 2000, many ST&E jobs were already among the fastest growing in the U.S. workforce, to the point that demand for workers had already outstripped supply. [1]

In 2007, the situation has become worse as we are experiencing a workforce shortfall across all educational levels of technical and scientific expertise. The presence of a diverse and highly skilled workforce in Northern Utah is of primary importance to economic growth. When companies consider moving to Weber County, once they determine that it makes sense from a strategic standpoint, the next question asked is nearly always whether a sufficient workforce exists. Companies locating here nearly always say that our highly trained workforce is a primary reason.[2] At the same time, 80% of manufacturers in a recent survey by Deloitte consulting expected a shortfall in their numbers of skilled workers over the next three years.[3] In particular, companies that employ highly skilled manufacturing employees such as engineers, machinists and welders have orders on hand that cannot be filled due to a shortage of labor with the right skills. So while Utah's workforce quality is seen as significantly better than the national average, firms still face difficult choices about whether to shift business to places with a more abundant supply of workers, even if the efficiency of workers is lower.

The most new jobs nationally have been created in construction, aerospace, manufacturing and health care.[4] There is a myth that manufacturing is a dying industry. The reality is that while many low-skilled jobs have left for overseas, the number of highly skilled manufacturing positions with a median hourly wage of $24 jumped by more than 36% and in many areas of the country, industrial output is 42% higher from 1983 to 2002.[2, 5] The U.S. still ranks number one in the world in competitiveness.[6]

At the same time, the number of skilled workers is starting to fall. For example, the number of high school students who enrolled in college declined by 11% between 1992 and 2006 nationally. In Utah, 2005 marked a low point in the number of graduating high school seniors,[7] and during that time, many new jobs created were filled through people moving into the area. The national workforce is aging, and *This Old House Magazine* reported that the average age of a carpenter in the U.S. is about 55 years old. While Utah's workforce is somewhat younger, retiring Boomers will still create gaps across industries. So we face a situation with the most efficient workers preparing to exit the labor force while the next generation is less interested in filling these highly skilled positions. Utah has more cause for optimism than other areas, however. The numbers of

graduating high school seniors is starting to increase again, and by 2017 there will be a 28 percent increase in graduating high school seniors over 2001.[6] This presents a window of opportunity to make changes now and thereby enable greater numbers of young people to enter into technical fields when they reach graduation age.

Economics of Technical Education:

The State's return on investment for technical education is high. An average tech college certificate takes less than a year to complete; associate degrees in technical areas just two years. Many students start working in related jobs while they are still completing their education. So in less than a year to just two years, a citizen can go from receiving state assistance to becoming a taxpayer in a career that pays, on average, $660 more per month than someone with only high school diploma.[8] Today, 90% of the jobs providing a wage sufficient to sustain a family of four require at minimum a combination of technical education and on-the-job training. [9] The Ogden-Weber Applied Technology College and associate degrees in technical fields at Weber State University can fill the need in many of these areas. A technical education at a public technical college or associate degree is also much more affordable than a four-year degree, helping students get into a career without the average $12,807 in debt held by those graduating from four-year colleges in the State of Utah in 2006.[10]

Some college or advanced training will be needed for about 85% of new jobs, but only 60% of Americans get that far, according to the Kiplinger Letter. Businesses will need 2 million more scientists and engineers by 2012 and 2.4 million workers with key manufacturing and production skills.[11] Clearly, we need a more technically skilled workforce at all higher education levels.

We should be concerned about keeping technician-level jobs for their own sake, but also because of a broader impact. These jobs are critical for attracting and keeping engineering and professional positions which are also in high demand. For every engineering and professional job created many times more support positions are needed to build the products and ideas created. So to support engineers and other professionals, we must produce machinists, practical nurses, welders, accounting clerks, and other skilled workers.

Specific Goals for the Top of Utah:

To ensure sustainable economic growth, public and private employers, trade associations, educational institutions, economic development entities, and governmental agencies must work together toward joint goals. This paper proposes several goals including:

- Increase the number of students enrolled in high school technical programs, tech colleges and technical associate degree programs.
- Improve transition from high school into tech college programs and from the tech colleges into universities.
- Improve awareness about how individual choices about education affect our economy.
- Improve awareness about the abundance and desirability of careers in technical fields.

Barriers:

There are several barriers that prevent students from obtaining technical education.

Systemic Barriers in Education:

There is a popular sentiment within education focusing on academic readiness. While it is important that students have a strong foundation in math, English, and the sciences, some specific decisions have sacrificed workforce readiness in favor of academic readiness. It should be noted that becoming ready for the workforce includes academic preparation, career exploration and introduction to technical fields.

Another barrier is that core graduation requirements have increased, requiring students who are arguably not university bound to take more courses in preparation for college at the expense of classes that would prepare them for employment immediately after high school. Students in Utah are only required to take one Career and Technical Education (CTE) unit for graduation, leaving any additional to count as electives. By the graduating

class of 2011, out of 24 units available to students, a minimum 18 are mandatory core requirements and some districts require more. This leaves only six elective units in four years to be divided among CTE courses, LDS Seminary, foreign language, or additional arts, health, physical education and others. This significantly reduces a student's ability to become ready for employment or to enter a tech college program upon graduation.[12]

It is important to realize that not all students are *or even should be* university bound. For these students, learning the fundamentals of math, science and English in a hands-on, trade context may provide the most relevant and rigorous education. Simply requiring more of the same kind of curriculum to students already struggling in a traditional classroom may be counter productive. However, success at a tech college may turn out to be the starting point for continued success at a university.

There are also financial barriers within the system. Currently high school district budgets are based on enrollment numbers and as a result, there is a financial disincentive for schools to send students to another institution for technical training courses.

Perception and Awareness:

Many individuals may be interested in obtaining a technical education if they were aware of the opportunities available, or if attitudes toward these fields changed. These attitudes start with parents, who often encourage children to obtain a four-year degree and are disappointed if a child "settles" for a technical profession, even if the financial opportunities are equal or better.

There is a general sentiment that in order to be successful, one must go to college. This is absolutely true. However, society often implies that only four-year institutions fit the definition of "college." Most people do not think of "technical colleges" when this statement comes to mind. And in Utah, ATCs are generally not viewed as technical colleges even though that is their specific role within higher education.
Currently of 100 students who enter the 9th grade, only 83 graduate from high school. From there, 36 of 100 go directly to college and 24 are still enrolled for their sophomore year. Within three to six years, only 17 have achieved either an associate's or bachelor's degree. [13]

What happens to those who do not go to a university at all or who do not graduate? These students will need post-secondary technical education to compete for the skilled jobs that can provide a livable wage. Individuals and the broader economy may be better served by encouraging more students to go straight into a tech college or technical associate degree program where their skills are so desperately needed by industry. In short, students need to understand that while college is, indeed, critical to obtain a good job, tech colleges (ATCs) also fit that definition.

A total of 29% of Utah's population has a bachelor's degree or higher.[14] While only 22% of new jobs in Utah actually require a bachelor degree or higher, increasing retirements of the baby boom generation will exacerbate this need. [15] Pathways from the tech colleges to traditional four year degrees will continue to open doors for advancement to higher level technical fields also in demand.

Many incorrect ideas about technical occupations also persist. High-tech manufacturing such as machining was once considered dirty, difficult and dangerous. Today, however, most of these jobs have gone from blue collar to white lab coat, and require high-tech computer skills. Local companies offer great benefits, working conditions, opportunities for advancement and tuition reimbursement. For example, machinists make a median wage in the Ogden-Clearfield MSA of $40,650.[16] Occupations in health care are also in increasingly high demand even without a four-year degree, and provide a rewarding career. Finally, for the entrepreneurially-minded, a strong trade can be an ideal launching point for starting a business in construction, health care, manufacturing, business and the service industries.

Another barrier is a perception that an education in a technical field is inferior to a traditional four-year degree. Efficiency in learning should not be perceived as inferiority. Indeed, a technical education zeros in on the skills local employers need while training students using effective hands-on methods. This means students finish quickly and affordably and become ready to enter the jobs that are most in demand. In many cases, students graduating with a technical education can earn just as much as or more than those with a four-year degree. Indeed, Northern Utah's demand for skilled labor is so high that a mismatch exists. Many highly-skilled technical jobs are unfilled while some individuals with B.S. degrees find themselves under employed.

Seamless Transitions in Education:

Unfortunately, coursework does not transfer as easily as it should in most instances between institutions. Ideally, high school students would take many tech college or university courses before graduation and would have a seamless transition from high schools to tech colleges and to Universities wherever appropriate. High schools should view the tech colleges and universities as an advanced resource for students, and the universities should view tech colleges as feeder schools. The ATCs should work aggressively to bridge both worlds.

Ideas to Explore:

Make it easier for high school students to attend tech colleges (ATCs):

1. **Promote Technical:** Approve more technical courses to count toward core graduation requirements. This will allow students to obtain both graduation credit and employable skills. It will also allow for larger blocks of time in a student's schedule, thereby making it more practical to travel to a tech college during the school day.
2. **Think Two-Track:** Promote a two-track system within secondary education that recognizes dramatically different objectives for students who are university bound compared to those who, for a variety of reasons, should enter the workforce with technical skills after high school.
3. **Instill Pride:** Through consistent communications, encourage a sense of pride among those who enter a skilled trade profession rather than one of apology at not attending a university. Recognize a technical profession as a different choice, not an inferior choice.
4. **Get the Word Out:** Through marketing and public relations efforts, communicate the availability and advantages of technical careers and training programs to parents of high school students, as well as to the general community.
5. **Create More Partnerships:** Weber County has the benefit of having both a technical college and a university with many technical programs within its boundaries. To further promote technical careers, we need to create more pathways between the tech college programs and associate/bachelor degree programs at Weber State University.

Investigate possibility of creating technical high school programs on OWATC campus:

OWATC has the expertise to springboard a magnet high school program on its campus. Students from across technical programs would attend core classes for part of the day together as provided by the partnering school district, and would conclude the day with technical training in OWATC labs. Partnerships would be created with school districts and Weber State University to provide seamless transitions. Local employers would form employer advisory teams to set curriculum, just as they do for regular OWATC programs. This concept would also eliminate time and transportation issues associated with commuting from high school. It would provide students with an opportunity to study in state-of-the art labs that high schools cannot afford. It would fully utilize OWATC capacity in programs that, with an economy sitting at full employment, are becoming increasingly night-student oriented. Finally, students would complete technical certificates and be ready to fill high-paying, full-time employment upon high school graduation. This would decrease the time it takes for these workers to alleviate the region's labor crunch.

Research best practices nationwide:
Models exist for technical education throughout the country and in Europe. Industry and education are creating increasingly innovative partnerships to meet workforce requirements. Compiling additional white papers to highlight successful cases in other regions should yield concrete, proven ideas.

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[1] Ensuring a Strong U.S. Scientific, Technical and Engineering Workforce in the 21st Century. National Science and Technology Council. 2000.
[2] Interview with Ron Kusina, Weber Economic Development Corporation, September, 2007
[3] The Myth of Deindustrialization, Joel Kotkin, Wall Street Journal, August 6, 2007
[4] The Kipplingler Letter, September 25, 2005, Vol. 82, No. 38
[5] CagleCartoons, "Joel Kotkin Debunks the Myth of Deindustrialization," Bill Steigerwald, August 31, 2007, www.CaggleCartoons.Com
[6] Deseret Morning News, Thursday May 10, 2007 U.S. ranks No. 1 in competitiveness, It edges Singapore, Hong Kong for top spot in Swiss Study. Bradley S. Klapper, Associated Press. http://deseretnews.com/dn/print/1,1442,660219195,00.html
[7] Knocking at the College Door, Projections of High School Graduates by State, Income and Race/Ethnicity, Cheryl Blanco, December 2003, Western Interstate Commission for Higher Education, www.wiche.edu
[8] Institute for Higher Education Policy (2005): *The investment Payoff*, Appendix 1
[9] Ready for College or Ready for Work: Same or Different?, Study, 2006, ACT Inc., http://www.act.org/path/policy/pdf/ReadinessBrief.pdfMay 2006
[10] "The Project on Student Debt, Quick Facts About Student Debt," April, 2006, www.projectonstudentdebt.com, Alliance Bernstein Investments
[11] The Kipplingler Letter, September 23, 2005. Vol. 82, No. 38
[12] Utah Curriculum, High School Requirements, Utah State Office of Education, www.schools.utah.gov/curr/main/gradbyyr.htm
[13] Measuring Up, 2006, the State Report Card on Higher Education, The National Center for Public Policy and Higher Education, www.highereducation.org
[14] Measuring Up, 2006, the State Report Card on Higher Education, The National Center for Public Policy and Higher Education, www.highereducation.org
[15] Utah Job Trends, p. 3 Department of Workforce Services, 2006
[16] Utah Department of Workforce Services 2007 salary survey, http://jobs.utah.gov/jsp/wi/utalmis/gotoOccwage.do