THE WORKFORCE IN TEXAS

Aligning education to meet the needs of Texas employers

TAWB

Texas Association of Workforce Boards

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ON BEHALF OF THE TEXAS ASSOCIATION OF WORKFORCE BOARDS (TAWB),

I am pleased to present the TAWB 2014 Education Paper, The Workforce in Texas: Aligning Education to Meet the Needs of Texas Employers. Our goal as an organization, and the intent of this paper, is to engage the Texas business community, educational providers and public officials in discussions leading to actions that will ensure a highly skilled, well-trained talent supply for Texas employers.

Employer demand for middle skill and higher-level jobs will substantially increase in the coming years. It is clear that a high school education alone will not be sufficient to land most of those jobs and that we have too many residents who lack even a high school diploma or equivalency. Our demographics also are rapidly changing, intensifying our challenges in preparing our workforce.

ENSURING HIGHLY SKILLED, WELL-TRAINED TALENT SUPPLY FOR TEXAS EMPLOYERS

Properly educating and equipping our present and future workforce to meet employer needs is essential to Texas' ability to compete in the global economy and vital to our continued growth and prosperity as a state. We believe that aligning and integrating education and workforce development must occur to ensure we meet the needs of Texas employers. As such, the investments in education and workforce development necessary to realize this prosperity are investments in economic development, whether made by an individual, a business or the government.

TAWB's board member representatives are private business and community leaders from communities across Texas who serve or have served as leaders of their regional workforce boards. The hands-on expertise of its board members uniquely positions TAWB to advise on education, training and workforce development policies for the state's incumbent and emerging workforce and to assist in building a true employer-driven workforce development system.

On behalf of our membership, I invite your input and participation in these discussions as we continue to look for ways to best assist Texas employers with workforce needs.

Mark C. Guthrie
Chairman
Texas Association of
Workforce Boards

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EXECUTIVE SUMMARY

The Texas Association of Workforce Boards (TAWB), an association of Texas' 28 local workforce development boards, makes recommendations on workforce development, education and training from the employer's perspective, in order to ensure a future workforce that will be ready to meet the needs of employers and grow the state's economy. Accordingly, one of TAWB's primary objectives is to address employer workforce needs and labor market/workforce trends on an on-going basis. TAWB's analysis of such needs and trends leads us to conclude that our K-12 education system requires significant changes for Texas businesses to effectively compete in the global economy of the future.

In this paper, TAWB considers the current and projected levels of education attainment, the projected workforce needs of the Texas economy, the projected gaps in education and training, and the trends in STEM fields, career and technical education and worker certifications. We also take into consideration the state's rapidly changing demographics. These demographics include an aging incumbent worker pool, a fast-growing population, a rapidly increasing Hispanic population, and a significant high school dropout rate.

Among other factors, it is projected that by 2040:

- The population of Texas will increase to 35.8 million, a 151% increase from 1980[1]
- The percentage of the population 65 and older will nearly double to 18%[2]
- Hispanics will be a majority in every age group younger than 60 years[3]

At the same time, the skill and ability levels needed by our employers are rapidly changing and there is an existing skills gap between available jobs and our workforce that will only grow worse as time passes. Texas lags behind most other states in education attainment of the labor force and these attainment rates are projected to get significantly worse by 2040.[4]

Compared with other states, Texas is currently:

- Last in percent of people 25 years and over who have completed high school or have a GED[5]
- 30th in percent of people 25 years and over who have completed a bachelor's degree (26.4%)[6]
- 41st in percent of 18-to 24-year-olds enrolled in colleges and universities (39.6%)[7]

These indicators lead TAWB to conclude that Texas now faces a crisis in K-12 education and unless changes are quickly made, by 2040 Texas will experience a much weaker economy than we have today, with an undereducated workforce that will be less attractive to businesses, a decreasing tax base to fund state and local governmental services, and declining revenues to build and maintain infrastructure. To avoid these outcomes and remain competitive in the global economy, TAWB recommends the implementation of a **Pre-K to Careers Model** and a **Business Driven Education System,** each described below to improve our education system and to further align education with employer needs.

The Pre-K to Careers Model includes increasing teacher quality and providing students from kindergarten through middle school and beyond with information and opportunities about career paths, and ensuring that students are ready by the end of middle school to read and perform math at the level required to succeed in high school and thereafter in additional education and training. It also would provide expanded levels of career and technical education in high school leading to industry certifications and college credits.

The Business Driven Education System involves forming regional partnerships between business and education, including collaborations by employers and educators for our important industry clusters. The partnerships would be tasked with developing and implementing master plans that create more efficient and effective talent development pipelines for each of the important industry clusters that are relevant to the region. Among other things, the partnerships would identify shared visions, goals and outcomes for those clusters.

TEXAS NOW FACES A CRISIS IN K-12 EDUCATION AND UNLESS CHANGES ARE QUICKLY MADE...

TAWB believes implementing these steps would begin to address the fundamental need that Texas employers have today and increasingly will have in the future if our economy is to prosper and grow: the graduation of youth with the academic skills, abilities and preparation needed for the future, whether they pursue an advanced education or join the workforce immediately upon graduation.

DISCUSSION

TEXAS AS A COMPETITOR

During the past 20 years, the economies of Texas and other states in the US have undergone tremendous change in an evolving world economy. Years ago, the United States ceased being the preeminent exporter of goods and services to the world. The U.S. Bureau of Economic Analysis reported in December 2013, that the total October 2013 exports of $192.7 billion and imports of $233.3 billion resulted in a goods and services deficit of $40.6 billion for that month alone.[8] This trade imbalance is yet another sign that many jobs, particularly in manufacturing, have left our shores and other nations are moving to take the mantle as world financial leaders.

According to the World Bank and the U.S. Department of Commerce Bureau of Economic Analysis (2012), if Texas were a country, it would rank 14th worldwide for Gross Domestic Product, ahead of South Korea and Indonesia.[9] Texas' capacity to bring goods and services to the global marketplace is strong, and the current energy boom is strengthening that capacity. However, Texas' competitive advantage will not continue unless we make significant changes in our approach to education.

At any given time, the health of a state's economy is largely influenced by the composition of its current and future workforce, which not only dictates the jobs and employers it can support and retain and the new jobs and employers it can attract, but also the standards of living enjoyed by the workforce. Characteristics of that workforce also impact business and personal productivity, the state's economy, and its national and global competitiveness.

At present, the Texas economy is driven by six industry clusters: Advanced Technologies and Manufacturing, Aerospace and Defense, Biotechnology and Life Sciences, Information and Computer Technology, Petroleum Refining and Chemical Products, and Energy.[10] To maintain our ability to effectively compete nationally and in the increasingly global economy, Texas must have a workforce that will meet the needs of our existing driver industry clusters and attract and retain businesses within them.

Each of these industry clusters requires various levels of education in specialized technologies to conduct and sustain its operations. Yet the technology and skills needed to use the technology to work in these cluster industries is changing at exponential rates. The businesses in these clusters have an increasing need for workers with mastery in evolving technologies such as systems integration, multimedia networking, and web-based development, to name a few. The tablet computers and computer pads that did not exist several years ago have been incorporated into jobs in many of these clusters. These tools, requiring new technical knowledge to operate and maintain, replaced the people and other machines someone used to make, sell and service, enabling more efficiency and productivity, but requiring less labor.

AS NOTED BY THE KINDER INSTITUTE FOR URBAN RESEARCH IN A NOVEMBER 2013 REPORT:

The resource-based, industrial-era economy for which [Houston] and the state were so favorably positioned has now receded into history, and with it the traditional "blue collar path" to financial security.[11]

It is no longer good enough to educate our young people the way we have always done it. We are positioning them, and our state's businesses, to be much less successful than we are now due to the skills gaps we have and will continue to

experience. Skills gap — a significant gap between an organization's current capabilities and the skills it needs to achieve its goals. It is the point at which an organization can no longer grow or remain competitive because it cannot fill critical jobs with employees who have the right knowledge, skills, and abilities.[12]

Texas employers tell us there is a widening skills gap in professions requiring higher-level skills, particularly those in the target industry clusters and in other careers in Science, Technology, Engineering, and Math (STEM).13 There are also skills gaps in jobs that are often referred to as middle-skill occupations, which require credentials between a high school degree and a four-year college degree.[14]

Today, those middle-skill jobs make up the largest part of America's and Texas' labor demand market.[15] In 2009, approximately 51% of Texas' jobs were in middle-skill occupations but only 40% of the state's workers had the appropriate training for those jobs.[16] It is becoming more common that businesses in key industries in Texas are unable to find enough sufficiently trained workers to fill available, middle-skill jobs. These skills gaps leave many Texas employers unable to grow and innovate, and restricts their ability to compete in the current economy. TAWB believes these gaps and detrimental impacts will only worsen in the near future if changes are not made now.

These alarming trends will fuel the skills gaps, which will further intensify with the gradual departure of the Baby Boomers from the workforce. While many older workers postponed retirement because of the recession that began in 2007, it is estimated that approximately 77.2 million will leave the workforce over the next two decades, resulting in an overall loss of expertise and management skills.[18]

Based on the body of demographic research conducted in the past 20 years, TAWB predicts that rapidly changing economies, increasing numbers of middle-skill jobs and an increasing need for specialized knowledge and technological proficiencies will lead to continuing skills gaps not only in Texas' target industry clusters, but in many other important and emerging industries. According to Dr. Steve Murdock, director of the Hobby Center for the Study of Texas at Rice University, there will be a 69.9% increase in demand for Career and Technology Education (CTE) programs by 2040.[19]

These impending trends will be accompanied by the profound and rapid demographic changes Texas is facing, discussed below. Unless thoughtful and expeditious changes are made in our education policy, Texas' place in the global economy will erode because its workforce will not have the qualifications and training to fill current or future job requirements.

ACCORDING TO A 2011 REPORT BY THE MCKINSEY GLOBAL INSTITUTE, BY 2020:

- 37% of the working population will be 55 or older
- The U.S. labor force is expected to grow to an estimated 168.9 million, but the make-up of this growing workforce will not match the needs of the developing economy
- An estimated shortage of 1.5 million college graduates in the workforce
- The number of Americans with a high school degree or less will increase while the number of jobs requiring postsecondary education such as a certification will rise[17]

TEXAS' CHANGING DEMOGRAPHICS

Our state will continue to see rapid increases in total population growth and in less than a generation, Hispanics will comprise majorities of the working age and youth populations.

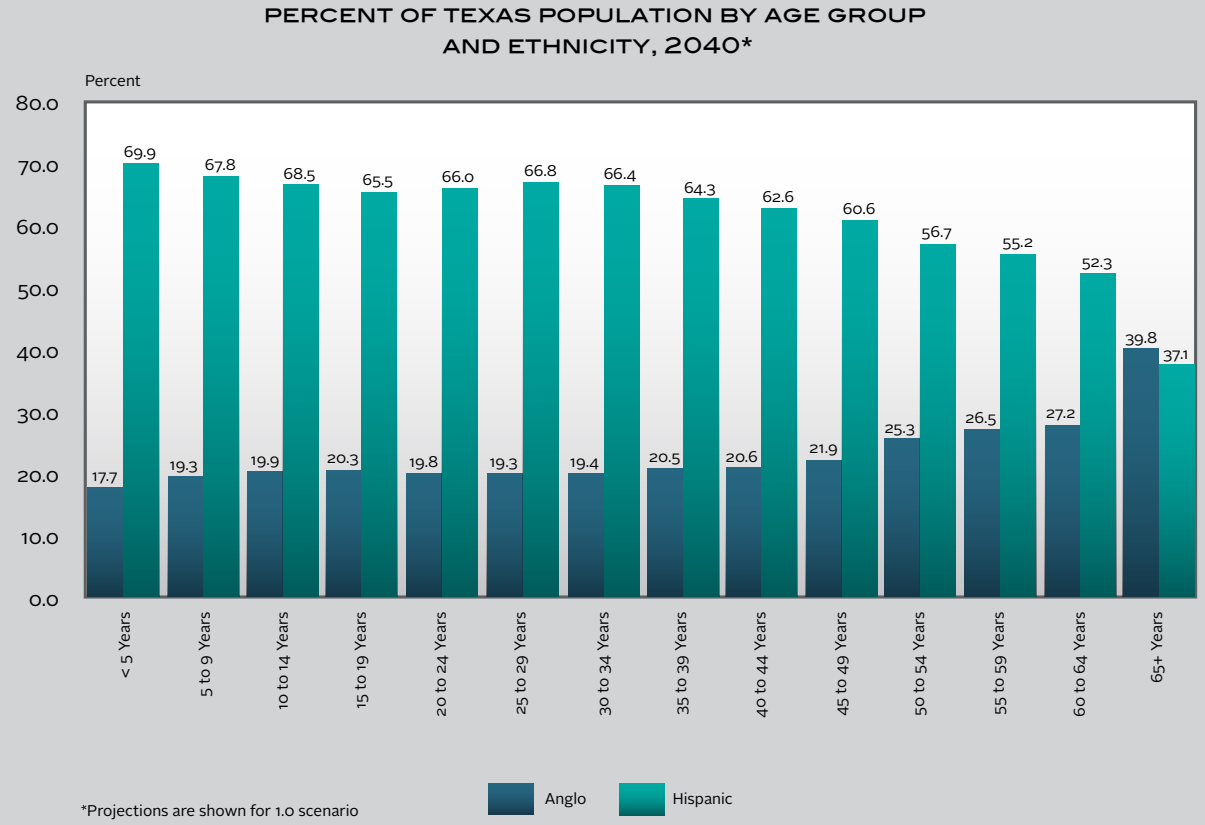
The Texas State Demographer's Office projects that by 2040:

- The population of Texas will increase to 35.8 million, a 151% increase from 1980[20]
- The percentage of the population 65 and older will nearly double to 18%[21]
- There will be 18.8 million Hispanics in Texas, a 530% increase from 1980[22]
- There will be continuing shifts in populations from rural to urban areas[23]

In addition, as demonstrated by Figure 1, Hispanics are projected to be a majority in every age group younger than age 60 by 2040.

Texas must address issues created by these demographic changes when attempting to remedy the skills gaps and implement other changes to its education system. These changes must include enabling a greater number of students in our K-12 schools to successfully matriculate, earn a post-secondary credential, and continue to learn and adapt throughout their working lives.

Figure 1[24]



*Projections are shown for 1.0 scenario

The urgency of doing so for Hispanic and African American students is magnified. According to Raymund Paredes, the Commissioner of Higher Education in Texas, only 11 of every 100 Hispanic and 11 of every 100 African Americans in 8th grade complete a post-secondary credential (Paredes, 2013). However, since only 19 of every 100 Texas 8th grade students ever complete such a credential, this is not just a problem applicable to Hispanic and African American students.[25] *(See Figure 2 below.)*

Figure 2

HOWEVER, TOO FEW TEXAS STUDENTS MAKE IT THROUGH THE EDUCATION PIPELINE TO A POSTSECONDARY CREDENTIAL

19

of every 100 Texas 8th graders complete a postsecondary credential within 11 years

11

of every 100 Hispanic 8th graders complete a postsecondary credential

11

of every 100 African American 8th graders complete a postsecondary credential

Source: THECB 8th Grade Cohort (Enrolled in 2001, Completed Postsecondary by FY 2011)

As these statistics illustrate, we are creating a less-prepared workforce at a time when we have an increasing need for educated and certified employees to fill the growing number of middle-skill positions. This does not bode well for the future of the Texas economy. Texas' K-12 education system needs to change so that students can achieve both the highest level of education they aspire to and that employers need. These changes must also ensure that career and technical education is relevant and focused on student success.

TEXAS' K-12 EDUCATION SYSTEM NEEDS TO CHANGE... FOR STUDENT ACHIEVEMENT AND EMPLOYERS' NEEDS.

THE STATE OF EDUCATION IN TEXAS

Over the last two decades, some piecemeal efforts have been initiated to address the gaps between the workforce skills demanded by the business community and those produced by our education system. In November 2007, the Governor's Commission for a College Ready Texas issued recommendations on the alignment of high school curriculum with college standards. In January 2008, the Texas Higher Education Coordinating Board adopted College Readiness Standards (CRS) in the areas of English/Language Arts, Social Sciences, Mathematics and Science in order to improve college readiness.

During this same period, the number of high-stakes end of school year tests significantly increased while the amount and availability of career and technical education decreased. A new emphasis was placed on a 4X4 curriculum emphasizing college (but not necessarily career) ready knowledge and skills. Also during this period, both high school drop-out rates (particularly but not exclusively among African American and Hispanic students) increased as did the amount of time and effort spent teaching to those high-stakes tests. Finally, during the latter years of this period, the Texas Legislature drastically cut funding to school districts, requiring school districts to lay off instructional and support personnel, further restricting the ability to offer career and technical education courses.

In 2013, the Texas Legislature enacted legislation known as HB-5 to address the skills gap by modifying graduation requirements to allow different "tracks" or "endorsements," expand career and technical education, and reduce the amount of end of course testing, each of which promise to improve secondary education and retain more students. In other legislation, the Legislature also restored a substantial portion of the funding it cut from school districts in 2011 and in SB-307, transferred administration of adult basic education programs from the Texas Education Agency to the Texas Workforce Commission. From a Texas employer's perspective, all of these are encouraging developments.

Nonetheless, as demonstrated by the statistics discussed below, Texas lags other states in educational attainment. Significant skills gaps continue to exist and are predicted to worsen over time due to the looming demographic changes, the projected lower levels of education attainment and the rapidly increasing pace of technological change, making clear the need for a unified and more sweeping plan of action to reform our education system. Research by Dr. Steve Murdock on Selected Characteristics of Texas Education, shows that when compared with other states in the US:[26]

Texas is:

- 2nd in Total Student Enrollment (4.9 million students 2010–11)
- 1st in Total Student Enrollment Growth (1998 to 2009)
- 1st in Hispanic Student Enrollment Growth (1998 to 2009)

SIGNIFICANT SKILLS GAPS continue to exist and are predicted to worsen over time due to the looming demographic changes, the projected lower levels of education attainment and the rapidly increasing pace of technological change...

Texas ranks near the bottom in critical categories:

- 42nd in Instruction and Instruction-Related Expenditures per Pupil ($5,443)
- 43rd in Total Per Pupil Expenditures ($8,350)
- 28th in Pupils per Teacher (14.7)
- 28th in Average Freshman Graduation Rates for Public Secondary Schools, 2008–09 (75.4%)
- Last Among the States in the Percent of People 25 Years and Over Who Have Completed High School (81.1%, including equivalency)
- 30th in Percent of People 25 Years and Over Who Have Completed a Bachelor's Degree (26.4%)
- 41st in Percent of 18 to 24 Year Olds Enrolled in Colleges and Universities (39.6%)
- 46th in the Percent of Public High School Teachers Teaching with a Major in their Main Assignments (71.9%)

Texas has a fast-growing, school-age population:

- Texas Student Age Population (Ages 5–17) grew by 67,522
- People Per Year (or 675,220) between 2000 and 2010
- 4,937,351 children were of school age (Ages 5–17) in 2010, up from 4,262,131 in 2000 (a 15.8% increase)
- Texas Student Age Population (Ages 5–17) is projected to grow by 4.5 million people (or 91.5%) between 2010 and 2050

Texas has more than 25% of children living in poverty:

- 12th in Percent of People below Poverty Level as of October 2012 (18.5%)
- 10th in Percent of Children below Poverty Level as of October 2012 (26.6%)

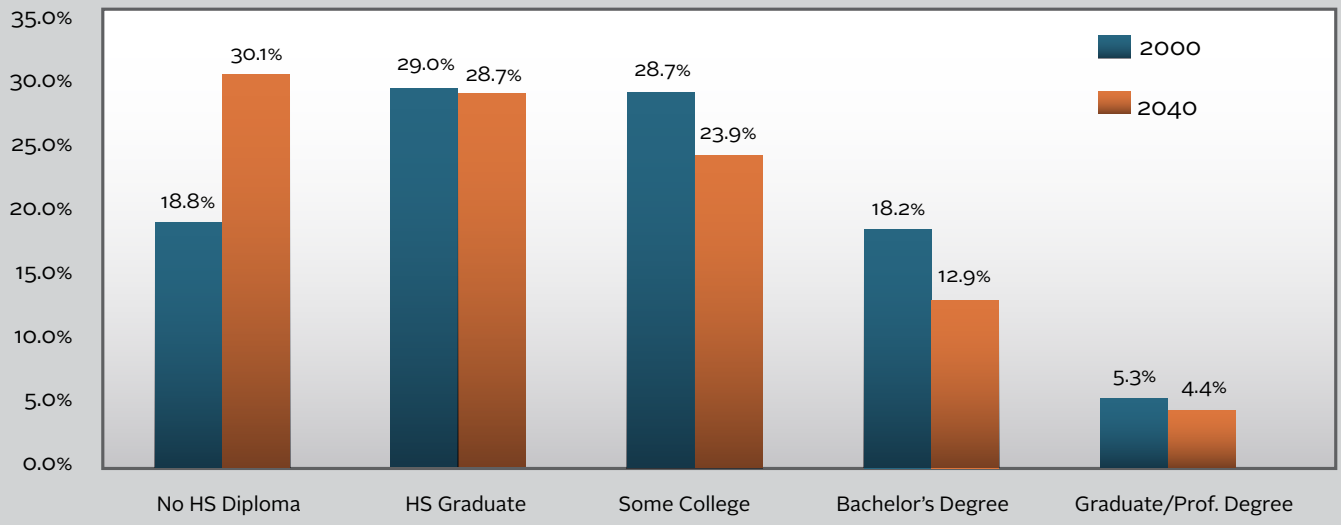
For those 3 million Texans who do not have a high school diploma, Adult Basic Education that is comprised of General Education Degree (GED) studies, English as a Second Language and literacy classes are the first steps they may take toward workforce readiness. Yet, according to the U.S. Department of Education, "…Texas is one of only two states that spends no money on adult education beyond the minimum required to receive federal funding for those programs…"[27]

Unfortunately, educational attainment levels in Texas are traveling in the wrong direction and are projected to significantly drop by 2040 unless we make meaningful and significant changes today.[28] Figure 3 on the next page projects a steep increase in labor participants who have not completed high school and decreases in labor participants who have earned college credentials.

THE STATE OF EDUCATION IN TEXAS

Figure 3

PROJECTED COMPARISON OF LABOR FORCE EDUCATION ATTAINMENT RATES IN TEXAS, 2000 AND 2040*



*Using US Census Bureau count for 2000 and Texas State Data Center 1.0 population projection scenario for 2040.

Note: Figures rely on the Texas State Data Center's 'high-growth' scenario, which assumes the age, sex and race/ethnicity rates of net migration experienced in Texas from 1990 to 2000 will continue.

Source: Texas State Data Center, University of Texas at San Antonio.

Figure 4

BELOW PRESENTS 9TH GRADE GRADUATION AND DROPOUT RATES RECENTLY COMPILED BY THE TEXAS EDUCATION AGENCY

Grade 9 Longitudinal Graduation, Completion, and Dropout Rates (%), by Race/Ethnicity and Economic Status, Texas Public Schools, Class of 2011

Group	Graduated	Continued	Received GED[a]	Dropped out	Graduated or continued (Completion I)	Graduated, continued or received GED (Completion II)
African American	80.9	7.4	0.8	10.9	88.2	89.1
American Indian	86.6	5.2	1.8	6.4	91.8	93.6
Asian	95.0	3.5	0.1	1.4	98.4	98.6
Hispanic	81.8	8.4	1.1	8.7	90.2	91.3
Pacific Islander	88.0	6.1	0.9	5.0	94.1	95.0
White	92.0	3.3	1.2	3.4	95.4	96.6
Multiracial	92.1	3.8	1.0	3.1	95.9	96.9
Economically disadvantaged	83.7	7.6	1.0	7.7	91.3	92.3
State	85.9	6.2	1.1	6.8	92.1	93.2

Note: Parts may not add to 100 percent because of rounding. Racial groups (African American, American Indian, Asian, Pacific Islander, White, and multiracial) do not include students of Hispanic ethnicity. [a]*General Educational Development certificate.*

According to the Texas Education Agency, in its report, Secondary School Completion and Dropouts in Texas Public Schools 2011–12, in the class of 2012 Grade 9 cohort, Asians had the highest graduation rate (94.4%), and African Americans had the lowest graduation rate (83.5%). The graduation rates for Hispanics and Whites were 84.3% and 93.0%, respectively. African Americans and Hispanics had the highest longitudinal dropout rates across racial/ethnic groups, at 10.1% and 8.0%, respectively (TEA 2013).[30]

Data gathered and reported by Texas public schools to the Texas Education Agency in the spring of 2010, show that:

- 817,165 English Language Learner (ELL) students were enrolled in our public schools (456,051 in bilingual education)
- 310,812 students were enrolled in English as a Second Language programs and 50,302 in various other programs
- 744,949 of the ELL students (>91%) speak Spanish and 17% of students enrolled in Texas public schools were ELL students.[31]

As the Hispanic population continues to grow, a sizable and growing proportion of school age students will need to be taught using various types of instructional strategies and programs to successfully navigate curriculum standards. The goal of such instructional intervention is twofold: (1) these language proficiency initiatives can potentially decrease high school dropout rates by increasing students' ability to master various subjects: English, social studies, science or math; and (2) these programs will support English language proficiency for Texas' future workforce and lead to a more skilled workforce.

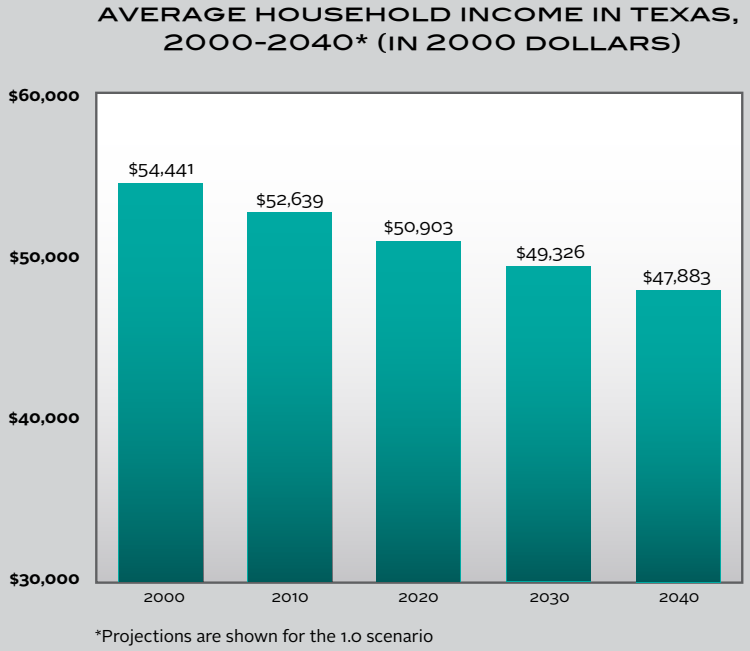
As it stands now, Texas' emerging talent pool is increasingly under stress. A high school dropout rate of more than 15%, as reported by TEA, for some groups is an unacceptable return on our investment in education and has severe economic implications for the state and its residents. Texas can no longer afford piece-meal efforts regarding matters of such critical importance to its future economic vitality. A 2009 study found that just one year's class of Texas high school dropouts costs Texas $9.6 billion in lost wages, reduced sales tax, and welfare expenses.[32] This not only creates a tremendous drain on the state's economy in terms of lost revenue and higher expenses, but also continues to weaken the talent pool for Texas employers.

AS IT STANDS NOW, TEXAS' EMERGING TALENT POOL IS INCREASINGLY UNDER STRESS.

THE STATE OF EDUCATION IN TEXAS

As we plan for the workforce of tomorrow, each of the statistics and projections outlined above must be considered, prepared for and addressed as part of a whole solution for education attainment. Unless these trends are reversed, Dr. Steve Murdock predicts that average household income will decrease and household poverty rates will rise significantly between now and 2040, as demonstrated by *Figure 5 below.*[33]

Figure 5



The data and statistics referenced above, along with the demographic projections for Texas forecasting substantial increases in both the elderly and Hispanic populations, suggest that unless we make significant and immediate interventions in education, we will face a bleak future with an under-educated workforce, which will in turn result in a decreasing tax base to fund state and local governmental services and declining revenues to build and maintain infrastructure.

Finally, additional education reform is needed to increase the development of career readiness skills and abilities needed by employers. Our employers (and higher education providers) increasingly complain about the skill levels of students who graduate from high school (and from higher education). Those complaints include the lack of basic reading and math abilities, and in the case of employers, soft-skills and problem-solving skills. Clearly, education reform must address both skills and abilities needed by our employers and by our students to continue their learning, as well as be relevant to our students in order to keep them engaged. Reform should also be relevant to our changing economy and revisited on an ongoing basis to adapt to changing employer needs, demographics and technologies. It is paramount that reform, at any given time, not be considered a "fix" but rather a process.

FRAMEWORK FOR COORDINATED EDUCATION REFORM

The Governor's Competitiveness Council's 2008 Report to the Governor, called for the adoption of a joint-operations model, where regions and agencies remain autonomous but the state plays a more central and active role in improving the quality of business conditions.[34] TAWB agrees with the Competitiveness Council's assertion that a "successful talent development system is cohesive, such that all parts work seamlessly together; dynamic, in that it can rapidly respond to changing workforce demands; efficient, in that tax dollars are spent on effective programs that provide and improve talent; and accountable to the students and the taxpaying public for producing results."[35]

TAWB also supports the Competitiveness Council's recommendations that in order to improve Texas talent development outcomes, reform of the Texas education system from Pre-K to Careers should start by:

- Removing bureaucratic policies that prevent all parts of the system from working seamlessly together to meet workforce demand
- Ensuring all students graduate with the skills required to be successful in college and/or workforce ready
- Emphasizing accountability and results for all students over turf or institutional preservation
- Improving graduation rates for all, with emphasis on programs in critical fields, and
- For post-secondary education, establishing performance funding standards when appropriate that are aligned with the regional, state and/or global demand for certain knowledge, skills and abilities targeted as drivers for the Texas economy

TAWB also recommends that the Texas Workforce Investment Council's 2010-2015 Strategic Plan for the Texas Workforce System guide planning initiatives, as well as the development of education policy and regulations for adult education, career and technical education, and college and work readiness, and that strategies are addressed in an integrated, collaborative manner in order to ensure alignment. TAWB believes that its Pre-K to Careers Model and principles of a Business Driven Education System, each outlined below, should be implemented to accomplish this needed reform of our education system.

TAWB AGREES

with the Competitiveness Council's assertion that a "successful talent development system is cohesive, such that all parts work seamlessly together; dynamic, in that it can rapidly respond to changing workforce demands, efficient, in that tax dollars are spent on effective programs that provide and improve talent, and accountable to the students and the taxpaying public for producing results."

THE PRE-K TO CAREERS MODEL

As we wrote in 2009 in *Creating a Culture of Competitiveness... The Future of Workforce Development in Texas:*

"Grades K through 8 are the central focus of education and workforce development. We must stop focusing on high school graduation as the start and end point for the training of our emerging workforce."[36]

Education reform efforts in recent years have focused on high school, but have missed critical opportunities at elementary and middle school levels. According to the Youth Transition Task Force (2006), specific academic indicators have emerged while studying the elementary and middle school experiences of high school drop-outs throughout the country. For example, a longitudinal study of Baltimore Public Schools found that 94% of those who were retained both in elementary and in middle school dropped out."[37] A study of middle school students in Philadelphia found that having failed math or English in 6th grade significantly diminished the probability of a student completing high school.[38]

Additionally, in a series of focus groups and surveys conducted in 25 different locations throughout the country, 45% of youths and adults 16-25 years old who identified themselves as high school dropouts reported that they were academically unprepared when they started high school.[39] These same respondents frequently repeated a grade before dropping out and likely fell behind in elementary and middle school.[40]

It is imperative that Texas acts now to reduce the level of high-school dropouts. Preparation of the workforce begins at the Pre-K level, and by the time students reach middle school, they must be well-positioned to succeed in and graduate from high school with the necessary skills to enter the workforce or further their education. Texas must therefore seize early opportunities to positively impact graduation rates and prepare students for the workforce.

Opportunities to position students for education and workforce success abound at the elementary and middle school levels. Critical strategies beginning at the early childhood development phase and continuing through middle school must be employed to engage students. According to scholars Brigid Barron and Linda Darling-Hammond, there is strong evidence to show that inquiry-based, collaborative approaches to learning benefit both individual and collective knowledge growth. Students engaged in inquiry-based learning develop content knowledge and learn increasingly important twenty-first century skills, such as the ability to work in teams, solve complex problems, and to apply knowledge gained through one lesson or task to other circumstances.[41]

When students are exposed to this type of learning, which is relevant to their lives, it connects learning to the real world and puts information into everyday context. Subject matter becomes logical, interesting, and exciting. Of course, if elementary school students move forward without solid reading and basic math skills, they are positioned to fail in middle school and high school.

Skills that are considered both fundamental and essential for workforce success must be taught beginning at the elementary school level. In a recent report issued by the National League of Cities, it was noted that:

The changing nature and composition of the economy has highlighted the necessity of a local workforce with skills that are appropriately aligned and matched with employer demand. Unfortunately, more than one in two city officials (53%) report that current local workforce skills are posing a problem for the economic health of their communities. Nearly nine in 10 city officials (88%) note that workforce alignment has not improved over the past year. Similarly more than eight in 10 (82%) report that the percentage of the population with a post-secondary degree has not increased. [42]

According to North Carolina's Workforce Development Boards' 2012 survey, Closing the Gap, employers across the country report a shortage of workforce readiness skills.[43] Critical thinking, teamwork, professionalism, communication and work ethic are some examples of these in-demand workforce readiness skills. As a result, pedagogy learning models should be employed to address better development of workforce readiness skills. A pedagogy learning model teaches children how to think; children are encouraged to analyze a subject matter instead of being taught what to think about a subject matter. Teaching them how to think teaches them how to problem solve, adapt, innovate and succeed in the workplace. Laying the foundation for critical thinking early in the education continuum positions them for life-long learning success, that which may be built upon from an early age.

Opportunities also abound at the middle school level. TAWB believes that middle school students should receive career education and prepare career plans that outline career goals and the educational requirements necessary to achieve them. This process should be updated annually to reflect not only the changing job market and employer needs, but the student's changing interests as well.

TAWB continues to recommend that college or postsecondary education planning should begin in middle school so that by the time students arrive in high school, they are able to plan their coursework and their high school endorsement tracks accordingly. Currently, few students actually report initiating college planning before high school. Wimberly and Noeth (2005) found that although most students reported a desire to attend college in the early years, few reported being enrolled in a college preparatory curriculum in high school and almost a fourth of high school students had yet to explore their post-high school options.[44] Unfortunately, a wide gap also exists between aspirations and expectations and actual college or post-secondary education planning activities among working class families or families where parents do not have a college education.[45]

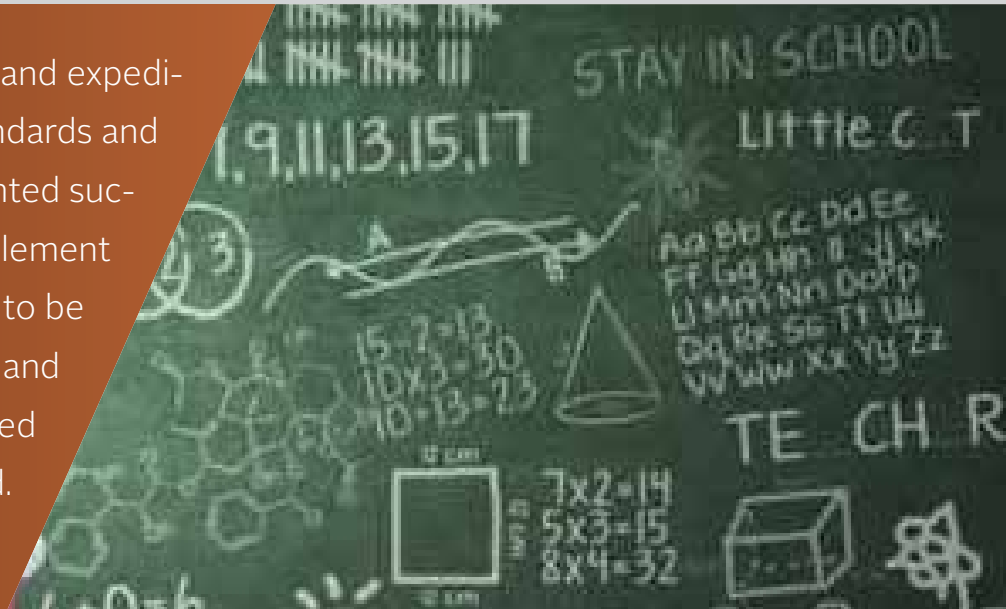
THE PRE-K TO CAREERS MODEL

Further, TAWB continues to recommend that Grades 6–8 should be focused on building a career planning foundation by promoting career exploration in advance of matriculating to high school. Moreover, TAWB recommends that Texas schools adopt and implement Competitive Texas Curriculum Standards (CTCS), standards previously outlined by TAWB, to equip students in middle school and high school with the competencies they need to earn a high school diploma, to achieve proficiency as measured by the National Assessment of Education Progress Examination, and to have the necessary skills and preparation to continue their post-secondary education and pursue a career of their choice.[46]

TAWB's recommended CTCS components include:

- Middle school students should prepare career preparation plans that outline career goals and the educational requirements necessary to achieve them. The plans would encourage career exploration and would be reviewed and revised annually, if necessary.
- Middle school students should take a class that advises them on career opportunities and complete a thesis or similar project as part of the middle school CTC standards in order to use and integrate skills necessary for achievement.
- Education systems should increase the opportunities for middle school students to earn credits that can be applied toward high school graduation requirements.
- Educators should develop regional graduation requirements to meet education and workforce needs as defined by employers in their region.
- Career and technical education should be a core component of the middle school and high school curriculum and appropriately funded.
- Continuous improvement processes as they relate to curricula and educational programs should be employed at the state, regional and local levels in order to promptly anticipate change and implement appropriate strategies.[47]

Texas should move urgently and expeditiously to implement these standards and ensure that they are implemented successfully. Texas should also implement measures that require students to be ready by the 8th grade to read and perform math problems required in high school and beyond.



CAREER & TECHNICAL EDUCATION (CTE)

Over the past few decades, Texas, like most other states, developed a college-for-all approach to K-12 education. With the funding cuts to public education and emphasis on four years of math, science, English and history (4X4) perceived necessary to increase the numbers gaining admittance to a college, public education began cutting CTE programs because schools could not afford them and students did not have time (and were often discouraged) to take them. Despite this emphasis on college for all, American college completion rates have remained static over the past 30 years while completion rates in other countries have surpassed us.

Due to the increasing importance of middle-skill jobs and the adverse impact college for all may have had on dropout rates, TAWB and other members of the business community called for the return of relevant Career and Technical Education (CTE) to schools. CTE presents the business community with an actionable agenda for solving growing workforce shortages and provides diverse sets of knowledge, skills, and abilities that employers in many industries need to fill crucial jobs. Well-designed models of CTE integrate rigorous academics with relevant, project-based learning drawn from the real world of work.

Moreover, participation in CTE leads to other positive outcomes:

- CTE contributes to higher graduation rates. The average high school graduation rate for students concentrating in CTE programs is 90.18%, compared to a national graduation rate of 74.9%.
- CTE addresses America's jobs of tomorrow. Experts project 47 million job openings in the decade ending 2018. About one-third of those jobs will require an associate's degree or certificate, and nearly all will require real-world skills that can be mastered through CTE.
- CTE works to reduce high school dropout rates. High-risk students are 8 to 10 times less likely to drop out in 11th or 12th grades if they are enrolled in a CTE program, compared to general education.
- CTE feeds the post-secondary pipeline. Seventy percent of students concentrating in CTE areas stayed in post-secondary education or transferred to a four-year degree program, compared to an overall average state target of 58%.[48]

TAWB believes there are many ways to integrate CTE programs that lead to desired outcomes. First and foremost, the education and business communities, policymakers and regulatory agencies must work together to deliver a seamless CTE system that is responsive to employer and student needs. This system must continuously strive to produce the best and most efficient outcomes in terms of quality, time and cost.

In order for that to happen, the following must occur:

- Basic skills training should be incorporated into technical coursework to reduce training time and offer students applied or contextual learning
- Courses should be designed to meet employer needs, be approved by employers in the industry, and course approval by government should be streamlined
- Center of Excellence Models should be established to encourage greater collaboration in the education community
- Sharing of resources among the delivery partners (instructors, equipment, etc.)

CERTIFICATIONS

Today, the fastest-growing postsecondary credential is not a bachelor's or associate's degree but a certificate recognized by industry. According to Carnevale, Rose and Hanson, "the number of certificates awarded has sky-rocketed more than 800 percent over the past 30 years. In 1984, less than 2 percent of adults 18 and older had a certificate as their highest educational attainment; by 2009, the percentage had grown to almost 12 percent".[49]

This affordable alternative usually takes less than one or two years to complete and can boost a worker's earning power by 20% over those with only a high school diploma. Analysis of certifications, which are acceptable and meaningful to the business community, show an average boost of the earning power over a high school diploma of 27% for men and 16% for women.[50]

Additional learning environments based on real-world, project-based learning afford students greater chances of success whether entering college or the workforce. In order to expedite professional development, professional certificate programs should be offered at the high school level. Expedited professional development is convenient and efficient for both the student and future employer. Additionally, a certificate is often a catalyst for continued or higher education. Continued certifications and upgrades may be used to boost an incumbent worker's existing skills, retool a dislocated worker, and complement adult basic education programs.

There is no valid reason not to offer meaningful certificate programs in high schools. While all students should be encouraged to pursue postsecondary education, those who choose otherwise should have pathways that lead to meaningful employment.

DUAL CREDITS

Whenever possible, the delivery of education must be flexible, affordable and designed to reach and retain the greatest number of students possible. During the last decade, TAWB recommended that high school students have the opportunity to graduate from high school with an associate's degree, or substantial credits toward one, in addition to a high school diploma. While such accelerated learning is rigorous, those students living at home and still under the guidance of parents, teachers, counselors and principals are better situated to succeed. According to a study conducted by the American Institutes for Research, students enrolled in an Early College High School outperform their peers on state English Language Arts assessments. In Texas, another study found that students enrolled in an Early College High School had a higher probability of passing high school math assessments than students in that study's comparison group. Overall, students were more likely to graduate from high school than non-participating students.[51]

As noted in an interview with Cecilia Le, Project Manager with Jobs for the Future, which appeared in an article in the March 4, 2013 issue of *The Hispanic Outlook:*

Many students today are taking advantage of these learning opportunities through dual course credits; however, further cooperation and understanding is needed by leaders, policymakers and educators in order to better align and integrate dual course study. It is crucial that all partners involved in the talent development system position dual credit study so that it is systematically achievable. They must support delivery, to include innovative and customized programs, at both the high school and middle school level in order to expedite proficient professional development. They must also carefully articulate agreements and degree plans at the outset in order to promote student success. Further, collaboration that includes sharing of resources, instructors, and materials between independent school districts and community and technical colleges must occur not only to expand access for students, but promote more cost-efficient and timely outcomes for all.

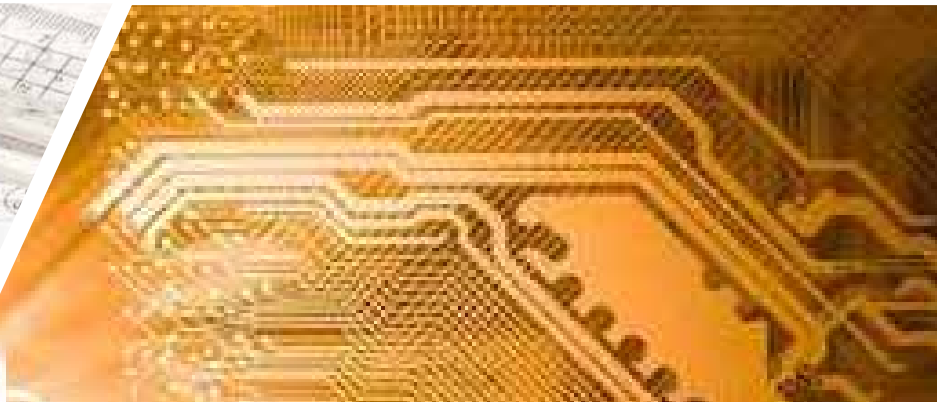
61% of early college high school students are on free or reduced lunch, and about half of them are the first in their family to attend college. Forty- three percent of early college high school students are Hispanic. In the 2010-11 school year, early college high schools nationwide had a median four-year graduation rate of 93%...[and] 93% of their graduates earned at least some college credits; 56% earned two or more years of college credit.[52]

SCIENCE, TECHNOLOGY, ENGINEERING AND MATHMATICS (STEM)

The Texas Science, Technology, Engineering and Mathematics (T-STEM) Initiative was created to align high school curriculum with the admission requirements of colleges and the qualifications needed for 21st Century jobs. According to The Alliance for Science and Technology Research in America, by 2018 Texas will need to fill 758,000 STEM-related jobs.[53] However, our current education system is not producing enough graduates with strong enough backgrounds and knowledge in STEM courses needed to sustain job growth in key industries in the state.

In order for Texas to grow its economy and recruit more businesses to the state, TAWB believes that STEM curriculum in elementary and middle schools across the state must be strengthened and incumbent teacher quality thoroughly reviewed to ensure that effective teachers are delivering this curriculum. Additionally, efforts must be made to attract and retain the best and brightest teachers educated in STEM fields of study to the elementary and middle school levels so that students may be introduced to 21st Century jobs at an earlier age. Particularly in the STEM fields, but applicable to all other areas as well, teacher quality initiatives should be implemented, incumbent teachers should be carefully reviewed, and inadequate teachers should be removed.

Elementary students should be exposed to experts in STEM fields as well as real-world activities in the classroom. Introducing and instilling a love for the STEM courses and careers when students are most impressionable affords opportunities for talent development for our most promising industries.



BUSINESS, EDUCATION & ECONOMIC DEVELOPMENT

In an effort to meet local workforce talent needs, the business and education communities have worked together reasonably well over the last decade to deliver customized curriculum to local high school students. For example, Pathways in Technology Early College High School in Brooklyn, New York and IBM partnered to offer a model six-year program whereby high school students may graduate with an associate's degree in Computer Information Systems or Electromechanical Engineering Technology.[54] Participating students gain access to accelerated learning and IBM gains access to an increased labor pool of qualified applicants. However, it is important to note that pilots such as these are largely funded by industry out of frustration.

Still, business-education partnerships can be enormously satisfying to both partners. For these partnerships to succeed, clear goals, intent and results need to be agreed upon at the outset and there must be good communication throughout the process. The partners must also agree to overcome challenges while recognizing benefits and rewards. In effect, the partnership must employ a business plan and adapt as needed to reach the goals of the plan. Many businesses in Texas have participated in local partnerships and others stand ready. Business organizations have also initiated their own partnerships over the years. In 1989, the Texas Business and Education Coalition was formed to advise on the alignment of education to meet the needs of businesses in the state. Today, the Texas Association of Business advises on the need to fund pre-school programs, as well as increase quality and accountability in early childhood education programs.

In 2007, DeHavill and Associates, and the National School Foundation Association, surveyed more than 750 superintendents and other education officials on the importance of community/school partnerships. Results of the survey found that:

> School officials ranked individual businesses as the most important community partnership group, ahead of other well-established partners such as parent organizations and booster clubs. Although school administrators ranked business coalitions like local chambers of commerce as fifth in terms of the importance of existing community partnerships, they ranked business coalitions first when asked to rank the importance of future community partnerships.[55]

It remains true that business and education do not always understand each other and that lack of understanding can create barriers to partnership success. The business community is results-oriented, operating on a more urgent basis, while the education community focuses on the long-term development of a student, where outcomes are not immediately realized. However, in this changing world and global economy, all partners in the talent development system must adapt and work together to meet the needs of its customers.

CORNERSTONES FOR A BUSINESS-DRIVEN EDUCATION SYSTEM

TAWB recommends the implementation of a Business-Driven Education System, composed of regional partnerships of employers, educators and others, to make recommendations on course and curriculum development in the region, needed competencies, and certifications and CTE programs to be offered for each of Texas' important industry sectors that are relevant in the region, based on the principles discussed below. TAWB believes that for a Business-Driven Education System to be effective, certain events, partnerships and strategies must occur so that a foundation for success may be established.

Those cornerstones include:

- Establishment of a collaborative network among Business/Workforce/Education to develop a master plan that will identify and define shared visions, goals and outcomes and will create a more efficient and effective talent pipeline
- Development of a business-driven, integrated and adaptive career and education pathway system
- Focus on education and skills demanded by regional economies and employers, and investment in high-demand jobs of the future
- Leveraging of regional and state partnerships of key system stakeholders to maximize innovation, cooperation, and resources around regional and state economic growth strategies
- Collaboration of key business and community leaders, including civic, business, education, workforce, economic development, and philanthropic leaders, to identify strengths, challenges, resources, and needs in their regions and to identify, build support, and leverage resources in order to build a highly-effective talent pipeline
- Alignment of key agencies and resources, including workforce development, higher education, adult education, and economic development so that seamless pathways to good jobs are created
- Investment in education, training, and workforce development at a level proportionate to the need
- Investment targeted to get it right the first time

TAWB further believes that certain events and actions should be taken to ensure a successful Business Driven Education System. Those actions/events include but are not limited to:

- Conduct industry surveys to measure current local and regional employment needs as well as predicted future needs
- Establish regional partnerships to develop middle and high school curriculum that will meet regional education and workforce needs
- Align career pathways with course requirements and curriculum from Pre-K through Higher Ed and actual job requirements
- Redefine educational success by building a learning system (Pre-K through 16+) focused on competencies rather than "seat time" or credit hours
- Support access to quality early education that includes Pre-K STEM initiatives
- Support programs to train Pre-K and early elementary grade teachers in math and science
- Provide job-shadowing opportunities to enable students to explore career opportunities in the workplace
- Provide job internships for students
- Mentor students in career pathways
- Provide opportunities for students to visit worksites during field trips
- Host annual Career Expos to showcase industries
- Sponsor and/or support summer camps and school-based activities and clubs
- Establish partnerships to assist with career development/planning in middle schools
- Advise on appropriate Career and Technical Education (CTE) programs in communities

CONCLUSION

Texas youth in grades 1–6 today will be ready to enter college and join the workforce in the next 6–12 years. Their preparedness, and the preparedness of those now in secondary school, will be a determining factor as to whether Texas will, at a minimum, sustain its current level of economic growth over the next generation. Our driver industries need the best and brightest employees in order to continue to be leaders in their respective industries, as well as grow the Texas economy.

In order for this to happen, it is time for Texas to get it right the first time (and pay for it once). The need for remedial coursework post-high school and prior to post-secondary education is a prime example of not getting it right the first time. In the business world, producing a defective product or service that repeatedly and predictably required correction or remediation would lead to the failure of the business. The same is true for our education system. Therefore, it is time for the business and education communities to work together to define and produce a product that is desirable the first time around.

Working together can be nothing less than working smarter. The business and education communities must no longer work independently around problems but instead together in order to solve them. For example, the standard exit test for a high school student is not the same as the entrance test for a community college student. There is no logical reason for this and the existence of two tests serves to decrease efficiencies and increase costs. After all, the goal of the education system is to produce a high school graduate that is college or workforce ready. One test will suffice.

Other opportunities to improve outcomes and efficiencies exist at every level in the education pipeline. Teacher quality initiatives must be required, implemented and supported, and ineffective teachers must be removed. The education system must also position itself to readily adapt to the ever-changing business climate. Processes such as these must be ongoing to ensure a workforce with the capacity to create and maintain a thriving, successful and robust economy.

Further, we must demand that our universities and colleges engage the talent development system in a way that is seamless and supportive. It is time for them to more fully align their degree and certificate programs in ways that better meet the needs of students and employers. It is time for universities and colleges across the state to deliver bachelor's degrees that are timely and affordable. It is also time that they move to align their research and investments to meet the needs of an innovation economy, one that is focused on economic development and job creation. The higher education community must become an active participant in business-driven reform.

In this paper, we put forth recommendations to better align the education and workforce communities. While we believe that every student successfully exiting our public education system should have the opportunity and skills necessary to choose to continue their education at a post-secondary level (without remediation), we also believe there are viable and valuable pathways to careers should they instead choose to enter the workforce upon high school graduation. We believe that either choice holds great value and contributes significantly to the state's economy. Both choices offer various approaches to successful careers while addressing the growing needs of Texas employers.

THIS IS AN EXTRAORDINARY TIME FOR OUR STATE.

Many politicians and interest groups are in fierce debate over curriculum that they may or may not find appropriate for our youth. Now more than ever, it is crucial that we educate our leaders on content that matters and not let the critical college and workforce readiness skills that the business community so desperately needs get lost in these debates. The opportunity is before us and all producers and purchasers of the state's talent supply must act with urgency and good will. More than ever, the business and education communities must stand together and move responsibly and immediately to thoughtful, comprehensive, and business-driven reform. The future of Texas depends upon it.

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2014 REPORT

PRESENTED BY THE TEXAS ASSOCIATION OF WORKFORCE BOARDS (TAWB)

The Texas Association of Workforce Boards (TAWB) is an association of Texas' 28 local workforce development boards. The workforce boards are required by law to have a majority of private business representatives serving on them. As such, these board members represent various industries driving the Texas economy: manufacturing, banking, health care, transportation, finance, construction and other sectors. TAWB, in conjunction with local workforce development boards, seeks to identify future workforce needs and trends affecting Texas employers, and to provide strategic direction to meet those needs. In addition to issues impacting the workforce today, a primary focus of TAWB is the development of strategic policy for workforce education and training to ensure that the state's future workforce will meet the needs of industry. For more information about TAWB or this paper, please contact Executive Director Greg Vaughn at 214-290-1019 or greg.vaughn@tawb.org.

TEXAS WORKFORCE SOLUTIONS

Texas Workforce Commission
(512) 463-2222
texasworkforce.org

Alamo
(210) 272-3260
workforcesolutionsalamo.org

Brazos Valley
(979) 595-2800
bvjobs.org

Cameron County
(956) 548-6700
wfscameron.org

Capital Area
(512) 597-7100
wfscapitalarea.com

Central Texas
(254) 939-3771
workforcelink.com

Coastal Bend
(361) 882-7491
workforcesolutionscb.org

Concho Valley
(325) 653-2321
cvworkforce.org

Greater Dallas
(214) 290-1000
wfsdallas.com

Deep East Texas
(936) 639-8898
detwork.org

East Texas
(903) 218-6400
easttexasworkforce.org

Golden Cresent
(361) 576-5872
gcworkforce.org

Gulf Coast
(713) 627-3200
wrksolutions.com

Heart of Texas
(866) 982-9226
hotworkforce.com

Lower Rio Grande Valley
(877) 687-1121
wfsolutions.org

Middle Rio Grande
(830) 591-0141
wfsmrg.org

North Central
(817) 695-9184
dfwjobs.com

North East Texas
(903) 794-9490
netxworkforce.org

North Texas
(940) 767-1432
ntxworksolutions.org

Panhandle
(806) 372-3381
wspanhandle.com

Permian Basin
(877) 563-2580
workforcepb.org

Rural Capital Area
(512) 244-7966
workforcesolutionsrca.com

Southeast Texas
(409) 719-4750
setworks.org

South Plains
(866)765.5038
www.spworkforce.org

South Texas
(956) 722-3973
southtexasworkforce.org

Tarrant County
(817) 413-4400
workforcesolutions.net

Texoma
(903) 640-0222
workforcesolutionstexoma.com

Upper Rio Grande
(915) 887-2600
urgjobs.com

West Central
(325) 795-4200
workforcesystem.org