

Registered Apprenticeship – The Other Higher Education Thursday, January 24, 2019

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Registered Apprenticeship – The Other Higher Education

Background: On November 16, 2015 Gov. Abbott announced the launch of the higher education plan for Texans, 60x30TX. Under the plan:

- 60% of Texans ages 25-34 are to possess a certificate or degree by 2030¹
- 550,000 students by 2030 will complete a certificate, associate, bachelor's or master's degree from a Texas institution of higher education.
- By 2030, all graduates from Texas public institutions of higher education will have completed programs with identified marketable skills.
- By 2030 undergraduate student loan debt will not exceed 60% of first year wages for graduates of Texas public institutions. ²

Counted towards satisfying the goals of 60x30TX are Texas residents ages 25-34 who have one or more of:

- **A level I, II, or advanced technical certificate, as defined in the Guidelines for Instructional Programs in Workforce Education. Any degree – associate, bachelor's, master's, professional or doctoral. ³**

Certificates are classified and defined by number of semester credit hours (anywhere from 15 to 87 depending on certificate level)⁴ issued by Texas public, independent (private institutions of

¹ 60% education goal for Texas established by THECB was based upon a 2013 Georgetown University Study "Recovery: Job Growth and Education Requirements through 2020" by Anthony Carnevale.

² November 16, 2015 Office of the Texas Governor Greg Abbott Press Release "Governor Abbott Establishes Tri-Agency Workforce Initiative"

³ July 2018 60x30TX Progress Report

⁴ See THECB Glossary of Terms, August 14, 2017.

higher education), community and technical colleges, career schools and colleges and health related Institutions.⁵

On March 7, 2016, Governor Abbott established the Tri-Agency Workforce Initiative to assess local economic activity, examine workforce challenges and opportunities and consider innovative approaches to meeting the state's workforce goals. The initiative was to be a collaborative effort between the Texas Education Agency (TEA), Texas Higher Education Coordinating Board (THECB) and Texas Workforce Commission (TWC).

Governor Abbott charged the Tri-Agency partners to:

- Identify and advance public and higher education initiatives that make college more affordable for families and help students enter the workforce more quickly with marketable skills.
- Work with industry and local stakeholders to assess local workforce needs and identify innovative workforce development models that directly coordinates with industry partners and promote post-secondary success including CTE and STEM models in their assessment.
- Evaluate current agency efforts, as well as state and local web-based education and career awareness systems to better link students, parents and educators to the broad array of high demand jobs in the state and the educational requirement to secure those opportunities.
- Identify gaps in services to Texas veterans, advance strategies to enhance their education and employment opportunities and develop solutions to ensure a seamless and accelerated transition back into the Texas workforce.

⁵ Texas Education Code Chapter 61.003 defines institutions of higher education including public junior colleges.

- Make recommendations that build the skills of the Texas workforce and advance regional economic expansion, job creation and the goals of 60x30TX.⁶

After a series of regional stakeholder meetings, the Tri-Agency collaboration issued their final report to the Governor, “Prosperity Requires Being Bold: Integrating Education and the Workforce for a Bright Texas Future”⁷.

Recognizing the value of applied learning opportunities including registered apprenticeships, the Tri-Agency emphasized “creating more paid internships, apprenticeships and other applied learning opportunities” to provide students with skills they need to succeed and as a way for employers to gain skilled employees who can fill in-demand and high demand jobs and help businesses grow.⁸

The Tri-Agency partners recommended developing more public/private partnership models that focus on industry aligned career pathways, credentials with marketable skills and efficient stackable program opportunities.⁹

Also stressed was the need to “create educational pathways such as apprenticeship programs to Texas’ two-year community, technical and four-year institutions via articulation agreements for college credit.”¹⁰

The Tri-Agency further recommended building a proactive, ongoing partnership between TEA, THECB, TWC and other stakeholders to continue aligning the educational goals of Texas

⁶ March 7, 2016 Press Release Office of the Texas Governor Greg Abbott, “Governor Abbott Establishes Tri-Agency Workforce Initiative”

⁷ Prosperity Requires Being Bold: Integrating Education and the Workforce for a Bright Texas Future” The Tri-Agency Report to the Office of the Governor from the Texas Education Agency; Texas Higher Education Coordinating Board and Texas Workforce Commission, November 2016.

⁸ Prosperity Requires Being Bold, pg. 11

⁹ Prosperity Requires Being Bold, pg. 15

¹⁰ Prosperity Requires Being Bold, pg. 15

with the state's higher education plan of 60x30TX and to grow the state's workforce, industry and the economy.¹¹

One of the identified strategies in support of all recommendations was to co-locate Texas Workforce Specialists at area high school campuses to provide guidance and information regarding high demand careers, including middle skills jobs and training opportunities with apprenticeships, trade schools, community colleges and employers."¹²

Clearly, the Tri-Agency partners recognized the value of connecting high school students with educational pathways resulting in stackable and portable credentials and connecting students with information regarding high demand careers and educational opportunities made possible through apprenticeships.

These connections were deemed so important that during the 85th Texas Legislative Session, Senator Juan Hinojosa introduced SB 154. This Bill would have created the Career and Technical Education Workforce Specialist Initiative, a pilot program that would call for co-locating Workforce Development Specialists at area high schools. These workforce specialists would advise students regarding in demand careers and training opportunities with Registered Apprenticeships, Trade schools, Community/Technical colleges and Employers. Unfortunately, due to other pressing matters before the Legislature, this bill did not move forward.

In July 2018, the three-member Texas Workforce Commission approved funding to pilot the Workforce Career and Technical Education Specialist Initiative. A Request for Applications was posted November 9, 2018 and recently closed January 11, 2019. Applications are currently under review and successful applicants

¹¹ Prosperity Requires Being Bold, pg. 18

¹² Prosperity Requires Being Bold, pg. 18

have not yet been announced. This pilot program supports the achievement of Texas' goals outlined in the Tri-Agency report, 60x30TX and SB 2105 by ensuring students gain degree certifications and graduate with marketable skills and minimal student debt.¹³

The Texas Economy: Since May 2010, Texas has experienced 100 consecutive months of annual job growth¹⁴. Texas employers continue to experience the retirements of Baby Boomers thereby increasing the demand for trained workers in many occupations. These changes are occurring as Texas employers have also increased their employment requirements. Hiring managers are looking for more workers while also demanding workers with more technical skills, more work experience, and more education.

Recently, the National Skills Coalition reported many States are facing a skills gap, not enough workers adequately trained for available jobs. Between 2014-2024 nearly half of all job openings across the county will be middle skill positions that require training beyond high school but not a four year degree.¹⁵ In order to meet this demand, many states are establishing statewide postsecondary attainment goals for the number of people with postsecondary credentials which include registered apprenticeships.¹⁶

Registered Apprenticeship:

Apprenticeships, known as the “earn while you learn” teaching model has been around since the medieval ages. In modern times, students combine classroom hours with applied on the job learning. Registered Apprenticeship (RA) curriculum is

¹³ Senate Bill 2105 became effective September 1, 2017 (see references for complete bill text).

¹⁴ 2018 Report on Texas Growth Occupations, TWC LMCI

¹⁵ Counting Registered Apprenticeship Completions, Workforce Data Quality Campaign, National Skills Coalition (complete article contained in Appendix)

¹⁶ Counting Registered Apprenticeship Completions, Workforce Data Quality Campaign, National Skills Coalition

customized to meet the needs of industry to train, develop and retain a highly skilled workforce.

The Registered Apprenticeship system has been overseen by the U.S. Department of Labor for over 80 years.¹⁷ Registered Apprenticeship programs are written plans designed to move an apprentice from a low or no skill entry-level position to full occupational proficiency.

Registration means the program has met national and independent standards for quality and rigor under the National Apprenticeship Act. The Act and its regulations are administered by the Department of Labor's Office of Apprenticeship or a State Apprenticeship Agency.

The length of an apprenticeship program can vary from 1 to 6 years. For each year of the apprenticeship, the apprentice will receive approximately 2,000 hours of on the job training and minimum of 144 hours of related classroom instruction.¹⁸ Military veterans can use their GI Bill benefits to support their education while in an apprenticeship program. Since students are connected to a job on day one; they graduate from a RA program with little or no debt.

Every program includes structured on the job training from an experienced mentor at the job site and developed through mapping the skills and knowledge that the apprentice must learn over the course of the program to be proficient at the job.

Apprentices also receive related classroom instruction. Related classroom instruction can be provided by a community college, a technical school or an apprenticeship training school or by the business itself. Educational partners collaborate with business or

¹⁷ DOL website www.doleta.gov/oa/apprenticeship.cfm

¹⁸ DOL website www.dol.gov/featured/apprenticeship/faqs

industry to develop the curriculum based on the skills and knowledge needed by apprentices. Apprentices receive increases in pay as their skills and knowledge increase.

Registered Apprenticeship is no longer just for the skilled construction trades. Registered Apprenticeship now offers access to 300 career areas including software developers, engineers, pharmacy technicians, telecommunications technicians, aircraft technicians, mechanics, certified nursing assistant, electricians, dental assistants, insurance agents and truck drivers.

Upon completion of a Registered Apprenticeship program, the apprentice receives a Department of Labor issued, nationally recognized credential that certifies occupational proficiency. This credential is stackable and portable to in state and out of state institutions of higher education.

There are over 17,000 apprentices in Texas. 1,624 Texas apprentices received their industry recognized credential from the U.S. Department of Labor during Federal Fiscal Year 2017.¹⁹

Graduates from a register apprenticeship program can articulate their DOL Certificates (credentials) to institutions of higher education. For example, United Associates Plumbers and Pipefitters have articulation agreements with out of state institutions such as Washtenaw Community College in Michigan and Rowan University in New Jersey.

The Registered Apprenticeship College Consortium (RACC) is comprised of two and four-year institutions that partner with Registered Apprenticeship programs across the country. As members of the RACC, institutions of higher education agree to accept the college credit value of the Registered Apprenticeship

¹⁹ According to U.S. Dept. of Labor, Office of Apprenticeship

completion certificate as recommended by a recognized third-party evaluator for purposes of facilitating the transfer of credit between consortium member colleges. The consortium is run by the US. Dept. of Labor and the U.S. Dept. of Education. ²⁰

During National Apprenticeship Week in November 2017 Texas community and technical colleges and registered apprenticeship training programs in the construction trades met at San Jacinto Community College in Houston Texas to begin mapping the articulation of credit between registered apprenticeship programs and two-year institutions of higher education. To date, the workgroup has articulated 18 occupations.

This crosswalk was made possible by a Perkins Grant from Texas Higher Education Coordinating Board and Texas Workforce Commission. As Registered Apprenticeship programs are developed, the crosswalk will be updated by the workgroup. The apprenticeship crosswalks can currently be found on the San Jacinto Community College web site²¹ as well as the Texas Workforce Commission website and Texas Higher Education Coordinating Board website.

The University of Houston – Downtown campus has expressed interest as the four year university partner to articulate credit towards an applied bachelor of science degree. This partnership underscores the value of DOL industry recognized credentials.

The quality of instruction provided by registered apprenticeship training centers has been recognized by accrediting organizations. The Houston Plumbers and Pipefitters, Local 68, training center is undergoing review for accreditation from the Council on Occupational Education (COE). A preliminary site visit

²⁰ Registered Apprenticeship College Consortium <https://doleta.gov/oa/racc.cfm>

²¹ <http://www.sanjac.edu/continuing-professional-development/apprenticeship-crosswalks>

by the accreditation team leader occurred in December 2018 and a full team visit is scheduled February 4 – 7, 2019. The COE is scheduled to vote on the accreditation at their March meeting.

Such accreditation will allow Local 68 to establish a two-year degree plan and issue associate degrees in plumbing technology. They will be one of only a handful of apprenticeship programs in the country to be accredited.²² As of Fall 2018 Local 68 had enrollment of over 630 students in their three training centers: Houston, Beaumont and Corpus Christi. They are currently moving forward with plans to acquire and develop a training center in Harlingen, Texas.

Texas Workforce Commission (TWC) supports some Registered Apprenticeship programs as does THECB with funding under Chapter 133 of the Education Code. This funding is to assist with related classroom costs. In Fiscal Year 2018 TWC supported the training of 6,074 apprentices and 541 journey workers.²³

Texas Chapter 133 apprentices earn an average starting wage of \$12.64 an hour. Fourth-year apprentices earn an average wage of \$20.21 an hour, while fifth-year apprentices earn on average \$24.95.²⁴ TWC supports about 1100-1200 employers in Texas engaged in Registered Apprenticeship.

In 2016 TWC received an Expansion Grant from the Department of Labor to develop new registered apprenticeship programs and conduct an outreach campaign to expand registered apprenticeships in Texas into traditional and nontraditional industries and occupations. Since that time, new registered apprenticeship programs have been developed with:

²² Information obtained from Wayne Lord, Local 68 Business Manager

²³ Texas Workforce, Office of Apprenticeship

²⁴ Texas Workforce Investment Council, 2017 Apprenticeship Brochure

- o St David's Healthcare – Registered Nurse – Residency
- o RMS, Aerospace - Drone and Operating Systems
- o South Texas College – Heating, Ventilation, and Air Conditioning partnering with school districts for pre-apprenticeship to apprenticeship programs.²⁵

Conclusion

Registered apprenticeship is not only an effective education and training model but also helps to fill industry demand for educated workers with technical skills. As the job market demands more alignment between industry and education, a reexamination and recognition of educational institutions successfully educating and connecting young students with careers, graduating with little or no debt is important. These Registered Apprenticeship models not only satisfy the goals of the Tri-Agency collaboration, but they also support a strong Texas economy! ²⁶

²⁵ Texas Workforce Commission, Office of Apprenticeship

²⁶ Author's note: As education evolves and the way education is delivered and consumed by young people, we should look for various opportunities to accept and articulate industry recognized credentials in areas of IT certifications not defined by the 60x30TX report.

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Senate Bill 2105 amends Section 302,014(a) of the Labor Code. The legislation requires Texas Workforce Commission to provide the Texas Education Agency with information at least quarterly, disaggregated by county or other appropriate region, regarding: (1) current and projected employment opportunities in this state; (2) career and technical education partnership opportunities with business and industry and (3) professional development opportunities for teachers and learning opportunities for students through industry mentorships, internships, summer programs, after school programs and career based student leadership opportunities. Act effective September 1, 2017.

DOL website “What is Registered Apprenticeship”
Retrieved from: www.doleta.gov/oa/apprenticeship.cfm

DOL website “Frequently Asked Questions”
Retrieved from: www.dol.gov/featured/apprenticeship/faqs

U.S. Dept. of Labor, Office of Apprenticeship, Registered Apprenticeship College Consortium. Retrieved from: <https://doleta.gov/oa/racc.cfm>

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Wayne Lord, Local 68 Business Manager, personal communication, January 2019).

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Office of Apprenticeship

FACTSHEET

www.dol.gov/apprenticeship

Apprenticeship: Building a Skilled American Workforce

Overview of Opportunity

Today, more than ever, building a strong pipeline of skilled American workers is critical for companies to grow their business and compete in the 21st century global economy. Top companies and organizations are leading the way in developing and training a world-class workforce through apprenticeships.

Apprenticeship is a flexible model that can be customized to meet the needs of nearly every type of business, and is integrated into existing training and human resource development practices. It's an employer-driven training model that combines on-the-job learning with related classroom instruction to increase an apprentice's skill level, opportunities, and wages.

There has never been a better time for employers to develop their own apprenticeship program. Federal and state resources are available to assist employers to start and expand apprenticeship programs and to assist workers in accessing education and training opportunities.

Why Partner with the Department of Labor on Apprenticeship?

Technical Assistance and Support

Your program will join the apprenticeship system, which provides access to a national network of expertise, customer service, and support at no charge. Apprenticeship exemplifies high standards, instructional rigor and quality training programs. The U.S. Department of Labor provides technical assistance to companies on how to take advantage of federal and state benefits and programs, and can help guide companies in the development of occupational competencies.



National Credential

Graduates of apprenticeship programs earn a national, industry-recognized credential.

Tax Credits

In many states, businesses can qualify for tax credits related to apprenticeship programs. In addition, employers may be able to claim some expenses for training as a federal tax credit.

Federal Resources

Businesses and apprentices can access funding and other resources from many federal programs to help support their apprenticeship programs.

What Federal Resources are Available to Support Apprenticeship programs?

- **Workforce Innovation and Opportunity Act Funds.** Over \$1 billion for employment and training services is available across the country. WIOA can assist apprenticeship programs by providing training funds to support on-the-job training and related instruction, as well as provide supportive services to help apprentices.
- **Federal Financial Aid for Apprentices.** Some apprentices may be eligible for Federal Financial Aid. If the apprenticeship is connected to a school's program of study, then apprentices may be eligible for Pell Grants, \$3,000 on average per apprentice, and the school may choose to provide federal workstudy grants, \$2,000 on average per apprentice.
- **Support for Veteran Apprentices.** Apprenticeship programs can assist their current and future Veteran apprentices with the benefits they've earned through their service. Veterans who qualify for the GI Bill can receive a monthly stipend (paid by the Department of Veterans Affairs) in addition to the wages they receive in an apprenticeship.

Be an Apprenticeship LEADER

All across America, companies, industry associations, educational institutions, and others are coming together to make new commitments and to help lead on apprenticeship. To learn more about the LEADER program and to see a full list of Apprenticeship LEADERS, visit www.dol.gov/apprenticeship.



How to Connect with Apprenticeship Resources

To learn more about apprenticeship, access an employer toolkit to start an apprenticeship program or to find out how to leverage federal resources, visit www.dol.gov/apprenticeship.

For additional information or to contact the Department's Office of Apprenticeship, email Apprenticeship@dol.gov or call 202-693-2796.

Fitzgerald Act passed in July 1937

29 CFR parts 29 & 30 as revised

Currently over 1350 occupations industry approved, adding new Occupations expanding in areas such as Health Care, (Registered Nurse Resident), Information Technology (Cyber Security and Digital Marketing), Drone Pilot, Aerospace Engineering and more.

Over 2,500 employers in Texas participating in over 450 Registered Apprenticeship Programs in Texas with over 17,000 apprentices participating.

334 Colleges/Universities in the Registered Apprenticeship College Consortium ((RACC)

REGISTERED APPRENTICESHIP COLLEGE CONSORTIUM (RACC)

Overview

RACC is a network of colleges and apprenticeship programs that work together to provide enhanced educational opportunities to a significant number of apprentices across the country. Through the consortium, colleges agree to provide credit for an apprenticeship completion certificate towards an Associate's or Bachelor's degree as recommended by a recognized third party evaluator. While there are currently thousands of existing articulation agreements between a single college and local apprenticeship program, the consortium will create a national network to help expand opportunities for apprentices to complete their postsecondary degrees at member colleges. The RACC is a joint initiative by the U.S. Department of Labor and the U.S. Department of Education.

RACC Goals

- ✓ Provide apprentices with an accelerated pathway to earn an associate's or bachelor's degree;
- ✓ Create a new pipeline of degree seekers to increase graduation rates;
- ✓ Enhance the competitiveness of businesses by enlarging the pool of highly-trained workers;
- ✓ Strengthen relationships among apprenticeship and postsecondary institutions nationwide; and
- ✓ Enhance national understanding of and responses to the needs of apprentices as another working student population.

Why should Colleges Join the RACC?

In today's economy, individuals are looking for flexible avenues to obtain credentials, career opportunities and greater earning potential. By joining the RACC, institutions will have access to apprenticeship graduates who may want to complete a degree to move further up a career path. Graduates of apprenticeship programs are a highly motivated pool of degree seekers. Having gone through the rigor and structure of an apprenticeship, they are likely to easily complete a college degree.

What is Apprenticeship?

Apprenticeship is a proven and structured "earn and learn" model that pairs paid on-the-job learning with related technical classroom instruction in any number of career fields. Apprenticeship offers job seekers immediate employment opportunities that usually pay higher than average wages and offer continued career growth. Apprentices earn a portable credential from the Department of Labor that is recognized by the Department of Education. Programs are offered by tens of thousands of employers, employer associations and labor-management organizations that use the model to prepare highly-skilled workers ready to meet current industry specifications, ensure workplace safety, and increase productivity. Apprenticeship crosses a wide sector of industries that include construction, energy, manufacturing, healthcare, transportation, hospitality, telecommunications, and information technology. Over 550,000 apprentices are trained each year.

How Do I Join?

Joining the RACC is a click away through the streamlined application process, available on the U.S. Department of Labor, Office of Apprenticeship homepage, www.dol.gov/apprenticeship. For further information please email Apprenticeship.College@dol.gov.



UNITED STATES DEPARTMENT OF EDUCATION



EMPLOYMENT AND TRAINING ADMINISTRATION
UNITED STATES DEPARTMENT OF LABOR

Crosswalk Example

PLUMBER	Basic Blueprint Reading for Pipefitters	Basic Blueprint Reading for Plumbers	Basic Pipefitting Skills	Introduction to the Plumbing Trade	Plumbing Maintenance & Repair	Plumbing Codes I	Pipefitting Fabrication & Blueprint Reading	Backflow Prevention	Plumbing & Pipefitting Equipment and Safety	Pipe Fabrication & Installation I	Piping Standards & Materials	Residential Construction Plumbing I
	PFPP 1005,1305,1405	PFPP 1006,1306	PFPP 1008,1308,1408	PFPP 1013,1413	PFPP 1021,1321,1421	PFPP 1023,1323	PFPP 1043,1343,1443	PFPP 1047,1247,1347	PFPP 1050,1350,1450	PFPP 2007,2307,2407	PFPP 2008,2308,2408	PFPP 2009,2309,2409
Skills												
Introduction to the Plumbing Profession				X								
Plumbing Safety-OSHA Training				X					X			
Introduction to Plumbing Math			X	X			X					
Introduction to Tools			X	X					X			
Intro to Blueprints & Plumbing Drawings	X	X	X	X			X				X	
Various Pipes & Fittings			X	X						X	X	X
Fixtures & Faucets				X								X
Intro to Drain, Waste & Vent (DWV) Systems			X	X	X						X	X
Intro Water Distribution Systems											X	X

Colleges in Texas & Their Program Areas

Colleges - 11-24-18	Boiler Maker	Carpentry	Concrete Workers	Diesel Technician	Electrician	Elevator Technician	Glazers & Painters	Heavy Equipment Operators	HVAC Technicians	Iron Workers	Machinists	Masonry Workers	Millwrights	Pipefitters	Plumbers	Sheet Metal Technicians	Welders
Alamo Com Coll District																	
- St. Philip's College				X	X				X						X		X
Alvin Community College				X							X		X	X			X
Angelina College				X	X				X							X	X
Austin Community College		X	X		X		X	X	X	X		X		X		X	X
Blinn College District		X			X				X								X
Brazosport College					X				X		X		X	X			X
Brookhaven College																	
Cisco College									X								X
Clarendon College																	X
Coastal Bend College																	X
College of the Mainland					X				X		X			X			X
Collin Cty Com Coll Dist					X												
Dallas Cty Com Coll Dist																	
-Cedar Valley College				X	NC			X	X		NC						
-Eastfield									X		NC						NC
-Richland											NC						NC
Del Mar College		NC		X				NC					X				X
El Paso Com Coll Dist				X	X				X		X						X
Frank Phillips College																	X
Galveston College					X				X								X
Grayson College					X				X								X
Hill College									NC								NC
Houston Com Coll Sys					X			X	X		X						X
Howard College					X										X		
Howard Cty Jr Coll Dist																	
Kilgore College				X	X				X								NC
Lamar Inst of Technology		X															X
Lamar State College																	
- Orange																	X
- Port Arthur		X							X								X
Laredo Community College				X	X				X								X
Lee College					X						X		X	X			X
Lone Star College System																	
- CyFair											X						X
- Kingwood																	
- Montgomery											X						X
- North Harris		X	X	X	X			X	X	X	X	X		X	X	X	X
- Tomball					X						X						
- University Park											X		X				
McLennan Com College																	
Midland College				X	X				X								X
Mountain View College					X						X						X
Navarro College				X									X				X
North Central Texas Coll				X				X			X		X				X
Northeast TX Com College					X								X				X
Odessa College				X							X						X
Panola College																	X
Paris Junior College		X						X									X
Ranger College											X						X
San Jacinto Com Coll Dist																	
- Central Campus					X												X
- North Campus				X	X										X	NC	X
- South Campus																	
South Plains College				X					X		X						X
South Texas College				X	X				X								X
SW Collegiate Inst for the Deaf																	X
Southwest TX Jr College				X					X								X
Tarrant County College District																	
- South Campus								X									X
Temple College											NC						
Texarkana College				X	X				X								X
Texas Southmost College																	
Texas State Tech College																	
- Fort Bend					X				X		X						X
- Harlingen		X							X		X		X				X
- Marshall					X						X						X
- North Texas									X		X						X
- Waco		X			X				X		X				X		X
- West Texas									X		X						X
Trinity Valley Community College									X		X						X
Tyler Junior College									X								X
Vernon College									X		X						X
Victoria College		X			X				X				X	X	X		X
Weatherford College									NC		NC						NC
Western Texas College																	X
Wharton County Junior College									X		X						X

Pathways



Electrical Technology AAS – 21 + 30 credits to UHD BAAS
HVAC AAS – 31 + 20 credits to UHD BAAS
Pipefitting Certificate – 16 credits to UHD
Welding Technology AAS – 42 + 9 credits to UHD BAAS

THECB:

<http://www.thecb.state.tx.us/index.cfm?>

objectid=BE89E640-12C0-11E9-830D0050560100A9

TWC:

SJC:

www.sanjac.edu/CPD - >

Apprenticeship Crosswalks

How to Use an Apprenticeship Crosswalk

4 - 30-18

Note:

1. Crosswalks have been designed using Work Plans as approved by the Department of Labor for the specific industry sectors and cross-walked to courses in the Texas Higher Education Coordinating Board - Workforce Education Curriculum manual.
2. Teams of community college faculty and industry specific subject matter experts developed the cross-walks.
3. Thirty-eight individuals from 7 community colleges and 8 Department of Labor Registered Apprenticeship organizations participated.

Basic Assumptions:

1. The crosswalks have been designed to encourage and help colleges be more efficient and consistent in developing MOU/partnerships with DOL Registered Apprenticeships in Texas.
2. The crosswalks are designed to be used when the individual requesting transferability has completed the apprenticeship.
3. The crosswalks are applicable only when a community college offers those courses/ program.
4. The college chooses which courses, as per their program, will transfer.
5. The college follows its own policies and procedures regarding transfer of credit/credit for prior learning.

HOW TO USE THE CROSSWALK

Student who has completed an apprenticeship and wants to pursue a community college certificate or degree -

1. Student takes copy of certification of apprenticeship completion to a community college with which the registered apprenticeship organization has a Memorandum of Understanding or to any other community college in Texas that offer a program in which the individual has completed the apprenticeship.
2. Student visits with appropriate community college personnel to determine what classes the college offers in that program for which the student can receive credit.
3. College procedures and policies will dictate how many courses the student will be allowed college credit.

Community College with a program for which a crosswalk has been developed -

1. College can use the crosswalk to develop a relationship with a registered apprenticeship program that provides their own classroom training and, subsequently, write a Memorandum of Understanding defining specifically for what courses the apprentice will receive college credit once they have completed the apprenticeship.
2. College can use the crosswalk to determine for what courses an individual may get credit if an individual has completed an apprenticeship in a particular field. This does not depend on the college having an MOU with the training organization with which the individual completed the apprenticeship.

Registered Apprenticeship Organizations that provide their own classroom training -

1. Registered apprenticeship organizations should work with a community college to develop a pathway through which their apprentices can move through an apprenticeship to the community college to earn an associate degree and, possibly, beyond.

Developed by over 40 individuals including faculty from 9 community colleges and subject specific subject matter experts from around the state.

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— TEXAS —
WORKFORCE SOLUTIONS

Texas Workforce Commission

Registered Apprenticeship - Employer Training Model

- Business/Employers are the foundation of every Registered Apprenticeship program's development. Program's develop their curriculum to meet their workforce skill needs. It is a proven training model for businesses to recruit, train, and retain a highly skilled workforce.
 - Some programs start pre-apprenticeship programs to generate interest and expose individuals to the apprenticeship model.
 - Trio Electric
 - <https://sbmd.org/trio-pre-apprenticeship-program-direct-pathway-to-lucrative-career-for-spring-branch-students/>
 - Northside ISD – Construction Careers Academy
 - <https://nisd.net/cca/apprenticeship>
 - Product built - <https://nisd.net/cca/tinyhomes2019>
- Registered Apprenticeship can receive funding from Texas Workforce Commission through:
 - Eligible Training Provider System:
 - Texas Education Code – Chapter 133; and
 - Vocational Rehabilitation.
- Registered Apprenticeship is expanding in both traditional (plumbing, electrical, welding and carpenters) and non-traditional (health care, information technology, non-manned drone flight, and robotics).
 - St David's Healthcare – Registered Nurse - Residency 2018
 - <https://stdavids.com/about/newsroom/st-david-s-healthcare-earns-approval-to-classify-nursing-as-apprenticeable-occupation>
 - Continental – Automotive Division – Mechatronics and Robotics 2018
 - https://www.seguintexas.gov/news_detail_edc_T63_R130.php
 - South Texas College – Industry Driven Apprenticeship
 - <https://riograndeguardian.com/stc-becomes-an-official-department-of-labor-apprenticeship-sponsor/>

- Registered Apprentices upon completion of their apprenticeship received a Department of Labor Certificate national recognized certificate that can be articulated with many colleges to an Associate’s Degree (sometimes only a few credits needed). Link to the crosswalk used in articulation see page linked below:
 - <https://twc.texas.gov/businesses/apprenticeshiptexas>

Questions:

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COUNTING REGISTERED APPRENTICESHIP COMPLETIONS

BY JENNA LEVENTOFF



States are facing a skills gap, whereby not enough workers are adequately trained for available jobs. In order to meet this demand, many states are establishing statewide postsecondary attainment goals for the number of people with postsecondary credentials. Achieving these goals can help states ensure they have a well-trained workforce and can improve living standards for residents.

However, these goals cannot be met by simply helping high school students to receive a four-year college degree. Between 2014-2024 nearly half of job openings across the country are middle skill positions that require training beyond high school, but not a four-year degree.¹ In order to train enough workers to meet anticipated middle-skill demand, states must pass equitable policies that help a variety of residents, particularly those with barriers to employment, receive training for in-demand careers.

Training for middle-skill positions includes certificates resulting from the completion of a registered apprenticeship program. Registered apprenticeships allow students to earn while they learn, by combining on-the-job training with job-related academic instruction. These programs must meet certain national standards, and the resulting certificates are nationally recognized as certifying a particular set of skills in an occupation.

In 2018, Congress appropriated \$145 million to expand registered apprenticeships. Since 2017, the United States Department of Labor (DOL) has allocated over \$100 million to thirty-six states to help them expand innovative apprenticeship approaches.² Considering the significant federal investment in apprenticeships, states should take care to effectively align how they are spending this funding with their broader workforce and education goals. One way to do this is to collect data that allows them to count registered apprenticeship certificates within their postsecondary attainment goals, thereby showing how registered apprenticeships can help narrow the skills gap.



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Registered apprenticeships have value

Registered apprenticeships benefit workers, employers, and the state's economy. Because apprenticeships are paid employment, they can help upskill workers while allowing for broader participation amongst non-traditional students and people with barriers to employment, who may not have the financial resources to stop working and pay tuition while they train for a new career. Improving postsecondary attainment for non-traditional students and those with barriers to employment is key for meeting state attainment goals because there are simply not enough traditional first-time full-time students to meet the goals and fill employer demand. By completing a registered apprenticeship, workers can attain a recognized credential and have strong employment outcomes upon completion. According to DOL, 90 percent of apprenticeship completers are retained by the company they apprenticed with, and apprentices have an average starting wage of more than \$60,000 per year.³ Over the course of their careers, registered apprenticeship completers earn an average of \$240,037 more than their peers who did not participate in a registered apprenticeship program.⁴

Since apprenticeship programs are created by industry looking to hire skilled workers, they are naturally aligned with in-demand careers, and tailored to the needs of particular employers. Apprenticeships have a strong return on investment for the employers who invest in them. According to a U.S. Department of Commerce study by Case Western Reserve University, Siemens USA had over a 50 percent rate of return on its machinist apprenticeship program, compared to hiring off the street.⁵ According to a report cited by DOL,

for every dollar invested in apprenticeship training, employers receive an average benefit of \$1.47.⁶

There is a clear economic benefit for states as well. In addition to narrowing their middle skills gap, states can save on the costs of programs such as unemployment insurance, Supplemental Nutrition Assistance Program, and Temporary Assistance for Needy Families when recipients of benefits under those programs have access to training that leads to well-paying employment. According to Mathematica Policy Research, states can earn an average "social benefit," (defined as the sum of increased employee productivity and reduced administrative costs of state programs) of \$124,057 over the career of an apprentice.⁷

State postsecondary attainment goals should include registered apprenticeships

Because registered apprenticeships have a clear benefit to workers, employers, and a state's economy, states should promote policies that encourage their achievement. One way states can do this is by explicitly including registered apprenticeships within their postsecondary attainment goals. This signals to the public that registered apprenticeships are a valid pathway to a strong career. It also provides incentive to state policymakers to pass policies that make registered apprenticeship programs more prevalent, which could help states narrow their skills gaps. However, according to an unpublished 2017-18 survey conducted by Workforce Data Quality Campaign (WDQC), only twenty-one states reported including registered apprenticeship certificates within their postsecondary attainment goals.

To understand progress towards meeting attainment goals, states must collect data about registered apprenticeships

In order for states to successfully measure progress towards a postsecondary attainment goal that includes registered apprenticeships, a state must collect individual-level data about registered apprenticeships. This enables the state to know which residents have enrolled in registered apprenticeship programs, which industries those apprenticeships are in, and the demographic characteristics of those who completed their apprenticeship and earned a certificate. According to WDQC’s “Measuring Non-Degree Credential Attainment Fifty State Scan,” twenty-seven states reported having most or all data about registered apprenticeship programs within a state agency.⁸ The rest of the states may not have an accurate method of knowing how many of their residents have enrolled in and completed registered apprenticeship programs, and how those completions help equitably address the skills gap.

The process for collecting data about registered apprenticeships, which usually includes data about the apprentice and the apprenticeship program, varies depending upon where a state’s programs are administered. Administration of registered apprenticeship programs varies among states. About half of state registered apprenticeship programs are administered by a state agency referred to as a State Apprenticeship Agency (SAA). In the rest of states, DOL’s Office of Apprenticeship (OA) directly registers and oversees apprenticeship programs. Because apprenticeship programs are overseen in different places, there is no comprehensive repository of information about all registered apprenticeship programs in the country.

DOL’s data system that holds registered apprenticeship data is called the Registered Apprenticeship Partners Information Data System (RAPIDS) 2.0. The database contains information about apprentices and registered apprenticeship programs in all states whose registered apprenticeship programs are overseen by DOL, as well as nine state programs administered at SAAs. RAPIDS 2.0 has data about apprentices such as a unique identifier, demographic information, contact information, and current enrollment status in an apprenticeship program. It also contains program information including the related instruction provider, the employer, the duration of on-the-job instruction, and the apprentice’s wage rates.⁹

In the rest of states, data about a particular state’s registered apprenticeship programs is likely held within that state’s SAA database. SAAs usually collect similar data to that in RAPIDS 2.0, however, the specific data elements may vary slightly from state to state.

There is no clear benefit to where a state’s registered apprenticeship data is housed, provided that the entity holding the data is willing to share it. This paper provides case studies about how two states that include registered apprenticeship within their postsecondary attainment goals access and share registered apprenticeship data. Iowa represents states whose programs are administered by DOL, and Washington represents SAA states.

Iowa and Washington deserve recognition for collecting individual-level data on apprenticeship completers, although as pointed out below, there is still more both states could do to track apprenticeship data as part of measuring educational attainment.

States can add apprenticeship data to their state longitudinal data systems (SLDS). SLDS allow states to fully utilize data they already collect by matching data from different programs and agencies across time. These systems contain privacy-protected data that follow an individual’s progress through K-12, postsecondary education, training, the workforce, and sometimes include social service programs. Adding registered apprenticeship and other credentials data to their SLDS may make it easier for states to measure progress towards their postsecondary attainment goals, because all of the data about credential attainment can be stored in one place. Moreover, adding data about registered apprenticeships to their SLDS will help states to better understand how apprenticeships fit into their overall workforce and education training system. This can help policymakers design and fund effective programs, can help educators adjust programs based on outcomes, and can allow students to find education and training that meets their needs. When individual-level data in the SLDS includes demographic information, all of these audiences can better understand how programs are serving non-traditional students and those with barriers to employment.

Despite the value of including registered apprenticeship data within SLDS, relatively few states do so. According to WDQC’s Measuring Non-Degree Credentials survey, just nine states incorporate all or most data about registered apprenticeships into their SLDS, and twenty-nine states report having no apprenticeship data in their SLDS.¹⁰ Moreover, relatively few states use their SLDS to measure progress towards their postsecondary attainment goals. Thus, most states are unable to see a clear picture of how registered apprenticeships fit into their state attainment goals, and their broader education and workforce strategies.



Case study: Iowa

Iowa's postsecondary attainment goal, called the Future Ready Iowa initiative, sets a goal that 70 percent of Iowa's workforce will have education or training beyond high school by 2025.¹¹ Counting towards that goal is the attainment of registered apprenticeship certificates.

Iowa's registered apprenticeship programs are administered by DOL, so data about Iowa's apprentices is maintained in RAPIDS 2.0. As mentioned above, RAPIDS 2.0 has data about apprentices such as a unique identifiers, demographic data, contact information, enrollment status, the related instruction provider, the employer, the duration of on-the-job instruction, and the apprentice's wage rates.¹²

In order to receive data from DOL about its registered apprentices, Iowa Workforce Development (IWD) signed a memorandum of understanding (MOU) with DOL. An MOU is a contract dictating what data may be shared and how that data may be used. It also signed an Interconnection Security Agreement governing how the data will be shared and protected. To begin the process of signing an MOU, IWD officials report that they reached out to their regional DOL Employment and Training Administration representative, who was able to connect them with the appropriate personnel at DOL. IWD officials recommend that other states have their workforce agency spearhead any effort to get registered apprenticeship data. Although DOL has a standardized MOU, Iowa reports that it was able to modify the existing contract.

The MOU modification allows IWD to receive data quarterly instead of annually, and to share data with the Iowa Department of Education (IDE). IDE houses the state's SLDS, so, once DOL shares data pursuant to the modification, the SLDS will contain robust information about credential attainment in the state, including attainment of registered apprenticeship certificates. The process to modify the MOU took about a year.

IWD is tasked with measuring progress towards the state's postsecondary attainment goal. Although IWD has data about apprentices from DOL, IWD primarily measures progress towards its attainment goal using data from the state's Laborshed studies.¹³ These studies are conducted through a survey of state residents about their educational attainment, employment outcomes, and commuting patterns. While this information is helpful for measuring progress towards its attainment goal, Iowa would have more accurate information about attainment if it used the data that will soon be in its SLDS. The SLDS would contain comprehensive information about credentials awarded to Iowa residents, and would help the state better understand how apprenticeships fit into achieving the state's attainment goal. Moreover, data in the SLDS is likely to be more accurate than survey data, as surveys often have low completion rates and rely upon self-reported information.



Case study: Washington

The Washington Student Achievement Council (WSAC) has set the state's postsecondary attainment goal. To meet the goal, at least 70 percent of Washington adults must have a postsecondary credential by 2023.¹⁴ Included within the goal are certificates, apprenticeship certificates, and degrees.

Washington's registered apprenticeship programs are administered by the Washington State Department of Labor & Industries (L&I). That agency collects data about registered apprentices from apprenticeship sponsors through its Apprenticeship Registration Tracking System (ARTS). ARTS includes information about each apprentice and each program. Data on apprentices includes their name, demographic information, and enrollment status. Program information includes the program name and related occupation, employer information, and the duration of on-the-job training and related training instruction.¹⁵

WSAC is tasked with measuring progress towards the state's postsecondary attainment goal. Washington officials report that they count registered apprenticeship certificate production using aggregate data provided by the state Workforce Board. The Workforce Board, in turn, gets their data from L&I. WSAC then counts overall attainment using the 2011-2013 American Community Survey published by the United States Census Bureau.¹⁶ This survey contains self-reported data from across the country and is intended to help make decisions about how federal and state funds are distributed.¹⁷

In order to gather more comprehensive information about credential attainment, Washington could utilize the data in its SLDS maintained by the Education Research Data Center

(ERDC), which gets data about apprenticeship participants from L&I. Utilizing administrative records for counting overall attainment instead of survey information would help the state overcome the inherent inaccuracies in surveys.

In order to get apprenticeship data from L&I, the ERDC signed an MOU with L&I in 2011, dictating what data is shared, how that data may be used, and how it must be protected. Pursuant to that contract, L&I sends the ERDC information on an annual basis using a secure system. Data shared with ERDC includes an apprentice's personal identifier, contact information, and demographic information, as well as information about the apprenticeship program, and the status of the apprenticeship.

As shown in WDQC's survey of states, many states struggle to share apprenticeship data with their SLDS. In Washington, state officials believe that apprenticeship data is successfully shared because of a culture of trust between agencies within the state. Agencies know that other state entities will protect the data, and not use the data to disparage another agency. Agency officials also understand the value of data matching. For example, the Washington Workforce Training and Education Coordinating Board (WTECB) tracks the results and taxpayer return on investment for twelve of the state's largest workforce programs, including apprenticeship.¹⁸ By matching apprenticeship data with wage record information to create these reports, the state showed impressive employment and earnings outcomes for apprenticeship participants. In response, Washington's legislature enacted several bills aimed at increasing the number of apprentices in Washington.¹⁹



Conclusion

Because apprenticeships are an extremely effective method of training for individuals and industry, they can be a valuable tool in helping states meet anticipated middle-skill demand. In order to promote apprenticeship participation and completion, states should include apprenticeships within their postsecondary attainment goals.

To measure equitable progress towards their postsecondary attainment goals, states should collect individual-level data on registered apprenticeships, including data about an apprentice's demographic characteristics. States should also add individual-level data on registered apprenticeships to their SLDS, and ideally use the SLDS to measure credential attainment.

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Prosperity Requires Being Bold: Integrating Education and the Workforce for a Bright Texas Future

The Tri-Agency Report to the Office of the Governor from the

Texas Education Agency

Texas Higher Education Coordinating Board

Texas Workforce Commission

November 2016



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Executive Summary

Prosperity and innovation in Texas depend on extensive and meaningful collaboration among the prekindergarten through 12th grade (P-12) school system, institutions of higher education, and industry. In March 2016, Governor Greg Abbott established the Tri-Agency Workforce Initiative and tasked the Commissioners of the Texas Education Agency (TEA), the Texas Higher Education Coordinating Board (THECB), and the Texas Workforce Commission (TWC) to work together on five charges centered on developing strong links between education and industry, with the goal of helping Texas grow in economic prosperity. Specifically, the governor laid out these charges:

- **Charge 1.** *Commissioners should identify and advance public and higher education initiatives that make college more affordable for families and help students enter the workforce more quickly with marketable skills.*
- **Charge 2.** *Commissioners should work with industry and local stakeholders to assess local workforce needs and identify innovative workforce development models that directly coordinate with industry partners and promote postsecondary success. The Commissioners should include career and technical education (CTE) and science, technology, engineering, and mathematics (STEM) education models in their assessment.*
- **Charge 3.** *Commissioners should evaluate current agency efforts, as well as state and local web-based education and career awareness systems in an effort to better link students, parents, and educators to the broad array of high-demand jobs in this state and the educational requirements to secure those opportunities.*
- **Charge 4.** *Commissioners should identify gaps in services to Texas veterans, advance strategies to enhance their education and employment opportunities, and develop solutions to ensure a seamless and accelerated transition back into the Texas workforce.*
- **Charge 5.** *Commissioners should make recommendations that build the skills of the Texas workforce and advance regional economic expansion, job creation, and the goals of 60x30TX.*

To begin addressing the charges, the commissioners of the three agencies held regional meetings across Texas in Midland, San Antonio, Houston, Dallas, El Paso, McAllen, Tyler, and Austin from April through June 2016. The commissioners met with regional leaders from education, industry, government, and nonprofits to understand the state's workforce needs at a regional level.

Regional leaders suggested placing greater emphasis on critical STEM fields in P-12, creating more access to higher education for economically disadvantaged and underrepresented students, creating more public/private partnerships, and increasing paid internships, apprenticeships, and mentorships. They also proposed expanding and improving student advising, training and hiring people with disabilities, mentoring and guiding foster youth into higher education, helping students in rural areas gain the skills to support their families, encouraging entrepreneurship programs (including in rural areas), and better transitioning veterans into the workforce. The commissioners learned more about exemplary regional models among high schools, colleges, universities, and industry for educating and training students in high-demand fields. They heard concerns about unfilled jobs in high-demand fields and about closing the gaps in the educational pipeline needed to fill those jobs.



Based on the conversations at regional meetings and conversations with community leaders, the commissioners addressed the governor's charges by developing several comprehensive statewide prime recommendations to help Texas achieve pre-eminence in our global economy. The recommendations hinge on aligning current P-16 education to workforce development and encouraging the state and each region to envision how to build local economies, industries, and jobs of the future. Building tomorrow's industries begins with developing a vision, then strengthening the P-16 education pipeline to support those industries.

Fifteen years ago, graduates did not seek careers as information security analysts, cloud computing specialists, or social media managers. Those careers did not exist then. Developing and acting on strategic programs that meet current workforce needs while focusing on building the economy of the future will help regions create the educational pipelines and private/public partnerships to meet future needs. As part of moving in this new direction, P-16 educators will need to ingrain in students the expectation of several careers in one lifetime and the need for lifelong learning.

The state's new higher education plan, *60x30TX*,¹ will play a key role in linking education and the workforce while supporting efforts to help more Texans achieve a higher education and boost Texas in the global economy. The overarching goal of the plan is for 60 percent of 25-34 year olds in the state to hold a certificate or degree by 2030. When *60x30TX* was written, only 38 percent of Texans in this age group had met this goal, and only 35 percent had an associate degree or higher.

During the recovery period from January 2010 to January 2016, the U.S. economy added 11.6 million jobs. Of those jobs, 11.5 million went to workers with some college education. Of the 7.2 million jobs lost during the recession, workers with only a high school education or less lost 5.6 million and recovered only about 1 percent of the 11.6 million new jobs.² These sobering numbers make reaching the overarching goal of *60x30TX* vitally important if Texas is to enhance its prosperity and achieve pre-eminence in a global economy.

To address the governor's charges and reap benefits for all Texans, the commissioners developed the following four prime recommendations to ensure the future economic competitiveness of Texas:

- ▲ Identify statewide initiatives for the next generation that will make Texas the clear leader in targeted fields and position the state for economic pre-eminence.
- ▲ Strengthen prekindergarten through high school academic instruction to establish students' foundational skills in math, science, language arts, and social studies so that students graduate high school career or college ready and are prepared for lifetime learning.
- ▲ Build a proactive, ongoing partnership among the TEA, THECB, TWC, and other stakeholders to align the educational goals of Texas with the state's higher education plan of *60x30TX*, which aims for 60 percent of 25- to 34-year-olds to hold either a certificate or degree by 2030, with the goal of growing the state's workforce, industry, and the economy.
- ▲ Identify services for Texas veterans and advance strategies to enhance their education and employment opportunities, while developing solutions to ensure a seamless and accelerated transition back into the Texas workforce.

¹ A PDF of [60x30TX](#) is available here

² From [America's divided recovery: College haves and have nots](#).



Texas faces a significant challenge in helping all students in P-12 schools become career and college ready in areas that address both current and future workforce needs. The state also must help workers quickly retool their skills when their jobs are affected by ever-changing technology. This report addresses the governor's charges with an eye toward meeting those challenges and preparing Texans for future careers and industries.

This report discusses new models for integrating P-12 education and higher education's academic goals with technical workforce needs and for meeting the goals of *60x30TX*. The common thread among the report's recommendations and initiatives is the commitment of the TEA, THECB, and TWC to enter into an ongoing and long-term partnership for the purpose of making Texas the best place to learn, work, and do business.



Introduction

Prosperity and innovation depend on extensive and meaningful collaboration among the P-12 school system, institutions of higher education, and industry. In March 2016, Governor Greg Abbott tasked the Commissioners of the Texas Education Agency (TEA), the Texas Higher Education Coordinating Board (THECB), and the Texas Workforce Commission (TWC) to work together on five charges centered on developing strong links between education and industry, with the goal of helping Texas grow in economic prosperity. Specifically, the governor laid out these charges:

- **Charge 1.** *Commissioners should identify and advance public and higher education initiatives that make college more affordable for families and help students enter the workforce more quickly with marketable skills.*
- **Charge 2.** *Commissioners should work with industry and local stakeholders to assess local workforce needs and identify innovative workforce development models that directly coordinate with industry partners and promote postsecondary success. The Commissioners should include career and technical education (CTE) and science, technology, engineering, and mathematics (STEM) education models in their assessment.*
- **Charge 3.** *Commissioners should evaluate current agency efforts, as well as state and local web-based education and career awareness systems in an effort to better link students, parents, and educators to the broad array of high-demand jobs in this state and the educational requirements to secure those opportunities.*
- **Charge 4.** *Commissioners should identify gaps in services to Texas veterans, advance strategies to enhance their education and employment opportunities, and develop solutions to ensure a seamless and accelerated transition back into the Texas workforce.*
- **Charge 5.** *Commissioners should make recommendations that build the skills of the Texas workforce and advance regional economic expansion, job creation, and the goals of 60x30TX.*

The Regional Meetings

To begin addressing the charges, the commissioners of the three agencies held eight regional meetings in Midland, San Antonio, Houston, Dallas, El Paso, McAllen, Tyler, and Austin from April through June 2016. Andres Alcantar, Commissioner Representing the Public (TWC); Ruth Hughs, Commissioner Representing Employers (TWC); Julian Alvarez III, Commissioner Representing Labor (TWC); Mike Morath, Commissioner of Education (TEA); and Raymund Paredes, Commissioner of Higher Education (THECB) attended the meetings. They posed questions and listened to responses and concerns from industry leaders, business executives, and entrepreneurs, including leaders from historically underutilized businesses; ISD superintendents; economic and workforce development leaders; directors of community and nonprofit organizations; elected officials; higher education administrators; and other stakeholders.



The commissioners heard about exemplary regional models among high schools, community colleges, universities, and industry representatives for educating and training students in high-demand fields. The models represent many public/private partnerships and include such efforts as building the educational workforce for the aerospace and aviation industry, teaching elementary school students computer programming languages to encourage future development of innovative products and entrepreneurship, and developing a two-year nursing program concurrent with high school that allows students to receive high school diplomas and sit for nursing board examinations in the same month.

The commissioners also heard concerns about unfilled jobs in technology, manufacturing, the financial sector, construction, transportation, engineering, nursing, and other in-demand and high-demand fields. Commissioners heard about the need to close gaps in the educational pipeline in order to fill in-demand jobs, as well as the need to retrain workers and ensure students graduate with the marketable skills necessary to succeed in business and industry.

Commissioners listened to the successes and recommendations of leaders from organizations that help veterans transition from active military service to civilian life. In short, the responses, concerns, and models mentioned in this report represent only a sampling of what commissioners heard at regional meetings and in conversations and other meetings surrounding those events. Some ideas suggested by regional leaders include:

- Placing greater emphasis on computational reasoning and critical STEM fields in P-12
- Creating more access to higher education for economically disadvantaged and underrepresented students
- Promoting more public/private partnerships to provide regions future employees
- Increasing paid internships, apprenticeships, and mentorships
- Expanding and improving student advising in middle school, high school, and college
- Training and hiring people with disabilities
- Mentoring and guiding foster youth into higher education
- Helping students in rural areas gain the skills to support their families

The regional meetings represented formal collaborations between industry and education. At the meetings, education and industry representatives began discussing ways to create a seamless system for developing a skilled Texas workforce that will drive local, regional, and statewide economies and encourage innovation and lifelong learning. Ideas and discussions centered on better linking education to the workforce in regions and throughout the state as a whole.

The Challenge of 60x30TX

The state's new higher education plan, *60x30TX*, will play a key role in linking education and the workforce and supporting efforts to help more Texans achieve a higher education credential. The overarching goal of the plan is for 60 percent of 25- to 34-year-olds in the state to hold a certificate or degree by 2030. When *60x30TX* was written, only 38 percent of Texans in this age group had a higher education credential, and only 35 percent had an associate



degree or higher.³ Developed with input from school administrators, higher education representatives, community leaders, private industry partners, elected officials, former faculty, and other stakeholders, *60x30TX* establishes goals for higher education that will help Texas secure its place in a global economy and attract new revenue, spurring innovation, research, and job growth and bettering the lives of Texas families from all backgrounds.

Ambitious and bold, the overarching goal of *60x30TX* equates to an educational moonshot. In November 2015, when Governor Abbott endorsed the plan at Collin College, he said, “Texas will become the home for innovation and intellectual capital. The standard that this group [higher education] sets does set high expectations. But I’ve come to believe that people live up to the expectations that are set.” The governor’s comments and other efforts across the state, including the tri-agency meetings, signal that work is underway to propel Texas toward greater prosperity.

To meet the goals of *60x30TX*, Texas must improve student outcomes and maximize the potential of every child in its public school system. The proportion of school-aged children who are economically disadvantaged in Texas is currently 58.8 percent, 12 percentage points higher than 20 years earlier.⁴ Texas faces a challenge in helping this growing population of

economically disadvantaged students graduate career and college ready from high school in areas that prepare them for current workforce needs and the jobs of the future.

Bolstering the Texas Workforce

Texas has one of the most robust and diverse economies in the nation. Indeed, Texas is home to industries in advanced technologies and manufacturing, energy and petroleum refining, aerospace and defense, and information and computer technology, and the state is making strides in the healthcare industry, including biotechnology and life sciences. The state’s continued growth in the demand for housing and infrastructure also has increased demand for skilled labor in the construction and transportation industries.

Texas has the advantage of a workforce that is comparatively younger than other states and growing in numbers. The P-12 public school system is an enormous human resource, with the potential to support both existing and burgeoning industries. It serves more than 5.23 million students,⁵ roughly two and a half times the population of neighboring New Mexico. The potential of that number cannot be ignored, which makes a case for building the best educational systems in P-16, as well as the best public and private partnerships to benefit all students. The state has extraordinary opportunities to advise and serve all Texas students, including economically disadvantaged students, rural students, foster children, students with disabilities, dropouts, and other at-risk student populations. Increased and enhanced counseling and mentoring for all students from prekindergarten through higher education will be a key component to unlocking students’ potential, along with teaching them marketable skills and providing paid internships, apprenticeships, and mentorships.

Each of those options is needed to serve the greatest number of students. Internships, for example, often co-exist with coursework or occur during the summer. Apprenticeships often last longer than internships and are accompanied by coursework leading to a license in a specific

³ Source: THECB data. As of 2015, the baseline data for *60x30TX*, 40.3 percent of 25-34 year olds had a higher education credential.

⁴ TEA’s [Pocket edition 2014-15 Texas public school statistics](#). [single-page edition], TEA’s [1995 Pocket edition](#). Source: PEIMS data.

⁵ From TEA’s [Pocket edition 2014-15 Texas public school statistics](#) (see footnote 4). Source: PEIMS data.



field or trade, and mentorships allow professionals working in a field to guide and advise students about their career paths. Through industry partnerships with education, these experiences can help even the most economically disadvantaged students gain essential workplace experience.

In addition to its vast number of students, Texas is home to another valuable resource. In fall 2014, the U.S. Department of Veterans Affairs data showed there were nearly 1.7 million veterans in Texas, second only to California.⁶ The skills that veterans acquire in the military – discipline, teamwork, and a strong work ethic – make them ideal candidates for many Texas employers. Better assistance for veterans transitioning from military service to the civilian workforce is good for Texas and good for Texas businesses.

Many positive efforts to address the range of populations in Texas is already underway among the P-12 school system, institutions of higher education, industry, and the state and is borne out, in part, by the data:

- Undergraduate awards in Texas increased every year from 2001-2015. By fiscal year 2015, the state had exceeded the final target by nearly 49,000 awards, or 23 percent.⁷
- African American, Hispanic, Asian, and white participation rates in Texas for students taking the SAT and ACT is at or near all-time highs.⁸
- In 2015, in fourth-grade mathematics, Texas ranked 11th nationally, up from 27th in 2013. According to The National Report Card, “Texas fourth and eighth grade students taking the 2015 National Assessment of Educational Progress (NAEP) in mathematics posted scores higher than the national average ... Scores for white, African American, and Hispanic students also exceeded scores by their national counterparts in NAEP fourth-grade mathematics.”⁹
- Level 1 workforce certificates (as defined in the THECB’s *Guidelines for Instructional Programs in Workforce Education* manual) also have grown from 13,353 to 32,007 from 2000 to 2015. These certificates are a good option for students looking to get into the workforce quickly and to develop marketable skills.¹⁰
- As of July 2016, the state had experienced job growth in 14 of the past 15 months.¹¹

These positive indicators provide more reasons to build greater links between education and the workforce for greater numbers of Texans.

⁶ Department of Veteran Affairs [data](#) from the National Center for Veterans Analysis and Statistics.

⁷ *Closing the Gaps* final progress report, THECB, 2016.

⁸ TEA press release “[SAT, AP exam rates continue to climb](#),” Sept. 3, 2015; *Texas Education Today* newsletter article, “[Number of Texas students taking ACT sets new mark](#),” Sept. 2015. Source: College Board and ACT data.

⁹ TEA press release: “[2015 NAEP math scores strong for Texas students](#).” Source: NAEP data.

¹⁰ [Adult learners and non-traditional students](#), June 21, 2016, THECB presentation (slide 6). Source: THECB data.

¹¹ TWC press release, July 22, 2016: “[Texas economy adds 7,200 jobs in June](#).” Source: TWC and U.S. Department of Labor data.



A Growing and Changing Student Population

Over the last 20 years, the number of students coming from economically disadvantaged backgrounds has risen in the state's public P-12 schools. For Texas eighth graders qualifying for free or reduced-price lunches, only about 11 percent go on to attain a postsecondary credential within 11 years after leaving eighth grade.¹²

For the state to remain competitive both now and in the future, the leaders of the TEA, THECB, and TWC agree that the P-12 school system, two- and four-year colleges, adult education literacy (AEL) services, and industry-led workforce training programs will need

to make substantial efforts to ensure all students – including those who are economically disadvantaged or in rural areas – have access to a wide variety of educational and workforce programs, especially in high-demand occupations.

Texas has the largest number of rural P-12 students in the nation, more than the combined total rural enrollments of 17 other states. Among the roughly 834,000 rural students, more than 43 percent are considered economically disadvantaged.¹³ Helping economically disadvantaged students across the state succeed is paramount to helping Texas reach its economic goals and to becoming a national and world leader in new and emerging – and even yet-to-exist – sectors and industries. Establishing new regional centers of education in rural areas and across the state based on the Early College High School model will help low- and middle-income students acquire skills valued by employers. The centers could help accelerate completion in high-demand fields and make postsecondary credentials more accessible and affordable and could include transfer agreements with regional colleges and universities.

Greater numbers of adult students who are not recent high school graduates are also entering Texas institutions of higher education. In fall 2015, 17.8 percent of university students and 29.1 percent of technical and community college students fell into this category,¹⁴ suggesting that undergraduate education in Texas is undergoing dramatic change. In addition to serving older students, higher education increasingly serves a student population that is poorer and more diverse. This enrollment trend toward greater numbers of economically disadvantaged and traditionally underrepresented students in higher education is expected to continue as demographics shift in the state.

Texas must appropriately prepare all students for our diverse workforce by providing them with strong foundational skills in math, science, language arts, and social studies in order to graduate them career and college ready and prepared for lifelong learning. Helping those students enter community colleges and universities while supporting them through the completion of certificates and degrees will mean demonstrating that higher education is one of the best paths toward greater social and economic mobility. Striving toward educational parity between economically disadvantaged students and their non-disadvantaged counterparts is important for developing a Texas workforce that is adaptable, innovative, and diverse.

¹² Eighth grade cohort rates (2004-2015) found in 2016 [Texas public higher education almanac](#), (p. 14). Source: TEA and THECB data.

¹³ 2012 Rural and Community Trust' report "[Why rural matters: The condition of rural education in the 50 states](#)" (p. 70). Source: National Center for Education Statistics and U.S. Census Bureau data.

¹⁴ [Adult learners and non-traditional students](#), June 21, 2016, THECB presentation (slide 5). Source: THECB data.



A Vision for the Future

In *The Industries of the Future*, innovation expert Alec Ross describes the industries that will dominate the 21st century. Sectors such as genomics, big data, and artificial intelligence will create many new jobs for the states and countries that recalibrate their economies and incubate those industries. For Texas to be among those that achieve pre-eminence in the global economy, regional and statewide leaders will need a bold vision for industries that currently may not exist.

Fifteen years ago, newspapers employed thousands of people in pressrooms and printing plants, car mechanics used hand tools and mechanical skills to perform diagnostics, and phone repair workers serviced landlines. Fifteen years ago, postsecondary graduates did not seek careers as information security analysts, cloud computing specialists, or social media managers because those careers did not exist. Today, many pressrooms produce news solely online, mechanics perform high-tech diagnostics with computers and install software updates to accommodate sophisticated automobiles, and phone repair workers assist customers through cellular retail centers and virtual customer service guides. Those changes and the many that will follow, including driverless vehicles, robotic devices, and materials written by natural language machines, signal a strong need for individuals who possess skills in information technology and automation.

Developing visions and producing action plans that meet current needs while also looking to the future will enable regions to create the educational pipelines and private/public partnerships to better adapt to a rapidly changing world. Tools such as the “future state vision” process - a method for determining what and where an organization or area wants to be by a future date - could help regional planners to select new industries to pursue. For its part, the state will need to continually evaluate emerging trends or sectors such as robotics, cybersecurity, genomics, and big data, and find ways to foster and implement solutions that support those emerging industries. Texas will need to develop a statewide vision, as well as discover new ways to support its diverse geographic areas to develop regional visions for the future that support new industry and job creation objectives. Those combined efforts will ensure that Texas is the best place to learn, work, and do business.

Through regional visions that connect to a larger statewide vision, leaders will need to help Texas address the statistics that follow. These statistics – some statewide and some national – call for charting new and innovative educational paths to workforce success in a highly competitive global economy:

- In the report *America’s Divided Recovery: College Haves and Have Nots*, national workforce expert Anthony Carnevale writes that, during the recovery period from January 2010 to January 2016, the U.S. economy added 11.6 million jobs; of those jobs, 11.5 million went to workers with some college education. Of the 7.2 million jobs lost during the recession, workers with only a high school education or less lost 5.6 million and recovered only about 1 percent of the 11.6 million new jobs.¹⁵
- Of Texas high school students in 2014 who took the ACT, SAT, and Texas Success Initiative (TSI) Assessment, only 26 percent (ACT), 32 percent (SAT), and 29.9 percent (TSI) were college ready.¹⁶

¹⁵ [America’s divided recovery: College haves and have nots](#) (p. 3). Source: U.S. Census Bureau, Current Employment Statistics data

¹⁶ West Texas legislative summit – The future of higher education, August 4, 2016, THECB presentation (slide 18). Source: 2015 THECB data.



- Industries that employ managerial and professional workers, such as consulting and business services, healthcare services, financial services, education services, and government services, accounted for 28 percent of the workforce in 1947 and have grown to encompass 46 percent of the workforce today.¹⁷
- The first and overarching goal of *60x30TX* calls for at least 60 percent of Texans ages 25-34 to have a certificate or degree by 2030. As mentioned, when *60x30TX* was written only about 38 percent of Texans in this age range had a certificate¹⁸ or degree.
- A total of 58.8 percent of Texas public school students qualify for free or reduced-price lunches.¹⁹
- About 3.8 million or 15 percent of the state's total population are adults who lack a high school diploma.²⁰
- According to the Texas Workforce Investment Council's Report, "People with Disabilities: A Texas Profile," of Texas youth attending secondary school in 2014, 6 percent had a disability; of students attending colleges or universities in 2014, 3.4 percent had a disability. The same year, among Texas youth not participating in the labor force, 8.4 percent had a disability.²¹
- Only 55 computer science teachers were produced statewide in 2015. The state should train and certify computer science teachers with a state-level computer science certification aimed at doubling the number of instructors who utilize industry-standard tools and resources.²²
- More students enrolled in higher education have financial need, as determined by Pell eligibility – 32 percent in 2000, 49 percent in 2014.²³

The state has challenges. Texas needs many more workers with Level 1 and 2 certificates, associate degrees, bachelor's degrees, and master's degrees to meet workforce needs, especially in critical, high-demand careers. Preparing those workers to attain certificates and degrees starts with guiding students from P-12 into higher education and through to successful completion.

For the next generation, as well as the one currently entering the workforce, knowing how to adapt and retool one's skills will be as important as the knowledge and skills initially acquired to get a better job. For current and future workers who lose jobs as the result of new technology or other advances, the state needs to expand the number of accelerated retraining programs intended to help laid-off workers move into new careers quickly. The 2008 recession hugely affected workers without postsecondary credentials, and the recovery that followed largely forgot them.²⁴ Helping those workers retool and learn new

¹⁷ [America's divided recovery: College haves and have nots](#) (p. 4). Source: U.S. Census Bureau, Current Employment Statistics data, and Current Population Survey.

¹⁸ Certificates refer to those defined in the [Guidelines for instructional programs in workforce education](#) (GIPWE).

¹⁹ TEA's [Pocket edition 2014-15](#) Texas public school statistics (p. 1). Source: PEIMS data.

²⁰ [Adult learners and non-traditional students](#), June 21, 2016, THECB presentation (slide 4). Source: U.S. Census data.

²¹ http://gov.texas.gov/files/twic/Disabilities_Profile.pdf, June 2016 Update, (pp. 29-30). Source U.S. Census data, American Community Survey.

²² From TEA [data](#) discussed at commissioners' meeting at TEA, July 2016.

²³ [Adult learners and non-traditional students](#), June 21, 2016, THECB presentation (slide 6). Source: THECB data.

²⁴ [America's divided recovery: College haves and have nots](#) (p. 4).



skills is essential for maintaining a strong Texas economy. As Governor Abbott stated at the Tri-agency Education and Workforce Summit in September 2016, “For Texas to be the undisputed center for innovation and intellectual capital in this decade and beyond, we need to accelerate learning to the speed of business and technology.” The state has an opportunity to become not only the best place for efficiently preparing students for postsecondary credentials but also for providing accelerated training programs for adults who need to retool or learn new skills to reenter the workforce.

While there is much to be proud of in Texas P-12 schools, at colleges and universities, and within the partnerships among industry, community organizations, and Workforce Solutions Offices, data show there is also much to accomplish. Fortunately, Texans love a challenge.

Teaching Marketable Skills

Creating more paid internships, apprenticeships and other applied learning opportunities is critical to the state’s future success and is a centerpiece of this report. The need to provide training opportunities that coincide with the P-12 systems and institutions of higher education was discussed at every regional meeting, not only as a way to engage students and provide them with the skills they need to succeed, but also as a way for employers to gain skilled employees who can fill in-demand and high-demand jobs and help businesses grow. Paid internships also allow students – especially those who cannot afford to take on unpaid learning opportunities – to gain job skills before graduation and to expand opportunities for success after graduation. The state must focus on providing meaningful career training and work for all students, including those with disabilities, so that all students gain the marketable skills employers desire.

In addition to paid internships, P-12 schools and institutions of higher education have a key role to play. Clearly, many students in Texas are graduating from high schools, two-year colleges, and four-year universities with marketable skills. Students, however, are not always aware of the value of these skills nor able to articulate them to employers. P-12 schools and two- and four-year institutions of higher education can help make students more aware of the skills they learn. Some marketable skills learned in P-12 and higher education will include work habits and knowledge not easily aligned with a specific job or industry. For example, many industry-recognized curricula and liberal arts studies hone lifelong job skills, such as critical thinking, and help create more flexible and resourceful individuals, which will allow them to adapt nimbly to the jobs of the future while meeting the needs of today.

More Affordable Higher Education

A 2012 national Pew survey found that 57 percent of prospective students believed universities were no longer a good value because of the cost, and 75 percent deemed college unaffordable.²⁵ Texas can reduce the cost of higher education for students and families and help ensure students graduate more quickly and with marketable skills.

At the regional meetings, much discussion focused on students graduating college and career ready from high school. Many high school students assume that if they graduate from high school they are ready to attend college. When they arrive at college, however, data from the THECB from 2013-14 show that, among all high school graduates attending two- or four-year colleges directly from high school, about 27.3 percent of students need remediation, which adds time and cost for courses that do not count toward degrees. Encouraging students

²⁵ [College graduation: Weighing the cost ... and payoff](#). Source: Pew Research Center data.



to reach college-ready goals, take rigorous high school classes, and graduate career and college ready could reduce higher education costs and the time it takes to graduate. One way to ensure students graduate career and college ready is to continue to transparently hold P-12 school districts and schools accountable in the state's P-12 accountability system and implement the state's new A-F campus accountability system.

To address rising college costs, the state could expand its offerings of low- or no-cost options for taking college-level coursework in high school. Under the authority of Texas Education Code (TEC), Section 29.908(b) and Texas Administrative Code (TAC), Section 102.1091, Early College High Schools (ECHS) require a partnership between a high school and a college to allow students facing socioeconomic barriers to earn a high school diploma and 60 college semester credit hours (SCHs) before graduation. ECHS also provide counselors and other academic and social support services to help students succeed. For the 2015-16 school year, there were 154 ECHS operating in Texas, with four designated as career and technical education ECHS.²⁶

Using the ECHS model as a starting point, TWC, TEA, and the THECB are currently making grants available for Texas Industry Cluster Innovative Academies, a next-generation ECHS. The Innovative Academies leverage the efficiency of the existing ECHS frameworks in Texas but add an additional industry component. To receive an Innovative Academy grant, a high school must have a partnership that includes a regional employer and a community college or university. As part of the new model, industry will be able to contribute to curriculum content and design, as well as employ students through paid internships, externships, mentorships and apprenticeships. Innovative Academies will support efforts to better align educational opportunities with market activity in different industry sectors.

Dual credit enrollment also provides high school students with college credit by allowing students to enroll in a single course and earn credit that counts for both high school and college. Dual credit courses provide an opportunity to lower the cost of higher education for students by allowing them to graduate from college earlier. To ensure that more dual credit courses not only transfer to institutions of higher education but also count toward students' degrees, more information – especially online – needs to be easily accessible for students, parents, guardians, and other stakeholders to help avoid lost time and money. Improved and enhanced advising and more easy-to-access online information will help counselors, parents, students, and other stakeholders receive pertinent information about dual credit courses. While dual credit courses promise excellent value to students, it is important to note that the quality of academic dual credit courses must be rigorous and college-level for students to benefit. If academic dual credit courses expand to the point that rigor decreases, then Texas colleges and universities may not accept those courses as credit toward a degree.

Advising and more targeted information will help students and the state save money on the number of semester credit hours (SCHs) students in Texas take to complete a degree. In 2015, THECB data showed that students in Texas averaged 90 SCHs to complete a two-year degree and 139 SCHs to complete a four-year degree, though most programs of study require only 60 and 120 SCHs, respectively. Excessive SCHs for degree completion in Texas – some of it due to courses that do not transfer – contribute to student debt, fewer students graduating with postsecondary credentials, and students taking longer to graduate. This report proposes expanding and enhancing advising at all levels of P-16 to address this issue.

Expanded and enhanced advising and easy-to-find online information about colleges and careers and the transferability of college courses that count toward degrees must be considered

²⁶ TEA press release, "[TEA announces early college high school designations](#)," April, 7, 2015.



throughout the educational pipeline. Better communication among ISDs, institutions of higher education, parents, students, and other stakeholders will help students decrease the SCHs they take to earn a degree, thereby reducing time to degree while saving money for families and the state. Expanding higher education Fields of Study (FOS) and Programs of Study (POS) also would result in cost savings for students and the state because they establish *de facto* statewide articulation agreements between two- and four-year institutions. Both FOS and POS create seamless curricular pathways from high school to postsecondary institutions and between two-year and four-year institutions for students pursuing specific career fields and academic disciplines.

Advanced Placement (AP) courses and exams also may provide students with college credit while in high school and help save money. Students and parents must be made more aware that, starting in fall 2016, Texas colleges and universities must grant college credit for a score of 3 or higher on most AP exams.

Adult students who wish to return to higher education and complete degrees can save money by entering a competency-based program, such as the Texas Affordable Baccalaureate (TAB) program, which allows students to pay a set fee per term and to progress through as many modules in that term as their competencies allow. A student with many years of experience in technology or management may be able to complete a related course in those areas within weeks, barring the need to take a semester-long course. As a result, the TAB program can reduce the cost of higher education by thousands of dollars.

Competency-based education or other alternative pathways could meet the needs of students who are working full-time. Studies show that a high percentage of two-year college students are supporting families and working full-time. Additionally, many individuals transitioning from different careers need more opportunities to acquire skills efficiently and transition back into the workforce. Given the ever-changing global economy and technological advances, students of all backgrounds and ages must be educated with the expectation of having several careers over a lifetime and the necessity of lifelong learning.



The Prime Recommendations for Sustaining Texas Economic Competitiveness

In the recommendations and initiatives that follow, the commissioners have addressed the governor's charges by developing four prime recommendations that cut across all five charges, enabling the three agencies, educators, industry leaders, and other stakeholders to work toward common goals that reap benefits for all Texans. As part of this effort, the three agencies must commit to the Texas Competitive Workforce Partnership Compact, requiring mutual establishment of strategic goals, the development of statewide initiatives, and high levels of support and coordination on initiatives such as *60x30TX*. The *prime recommendations* are followed by multiple *major initiatives* that are perceived as the most impactful to the larger prime recommendation. A second layer of *recommendations* and *initiatives* follow that will help to support the prime recommendation and major initiatives.

Prime Recommendation 1

- ▲ **IDENTIFY STATEWIDE INITIATIVES FOR THE NEXT GENERATION THAT WILL MAKE TEXAS THE CLEAR LEADER IN TARGETED FIELDS AND POSITION THE STATE FOR FUTURE ECONOMIC PRE-EMINENCE.**

Major Initiatives to Support This Recommendation

- 1. Advance a statewide vision that establishes Texas as the world leader in research and development and drives the Texas economy to greater heights in the future.** Consider, for example, expanding and linking the university medical and science research platforms across the state, forming an Innovation Triangle in Texas. This statewide coordination could launch Texas research hospitals into fields already identified as key industry sectors. (<https://texaswideopenforbusiness.com/industries/advanced-tech-manufacturing>). The state could also identify other areas of targeted pre-eminence, driving the economy into the next century and making Texas the best place to learn, work, and do business.
- 2. Promote statewide and regional industry clusters and objectives that support a variety of businesses and regional job creation.** Launch the Texas Industry Clusters and Careers marketing campaign to promote the state's industry clusters through industry-aligned partnerships and industry-specific campaigns to continuously build and maintain a world-class workforce. Establish Texas as a leader in accelerated retraining programs, as well as building and expanding high-demand occupational pathway opportunities for students.
- 3. Encourage statewide and regional creativity and innovation to attract venture capital to the state to help foster the development of new business and industries in Texas.** The state has seen a large drop in venture capital investments since the late 1990s and early 2000s and has an opportunity to regain ground and compete with other populous states and countries. Through collaborative education and workforce efforts, the state has an opportunity to found new industries that position Texas as the premier investment place for future venture capital.



4. **Develop and deploy specific strategies, leveraging regional best practices, to increase entrepreneurial activity and increase small business expansion.** Focus on advancing efforts for growth of women-owned businesses and promote entrepreneurial activity in rural regions of the state to continue to spur job creation.

Additional Recommendations

- a. **Identify and replicate successful public/private partnership (P3s) models and focus on developing more industry-aligned career pathways, credentials with marketable skills, and efficient stackable program opportunities.**

Initiatives to Support Recommendation

- **Substantially increase paid internships, apprenticeships, externships, and other meaningful applied workplace learning opportunities** for students in both colleges and high schools. In addition, launch the Texas Industry Internship Challenge to significantly increase the number of high school and college internships, such as paid internships and externships, that augment apprenticeships – including during the summer – in high-demand industry clusters and occupations that provide students with course credit and emphasize strong work habits. Work to more uniformly grant academic credit for those workplace learning opportunities.
 - **Launch the Transition Foster Youth initiative** to form a partnership among Texas Foster Care Transition Centers, local workforce development boards, community or technical colleges, schools, and industry to assist the approximately 30,500 current foster children,²⁷ as well as former foster children, and help them complete a high school diploma or its equivalent, obtain a high-demand skills certification, and receive career guidance. Ensure students in, or formerly in, foster care are aware of the Texas tuition and fee waiver program to help them enroll in a postsecondary institution (TEC, Section 54.367). It is important that students in, or formerly in, foster care know that they are part of 60x30TX and the state's aspirations.
 - **Build credentials at each educational level** with the aim of reducing coursework duplication and time to obtain subsequent degrees. **Streamline credential pathways through the P-16 continuum** to ensure that secondary education graduation plans, including endorsement coursework, prepare high school graduates for completing a postsecondary credential. Also, create pathways such as apprenticeship programs to Texas' two year community, technical and four year institutions via articulation agreements for college credit.
- b. **Determine supply-demand skill challenges in each region of the state – especially in STEM and CTE – and establish partnerships among employers, the public, and higher education to implement solutions that address skills gaps and improve STEM and CTE education. The Jobs and Education for Texans (JET) Grant program is an example of a program that is working to address in- demand skills.**

²⁷ [KidsCount.org data center](https://kidscount.org/data-center). Source: Texas Department of Family and Protective Services data.



Initiatives to Support Recommendation

- **Require regional workforce entities to identify in-demand skills by enhancing supply and demand tools and capabilities.** Publish periodic Top 10 and Top 25 Hot Jobs lists in each region and statewide.
 - **Ensure students with disabilities acquire specific training and certification opportunities in high-demand occupations.** Launch a statewide campaign to promote the hiring of people with disabilities, e.g., starting with a month focused on hiring people with disabilities and supported by other promotional efforts. Work in partnership with the Governor's Committee for People with Disabilities, the Texas School for the Blind, and the Texas School for the Deaf.
 - **For students not planning on pursuing a postsecondary credential, such as full-time working students, adult learners, and others, emphasize information about Level 1 certification and increase Level 1 certification attainment.** Level 1 certifications are affordable and achievable in one year, allowing students to enter the workforce quickly with greater earning power to support themselves and their families.
 - **Initiate regional 60x30TX projections, which highlight state and local efforts to meet the goals.** Create a 60x30TX calculator portal that can be used by each region to establish and monitor 60x30TX goals and attainment matrices. Regional P-16 councils could be a mechanism for achieving the 60x30TX regional projections.
- c. **To accelerate connections between workers seeking jobs and growing businesses seeking employees, WorkInTexas should be replaced with a robust, leading-edge tool that reflects current technology and is customized to the needs of the Texas workforce and economy. Though best in class when built over a decade ago, WorkInTexas needs enhancements that are responsive to business and job seeker requirements in today's economy.**

Prime Recommendation 2

- ▲ **STRENGTHEN PREKINDERGARTEN THROUGH HIGH SCHOOL ACADEMIC INSTRUCTION TO ESTABLISH STUDENTS' FOUNDATIONAL SKILLS IN MATH, SCIENCE, LANGUAGE ARTS, AND SOCIAL STUDIES SO THAT STUDENTS GRADUATE CAREER AND COLLEGE READY AND ARE PREPARED FOR LIFETIME LEARNING.**

Major Initiatives to Support This Recommendation

1. **Raise student computational skills to make Texas No. 1 in mathematics in the nation.** Building upon Texas' Math Academies – the new teacher professional development tool passed by the Legislature in 2015 and established by TEA in summer 2016 – Texas should provide Math Innovation Zone grants to incentivize school districts to adopt comprehensive, proven, high-quality, and blended-learning math programs for all K-8 classrooms.



2. **Hold P-12 schools accountable for student performance using measures that include college readiness and closing student achievement gaps.** Transparently and consistently provide student outcomes on key student performance measures, including college readiness, to all stakeholders. Update the College and Career Readiness Standards (CCRS), with an awareness of how college readiness and career readiness connect and intersect. Emphasize career and technical education standards and Level 1 certificates to address the ever-changing economic environment. To help address workforce needs that require both college ready and career ready students, involve members of the business community in the CCRS updating process. Incorporate the updated CCRS into the Texas Essential Knowledge and Skills (state's P-12 curriculum).
3. **Improve the state's teacher ranks through better recruitment (including alternative certifications), preparation, and in-service training (e.g., Teacher Academies), and highlight the value of the profession in both P-12 schools and in colleges and universities.** In higher education, employ High-Impact Practices (HIPs), which are evidence-based teaching and learning practices shown to improve learning and persistence for postsecondary students from many backgrounds. Also, improve and expand professional development for K-20, and develop expertise among faculty in higher education about the best practices for student learning.

Additional Recommendations

- a. **Ensure P-12 students have access to rigorous and high-demand dual credit, career and technical education (CTE), and advanced placement (AP) courses. Also work to ensure that courses count toward students' certificates or degrees. Access is especially important in rural and economically disadvantaged communities.**

Initiatives to Support Recommendation

- **Expand access to dual credit and AP courses for rural and economically disadvantaged students** through teacher AP incentive programs and the Texas Virtual School Network to increase the participation of those high school students in dual credit and other college-level courses. Evaluate current dual credit courses for an appropriate level of rigor, and provide strong incentives in the state's school accountability system for offering high-quality dual credit, CTE, and AP courses. Develop ways (e.g., websites) for students and parents to receive information about dual credit options that will *transfer* and *count* toward specific certificates or degrees at institutions of higher education, similar to "truth-in-lending" statements.
- b. **Improve, expand, and replicate innovative STEM and CTE programs in P-12, and expand STEM and CTE course sequences and student pathways, especially in rural areas. Encourage schools, higher education, and industry to collaborate and expand sequenced course offerings in high-demand fields.**



Prime Recommendation 3

- ▲ **BUILD A PROACTIVE, ONGOING PARTNERSHIP AMONG THE TEA, THECB, TWC AND OTHER STAKEHOLDERS TO ALIGN THE EDUCATIONAL GOALS OF TEXAS WITH THE STATE'S HIGHER EDUCATION PLAN OF 60x30TX, WHICH AIMS FOR 60 PERCENT OF 25- to 34-YEAR-OLDS TO HOLD EITHER A CERTIFICATE OR DEGREE BY 2030, WITH THE GOAL OF GROWING THE STATE'S WORKFORCE, INDUSTRY, AND THE ECONOMY.**

Major Initiatives to Support This Recommendation

- 1. Focus on providing thorough education and career guidance through enhanced opportunities for students in middle school through college:** (1) Develop a statewide online advising tool for counselors, students, parents, and other stakeholders that will help P-16 students – especially students who are struggling, students who are economically disadvantaged, students with disabilities, or students in foster care – make meaningful and achievable college or career plans; (2) expand high school student advising programs such as Advise TX, which works to increase the number of low-income, first-generation college, and underrepresented high school students who enter and complete a postsecondary education; (3) advise students entering institutions of higher education more effectively to drive course selection and completion tied to specific careers, educational endpoints, and high-demand occupations; (4) encourage career exploration opportunities for all students by exposing them to labor market information related to jobs in the STEM and IT sector to encourage student attainment in high-demand occupations; and (5) demonstrate strategies to co-locate Texas Workforce Specialists at high school campuses to provide guidance and information regarding high-demand careers, including middle skills jobs and training opportunities with apprenticeships, trade schools, community colleges, and employers.
- 2. Expand the development of adult learners, high school dropout recovery programs, and achievement models** (e.g., adult charter schools), **and develop practices to encourage higher education “stop outs” with more than 50 semester credit hours to return and complete a degree or certificate.** Expand Grad TX, which helps stop outs to return to universities to finish their bachelor's degrees. Partnerships with current employers also may help advance completion opportunities.
- 3. Launch and fund grants for Texas Industry Cluster Innovative Academies.** These academies build on the existing Early College High School model and require key partnerships among high schools, regional employers and industry, and four-year universities to provide opportunities for students to acquire dual credit, certifications, and degrees, as well as internship and mentorship opportunities, in high-demand occupations in key regional industry clusters.

Additional Recommendations

- a. Promote innovation in P-16, through mechanisms such as Early College High Schools with a CTE focus (e.g., Industry Innovative Academies), competency-based education, experiential learning, and alternative pathways.**



Initiatives to Support Recommendation

- **Develop strategies to ensure that courses, credentials, experiential learning, and military training transfers and count toward degrees** at community colleges, technical schools, career schools, and postsecondary institutions, and develop regional articulation agreements that include high schools and the military, in addition to community colleges and regional universities. Make higher education more *affordable*, flexible, and *stackable* through instructional models and schedules that support students, especially working students and adult learners, and respond to the current needs of industry. Use innovative approaches for content delivery and scheduling (e.g., block scheduling) and higher education assessment to improve completion and reduce student cost.
 - **Make higher education more affordable for students by:** (1) supporting innovative approaches for more affordable credentials, (2) funding grants for eligible students in higher education, and (3) reducing the time it takes to complete a degree, e.g., through alternate degree pathways such as Texas Affordable Baccalaureate programs.
- b. Improve the marketable skills of students graduating from high school and college to include those necessary for workforce success, such as teamwork, critical thinking, personal responsibility, and problem-solving. Communicate acquired marketable skills to students, families, and the workforce.**

Initiatives to Support Recommendation

- **Embed marketable skills into the Texas Essential Knowledge and Skills** (state P-12 curriculum) from prekindergarten-12th grade, and **expand marketable skills in the Texas Core Curriculum** (higher education curriculum) and coursework.
 - **Ensure marketable skills are integrated into P-12 curricula** so that students can demonstrate and communicate those skills through established mechanisms, e.g., classroom assignments, projects, grades, etc.
 - **Align the P-12 accountability system with the 60x30TX accountability system.**
- c. Through a tri-agency collaboration among TEA, TWC, and THECB, develop a comprehensive, complementary, and aligned suite of technology tools and applications to communicate education and workforce data in an audience-appropriate manner to a variety of stakeholders.**

Initiatives to Support Recommendation

- As part of a collaborative technology plan, **develop a statewide online education and career advising tool for counselors, students, and parents, and other stakeholders, that will help P-16 students** – especially students who are struggling, economically disadvantaged, foster children, or children with disabilities – **make meaningful and achievable postsecondary or career plans**. In addition, encourage student attainment in high-demand occupations and help students select dual credit courses based on future plans. Include the



following information: (1) an individualized career pathway generator that helps students select a career and then helps them determine the P-16 courses required to be successful, earn a certificate, or enter a college or university, (2) existing and anticipated employment opportunities in local communities and across Texas, which directly align with state and regional objectives; (3) anticipated earnings in different careers; (4) local, regional, and statewide career training and certification programs, requirements, costs, and options; (5) local, regional, and statewide high school to career and college articulation agreements and efficient stackable degrees; (6) endorsements under the Foundation School Program offered by school districts related to postsecondary college and/or career options and (7) the cost, time, and expense of different career and educational options.

As a complement to the technology offerings, **the state should also continue career fairs sponsored by local workforce development boards and offered in partnership with local employers** as a means to highlight the broad array of occupations available to Texas students. The technology plan, coupled with applied learning opportunities and related campaigns to highlight careers and industries in Texas, will provide a stronger basis for students, parents, and teachers to understand the opportunities available.

d. Improve academic preparation and academic support for students to enter and complete higher education.

Initiatives to Support Recommendation

- Scale up and share practices that **support students in their academic preparation for postsecondary education.**
- **Expand high-quality education programs for educationally underserved adults**, including people with disabilities.
- Scale up and share practices that **support underprepared students to increase persistence and completion and reduce their time to degree.**

Prime Recommendation 4

▲ **IDENTIFY SERVICES FOR TEXAS VETERANS AND ADVANCE STRATEGIES TO ENHANCE THEIR EDUCATION AND EMPLOYMENT OPPORTUNITIES, AND DEVELOP SOLUTIONS TO ENSURE A SEAMLESS AND ACCELERATED TRANSITION BACK INTO THE TEXAS WORKFORCE.**

Major Initiatives to Support This Recommendation

1. **Ensure a seamless transition of service members into the civilian, education, and employment communities by providing enhanced employment services.**
 - **Create the *Operation Welcome Home* program to better meet the needs of transitioning service members at military installations in Texas by providing enhanced employment services.** The goal will be to build strong partnerships between Military Transition Centers and the Texas Workforce Commission's Local Workforce Development Boards (Boards) to assist in referring transitioning service



members who are within 180 days of separation. The program will enhance the ability of the local Boards and community partners to provide Texas specific employment services or services in one of the specified tracks – education, career technical training, or entrepreneurship.

- **Establish the *Welcome Home Transition Alliance* to promote a partnership with military installations.** The Alliance will be comprised of TWC and representatives from the 11 Boards with military installations, the Texas Veterans Commission, and the Texas Department of Licensing and Regulation. The Alliance will encourage the participation of military installations. They will collaborate on addressing the needs of transitioning service members and facilitate ongoing coordination to improve employment outcomes.
- **Enhance Skills Development opportunities for transitioning service members by establishing the *Skills for Transition* program.** The *Skills for Transition* program will work with separating service members who plan to remain in Texas. The *Skills for Transition* program will complement the efforts of existing transition programs and provide training opportunities to service members focused on skills associated with employment in high-growth, high-demand occupations. Boards will work together to ensure they are aware of opportunities throughout the state, and through the Workforce Solutions network, and will assist them in transitioning to any community in Texas. The Skills for Transition program will be a resource for the Workforce Solutions Office and workforce partner staff working with service members 180 days prior to their separation, and post-transition.
- **Support for military families.** This initiative will focus on providing employment assistance to military spouses who are experiencing challenges in obtaining employment, obtaining the appropriate licensure or certifications, or obtaining new skills to compete in the job market. Local Workforce Development Boards will provide job search assistance, assessment of skills, labor market information, resume writing and interview skills, and support training in targeted occupations.

Additional Recommendations

- a. **Replicate models on a statewide level that assign mentors to veterans to help them translate military resumes/experience into civilian resumes/experience.**
- b. **Expand College Credit for Heroes – a partnership between the Texas Workforce Commission and the Texas Higher Education Coordinating Board – that helps active duty, former, and retired military personnel receive college credits for their service.** As part of this initiative, transition veterans into competency-based education and affordable baccalaureate programs that offer academic credit for experiential learning.
- c. **Expand Troops to Teachers, and develop Troops to Teaching Assistants.**
- d. **Encourage veterans to test their college readiness by taking the Texas Success Initiative (TSI) assessment and waiving the fees for the test.**



Conclusion

Texas must continue to look for ways to develop skilled workers to support all sectors of its economy, as well as develop near- and long-term visions based on new and emerging industries. To support this vision, Texas will need to strike the right balance of hope and urgency as it forges new statewide and regional models for workforce development and educational achievement. Regional leaders across the state will need to collaborate and make careful decisions about the future, then collaboratively plan and implement the necessary educational pipelines to make the statewide and regional visions a reality.

To support those visions, industry partners and companies of all sizes will need to help align P-12 and higher education with the workforce. These collaborations will be especially important for places with fewer opportunities for advancement and/or with large populations of economically disadvantaged families.

The governor's charges make it clear that the state must focus on all Texans and all regions as it looks at strategies for workforce development and economic growth. Solutions for a bright and prosperous Texas future will come from educators, employers, government officials, communities, and others working together. Those stakeholders must dedicate resources to invest in skills that are meaningful for current and future jobs. Their investments – our investments – will advance the statewide goals of 60x30TX, expand the Texas economy, create job growth, and help build a prosperous future for every family that is proud to call Texas home.



Acronyms Used in This Report

ACT	American College Testing Program
AP	Advanced Placement
CBO	Community-Based Organization
CCRS	College and Career Readiness Standards
CTE	Career and Technical Education
ECHS	Early College High School
FOS	Fields of Study
HIPs	High-Impact Practices
ISD	Independent School District
JET	Jobs and Education for Texans
LWDB	Local Workforce Development Boards
PEIMS	Public Education Information Management System
POS	Programs of Study
SAT	Scholastic Assessment Test
SCHs	Semester Credit Hours
STEM	Science, Technology, Engineering and Mathematics
TAB	Texas Affordable Baccalaureate
TAC	Texas Administrative Code
TEA	Texas Education Agency
THECB	Texas Higher Education Coordinating Board
TEC	Texas Education Code
TSI	Texas Success Initiative
TWC	Texas Workforce Commission

