

Work-Based Learning

in Career and Technical Education Programs in Texas



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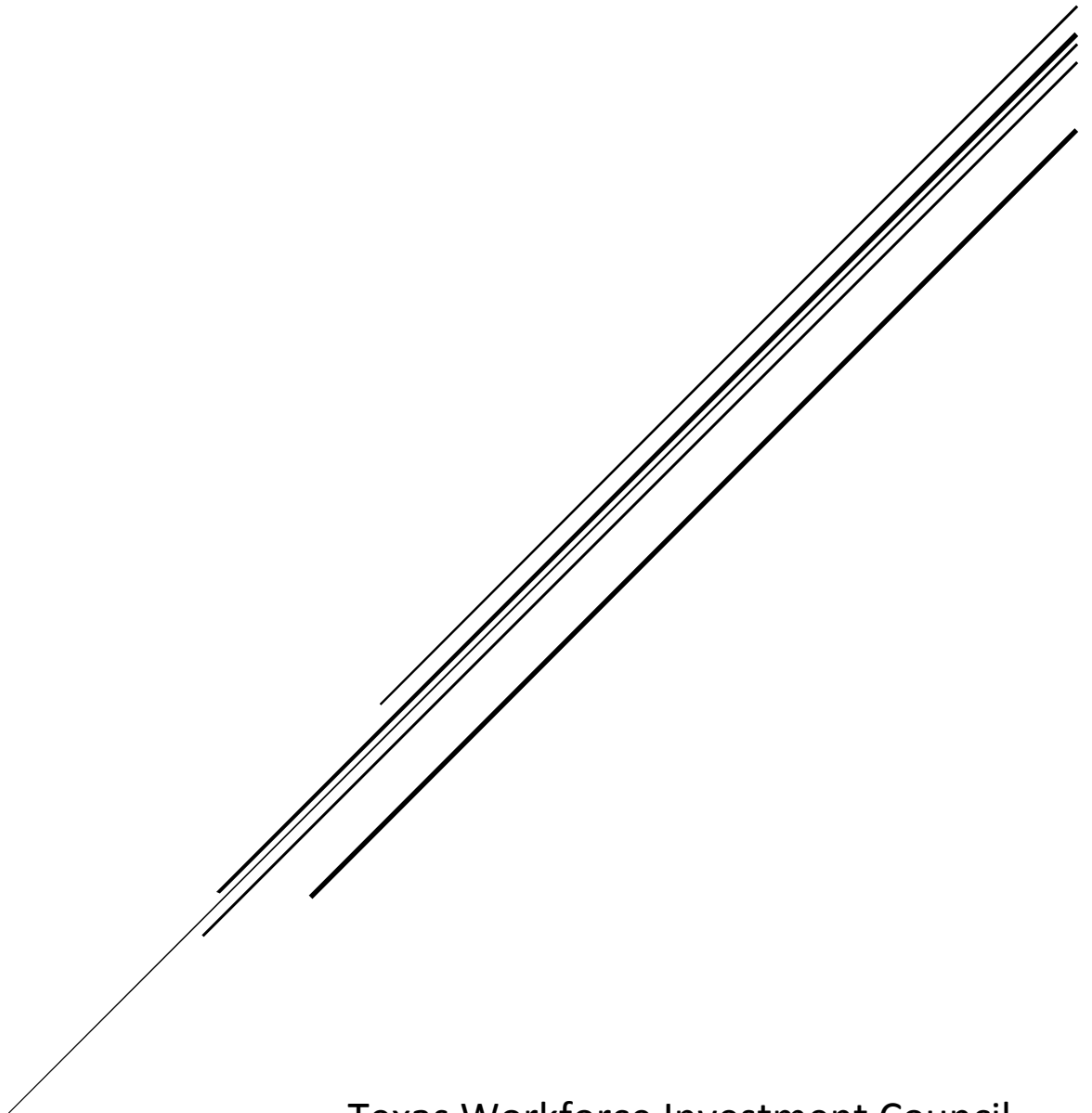


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The Mission of the Texas Workforce Investment Council

Assisting the Governor and the Legislature with strategic planning for and evaluation of the Texas workforce system to promote the development of a well-educated, highly skilled workforce for Texas.

WORK-BASED LEARNING IN CAREER AND TECHNICAL EDUCATION PROGRAMS IN TEXAS



Texas Workforce Investment Council
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Introduction

Two critical issues identified in *The Texas Workforce System Strategic Plan FY 2016–FY 2023* are the use of industry-based certifications and the demand for qualified workers for STEM occupations. During development of the system strategic plan, a panel of Texas employers expressed great difficulty in finding workers with the certifications and work experience they need. This was reinforced in the Council’s *2015 Survey of Texas Employers*, which provided insight into what types of workers are needed and what skills and qualifications are required. This report also provided insight into perceived deficiencies of workers linked to level of educational/training attainment including credentials such as industry-based certifications, licenses, and apprenticeships, as well as the need for students to engage in work-based learning to gain experience required for employment.

While research indicates that two-thirds of jobs projected over the next decade will require education beyond high school, nearly half are expected to be in middle-skill occupations—those requiring workers with education and training beyond high school but less than a four-year degree. This education can include subbaccalaureate credentials such as industry-based certifications or associate’s degrees. Many of the fastest growing occupations around the nation include jobs classified as middle-skill, especially jobs that require STEM skills and knowledge. Statistics also indicate that many middle-skill STEM occupations can provide workers with employment that pays above average wages.

According to a 2016 National Governors Association report, industries across all states are struggling with a growing mismatch between the needs of industry and the skills of workers. Research has shown that high-quality work-based learning is an effective strategy for equipping the workforce with industry-relevant skills and strengthening the competitiveness of the state. Scaling high-quality work-based learning models can ensure that such opportunities are available statewide, benefit employers across industries and participants from varied backgrounds, and further state goals for a skilled workforce.

Scope of the Report

This paper aims to develop a foundation for understanding work-based learning in Texas. It provides a description of work-based learning activities in Texas secondary and postsecondary education, focusing on efforts with a high degree of employer involvement. To further illustrate the options for and potential benefits of work-based learning, selected efforts from the secondary and postsecondary sectors are profiled as promising practices.

What is Work-Based Learning?

In general, work-based learning consists of acquiring academic, technical, and employability skills through interactions in real work environments. Activities and experiences involve practical, hands-on opportunities that link the classroom and the workplace. Work-based learning provides students an avenue to discover strengths and interests within career fields.

Work-based learning typically involves a collaboration of multiple partners to develop a method for conveying academic concepts and workplace skills required for a student to successfully transition from school to further education and careers. The goal is to provide students the opportunity to develop relevant skills and help employers access and expand the talent they need to remain competitive.

This type of learning is often viewed as a continuum of programs that offer authentic work and educational experiences that follow a career pathway. Based on a partnership agreement between student,

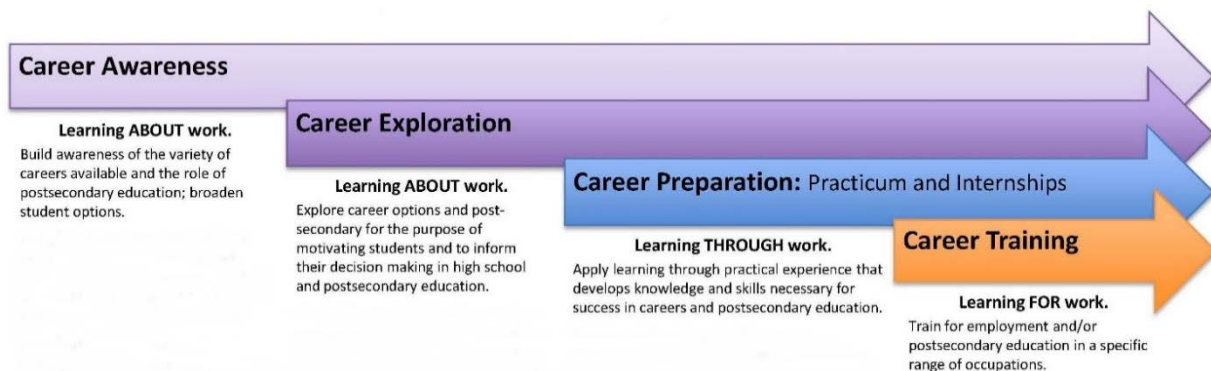
educational institution, and sponsoring employer, the student participates simultaneously in a learning and work experience component. Successful completion typically results in earning a workforce credential or other educational credit.

The Work-Based Learning Continuum

Work-based learning is an important education and training strategy that can result in industry-based certifications for critical middle-skill STEM jobs in Texas. It involves practical, hands-on opportunities that connect the classroom to the workplace. The Council’s 2016 report—*Research on Work-Based Learning*—developed a foundation for understanding work-based learning strategies and programs. In part, the report provided a detailed description of a work-based learning continuum, shown below, that features a range of strategies including career awareness, career exploration, career preparation, and career training and education. Activities increase in intensity over time as individuals move along the continuum. Continuum phases are flexible, meaning activities may overlap and individuals may enter at different ages or stages in their career.

As an instructional strategy, work-based learning connects a student with an industry to develop a deeper understanding of a specific occupation. As work-based learning strategies continue to evolve, programs have expanded and now permeate numerous education and training levels. Considering the age range, programs, and learning outcomes, work-based learning can best be understood as a continuum of sequenced and coordinated events that advance towards postsecondary education or professional careers. This model refers to experiences that increase in intensity over time as students move along the continuum, from general career knowledge to immersion in a career or industry. While variations to the work-based learning continuum exist, the structure of the continuum generally includes four phases: career awareness, career exploration, career preparation, and career training and education.

Experiences along the work-based learning continuum are flexible in nature. For instance, students may enter the continuum at any age or point in their career. Additionally, experiences along the continuum are not exclusive to each phase. Experiences such as internships can occur in career preparation, and career fairs may extend to career exploration. Work-based activities along the continuum are designed to increase in intensity over time, exposing students to deeper levels of learning and career development. The diagram and descriptions below provide a visual illustration of the work-based learning continuum.



SOURCE: Linked Learning Pilot Program (California).

Career awareness is the broadest of the continuum phases. At this stage, students become aware of and learn about available education and career options. By being exposed to a variety of options, students are able to identify potential pathways towards specific fields or industries. Career awareness is also the

phase where students can learn how education relates to work. Typically, students begin career awareness activities in elementary school and continue through middle school. Activities in this phase are less structured and may include school-sponsored career fairs or guest speakers who visit a classroom.

Career exploration is similar to career awareness and is the next step after students identify and gain a deeper understanding of their available options. Students learn about specific occupations during the career exploration phase and accumulate additional information to inform their decision making process. Students generally obtain a full understanding of the entire range of career options. Additionally, students start to match individual skills and interests to specific education and career pathways. Experiences during this phase usually begin in middle school or during the first year of high school and can include job shadowing or jobsite tours.

Career preparation provides students with the opportunity to learn through real work experiences. Students actively participate and interact with colleagues or mentors to simulate and enhance their skills and knowledge. This phase of the continuum allows students to apply foundational skills and knowledge required for college and career readiness. Experiences are geared towards integrating academic and work-based skills and usually occur during a student's freshman or sophomore year in high school. Career preparation experiences can include career-related competitions or interview training.

Career training and education represents the culmination of the three previous phases of a student's education and training. During this phase, students begin learning and training for actual employment or preparation for postsecondary education. Students are able to demonstrate specific skills and knowledge related to their selected career field. Students begin participating in career training and education towards the end of their high school career and well after graduation. Experiences during this phase are generally longer and involve the mastery of specific occupation skills. Career training and education encompasses a wide range of experiences, including internships, on-the-job training, and apprenticeships.

A robust work-based learning experience involves strong partnerships and clear expectations. Classroom education and workplace training are not repetitive at each phase of the continuum. Instead, experiences build upon each other to develop student skills and knowledge that culminate in a stackable credential. Work-based learning experiences continue throughout a student's working life as job opportunities shift or evolve. This allows students multiple entry and exit points as they progress along their academic and career paths.

Scope of the Research

In order to align with the Council's charge in Texas Government Code, Section 2308.101(8), to encourage, support, or develop research and demonstration projects designed to develop new programs and approaches to service delivery, the goal of this research was to develop a foundation of understanding work-based learning in secondary and postsecondary education in Texas. The focus was on primary, ongoing programs rather than new programs or specially funded initiatives.

The report highlights programs that have successfully implemented work-based learning strategies in core, credit-bearing programs. Featured programs have a high level of employer involvement and a history of activities in the latter phases of the continuum, which may include paid or unpaid work experiences such as internships or practicums. The featured schools include career and technical education programs, early college high schools, and T-STEM Academies.

Methodology

As part of the research effort, the Texas Education Agency, the Texas Higher Education Coordinating Board, and the Career and Technology Association of Texas were asked to recommend three to five schools or programs for consideration as promising practices in this report. If a school was recommended without a specified program, it was left up to the school to determine what program would be profiled. Program staff conducted phone calls with the three agencies to identify and confirm the recommended schools and programs for consideration and to request the school and program liaison from the recommending agency.

An introductory email was sent describing the Council's mandate, explaining that the school and program had been recommended for consideration as a work-based learning promising practice, and requesting the school or program's assistance in the research project. The email also invited the school to take part in a structured phone interview. Prior to the phone interview, the schools and programs were provided with documentation that included a working definition of work-based learning for this project and sample questions addressing the areas of continuum phases three and four. Eleven out of eighteen schools and programs participated in the research, with each one providing specific program information and data.

School and Program Profiles

The following pages include profiles that provide overviews of eleven schools and programs that have demonstrated promising practices for work-based learning in career and technical education programs in Texas. The profiles are accompanied by edited responses to a questionnaire about the work-based learning program.



Alamo Colleges Advanced Technology and Manufacturing Academy

Program Overview:

Alamo Colleges, in conjunction with San Antonio area industries and high schools, developed an educational partnership with Alamo Academies, a STEM-based instructional education model. The Academies focus on developing a pipeline of skilled workers and provide a college pathway for high school juniors and seniors to gain industry and academic certificates while addressing workforce industry needs.

The process begins when a need is identified for skilled labor by industry. Partners and stakeholders then work together and develop recruitment and enrollment processes, curriculum, and support systems utilizing a dual credit model that allows students to complete high school and college graduation requirements in a demand occupation.

The Advanced Manufacturing Technology program is a customized associate of applied science degree program. Students spend two and a half hours a day on an Alamo Colleges campus attending classes. During the two-year program, students earn more than 30 college credits at no cost to them, allowing them to receive both a high school diploma and a college degree. At the time of graduation, the student has the option to obtain a career in a high-demand occupation or to continue on with higher education.

Alamo Colleges
Advanced Technology and Manufacturing Academy

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*
Students enrolled in the Advanced Technology and Manufacturing Academy participate in a paid internship program during the summer months of their junior and senior year.
- b) *Explain the primary factors that led to development and implementation of the program.*
The San Antonio Manufacturing Association and Toyota identified advanced manufacturing as the most critical occupation in the Alamo region. Meetings with regional transportation manufacturing industry members indicated highly skilled industrial maintenance mechanics and technicians were needed to maintain and repair complex industrial automation systems.
- c) *Identify the key players involved in the planning process.*
Key players involved in the planning process include industry, local government, independent school districts, workforce development boards, and the chamber of commerce.
- d) *Specify how the planning/development was accomplished.*
The development of the program was achieved by using industry clusters. The industry consortium worked with the area colleges and developed the curriculum, focusing on nine courses that could transfer into an associate's degree.
- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*
The program is a paid summer internship offered to high school students between their junior and senior years. The internship is eight weeks long, full-time, and is a paid position. The internship provides the students with a real-world working environment that allows them to participate in on-the-job training or job shadowing. The activities are directly linked. The training in the classroom is exactly as it is at the employer. Metrics are taken during this process that are used for continuous improvement.
- f) *Explain how employers support and/or participate in the activities.*
The industry pays for internships. Each educational partner with Alamo Academies contributes and plays a critical role. Alamo Colleges provide facilities and instruction while the school districts provide books and transportation. The employers pay for the internships.
- g) *Describe the associated costs for the program and the work-based learning activities.*
School districts provide books and transportation to the community college campuses, and the employers are responsible for paying the internship salaries.

2) Success Matters

- a) *Explain if the work-based learning activities have increased the students' level of preparedness for high-level training and/or employment.*
During the two-year program of studies, the students are able to earn more than 30 credits toward an associate of applied science degree. Additionally, the program offers mentoring with the employers, soft skills training, and the opportunity to learn interviewing skills. The student attends classroom instruction and interns, earning a wage up to \$16 per hour while gaining new

skills, all with the possibility of beginning a career with Toyota and the potential of earning over \$50,000 per year.

- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*

As part of the program, students participate in a paid internship during the summer between their junior and senior year while earning a paycheck and college credit.

- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*

Yes, employer engagement has increased. Participating employers include CPS Energy, HEB, and Toyota.

- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*

Training plans have proven to be less challenging, based on feedback from employers after the internship periods have ended.

3) Lessons Learned

- a) *Recount a positive opportunity.*

Convincing industry to be part of the program and asking them to invest in workforce training was difficult. They were a large part of the solution. Industry expected to get a 20-year-old with 40 years of experience. It was a learned process for them; they engaged and owned their programs. It was a positive opportunity.

- b) *Describe a significant challenge or obstacle and explain how it was resolved.*

Finding qualified faculty can be a challenge.

- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*

The training program is in constant modification. This is to ensure the needs of industry are being met. It's a new lesson every day.

- d) *Point out an area for improvement for 2017-2018 or beyond.*

This question is not applicable due to the response to the question above.

4) In Retrospect

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*

Work harder to bring industry and other various stakeholders to the table in order to receive a solid commitment in supporting the program.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

Program elements recommended for expansion include pursuing more employers to participate in the internship program; expanding into other industries to increase funding streams; moving away from dealing with independent school districts; and gaining some political willpower.



Amarillo Independent School District
Amarillo Area Center for Advanced Learning
Health Science Technology Pursuing Real Opportunities (PRO) Internship

Program Overview:

The Amarillo Independent School District (AISD) in partnership with the Amarillo Area Center for Advanced Learning (AACAL) offers a health science technology mentorship and internship program designed to prepare students for success beyond high school. The health science technology program provides a comprehensive area of study for students who are interested in nursing, pre-medicine, and allied health fields.

The mentorships and internships are provided to juniors and seniors who are in the third or fourth year of studying their specific career fields. Juniors intern at long-term facilities in order to complete certification requirements and are often placed in other clinical settings at hospitals after certification requirements are completed. Seniors intern at health care facilities where they are able to demonstrate knowledge, skills, and abilities during clinical participation. The seniors intern three days a week for a semester and must receive a positive evaluation on their internship before progressing to the AACAL Pursuing Real Opportunities (PRO) senior internship.

PRO began as a collaborative effort between the Amarillo Economic Development Corporation, Amarillo Independent School District, and Amarillo College. In 2008, AISD implemented the PRO internship program to expose students to viable career paths through supervised hands-on experiences with local businesses. Originally a partnership between the City of Amarillo and AISD, the PRO senior internship program has now expanded to businesses all over the city that provide meaningful learning experiences for students.

Students are required to apply to the program and, once accepted, are paired with an internship site. Students spend six hours per week in an unpaid internship and work with a mentor throughout the year. This allows the student to develop a professional relationship with an adult who has taken an interest in the student's education, training, and employability.

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*

Students enrolled in the health science technology program participate in an unpaid internship program during their junior and senior year.
- b) *Explain the primary factors that led to development and implementation of the program.*

The development of the program was achieved by a number of factors. First, the workforce need of the area was health care, especially in rural areas. There were a number of smaller independent school districts that lacked the resources needed in order to provide a work-based learning program. House Bill 5 passed during the 83rd regular legislative session in 2013. The bill mandated new programs of studies and new graduation requirements. The PRO senior intern program was producing graduates; however, they were not continuing on for postsecondary degrees. Students were lacking skill sets in some cases. The aging workforce was also a factor.
- c) *Identify the key players involved in the planning process.*

Key players involved with planning included the staff of the health science technology program, Amarillo Economic Development Corporation, independent school districts, and existing partnerships,
- d) *Specify how the planning/development was accomplished.*

The development of the program as achieved by discussing the “big picture” issues and designing a plan to develop a workforce. Adding an internship program was a way to address an issue—by helping with training, skills, and employability.
- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*

The work-based learning component includes students attending school part-time in a lab-based setting that simulates a nursing environment. Before the internship begins, the students attend a safety orientation where they learn first aid and notifications of hazards. In the fall, the school conducts senior year seminars for all PRO students that include employability skills, interviewing, how to dress, personality type, and how to work with different types. Panhandle Workforce Solutions holds a career fair with AACAL for the juniors and seniors to provide education options and career paths. In the spring, PRO teachers hold an etiquette luncheon at a local restaurant. And in the late spring, the school has a mentor appreciation luncheon with students, faculty, and employers.
- f) *Explain how employers support and/or participate in the activities.*

Employers partner with the universities and community and technical colleges to support student training internships. The schedule is structured to work with employers such as hospitals so that students are able to participate in job shadowing and clinical rotations, allowing students to meet the set hours required for the CNA certification. The employers also support and participate in interviewing, job shadowing, internships, and practicums.
- g) *Describe the associated costs for the program and the work-based learning activities.*

The program costs are paid for by the Amarillo Independent School District. This includes all of the career and technical education courses, transportation to and from the different high schools, and the industry certification testing fees.

2) Success Matters

- a) *Explain if the work-based learning activities have increased the students' level of preparedness for high-level training and/or employment.*

The activities have increased the students' level of preparedness for training or employment. Every six weeks, they are evaluated on their work cooperation, job knowledge, safety, and dependability. The students are notified if they are not performing up to the program's standards.

During the students' senior year, they have the option of working toward a certification, or they may take dual credit with Amarillo College. Students spend six hours per week in an unpaid internship and work with a mentor throughout the year. This allows the student to develop a professional relationship with an adult who has taken an interest in the student's education, training, and employability.

While in the classroom, students focus on career planning, postsecondary training options, and refining skills such as communication, work ethic, taking initiative, networking, and problem solving.

- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*

Students who enter the class in August are much different than the students leaving the class in May. Through the experiences in class and through the internship opportunity, students are better prepared for the next step beyond graduation. They have matured and grown into young adults and are primed for life after high school.

- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*

The activities have contributed to increased employer engagement and support of the program.

- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*

The program completers are meeting the local workforce needs, and that has contributed to employer satisfaction. Employer satisfaction has also helped with employer engagement with the internships.

3) Lessons Learned

- a) *Recount a positive opportunity.*

Working on employer engagement and coordinating with postsecondary schools on the program provided a positive opportunity. Collaborating with the advisory committee, employer groups, and others working at various community events was a great experience.

- b) *Describe a significant challenge or obstacle and explain how it was resolved.*

The health science technology program will need to be reevaluated as the program continues. The challenge will be finding enough sites for clinical rotations or internships without overloading the employers. The needs of local employers will need to be reassessed and addressed.

- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*

There have been no significant changes or modifications, only expansion to the program.

d) *Point out an area for improvement for 2017-2018 or beyond.*

An area for improvement would include some course adjustments such as adding medical terminology and, in the student's junior year, offering two options—either health science as one credit or health science with clinical rotations as two credits.

4) In Retrospect

a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*

There would be no changes at this present time. House Bill 5 requires local continuous improvement.

5) Expansion or Replication

a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

Program elements that could be used for expansion or replication in other training programs include career development, job site tours, job shadowing, health fairs, and organizing a Health Occupation Student Association.



Bryan Independent School District Hospitality Services

Program Overview:

Bryan Career and Technical Education and Hilton Hotel partnered to provide Bryan Independent School District students with the opportunity to work in the hospitality and tourism industry. Students gain valuable experience in front desk and administrative work, event planning, catering, accounting, room service, and housekeeping. The practicum in hospitality services provides opportunities for students to experience classroom instruction and hands-on experience with business and industry.

The hospitality services program provides students with both academic and technical preparation in order to obtain a high-demand career in a hospitality-related industry. Knowledge and skills are learned through hands-on instruction, and the courses are designed to prepare students for nationally recognized industry certifications. The program is taught through internships, mentoring, or job shadowing. While enrolled in the hospitality services program, students do spend time in the classroom but travel to the employer to work. Positions are rotated every six weeks to allow the students to experience managing every aspect of a hotel.

The Bryan Independent School District started the Project Open for Business program, which is available to students enrolled in career technology education programs such as the hospitality services program. Project Open for Business offers training sites for students to gain work experience and strengthens the partnerships between the school and employers.

Bryan Independent School District Hospitality Services

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*
The hospitality services program is delivered through internships, job shadowing, and mentoring.
- b) *Explain the primary factors that led to development and implementation of the program.*
A primary factor that led to the implementation of the hospitality services program was when Texas A&M University joined the Southeastern Conference. The hospitality industry flourished.
- c) *Identify the key players involved in the planning process.*
Key players involved in planning include school staff and management, Hilton managers, and other area hotels who have approached the school.
- d) *Specify how the planning/development was accomplished.*
Planning and development were accomplished by researching other schools and scheduling visits to Houston schools. Bryan ISD collaborated with Hilton Hotel managers who had prior experience with internships, and an MOU was developed between the school and Hilton Hotels.
- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*
Students participate in internship and job shadowing positions with rotations, and are always paired with a Hilton staff member. Positions are rotated every six weeks and include front desk and administration, event planning, catering, accounting, room service, and housekeeping. Field trips are planned to visit other hotels such as Moody Gardens to provide examples of hospitality. The Family Career and Community Leaders of America (FCCLA) also holds competitions. FCCLA is a nonprofit national career and technical student organization for young men and women in family and consumer sciences education in public and private schools, grades 7-12.
- f) *Explain how employers support and/or participate in the activities.*
The Hilton Hotel participates in activities by serving on the advisory committee and by having representation for each program area. Hilton Hotel representatives attend the principles course.
- g) *Describe the associated costs for the program and the work-based learning activities.*
Costs for the program are paid for by Bryan Independent School District. Items include all program costs, such as transportation, books, and uniforms to wear at the hotel.

2) Success Matters

- a) *Explain if the work-based learning activities have increased the students' level of preparedness for high-level training and/or employment.*
The level of preparedness for high-level training and employment is a result of the program's work-based learning activities. The workforce learning occurs on-site, with the students learning the major benefits of working in the industry. The students are required to participate in an unpaid, three-hour practicum at a full-service Hilton Hotel in College Station, Texas. Many students work evening and weekends, and many are hired post high school.

- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*

Students who participate will attend a course on employability and life skills, punctuality, and reporting to a supervisor. The practicum is required as part of the program, which includes a Hilton Hotel staff member plus the teacher. The program includes 12 different roles with rotations. Students learn how to deal with difficult customers, and shy students benefit from working the front desk. Two years ago, the internship was running in the evening, which was not the busiest time. The internship was flipped to running in the morning and the students now have more to do.

There is a daily, informal assessment and an end-of-year assessment to look at changes for the next year.

- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*

Program activities have contributed to increased employment engagement for employers who participated and new employers.

- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*

Activities have contributed to increased employer satisfaction with program completers. For example, the Brazos Valley Hospitality Association is represented now by the school districts, and the hotels want training for the future workforce as hotels are built in the area.

3) Lessons Learned

- a) *Recount a positive opportunity.*

A positive opportunity was exposing students to local options they were not aware of such as accounting, construction, and administration. Another positive opportunity includes hiring students who commit to work a certain number of years with Hilton in return for college costs. And with Hilton, employees have the option to transfer anywhere in the world.

- b) *Describe a significant challenge or obstacle and explain how it was resolved.*

A significant challenge was the advertising and marketing for the program, especially for the lower grade levels. Another challenge was the misconceptions about available jobs at hotels. Housekeeping typically comes to mind by many; however, available jobs often include accounting, construction, front desk, and event planning.

- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*

A modification to the work-based learning activities now includes a required three-hour internship block at the hotel.

- d) *Point out an area for improvement for 2017-2018 or beyond.*

At this time, there are no changes planned at the hotel. Changes for 2017-2018 include preparation for industry-based certifications, postsecondary education, and entry-level careers.

4) In Retrospect

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*

The program needs to be assessed on a constant basis internally and at Hilton Hotel. The internship positions were shifted from the afternoon to the morning at the hotel's request.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

Focus efforts on helping Hilton Hotel. Design the program around the hotel needs because the hotel will provide the experts on the program and the internship positions for the program.



Connally Career and Tech Early College High School Automotive Technology

Program Overview:

The automotive technology program is a two-year degree program designed to prepare students to perform a wide range of diagnostics, repairs, and preventative maintenance on automobiles and light trucks. The program provides the opportunity for students to learn a variety of components of automotive technology and receive hands-on training in engine overhaul, manual and automatic drive train, front end alignment, brake service and repair, fuel systems, ignition systems, and air conditioning. The automotive technology program also provides training in engine performance diagnosis, electrical and electronic control systems, and on-board computerized engine control systems diagnosis.

Connally Independent School District and Texas State Technical College (TSTC) developed an early college high school called Connally Career Tech. While attending high school, students can earn up to 60 hours of college credit or complete an associate's degree at TSTC with applied learning opportunities in high demand occupations within targeted industry clusters. Opportunities include internships, externships, apprenticeships, mentorship programs, and career counseling.

The automotive technology program is an internship with HoltCat in Waco, which sells, services, and rents heavy equipment, truck, and trailers for construction. Students are selected for the program through an interview process and teacher recommendations. The internship begins in their junior year and requires a minimum of 10-15 hours per week. If the internship is a fit, students are able to continue the internship through the summer and through their senior year. After graduation, the student has the opportunity to be hired as a full-time employee.

Connally Career and Tech Early College High School

Automotive Technology

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*
Work-based learning activities include paid internship positions at HoltCat.
- b) *Explain the primary factors that led to development and implementation of the program.*
One of the factors that led to the development and implementation of the program was the new Early College High School.
- c) *Identify the key players involved in the planning process.*
Key players involved in the planning process include Connally staff and management, Texas State Technical College, and industry.
- d) *Specify how the planning/development was accomplished.*
Planning was conducted by meeting with Texas State Technical College to review the labor market information data, skills gap, and high need areas.

Connally ISD has created an advisory committee composed of students, parents, teachers, and administrators. Business partners, representatives of industry clusters, and representatives from postsecondary institutions are also represented on the advisory committee. The ISD is working with the advisory board and industry to provide internship, mentorship, and other industry experiences for other programs.

- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*
The activities of the automotive technology program provide on-the-job experiences that are directly related to the student's career goals. The students participate in the Technology Student Association, a student organization that competes in district competitions. The internship program provides career tech mentors who share their knowledge, encourage growth, and provide a supportive environment. The career tech mentors help with resumes, interviewing skills, business etiquette, and time management.

Every year, the Early College High School assesses the program and considers student aptitude, all associated costs, and area demands.
- f) *Explain how employers support and/or participate in the activities.*
Employers support the program by helping to design the program, participating as a mentor, and sponsoring and paying for program materials.
- g) *Describe the associated costs for the program and the work-based learning activities.*
The Early College High School pays for all tuition, transportation, books, and supplies while the employer pays for the uniforms, equipment, and wages.

2) Success Matters

- a) *Explain if the work-based learning activities have increased the students' level of preparedness for high-level training and/or employment.*

Students participate in hands-on core classes that align with their career programs to give them a deeper understanding of the subject (math, science, etc.) With the proper support and resources, the students are able to achieve accomplishments they didn't think were possible.

- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*

HoltCat will accept approximately 10 students and requires one-to-one mentoring at all times. The internship begins in junior year, with a minimum of 10-15 hours per week. If the internship is a fit, the student is able to continue the internship through the summer and through senior year. After graduation, the student has the opportunity to be hired as a full-time employee.

- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*

The activities have contributed to increased employer engagement, including new employers participating in the program.

- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*

With the addition of the community partnership liaison last year, media publicity has provided more business and industry support.

3) Lessons Learned

- a) *Recount a positive opportunity.*

Once the program was initially implemented, it was discovered that conducting a one-on-one conversation with every student to help determine a program of choice was important. Meeting with the students multiple times throughout the year allowed time for better assessments and helped ensure the students were on the right track.

It was also determined that an additional person with business experience was needed to assist in adding community and business partners for the program to help students get work and industry experiences.

An entrepreneurship class was encouraged. The primary focus of the course is to help students understand the process of analyzing a business opportunity, preparing a business plan, determining feasibility of an idea using research, and developing a plan to organize and promote the business and its products and services. In addition, students understand the capital required, the return on investment desired, and the potential for profit.

- b) *Describe a significant challenge or obstacle and explain how it was resolved.*

Because the students are in a wide variety of programs, it is challenging to find partners in those areas. This could be resolved by partnering with the teachers and working with business and industry partners.

A general employability class was added to help students learn valuable life lessons to ensure preparedness in college and the workforce. Administration realized that some students didn't know how to be successful in college or how to properly study or handle the workload.

- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*

The program has increased outreach and added internship opportunities.

- d) *Point out an area for improvement for 2017-2018 or beyond.*

This question is not applicable to the TSTC classes.

4) In Retrospect

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*

The program would be expanded to add more committees and include more in-depth work with industry and TSTC. HoltCat has had student interns for over eight years from other schools and has a detailed program to prepare students for employment. Increasing the number of internship and other work-based learning opportunities for students is essential for preparing them for successful careers and closing the skills gap.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

Every year, Connally ECHS assesses the program and considers student aptitude, associated costs, and area demands. Connally works with the Texas Workforce Commission to ensure that programs and internships are preparing the students for careers that are in demand and collaborates with the advisory board and industry to provide internship, mentorship, and other industry experiences for other programs. Connally ECHS received an Industry Cluster Innovative Academy Grant that has provided more work-based learning options with McLennan Community College.



Humble Independent School District Hospitality Services

Program Overview:

The Humble Independent School District (ISD) offers a hospitality services program, which provides students with the academic and technical preparation to pursue high-demand and high-skill careers in hospitality-related industries.

The program integrates hands-on and project-based instruction. Knowledge and skills are learned within a sequential, standards-based program. The hospitality services program is designed to prepare students for nationally recognized industry certifications, postsecondary education, and entry-level careers. The program was created so that performance standards meet employer expectations and enhance the employability of the students.

Students in the program work at the Marriott Hotel and Convention Center and are accompanied by a Humble ISD teacher who has an office on site. Students select four out of five different stations of the hotel on a rotational basis during the course of the school year. Each student is required to work three weeks in the engineering department and housekeeping. Other stations such as front desk, event planning, purchasing and accounting, banquets, kitchen, and loss prevention are available for students to choose. In the engineering department, students repair and maintain the property, which could include plumbing and electrical work. If they are working the front desk, students check guests into and out of the hotel, answer phones, take reservations, and other tasks. The students work with a mentor at each station who helps students with problem solving, providing guest services, and working with others in a professional manner.

Instruction may be delivered through classroom sessions or through internships, mentoring, or job shadowing. Classroom instruction includes taking notes; engaging in discussions, activities, and projects; and taking tests. The curriculum includes areas of study in customer service, the lodging industry, the food and beverage industry, and job hunting and skills for success.

Humble Independent School District Hospitality Services

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*

The key work-based learning program activity is an unpaid internship that is available either in the student's junior or senior year.

- b) *Explain the primary factors that led to development and implementation of the program.*

The program was developed because of the student drive to get the program reinstated. Humble ISD worked with the Marriott for four years and then went through a five-year gap in program availability.

- c) *Identify the key players involved in the planning process.*

Key players involved in the planning include an advisory committee, hospitality stakeholders, and a districtwide committee.

- d) *Specify how the planning/development was accomplished.*

Because the students were pushing for the program to be reinstated, the advisory committee played a big role. The development of the program was accomplished by recognizing the importance of on-site learning, which was prompted by House Bill 5.

- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*

Students select four out of five different stations of the hotel on a rotational basis during the course of the school year. Rotations include front desk, event planning, purchasing and accounting, banquets, kitchen, and loss prevention. Students learn the different stations by doing the work. The students work with a mentor at each station who helps students with problem solving, providing guest services, and working with others in a professional manner.

Students complete OSHA safety training; ServSafe culinary training; and Texas Food Handlers hospitality training. In addition, students participate in the National Technical Honor Society and the Hospitality Educators Association of Texas competitions.

- f) *Explain how employers support and/or participate in the activities.*

The Marriott Hotel and Convention Center supports the activities through internships, mentoring, or job shadowing. The Marriott Hotel is actively involved in preparing students for competition. At a regional event in March 2017, the students came away with 26 medals.

The Marriott Hotel and Convention Center also participates in Career and Technical Education Expo events.

- g) *Describe the associated costs for the program and the work-based learning activities.*

All associated costs for the program and work-based learning are covered by Humble Independent School District. Associated costs include transportation and industry certification testing fees.

2) Success Matters

- a) *Explain if the work-based learning activities have increased the students' level of preparedness for high-level training and/or employment.*

The activities have increased the students' level of preparedness for high-level training and/or employment. Marriott Hotel has hired some students after they have graduated from the program.

- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*

Students select four out of five different stations of the hotel on a rotational basis during the course of the school year. Each student is required to work three weeks in the engineering department and housekeeping. Other stations such as front desk, event planning, purchasing and accounting, banquets, kitchen, and loss prevention are available for students to choose. Students learn the different stations by doing the work. In the engineering department, students repair and maintain the property. If they are working the front desk, students check guests into and out of the hotel, answer phones, take reservations, and other tasks. The students work with a mentor who helps students with problem solving, providing guest services, and working with others in a professional manner.

Students do attend class instruction one day a week to take notes; engage in discussions, activities, and projects; and take tests. The curriculum includes areas of study in customer service, the lodging industry, the food and beverage industry, and job hunting and skills for success. Students are required to demonstrate the following five essential skills: dependability, job safety, hospitality, leadership, and professional appearance.

- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*

The program activities have contributed to increased engagement of both current employers and new employers.

- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*

The program activities have contributed to increased employer satisfaction with program completers. After graduation, students are hired and often receive Marriott-to-Marriott recommendations.

3) Lessons Learned

- a) *Recount a positive opportunity.*

There were opportunities for detailed planning to operate smoothly and seamlessly; attaining the mentor's understanding of the program and the students' need for learning; preparing for students with disabilities; and encouraging instructors to have hard conversations with students.

- b) *Describe a significant challenge or obstacle and explain how it was resolved.*

A significant challenge is figuring out how to get the most experience for the student while on site at the hotel and considering the required courses and electives within only a three-hour block of time.

- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*

There have been no significant modifications to the work-based learning activities since the program began.

- d) *Point out an area for improvement for 2017-2018 or beyond.*

An area of improvement going forward would include evaluating the use of on-site time and seeking additional funding for the program. The career and technical student organizations could be improved. These organizations are very expensive, time consuming, and travel is often involved.

4) In Retrospect

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*

Humble ISD would consider expanding career exploration to grade seven.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

A key activity recommended for expansion includes a competency checklist that is skill specific. This will set up expectations as the instructor goes over the list and reinforces the expectations with the business mentor.



Jack E. Singley Academy – Irving Independent School District Culinary Arts and Hospitality

Program Overview:

The School of Culinary Arts and Hospitality was established in 2009 with the expansion of the Jack E. Singley Academy. The School of Culinary Arts and Hospitality delivers a program that provides students with the opportunity to explore careers in the culinary arts, food service, lodging, and tourism industries. The curriculum is demanding and integrates high-level, critical thinking courses throughout a four-year program. The students are trained to fulfill one of the 4,000+ job vacancies in Dallas County.

School enrollment is through a lottery. Students select a first and second choice for their four year program of study, and those who are not selected for their first choice program are given the opportunity to enroll in their second choice program. The lottery runs a second time to fill all slots available in each program. Students may also apply to transfer to the campus before their tenth-grade year pending space availability in their program of choice. All programs have a four-year plan of study, which is reviewed with students in the eighth grade, prior to enrollment.

The coherent sequence of courses is designed to provide students with the academic background and skills necessary to succeed in a competitive market in the Dallas area. Students complete a four-year plan, which includes a minimum of two credits per year. The intensive program is designed to increase the level of skill and depth of understanding with each grade level.

Students in the School of Culinary Arts and Hospitality have several opportunities for work-based learning. Freshmen and sophomore students work in the student operated restaurant and junior students work at the majority of program events. All culinary and hospitality students provide catering services for multiple events, meetings, and conferences; participate in after-school and weekend catering events; and cater major district and partner events throughout the community. All of the planning, budgeting, preparation, and delivery of services is done by students under the supervision of their instructors, who are industry chefs and hospitality management professionals. Senior students are required to complete a paid or unpaid internship off-site at one of the many dining establishments and major hotels in the surrounding area.

Students who graduate from the School of Culinary Arts and Hospitality are highly skilled, qualified, and college and workforce ready. Establishing industry connections through a strong advisory board, which is composed of industry experts from area hotels and food service establishments, has enabled the program to build professional relationships and create meaningful, hands-on learning experiences for students.

Jack E. Singley Academy – Irving Independent School District Culinary Arts and Hospitality

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*
Students enrolled in the culinary arts and hospitality program participate in both paid and unpaid internship positions.
- b) *Explain the primary factors that led to development and implementation of the program.*
The development of the program was achieved by considering regional and national needs. In the heart of the Dallas metroplex, there are hundreds of hotels and resorts.
- c) *Identify the key players involved in the planning process.*
Key players involved in the planning process included a task force made up of parents, students, counselors, industry, and other community stakeholders.
- d) *Specify how the planning/development was accomplished.*
The development of the program took approximately three months, and the task force held a bond election to add a kitchen to Jack Singley Academy.
- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*
The classroom training is “learn by doing” and is an integral part of the program. Students complete the certifications for OSHA safety training and ServSafe culinary training. They also join the Texas Restaurant Association.
- f) *Explain how employers support and/or participate in the activities.*
Employers support and participate in the activities by helping to ensure equipment is five years old or newer. They also make donations.
- g) *Describe the associated costs for the program and the work-based learning activities.*
The initial set-up cost is expensive, especially for the equipment and food. The independent school district covers the program costs and testing fees for the students. The employers provide tools, if necessary, and the students must provide their own transportation.

2) Success Matters

- a) *Explain if the work-based learning activities have increased the students' level of preparedness for high-level training and/or employment.*
The activities have increased the students' level of preparedness for high-level training or employment. The majority of the students go on to culinary institutes or to private schools.
- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*
There are essentially no differences specific to Jack Singley's culinary arts and hospitality program.

- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*

The activities have contributed to increased employer engagement and support of the program. The program's advisory committee has a strong chairman who has a vision for the program's purpose.

- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*

The activities have contributed to increased employer satisfaction with program completers. Most of the students attend Jack Singley for four years. The student success rate in the workforce is the result of repeat employer business. Every six weeks, instructors meet with employers to receive feedback on the students, which is tied to their grade.

3) **Lessons Learned**

- a) *Recount a positive opportunity.*

A positive opportunity would involve hiring the right people as instructors; seeking early involvement from industry to work with the advisory committee on program and facility design; and building trust with industry partners and explaining the benefit of the program.

Regular communication and review of courses, equipment, professional development for instructors, and annual review of instructors teaching and industry credentials have enabled the program to offer a high quality program that has sustained a level of excellence for more than nine years. Adequate and highly qualified staffing have been essential to the success of the School of Culinary Arts and Hospitality.

- b) *Describe a significant challenge or obstacle and explain how it was resolved.*

Working with evening shifts and weekend catering events is challenging. Transportation is also a challenge. Some students work in order to help support their families—the district has a high percentage of economically disadvantaged students.

- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*

The traditional program has work-based learning activities typically in the junior and senior years of high school. The program is now open to grades nine-12.

- d) *Point out an area for improvement for 2017-2018 or beyond.*

An area for improvement would include looking for more ways to involve student work-based learning and options to increase the number of dual credit hours and increase the number of industry certifications.

4) **In Retrospect**

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*

In regards to planning, budget for more than what was originally projected by considering equipment costs and replacement costs for the equipment.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

Key activities recommended for expansion include having a very strong advisory committee with a tough chairman who is able to plan and help with employer engagement. Key components expected in all programs include: strong curriculum, neat and orderly facilities, student organizations, national technical honor society, industry certifications, and dual credit where applicable.



Lone Star College Floorhand/Roustabout Program

Program Overview:

Lone Star College's floorhand/roustabout program was designed to meet industry's need for an educated and skilled workforce. Lone Star College engaged and collaborated with the International Association of Drilling Contractors (IADC), who identified needs at the detailed competency level for every position on a drilling rig. When it was determined there was a need for an industry-driven workforce training program, Lone Star College and IADC designed fast-track programs and determined the technical skills and human factors for six occupations.

The first training track, called the gateway, is designed to connect industry with colleges and training providers to attract, hire, and train for oil and gas workers. The program offers a standard curriculum and a general introduction to the industry, including behavioral training, a module on rig life, technical math, rigging basics, electrical and fluid safety, industrial practices, and considerable hands-on training.

The first training program was developed for a floorhand/roustabout because it is the most common entry level position. This program includes 360 technical and behavioral competencies that have been determined to be most important by operational corporate leaders, human resources, and other stakeholders in the oil and gas business.

Lone Star College offers an accredited floorhand/roustabout fast-track certificate by the IADC for competencies in relation to the Workforce Attraction and Development Initiative, which is a worldwide project to provide the oil and gas industry with a larger number of rig-ready candidates. The program is a non-credit fast track program that includes 296 contact hours from in the Engineering Technology Department at Lone Star College. This program provides entry-level knowledge and skills needed for careers that include floorhand/roustabout, oil field roustabout, and rig hand. Upon completion of the program, IACD provides four nationally recognized certifications.

From the inception of the program, employer involvement has been strong. The Lone Star College program administrators and faculty enjoy professional relationships with the drilling contractors of IADC, which has allowed them to keep the curriculum updated and connect students directly with potential employers.

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*
Students enrolled in the floorhand/roustabout program participate in an unpaid internship position.
- b) *Explain the primary factors that led to development and implementation of the program.*
Lone Star College realized the need for an industry-driven workforce training program after the BP oil spill in 2010.
- c) *Identify the key players involved in the planning process.*
Lone Star College involved the International Association of Drilling Contractors, industry, and other corporate partners in the planning process.
- d) *Specify how the planning/development was accomplished.*
The planning process included developing high-level advisory councils with energy and manufacturing. Lone Star College held a series of work groups with IADC, the advisory councils, industry, and other corporate partners.
- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*
The college has a two year commitment from Baker Hughes, which leases its multi-million dollar training center so that the students have some sense of an internship before applying for jobs in the field. Since the incident in the Gulf involving a major blowout on an offshore rig, employers have been more hesitant about the safety of students as interns on live rigs. While the majority of the training takes place on the rig at Baker Hughes, there is some training that takes place in the lab on campus.
- f) *Explain how employers support and/or participate in the activities.*
Employer involvement has been strong throughout the life of this program, from inception through the economic challenges faced by the oil and gas industry, including with the placement of students. Employers often hold mock interviews; however, if they want to interview one student, they must interview all of the students.
- g) *Describe the associated costs for the program and the work-based learning activities.*
The cost for the program is \$4,070 for tuition. The cost for work-based learning activities can often exceed \$500, and that includes clothes, boots, and gloves.

2) Success Matters

- a) *Explain if the work-based learning activities have increased the students' level of preparedness for high-level training and/or employment.*
The floorhand/roustabout program has a history of career preparation and career training activities like those in the Work-Based Learning Continuum's Career Preparation and Career Training phases. The program provides students with practical work-based experience through 80 percent hands-on learning and 20 percent theoretical instruction. The 80 contact hours in the rig floor core skills component are hands-on activities done on a training rig. In partnership with Baker Hughes, students do these activities on a real drilling rig that is set up for training activities without actually pumping, which allows the students to experience real-work situations.

Lone Star College's floorhand/roustabout program provides a quick path for entry-level positions. Once a student completes the fast track program, students are eligible for 14 credits toward a Field Service Technology applied science degree.

Employers' focus on safety throughout the development of the IADC Gateway floorhand/roustabout program helped Lone Star College embed it throughout the entire program from day one, with principles of the module implemented on a daily basis. Additionally, the program components include competencies to ensure students' safety.

- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*

The floorhand/roustabout program provides a controlled environment. The instructors are from the oil and gas industry and therefore know the program well.

- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*

The employers who have engaged in the program have expressed complete satisfaction and continued engagement.

- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*

The IADC gateway floorhand/roustabout program has had strong success since its beginning in 2013. The program has had 328 registered students since 2013 in over 18 cohorts. Of those, 326 students have completed the program. And of those, 260 completers were able to find employment directly related to their field.

3) Lessons Learned

- a) *Recount a positive opportunity.*

The top positive opportunity for Lone Star College is having the opportunity to take advantage of partnerships and develop a curriculum around a hands-on learning environment. The college was able to listen to industry needs and develop training around those needs.

Another positive opportunity includes the fact that the instructors are straight from the industry. They have the knowledge and life skills that come from the business.

- b) *Describe a significant challenge or obstacle and explain how it was resolved.*

Challenges include accreditation and meeting standards due to the time and paperwork to be completed for an international program.

- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*

Every class provides an opportunity for a modification.

- d) *Point out an area for improvement for 2017-2018 or beyond.*

This question is not applicable due to the answer in the above question.

4) In Retrospect

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*

This is a living program and it's constantly changing. The school would eventually like to add CAD skills into the program.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

Students from other programs benefit from the Lone Star College and Baker Hughes partnership. For example, students from the accounting program toured the Baker Hughes rig and facility to observe a real-time inventory audit. The oil and gas industry is a critical employer of the workforce in the Gulf Coast area. Lone Star College has opened up opportunities for students in other programs to experience this aspect of the work world. The next step for Lone Star College is to expand and further develop the motorhand and assistant driller programs.



North East Independent School District Stem Academy Health Sciences

Program Overview:

North East Independent School District offers a career and technical education program in health sciences. Admission to this program is based on aptitude, age, and class space availability. The health sciences program includes an internship and certification.

The health sciences program offers a clinical rotation that takes place at a hospital or nursing home two to three times a week. The students rotate through the different departments to learn a variety of jobs available in the medical field. In the clinical rotations, students demonstrate established knowledge relevant to patient care and apply basic and clinically supportive sciences appropriate to patient care. Students learn to demonstrate open and effective communication with patients and hospital staff while using effective listening skills. Clinical rotations also provide students the opportunity to learn about different types of medical practices.

The emergency medical technician course prepares students to take the basic EMT certification. North East ISD has contracted with the University of Texas Health Science Center in San Antonio for this course. Students in this program are required to complete a number of clinical hours in an emergency room and ambulance in order to take the test.

North East ISD's practicum in health sciences also offers a course for a certified nurse aide. The course trains and prepares students in obtaining their certified nurse aide certification. Students are required to meet a number of hours in order to qualify for the test.

North East ISD's health sciences course for pharmacy technician is available for students in their senior year. Students are not required to complete clinical rotations for this course. However, some students obtain internships at Walgreens and CVS.

North East Independent School District Stem Academy Health Sciences

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*
Students employ hands-on experiences for continued knowledge and skill development through a health science clinical. The student demonstrates professional standards and employability skills as required by business and industry. The student implements the knowledge and skills of a health science professional in clinical setting.
- b) *Explain the primary factors that led to development and implementation of the program.*
Workforce demand is high; the health sciences program ties in well with the academy and offers a career pathway; parents approve of the program; and the health sciences field has several small sub-clusters such as IT, speech therapy, and surgery.
- c) *Identify the key players involved in the planning process.*
The key players involved in planning include business and industry, the passage of House Bill 5, graduation requirements, and curriculum requirements. Business and industry have driven the effort of the program.
- d) *Specify how the planning/development was accomplished.*
The development of the program was accomplished by partnering with The University of Texas and the Health Science Center, establishing an advisory committee, and collaborating with area hospitals.
- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*
Anytime learning can be made real, the learning is much more meaningful. Students are able to experience it, feel it, and know it.
- f) *Explain how employers support and/or participate in the activities.*
Employers support the program and activities by providing opportunities for clinical rotations and providing opportunities for the students to shadow staff.
- g) *Describe the associated costs for the program and the work-based learning activities.*
The academy is not able to provide associated costs for program and the work-based learning. The equipment alone is extreme, as is the cost for medical books having to be renewed every three years.

2) Success Matters

- a) *Explain if the activities have increased the students' level of preparedness for high-level training and/or employment.*
Yes, the activities have increased the students' level of preparedness for high-level training and/or employment. This outcome can be seen by the number of certifications achieved by students.
- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*

Students who do not participate in the program do not receive the same knowledge, experience, and credentials as the students who follow through the program and go through the clinical rotations.

- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*

The activities have contributed to increased employer support of the program based on employer feedback.

- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*

The activities have contributed to increased employer satisfaction based on the number of good comments received about the students participating in the program. The level of the questions students are asking during the clinical rotation is beyond their years.

3) Lessons Learned

- a) *Recount a positive opportunity.*

Ensure there is enough time in the beginning stage of planning. Develop strategic plans for long-term projects.

- b) *Describe a significant challenge or obstacle and explain how it was resolved.*

A significant challenge has been investing in and hiring effective teachers and providing the teachers with more time to plan and prepare. Another challenge is providing clinical rotations to students in doctor offices. Often times, there aren't enough spots and the program is competing with college students who are required to complete a number of clinical hours.

- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*

The only modifications made to the work-based learning activities are the clinical rotations.

- d) *Point out an area for improvement for 2017-2018 or beyond.*

An area of improvement is to provide one single center for clinical rotations and have the students bussed over for approximately two hours a day. The clinical rotations would cover certified nursing assistant, certified medical assistant, pharmacy technician, and medical technician.

4) In Retrospect

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*

Plan to keep up with state requirements. Build and provide bigger labs for clinical rotations, and be more innovative with the program. Ask the medical community to be involved and come to the table. And look for additional avenues to cover funding.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

Key program elements recommended for program expansion include college credit in high school and colleges helping high schools.



Panola Charter School Lineman

Program Overview:

In 2007, the Panola Charter School became part of the Texas Early College High School program and partnered with Texas State Technical College (TSTC). Students are able to earn up to 60 hours of college credit, with the possibility of earning an associate of applied science degree and a certification in a skill or trade. Tuition, books, fees, and supplies are provided to the students.

The students at Panola Charter School typically begin taking college courses during their freshmen year. The junior and senior students are allowed to take up to six college credit hours per semester. By the time they are ready to graduate high school, they've already obtained an associate's degree.

The electrical lineworker technology program offers a cooperative education course. This course is traditionally offered during the last semester of the lineman program and includes career-related activities offered through an individualized agreement among the college, employer, and student. The employer provides the cooperative training and pays the students as if they were temporary employees. The course also combines classroom instruction with work experience. Reports describe what the student is learning at the cooperative education location and are sent to the instructor weekly.

Panola Charter School Lineman

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*
The key work-based learning activity is cooperative education, which is a structured method of combining classroom-based education with practical work experience.
- b) *Explain the primary factors that led to development and implementation of the program.*
Panola Charter School joined the existing Texas State Technical College lineman program. This year the school is working with the new industry cluster innovative academy grant. Other primary factors that led to the development of the program are the recent changes in special topics for lineworkers; for example, commercial driver's license (CDL), replacing first aid, CPR, traffic control, and issues related to the trade agreement.
- c) *Identify the key players involved in the planning process.*
Key players involved included an advisory committee of industry partners. The advisory committee considered safety issues due to climbing requirements and electrical work.
- d) *Specify how the planning/development was accomplished.*
The planning and development of the program was accomplished through a memorandum of understanding with TSTC. However, going forward, the program will be under the new industry cluster innovative academy grant (dual credit). The class order may differ but will have an equivalent associate's degree curriculum.
- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*
Activities supplement traditional classroom training through cooperative education. In cooperative education, there is an employer representative all the time. Employers will host internship positions unless they don't have positions available. Interviews are held on campus by multiple employers and students may receive job opportunities. Employability skills are embedded in the program from the beginning and addressed almost daily.
- f) *Explain how employers support and/or participate in the activities.*
Employers participate in activities through cooperative education, in combination with other employers. Students are placed with employers for a work experience or internship opportunity. Participating employers include American Electrical Power, T&D Solutions, Oncor, Pike Electric, and Northeast Texas Power.
- g) *Describe the associated costs for the program and the work-based learning activities.*
The program provides the tuition, fees, supplies, tools, and books. Transportation is provided by the employer if needed. There is no cost to the student.

2) Success Matters

- a) *Explain if the activities have increased the students' level of preparedness for high-level training and/or employment.*
The activities have increased the student's level of preparedness for high-level training as a lineman. The wage for an entry level apprentice is \$17–\$21/hour and, in most utility fields, a registered apprentice moves up to journeyman.
- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*
The significant difference for a student who participates is that the student participates in traditional classroom training through cooperative education. In cooperative education, the employers host internship positions and there is an employer representative all the time.
- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*
Activities have contributed to increased employer support of the program based on prior students' feedback and participation.
- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*
The activities have contributed to increased employer satisfaction with program completers through advising and talking to students early in the program about industry need, employer need, employability, and key classes. Repeat business, hiring graduates, personal connections with students, and advisory committee memberships also contributed to increased employer satisfaction.

3) Lessons Learned

- a) *Recount a positive opportunity.*
Feedback is key—listen to what industry partners and employers say. Allow for the advisory committee to be involved with the program. The program hasn't had to recruit much because of the strong referrals from other students.
- b) *Describe a significant challenge or obstacle and explain how it was resolved.*
A significant challenge is employability after the program. It was discovered that employers wanted the lineman to have a CDL in order to drive a truck. The issue was resolved by adding CDL training to the degree plan and requiring a master trade agreement to be in place for hiring.
- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*
The option of getting a CDL was added to the lineman degree plan.
- d) *Point out an area for improvement for 2017-2018 or beyond.*
An area for enhancement, not necessarily improvement, for linemen would be to include training for residential wiring. Industry partners have agreed to the enhancement, and it is being proposed to the Texas Higher Education Coordinating Board this spring.

4) In Retrospect

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*

Insist on finding the best instructors for the program, as well as industry partners. Ensure instructors relate to working with students, have experience with and knowledge of the program, deliver instructional material effectively, and actively engage students with the hands-on and electrical pole components.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

Based on feedback, program elements recommended for replication in other training programs would include CPR certification, OSHA training, and any other credential.

SAN JACINTO COLLEGE



San Jacinto College **Automotive Toyota Technical Training Education Network**

Program Overview:

Automotive Toyota Technical Training Education Network (TTEEN) streamlines the path to becoming a highly trained automotive technician in less than two years. In Toyota TTEEN, students alternate between San Jacinto College, a Toyota TTEEN college, and hands-on work experience at a sponsoring dealership. Toyota TTEEN instructors are Toyota trained and knowledgeable about the latest automotive trends. Students learn how to identify, analyze, and solve complex automotive problems. Students also have the opportunity to apply theory and practice as they spend time working on customer vehicles.

Toyota TTEEN colleges provide the most current training available in the industry. The more students train, the more valuable students become as employees. Toyota Motor Sales, U.S.A., Inc. donates new vehicles to its Toyota TTEEN colleges. This ensures that students are training on the latest vehicle technology. All Toyota TTEEN programs, including San Jacinto College, are accredited by the National Automotive Technicians Education Foundation. This accreditation ensures students' training will meet or exceed industry standards. All Toyota TTEEN instructors must be certified by the National Institute for Automotive Service Excellence before they are allowed to teach in any Toyota TTEEN classroom.

San Jacinto College
Automotive Toyota Technical Training Education Network

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*
Paid internships are a required activity. San Jacinto College tries to accommodate students by placing them in an internship close to home. Internship positions last four semesters for a total of nine hours. Students are required to provide their own transportation. The Automotive Toyota Technical Training Education Network (TTEN) is designed to provide classroom instruction with hands-on experience.
- b) *Explain the primary factors that led to development and implementation of the program.*
One factor that that led to the development of the Automotive Toyota TTEN program was the need for five manufacturing programs to be combined.
- c) *Identify the key players involved in the planning process.*
The manufacturers approached the college. Key players involved in planning included manufacturers, Toyota TTEN consultants, and the school. The school worked with Toyota TTEN consultants for the better part of four years.
- d) *Specify how the planning/development was accomplished.*
The school and Toyota TTEN partnered to develop and modify the Toyota TTEN standards. Recently, Toyota TTEN assessed learning outcomes and current curriculum at a granular level. New standards are required across the U.S., with the most recent changes effective in the fall 2017. Toyota TTEN reviews the process and recommends adjustment, and San Jacinto College modifies the process.
- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*
Immediate application is key. The program provides classroom instruction plus hands-on experience and job shadowing at a dealership. The intake process targets area-specific recruiting. Students have the opportunity to visit dealerships and meet the service manager and director. This information often helps to decrease attrition.
- f) *Explain how employers support and/or participate in the activities.*
Employers support program activities by donating, and most donations come from Toyota corporate. Employers also support by providing special tools and vehicles, selling them for \$1 to San Jacinto College.
- g) *Describe the associated costs for the program and the work-based learning activities.*
Associated costs for the program include purchasing tools for students, which cost approximately \$3,000. The dealer and school split the cost. Tools are not required at the beginning of the program but are a job requirement. At least two Automotive Service Excellence certifications are required at the time of program completion. The student pays up front and Toyota reimburses the cost if the student receives the certification.

Students provide their own transportation to the work-based learning activities or internships. Students who already work at a dealership have uniforms. Toyota covers the cost of at least one uniform.

2) Success Matters

- a) *Explain if the activities have increased the students' level of preparedness for high-level training and/or employment.*
Activities have increased the students' level of preparedness for higher-level training and employment. This has been determined based on the number of ASE certifications students earn.
- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*
This is likely not applicable because an internship(s) and ASE certifications are required.
- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*
Increased employer engagement can vary depending on the dealership service director. Not all of the service directors are interested in the Toyota TTEN program.
- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*
Activities have contributed to increased employer satisfaction based on the student evaluations assessed by the employers.

3) Lessons Learned

- a) *Recount a positive opportunity.*
Nothing comes to mind.
- b) *Describe a significant challenge or obstacle and explain how it was resolved.*
Developing the curriculum was a challenge. It took several years to satisfy both parties. Through an iterative process, approximately 10,000 pages of lab sheets were developed.
- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*
There have been no significant modifications to the work-based learning activities—only a general focus on continuous improvement.
- d) *Point out an area for improvement for 2017-2018 or beyond.*
Effective fall 2017, a number of semester credit hours for internships will decrease due to a change in the state requirements for associate's degrees.

4) In Retrospect

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*
Get and keep employers engaged. Involve the advisory committee in the process so that the employer may understand what can be offered. Offer increased pay and invest more in the students.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*

Program elements recommended for expansion include good and concise curriculum and National Automotive Technician's Education Foundation accreditation. Other recommendations are to provide orientation or an introduction for students and involve strong and knowledgeable faculty who have certifications.



Tyler Junior College
Power Plant Technology

Program Overview:

Tyler Junior College offers a one year power plant technology program that provides students with electrical, mechanical, instrumentation, and controls skills that are needed in a variety of in-demand occupations. The power plant technology program is located on Tyler Junior College's West Campus, which was designed specifically for training in the energy sector.

Power plant technology graduates typically transition into various jobs with Luminant, Southwestern Electric Power Company, Eastman Chemical, Exelon, and ONCOR. They are able to gain employment within chemical plants, manufacturing, industrial maintenance, and petro-chemical industries.

The power plant technology program trains students for entry-level employment in the operation of modern fossil fuel power plants, gas turbine facilities, hydroelectric plants, and other facilities where steam and electricity is generated. Students learn from faculty who bring years of experience into the classroom. Students intern and learn the technical and safety features of plant operations, the responsibilities of plant operators, and the mechanical, electrical, and instrumentation technology related to industrial operations.

A power plant operator controls and monitors boilers, turbines, generators, and auxiliary equipment in power generating plants. Power plant operators also distribute power among generators, regulate the output, monitor and maintain voltage, and control electricity flow from the plant. Twelve-hour shift schedules are normal in the industry and being able to work in extended shifts or at night is often a requirement.

Tyler Junior College

Power Plant Technology

1) Work-Based Learning Design and Development

- a) *Describe the program's key work-based learning activities.*
The key work-based learning activity is a paid internship that equates to three semester credit hours.
- b) *Explain the primary factors that led to development and implementation of the program.*
One prime driver for the implementation of the program is that support training is needed for large electrical power plants.
- c) *Identify the key players involved in the planning process.*
The key players involved in planning included Luminant and the school.
- d) *Specify how the planning/development was accomplished.*
The development of the program was accomplished in three key areas: electrical, mechanical, and instrumentation controls. The power plant technology curriculum was originally developed by Luminant and has been revised as industry advisors modify the curriculum to be more technical and to include additional mechanical information.
- e) *Describe how the work-based learning activities supplement or complement traditional classroom training.*
The activities complement traditional classroom training through internship and through the value of the experience and exposure the student receives.
- f) *Explain how employers support and/or participate in the activities.*
Employers support work-based learning activities by sponsoring internship positions. Employers will often use internship positions as a marketing tool to hire graduates who have interned with them.
- g) *Describe the associated costs for the program and the work-based learning activities.*
Associated costs for the program such as tuition, books, and living expenses are paid for by the student. Tuition and fees are approximately \$2,300; books and supplies are \$1,800; and on-campus room and board is \$8,320. The work-based learning activities such as internships are paid for by the employer sponsoring the internship position.

2) Success Matters

- a) *Explain if the activities have increased the students' level of preparedness for high-level training and/or employment.*
Activities have increased students' level of preparedness for high-level training and employment.
- b) *Discuss if there are significant differences between students who do not participate and students who successfully complete the program.*
There are significant differences for students who do participate and successfully complete the program. The internship position provides an opportunity for students to be exposed to and work in the industry.

- c) *Explain whether the activities have contributed to increased employer engagement and/or support of the program.*
Activities have contributed to increased employer support of the program.
- d) *Explain whether the activities contributed to increased employer satisfaction with program completers.*
Activities have increased employer satisfaction based on the increase in hiring of graduates, networking and feedback, advisory committee participation, and equipment donations received.

3) Lessons Learned

- a) *Recount a positive opportunity.*
A lesson learned would be that the employers are the customer, not the student. However, the student benefits.
- b) *Describe a significant challenge or obstacle and explain how it was resolved.*
A challenge can be the student's understanding of the academics and the industry culture. The industry culture is a blue collar, skilled trade. Students need to be on time, dressed correctly, and disciplined.
- c) *Explain if there have been significant modifications to work-based learning activities since the program began.*
Luminant is no longer the only employer.
- d) *Point out an area for improvement for 2017-2018 or beyond.*
Areas for improvement for 2017-2018 include seeking input from the advisory committee.

4) In Retrospect

- a) *Looking back, explain if anything would be done differently with regard to planning, employer engagement, linking to classroom training, or another program element.*
Work harder at outreach to power plants to receive a solid commitment in supporting the program. Ask for more funding and donations from the school and employers.

5) Expansion or Replication

- a) *Describe key activities or program elements recommended for expansion or replication in other training programs.*
Program activities recommended for replication in other training programs include hands-on activities and high-quality lab equipment.

Concluding Comments

While there are some variations in the practices included in the profiles, there are many common elements across both the secondary and postsecondary sectors. All of the schools utilize strategies for aligning work-based learning activities and collaborating with industry, employers, and other various stakeholders to ensure a system that addresses the needs of the local workforce.

All profiles include alignment between secondary education, postsecondary education, and industry to provide a pipeline of work-based learning opportunities. Strategies described in the profiles include courses providing classroom instruction and hands-on training designed to prepare students for nationally recognized industry certifications. Other activities referenced in the profiles include supporting efforts aimed at strengthening communication between employers and other relevant partners and stakeholders and cultivating new partnerships with employers.

Of all the key work-based learning activities offered by the programs, six were paid and five were unpaid internships. The group of 11 schools and programs explained that the three primary factors that led to the development of their programs include employers, the workforce need, and the passage of House Bill 5 (83rd legislative session in 2013), which mandated new programs of studies. To accomplish the planning and development of the programs and curriculum, each of the schools and programs collaborated, partnered, and worked with industry, workforce boards, chambers of commerce, and community and technical colleges. Over half expressed the need to acquire industry's input early in the planning stage.

Each school and program described that work-based learning programs complement traditional classroom training. These programs provide students with a first-hand experience of working and learning in the industry. Of the 11 schools interviewed, all reported that either the school or employer pays for the work-based learning activities, leaving no cost to the students.

Schools and programs were asked to explain if the work-based learning activities increased the students' level of preparedness. All 11 programs agreed that exposing students to a real-life work experience and learning environment will prepare and benefit them for the future.

All of the schools and programs expressed that the activities have contributed to increased employer engagement and increased employer satisfaction. The outcomes included increasing program completions, meeting local workforce needs, hiring of graduates by employers, and growing partnerships between the employers and schools.

Lessons learned for the schools and programs were broad. About a third explained that convincing industry to invest in workforce training was a significant challenge. Less than a third reported difficulty hiring instructors. One described that the student's understanding of academics and culture was a problem. About a third shared that the time for internship positions was not always available and that transportation was also an issue.

In retrospect, the majority of schools and programs would have done something differently. Thirty percent of the schools and programs explained that they should have worked harder to bring industry and various other stakeholders to the table in support of the programs. One program would have brought on an advisory committee in the beginning. Just less than half would have asked for additional funding in order to expand the program to other employers and to middle school students.

The programs profiled in this report demonstrate that work-based learning is an effective tool for preparing students with industry-relevant skills that will benefit employers. Lessons learned from these

promising practices may provide valuable information not only for secondary and postsecondary education, but also for other workforce system programs such as adult education and literacy and rehabilitation services.

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Texas Workforce Investment Council

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