



Evaluation of the Alabama / Florida Technical Employment Network TAACCCT Program

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Executive Summary

Overview

This is a comprehensive evaluation of the Alabama-Florida Technical Employment Network (AF-TEN), which was funded under a 2012 grant under the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program. Five colleges in southern Alabama and the Florida Panhandle came together to create AF-TEN to address a high regional unemployment rate and a large number of dislocated workers. Due to workforce demand, the colleges primarily focused on welding (a certificate program) and secondarily on industrial electronics (an associate degree program). This research included a comprehensive implementation evaluation focused, among other topics, on the development of new programs and credentials, the impact of curricular changes on students and colleges, an examination of the role of technology and new equipment in program expansion, and effect of career coaches and other services on the program.

Over four years, AF-TEN enrolled 833 students in a population that was 73% non-Hispanic white, 19% African American and 8% from other races and ethnicities. About 80% of students attended full time, although nearly a third were incumbent workers. Six percent were veterans while less than 1% were TAA-eligible and 53% were Pell Grant-eligible. For most students, a high school diploma was their highest education credential, although 18% had some prior experience in postsecondary education.

Evaluation Design

This study is based on a mixed-methods approach with the goal to combine qualitative and quantitative data to provide a comprehensive view of AF-TEN, its implementation, and its outcomes. For the study of implementation, data sources included annual site visits to all participating colleges, surveys of students at entry and exit to obtain information about their views toward education and the program, their characteristics, grades, and achievement, interviews with faculty and career coaches on each campus, and interviews with employers and industry groups focused on welding and manufacturing. It reflected a Logic Model that detailed key project activities, including new equipment and technology, curricular improvements, and support services, geared to short- and long-term outcomes that include completion of programs of study and successful employment. Key implementation questions included:

- Was the grant implemented as intended? Why or why not?
- What progress has been made on core deliverables? If expected progress has not been made, why not?
- What new programs and certifications were offered? How was curriculum selected for these programs?
- How were programs delivered to students? What support services were available and how did students access them?

- What are the perceptions of their effectiveness among students? Staff? Administrators?
- What are the short- and long-term impacts on colleges?
- What contributions did partners make to program design, curriculum development, training, and sustainability? What contributions were critical to the program's success?

The study also examined how colleges used the grant to build their capacity. To examine that question, methods included observations during annual site visits, annual interviews with staff and instructors, a review of equipment and support services utilized in the grant, program enrollments, and a final survey of colleges in which they described how the project enhanced capacity at their institutions.

The impact / outcomes study had at its primary goal to conduct a group study of participants with a comparable group of non-participants who attended the Alabama colleges from 2010 to 2012. For the impact study, PTB used Propensity Score Matching (PSM) analysis based on a number of socio-demographic variables including age, gender, income, race, previous employment, and previous education level and achievement as co-variables in a multivariable logistic regression procedure to compare the historical sample of 2010-2012 students to the newly enrolled AF-TEN students at these two institutions. This procedure was used to select a comparable group of comparison students from the historical sample. This evaluation used PSM to determine the subset of the historical sample that is statistically independent (un-confounded) based on comparison of the noted co-variables between the AF-TEN and historical samples. The resulting sub-set represented our comparison sample for subsequent comparison to AF-TEN student outcomes. Research questions primarily focused on whether AF-TEN participants had a statistically significant increase in program completion than comparable non-participants. This analysis compared participants at the two Alabama colleges to welding students at the institutions during 2010-2012 prior to receipt of the AF-TEN grant.

In addition, the evaluation includes a descriptive outcomes analysis that compares program of study completion rates and employment rates of all AF-TEN participants to the historic group of pre-AF-TEN students that were used as the basis for the PSM study.

Implementation Findings

- Adhering to core goals of the grant, three colleges in Florida established welding programs where none had existed prior to the grant and two Alabama colleges expanded their offerings and labs in response to local demand.
- AF-TEN colleges surpassed their student enrollment and completion targets, enrolling 833 students after planning for 720 students.
- The program achieved most of its deliverables, including more hybrid/blended learning coursework, engagement of employers and workforce boards and development of a job search curriculum.

- Students had positive views of the program, their instructors, and support services. Many said the new equipment reduced lab wait times and enhanced their learning experience.
- Having Wallace Community College – the grant fiscal agent – advise the Florida colleges on equipment purchases and development of welding labs was seen as a positive by most college officials. Advice from Wallace and from employers were viewed as success factors for the colleges building welding programs from scratch.
- Though limited, data from employers indicated that most were satisfied with the AF-TEN offerings. Two of the Florida colleges voluntarily sought endorsement from a regional industry alliance.
- The grant appeared to have a major impact on colleges, particularly the \$4.3 million in new equipment that helped increase institutional capacity and student enrollment.
- Partnerships with workforce boards and a Round 1 grantee were critical to the ability of the grantee to obtain independent data on post-program employment.
- Support services and their use by students were not consistent across campuses, as some institutions had more activities than others. However, students viewed these services positively, including job search and academic assistance.
- One college was a strong driver in creating online/hybrid curricula to improve students' learning experiences and to allow the college to serve more students. However, the curricula was not widely adopted by colleges, in part due to clock-hour requirements in Florida that seemed to be a barrier to more flexible learning components.
- Regular communication across all consortium members was less consistent after the grant's first year, which many attributed to the unique planning and procurement issues facing each institution. As a result, the grant fiscal agent primarily communicated one-on-one with colleges to resolve issues.
- It appeared that many students left the immediate area / state to seek employment in the shipyards of Mississippi and Louisiana, among other states, as well as on offshore rigs. As a result, the colleges faced some challenges in documenting post-program employment and persistence in employment for students.
- A subject matter expert provided a positive assessment of coursework that AF-TEN members submitted to www.skillscommons.org.
- In a survey near the end of the project, college leaders said AF-TEN had benefitted their institutions and strengthened curriculum. All agreed that enrollment and completion rates had increased and that students had demonstrated increased achievement.

Participant Impact and Outcomes

- PTB used a form of Propensity Score Matching (PSM) analysis called inverse-probability weighted regression-adjustment (IPWRA) to construct a statistically equivalent comparison group of students enrolled from 2010-2012 at the Alabama colleges.
- The comparison group was matched to the students enrolled at the two Alabama colleges from 2013-2016 (Florida colleges were excluded from this analysis because they did not have prior comparable programs before the grant started).

- AF-TEN participation produced mainly positive effects on educational outcomes, based on regression analysis used to calculate an Average Treatment Effect (ATE) outcome in which participation effects on students enrolled during the grant were compared to the historical students enrolled before the grant program.
- AF-TEN participants were more likely than comparable, historical non-participants to attain credentials and complete their programs of study.
- Participants had higher GPAs while enrolled and were more likely to be employed during and after enrollment. The ATE for credit hours also was significantly affected by AF-TEN participation.
- AF-TEN achieved many of its targets on nine core U.S. Department of Labor program measures for the TAACCCT program, as noted in the chart below:

U.S. Department of Labor TAACCCT Measures

Measure	Targets for TAACCCT Program		
	Proposed in Application	AF-TEN Grant Data	Difference Final v. Proposed
1. Total Unique Participants Served	720	833	+113
2. Total Number of Participants Completing a TAACCCT-Funded Program of Study	346	442	+96
3. Total Number of Participants Still Retained in Their Program of Study or Other TAACCCT-Funded Program	293	198*	-95
4. Total Number of Participants Completing Credit Hours	447	698	+251
5. Total Number of Credentials	340	1120	+780
6. Total Number of Participants Enrolled in Further Education After TAACCCT-funded Program of Study Completion	115	89	-26
7. Total Number of Participants Employed After TAACCCT-funded Program of Study Completion	427	73**	-354
8. Total Number of Participants Retained in Employment After Program of Study Completion	323	15**	-308
9. Total Number of Those Participants Employed at Enrollment Who Received a Wage Increase Post-Enrollment:	66	21**	-45

*This number represents students retained from grant year 3 into year 4 (fall of 2015), plus new enrollees in fall 2015 and spring 2016, minus those who completed through March 31, 2016. As indicated in measure #2, AF-TEN had more students complete programs than anticipated.

**AF-TEN expects to obtain additional employment data from the Ala. Department of Labor prior to filing its final performance report. However, wage data for completers in Alabama were not available from the state on an individual student basis.

- A descriptive outcomes analysis also showed gains for participants. Overall, AF-TEN participants had a 62% completion rate for their program of study. This rate was far above the 15% completion rate from a pre-grant historic comparison group that was developed for the purposes of PSM matching.
- Among all AF-TEN program of study completers, including both incumbent and non-incumbent workers, 64% had gained employment after leaving their college program.

Conclusions

The report contains recommendations for the consortium, including that they continue to work together in enhancing workforce development programs in the future. For colleges considering an AF-TEN-like program, the report makes these recommendations:

Build in Planning Time. Colleges would be well served to invest time in planning for a multi-institution, multi-state and multi-program initiative such as AF-TEN. Having six months to a year to plan for AF-TEN-like improvements would give partners sufficient time to ensure a successful program launch. Planning time can ensure buy-in at all levels, allow time for hiring, equipment purchases, and curricular development. It also could be valuable time needed to assess further the state procedures, laws and regulations that might affect the partnership.

Create Mentoring Relationships: Officials at the Florida AF-TEN colleges said they welcomed site visits by welding instructors from fiscal agent Wallace to provide input on their equipment purchases and the layout of welding facilities. They viewed this support as helpful as they factored it into decisions alongside employer involvement. It was clear then, that having one college serve as a mentor or advisor to a new welding program was an effective strategy.

Adopt Online/Hybrid Approaches Where Possible: The online/hybrid courses developed by one college (Lurleen B. Wallace Community College) in welding and electronics are innovative and worthy of replication. Under this approach, the college used online platforms and lecture capture technology so students could view lectures about theory, safety, and other topics on a 24/7 basis outside class time. Covering everything from electrical concepts to blueprint reading and safety, these instructional modules can be adapted by many colleges and allow them to serve more students. LBW nearly doubled its electronics enrollment in part due to these new courses.

1. Background and Understanding

1.1 History and Purpose of AF-TEN

The Alabama-Florida Technical Employment Network (AF-TEN) was funded under the Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant Program, a workforce initiative enacted in the aftermath of the 2008 Great Recession. In 2009, the American Recovery and Reinvestment Act, commonly known as the economic stimulus bill, authorized the TAACCCT program to help displaced workers who lost their jobs as a result of foreign trade. In March 2010, President Barack Obama provided funding when he signed the Health Care and Education Reconciliation Act, which contained \$2 billion for TAACCCT activities to be awarded through competitive grants over four years. Under TAACCCT, community colleges and other eligible providers could apply for grants to improve education and workforce training programs of two years or less in order to update the skills of unemployed and underemployed individuals and help them find jobs paying a family sustaining wage. These training programs included certificate as well as degree programs.

Five colleges in southern Alabama and the Florida Panhandle came together to create AF-TEN in spring 2012 with the purpose of seeking TAACCCT funds for projects to meet regional workforce training demands. The colleges created AF-TEN to address the following needs: (1) The region had a high unemployment rate and a large number of dislocated workers, (2) While manufacturing was on the upswing in the region, employers had difficulty obtaining workers with appropriate training in welding and electronics, (3) Two- and four-year colleges in the region sometimes lacked the programming and resources required to set up training in these occupations, (4) Students seeking this training could benefit from more individualized or specialized services that required assessment tools, new technologies, and extra support for adults returning to education. The colleges focused primarily on welding due to employer demand along the Gulf Coast, including in shipyards of Florida, Alabama and Mississippi. One college also sought enhancements to its industrial electronics program to meet surging demand.

One major theme of AF-TEN was to provide, through the use of mobile welding units, an economy of scale that can serve geographically isolated individuals. Through mobile units, programs had the capacity to reach underserved rural areas and deal with increased student demand. In addition, colleges purchased welding simulators to provide an introduction to welding for new students. In addition to offering opportunities for students to experiment, simulators support “green” welding strategies by cutting down on supplies and waste. Other goals of the four-year project were to introduce hybrid course options, particularly for electronics students, that can accelerate student completion as well as support increased capacity of colleges.

AF-TEN members include:

- Wallace Community College (Wallace), Dothan, AL, the lead college and grant fiscal agent that serves 5,000 students and is based in Dothan, AL, in southeastern Alabama near the Florida border;
- Lurleen B. Wallace Community College (LBW), Andalusia, AL, enrolling 1,800 students;
- Chipola College of Marianna, FL, near the border of Alabama and Florida, which enrolls approximately 2,300 students;
- Northwest Florida State College (NWFSC), with 14,870 students located in Niceville, FL; and
- Pensacola State College in FL, with 28,000 students in the region’s largest city.

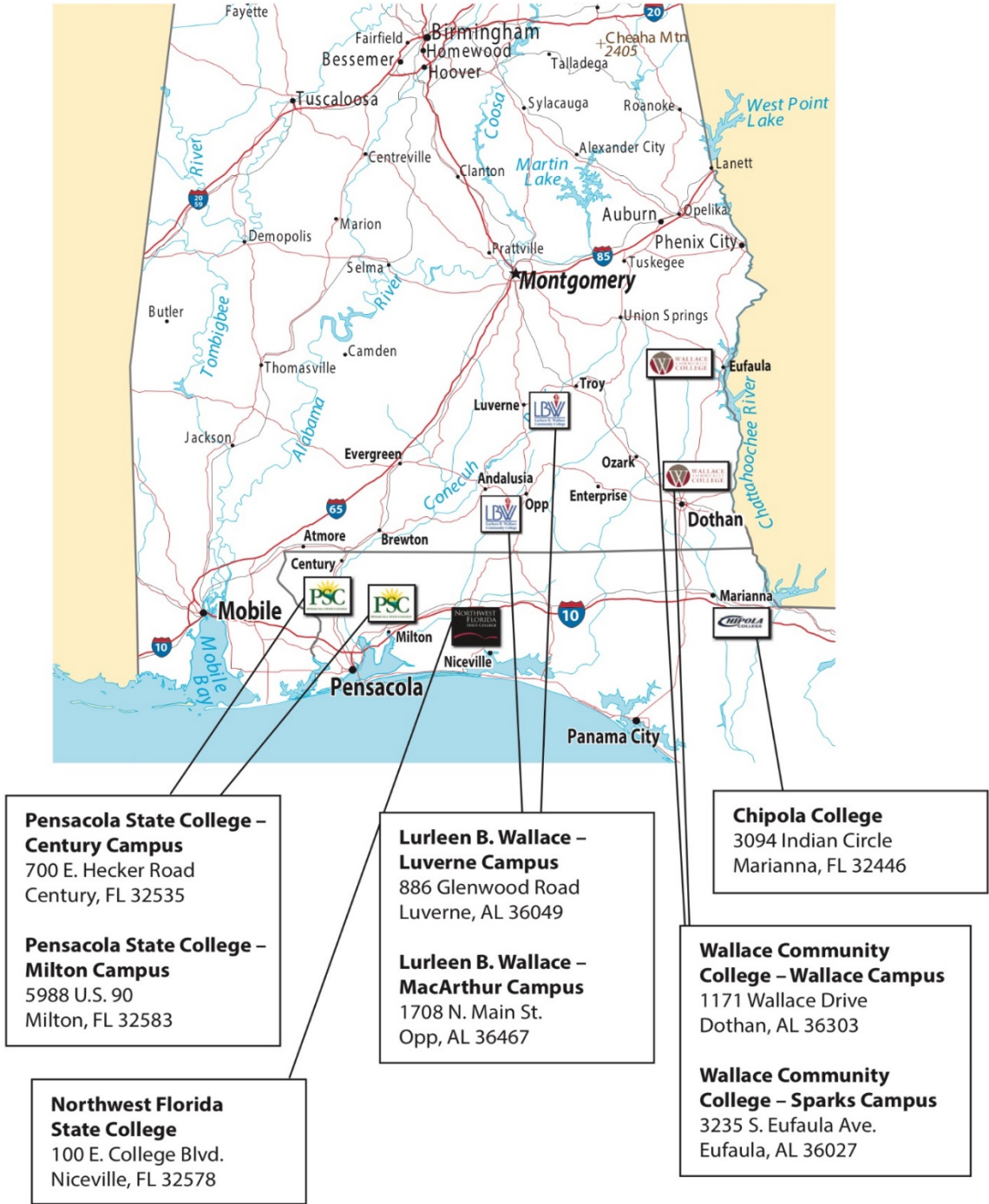
A map of all participating institutions is contained in Figure 1, next page.

The first full year of AF-TEN programming (2012-2013) was largely a developmental year as Wallace and LBW made plans to enhance their current offerings in welding and for LBW to upgrade its electronics program. Both colleges immediately enrolled students in AF-TEN even as TAACCCT-funded activities were getting underway. NWFSC, Chipola, and Pensacola spent much of the first year procuring equipment to launch welding programs, as none had existed at the time of grant receipt. These colleges invested considerable time and energy locating suitable space for a welding lab and classroom. NWFSC enrolled its first welding students just prior to the end of the first fiscal year, and Chipola and Pensacola started their programs during Year 2 of the grant.

1.2 The AF-TEN Model

The predominant focus of AF-TEN was on introduction and expansion of welding programs at the five colleges in south Alabama and the Florida Panhandle in response to demand. Welding was listed among the “Hot 40” jobs in Alabama in 2010 with projections of 20% growth in the state through 2018, much of it in the shipyards in and around Mobile. Labor market information in Florida also projected moderate annual growth in this industry. Among AF-TEN institutions, Wallace and LBW had existing welding programs and sought to add new equipment and programming through the grant. LBW also sought enhancements for its industrial electronics program. The remaining schools, all in Florida, did not offer welding prior to receipt of the grant and used TAACCCT to purchase equipment and add welding programs to their career training programs.

Figure 1: Map of Member Institutions, Alabama/Florida Technical Employment Network



Map courtesy of AF-TEN, Wallace Community College

Core priorities envisioned by the grant included the following:

- Create clear educational pathways to industry-recognized credentials in industrial systems and related technology, including multiple entry and exit points;
- Build programs along career pathways that meet industrial systems and related technology needs and led to industry-recognized credentials/certificates/degrees;
- Develop online, hybrid, and technology-enabled courses and learning modules for sharing among consortium members;
- Create or leverage partnerships with employers, workforce boards, community-based organizations, and Round 1 grant recipients;
- Provide placement services that connect students to industrial technology jobs; and
- Develop articulation agreements with four-year colleges and universities that allow students to further their educations in industrial systems and related technology.

AF-TEN programming was focused on having multiple career pathways for entering students (Fig. 2 and Exhibit 1, next page). Students previously exposed to welding in high school or other settings could enroll in a short or long certificate program to prepare for employment. Students with no prior experience could participate in a non-credit learning opportunity to explore their interest. At any point along this continuum, students could leave for employment as a welder helper (entry-level) to professional welder with American Welding Society certification. Students also would receive assessments for prior knowledge and to identify basic skill deficiencies that may impact their ability to meet requirements for certificate and degree programs.

1.3 Purpose of the Final Report

AF-TEN hired PTB & Associates (PTB) as the external evaluator to provide both formative and summative evaluations of the program. The formative evaluation focused on implementation, describing how the grant was carried out with recommendations for improvements in annual reports issued in years 1 through 3. This final, summative evaluation report contains both an implementation focus and impact focus; the impact study examines the progress of AF-TEN students compared with students who studied welding and electronics at the two Alabama colleges prior to establishment of AF-TEN. This comparison study uses a Propensity Score Matching (PSM) approach to assess impact on major outcomes such as program completion. Together, the formative and summative evaluations provide a comprehensive picture of the AF-TEN program, its development and implementation, and impact on students, colleges, and employers. This report provides descriptive analyses of AF-TEN students, their characteristics, and perceptions of the program; it also contains feedback from key faculty and staff members responsible for implementing the program.

Figure 2: Example of Welding Career Pathways under AF-TEN

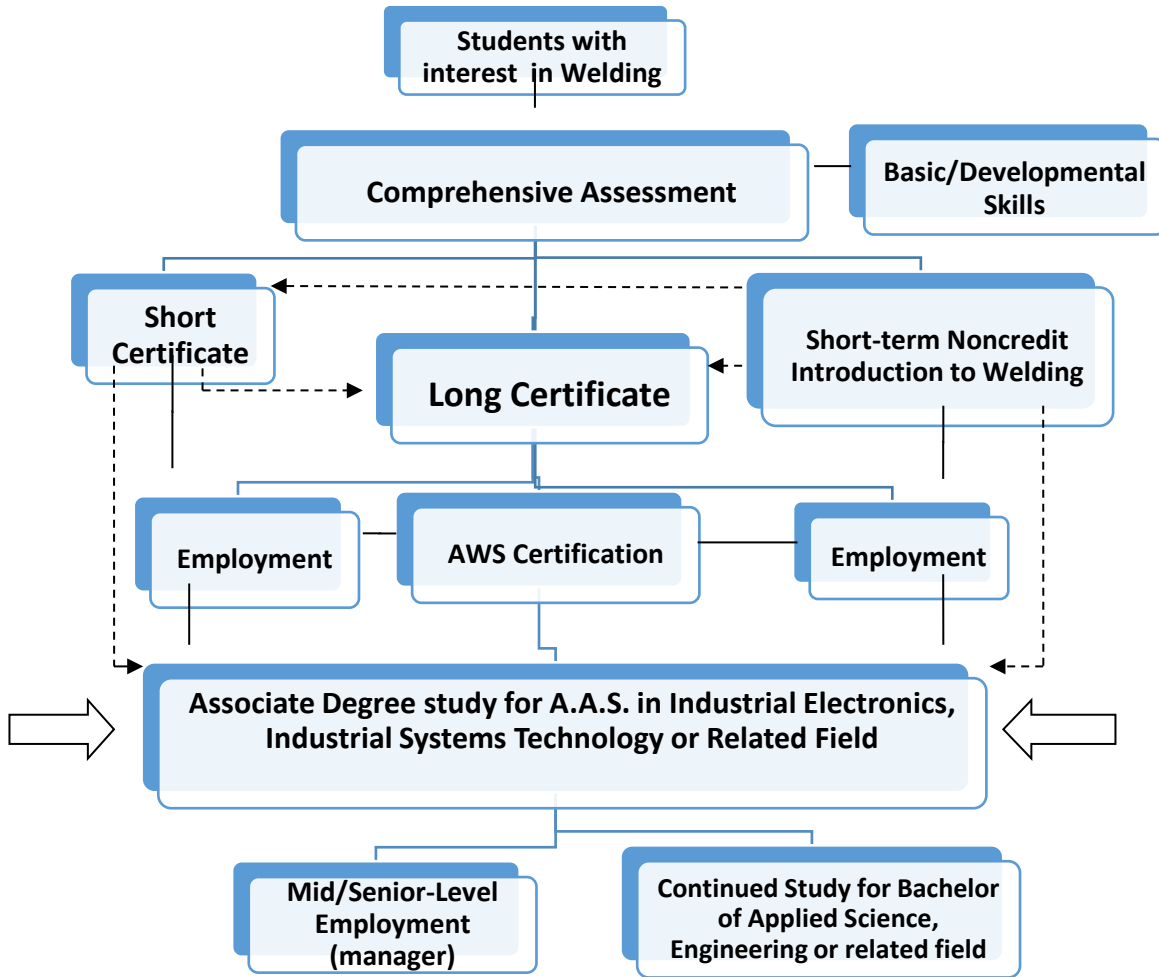


Exhibit 1: Electronics Career Pathway

Noncredit electronics classes to gain skills in one or more areas	>	Electronics Short Certificate 29 credit hours	>	Electronics A.A.S. 72 credit hours	>	Industrial Automation Technology A.A.S. 70 credit hours with lateral articulation A.A.S. to A.A.S.	>	Bachelor of Applied Science
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Electronics students can enter work from any of these steps.

For the implementation study, the final report has examined the following research questions:

- Was the grant implemented as intended? Why or why not?
- What are the characteristics and needs of participants?
- What progress has been made on core deliverables? If expected progress has not been made, why not?
- What new programs and certifications were offered? How was curriculum selected for these programs?
- How were programs delivered to students? What support services were available and how did students access them?
- What are the perceptions of their effectiveness among students? Staff? Administrators?
- What are the short- and long-term impacts on colleges?
- What contributions did partners make to program design, curriculum development, training, and sustainability? What contributions were critical to the program's success?

The impact study primarily examines two major research questions:

- Controlling for other factors, did AF-TEN participants have a statistically significant increase in program completion than comparable non-participants?
- Controlling for other factors, did AF-TEN participants have a statistically significant increase in employment than comparable non-participants?

For the impact study questions, PTB compared AF-TEN participants to a comparable group of non-participants who enrolled in welding programs at the two Alabama colleges at any point from 2010 through summer 2012, just prior to receipt of the TAACCCT grant.

1.4 Description of the Research Methodology

This study is based on a mixed-methods approach that combines qualitative and quantitative data. Data sources include annual site visits to all participating colleges, surveys of students at entry and exit, institutional data about AF-TEN students, their characteristics, grades, and achievement, interviews with faculty and career coaches on each campus, and interviews with employers and industry groups focused on welding and manufacturing. The study also collected information on a group of students who participated in welding and electronics at Wallace Community College and LBW prior to the start of the AF-TEN grant. Using PSM, the study analyzed the impact of AF-TEN comparing grant participants to this prior group of students on issues such as program completion. The study has obtained limited data on

employment of participant and comparison students and more is expected at a later date. While PTB has concluded its contract for evaluation of the program, it is committed to providing an addendum with an impact study analysis of employment when all data are available.

The evaluation also reflects a logic model (Table 1) that examines inputs, activities, and outcomes and was developed with the consortium.

Table 1: AF-TEN Logic Model			
Inputs	Activities	Short-Term Outcomes	Long-Term Outcomes
AF-TEN Consortium TAACCCT grant Existing curricula Existing welding technology and faculty at Alabama colleges Industry partnerships TAA recipients Veterans Other students	New welding programs at 3 Florida colleges New welding stations and welding simulators at all 5 AF-TEN colleges Hardware/software trainers in electronics at one college Career coaches to work with students on employability and soft skills Tutoring assistance Online / hybrid options for basic coursework Prior learning assessment Education plan for students Financial assistance Opportunities for certifications Opportunities for stacked & latticed credentials	More students enrolled in welding More students enrolled in electronics Reduced wait lists to enroll in programs Students gain industry certifications (OSHA, NCCER) Students gain employability skills	Increased number of completers in welding and electronics Increased % of enrolled students completing programs of study (v. comparison group) High number of students gaining employment after completion Increased % of completers employed (v. comparison group) High number of students retained in employment Increased % of students retained in employment (v. comparison group)

This model guided the development of site visit plans and surveys to gather information such as students, staff and faculty impressions of the program and to document the benefits for colleges participating in the program.

1.4.1 Site Visits

Site visits to colleges were conducted in 2013, 2014, and 2015 to assess implementation of the program and obtain feedback from students, faculty members, career coaches and administrators. In 2013, site visits were limited to Wallace and LBW as they were the only colleges able to enroll students in the fall 2013 and spring 2014 semesters; the other colleges

were in the process of purchasing equipment and launching welding programs. All colleges were enrolling AF-TEN students during site visits in 2014 and 2015, and the evaluator visited all colleges to observe programming and gain feedback. Table 2 summarizes the site visit plan.

Table 2: Schedule for Site Visits to Colleges

Spring 2013	Fall 2014	Fall 2015
Wallace Community College – Main and Eufaula campuses	Wallace Community College – main campus	Wallace Community College – main campus
Lurleen B. Wallace Community College	Lurleen B. Wallace Community College	Lurleen B. Wallace Community College
<i>All other colleges were taking steps to launch a welding program</i>	Chipola College	Chipola College
	Northwest Florida State College	Northwest Florida State College
	Pensacola State College	Pensacola State College

The site visits included interviews with the AF-TEN project director based at the main Wallace campus in Dothan, Ala., as well as interviews with AF-TEN career coaches on each campus. Instructors in welding and electronics were interviewed about their courses and programs. When visiting every college, at least one focus group was conducted with students enrolled in AF-TEN programming. Participants were promised confidentiality to encourage complete and honest responses. In any AF-TEN report over this period, no quotation or reference identifies a specific person.

More than 200 individuals participated in the focus groups and interviews (Table 3). The number of participants was lower in Year 1 as only the Alabama colleges had programs in operation at the time of the visit. At Pensacola State College, student focus groups in Year 2 and Year 3 were done on two campuses, one in a suburban location and another in a small rural branch campus near the Florida – Alabama border.

Table 3: Number Providing Site Visit Feedback

	Year 1	Year 2	Year 3
Students (focus groups)	39	90	49
Instructors (interviews)	5	11	10
Administrators / career coaches (interviews)	4	8	7
Total	48	109	66

1.4.2 Surveys

AF-TEN students were asked to participate in two surveys – one during their first semester designed to gain information about their attitudes and goals and a final exit survey to find out the reasons for leaving, their satisfaction with the program, and their completion and employment status. The initial survey was available online via Survey Monkey and in paper form; in addition, it also was designed for completion via smart phone. The exit survey was available by paper and online. There were some common questions in both surveys, mostly focused on student attitudes toward education.

In addition to a final round of site visits in fall 2015, PTB also conducted a survey of participating colleges in 2016 to obtain additional input including their impressions of and satisfaction with the program and the AF-TEN partnership. Colleges were asked to identify major successes and challenges from the grant as well as how AF-TEN might impact their future plans in technical education. Colleges designated a central point of contact for the grant to answer the survey.

1.4.3 Institutional Data

All AF-TEN colleges designated an individual to collect data from students and enter them into PTB's COMPETE database. At most locations, this person also was the career coach retained by the program to help students prepare for and gain employment. The data consisted primarily of assessment and course data as well as student characteristics including race, ethnicity, entering education level, TAA and veteran status, and low-income status as determined by Pell Grant eligibility. Any information on student assessments, including areas of academic deficiency, also was collected where available. Colleges provided course data on a semester basis, and they also entered data on earned credentials both from colleges and from industry. They also listed on a semester basis whether students had completed their programs of study.

1.4.4 Employer Interviews and Feedback

This evaluation relied on several different mechanisms to secure employer feedback. In Alabama, PTB interviewed employers by phone about their experience with AF-TEN welding programs and in interviewing and/or employing program graduates. In Florida, the chief mechanism for employer input was through the Gulf Coast Industry Alliance, an industry-led organization that reviews, critiques and endorses technical education programs through site visits and employer interviews. As the AF-TEN Florida programs were undergoing this review, the Florida colleges requested that PTB obtain information from the alliance rather than conducting its own interviews. However, the alliance provided detailed information about its reviews, which covered elements such as program design, curriculum, observation, and feedback from welding employers. PTB also reviewed quarterly project reports identifying employers that had visited AF-TEN programs and/or had spoken with students. This review provided information on the

extent of each college's involvement with employers and provided information on aspects of employer involvement such as donation of materials or participation in industry advisory councils.

1.4.5 Employment Data

AF-TEN colleges were able to obtain some employment and wage data from their one-stop centers or state employment agencies. However, some information from Alabama is still outstanding as of September 2016, although AF-TEN expects all data will be available by the time it files its final grant performance report. As a result, the impact study in this report could not analyze employment data on AF-TEN students contrasted with a matched comparison group. While the evaluation contract for this project will end with the submission of the final APR by AF-TEN, PTB intends to do an additional PSM analysis on the outcome of employment provided such data become available before December 2016.

1.5 Structure of this Report

This report is divided into sections based on key program components and findings. The implementation evaluation is examined primarily in Chapters 2, 3, 4, and 6. Chapter 2 provides details on the population served by AF-TEN, including consortium-wide and college data on race, ethnicity and other factors. This section also includes information on students' entering education levels, Pell Grant eligibility indicative of low-income status, TAA/veteran status, and other factors. It also contains brief summary information from the attitudinal survey completed by students during their first semester in the program. Chapter 3 focuses on the operation of AF-TEN, describing how colleges operated the program and provided services. This section also has information on AF-TEN activities and deliverables and the extent to which the consortium completed these targets. Chapter 4 examines student, faculty, and administrator perceptions of the program based on site visits conducted over the course of the grant. Chapter 5 provides information on student outcomes, including completion rates in the aggregate and by school along with student attainment of college credentials and industry credentials. Most of these findings are descriptive in nature with comparisons across individual schools. In addition, this section summarizes student exit survey data and contains impact study findings comparing AF-TEN students to a previous group of regional welding students at the institutions. These findings reflect a PSM analysis of participating and comparison group students on the topic of program completion and employment during and after program enrollment. Chapter 6 of the report examines other outcomes, including the impact of the program on participating colleges and feedback from employers. Chapter 7 of the report summarizes the report findings and includes recommendations both for the AF-TEN institutions and for other postsecondary entities as they consider launching similar partnerships to AF-TEN.

2. Population Served

Through Year 4 of implementation, the AF-TEN program enrolled 833 students, exceeding the 720 enrollment target set in its 2012 grant application to the U.S. Department of Labor. This section examines program enrollment in greater detail, including demographics and enrollment by institution. It also provides a snapshot of prior education attainment and employment status of students.

2.1. Race/Ethnicity of Students

The overwhelming majority of AF-TEN students, or 73.3%, were white. African Americans accounted for 19.3% of students, while Native Americans and Hispanic each represented 2%. Students describing themselves as multi-racial were 2% of enrollment. However, there were some significant differences by campus, with fiscal agent Wallace enrolling a much larger share of minority students. Students of color were a majority at Wallace, where 51% of students were non-white. By comparison, LBW, Chipola and NWFSC had program enrollments that were more than 80% white. Pensacola State College also had a diverse population, with students of color representing more than a third of the AF-TEN students. African Americans were most concentrated at Wallace (34% of enrollment) and Pensacola (31% of enrollment). Native Americans accounted for 5% of those enrolled at Wallace. Table 4 provides a detailed breakdown by college.

Table 4: Racial/Ethnic Composition of AF-TEN Students

College	White	African American	Hispanic	American Indian	Asian	More than One Race	Native Hawaiian
Wallace	49%	34%	3%	5%	<1%	8%	0%
LBW	87%	11%	<1%	1%	0%	0%	0%
Chipola	84%	12%	2%	2%	0%	0%	0%
NWFSC	83%	3%	6%	0%	2%	2%	2%
Pensacola	63%	31%	2%	1%	3%	0%	0%
Total	73%	19%	2%	2%	<1%	2%	<1%

Source: AF-TEN program data from COMPETE database

2.2. Total Enrollment by College

Of the 833 students enrolled in AF-TEN since the start of the grant, LBW enrolled the largest number, 382, accounting for nearly half of the consortium's total enrollment (Table 5). This may not be surprising as LBW was the only college to offer more than one career training program under AF-TEN, with industrial electronics in addition to welding. The other four colleges only offered welding due to the highly-documented demand for welders in the region

served by the program. Together, the Alabama colleges -- LBW and Wallace -- accounted for 612 students, or 73.4% of all participants across the project's four years. This statistic is not surprising as Wallace and LBW have had long-standing welding and/or electronics programs and the AF-TEN grant was designed to expand these offerings. The three Florida colleges built their welding programs from the ground up through grant support, and federal funds were used to purchase equipment and "stand up" these new programs. Northwest Florida State was the first of the Florida colleges to enroll students – late in Year 1 – followed by Chipola and, finally, Pensacola.

Table 5: AF-TEN Enrollment by College

College	Total Students	% of Total Enrollment	Total # of Male Students	Total # of Female Students
Wallace	230	27.6%	211	19
LBW	382	45.8%	369	13
Chipola	56	6.8%	53	3
NWFSC	66	7.9%	64	2
Pensacola	99	11.9%	93	6
Total	833	100.0%	790	43

Source: AF-TEN program data from COMPETE database

The overwhelming majority of AF-TEN students, 94.8%, were male, which is not surprising given that the two occupations covered by the grant, welding and electronics, have traditionally had a male workforce. The program enrolled 43 female students, including 19 at Wallace Community College and 13 at LBW. At LBW, eight of the female students studied electronics and five were in welding.

2.3. Full-Time v. Part-Time

The vast majority of students, 80%, attended their AF-TEN programs full time. All of the students at NWFSC and Pensacola were enrolled full time, while full-time students represented 89.3% of those at Chipola and 78% of those attending LBW. Wallace had the lowest percentage of full-time participants, as 66.5% were full time and the remainder were part time.

2.4. Electronics Students

As noted in Table 4 on p. 11, LBW enrolled the most students over the life of the grant, likely because it was the only school to offer electronics as well as welding. Overall, 237 LBW students were enrolled in electronics from 2012 through 2016, representing 62% of all LBW students in AF-TEN and 28% of all students across the consortium. Unlike welding, industrial

electronics was a degree program requiring at least two years of study and many AF-TEN students were still in their academic programs at the conclusion of the grant.

2.5. Incumbent Workers

Among AF-TEN students, 265 or 31.8% were incumbent workers. However, few if any students were working in the welding or electronics field based on data from student surveys and from student input in PTB focus groups. Many students at the Florida colleges said they worked in the hospitality industry, a major employer particularly in coastal areas. Nonetheless, the number of students who were employed while attending AF-TEN programs varied widely by school, from a low of 9.3% at Wallace to a high of 68.2% at NWFSC (Table 6). It is noteworthy that, despite its large share of incumbent workers, NWFSC also reported (Section 2.3) that 100% of its students attended the welding program full time. This likely was due to the structure of the AF-TEN program at the college; for most semesters, the college operated a daytime welding program, generally from 8 a.m.-2 p.m., and an evening program beginning around 4 p.m. Among other schools, LBW had the second-highest share of incumbent workers, which represented 43.5% of its enrolled students.

Table 6: Incumbent Workers by College

	Wallace	LBW	Chipola	NWFSC	Pensacola
Students who were incumbent workers	9.3%	43.5%	19.6%	68.2%	22.2%

Source: AF-TEN program data from COMPETE database

2.6. Other Target Populations

The TAACCCT program gives priority to veterans of the U.S. military who would benefit from career training. Over the four years of the grant, 49 students or 5.9% were eligible veterans. The program also sought to enroll trade-impacted workers who lost jobs or were threatened with job loss due to foreign trade and were in need of acquiring new skills. Only three students served by the program, or less than 1%, were listed as trade-impacted workers. In addition, 43 students, or 5.2%, were listed as having a disability.

2.7. Pell-Eligible Students

A majority of students, 439 or 53%, were eligible for the federal Pell Grant available to financially needy students (Table 7). Pell-eligible students were most highly concentrated at LBW, where nearly two-thirds of students qualified for the grant. At NWFSC, 55% of students were Pell eligible, as were nearly half of students at Wallace and Pensacola. No student at Chipola was Pell eligible.

Table 7: Low-Income Status as Defined by Pell Grant Eligibility

	Wallace	LBW	Chipola	NWFSC	Pensacola	AF-TEN Total
Students eligible for Pell Grant	48%	64%	0%	55%	48%	53%

Source: AF-TEN program data from COMPETE database

2.8 Traditional v. Non-Traditional Students

AF-TEN typically enrolled students who were out of high school for several years. This was evident in student focus groups, where many students said they had held full-time jobs or attempted college prior to enrolling in welding or electronics at one of the five colleges. To examine this issue in more detail, PTB compiled the average age of students for each year of the grant. Overall, the average age of a student was 26.6 years in Year 1 (Table 8). The average age remained steady through the grant; in the final year, the average age of students was 25.1 years. Pensacola’s average student age was higher than the other colleges. The average age of Pensacola students was 30.6 in the first year this college offered welding (Year 2 of the grant); the average age of students was 29 and 27.6 in the following two years. Pensacola’s AF-TEN program was located on two campuses – one in a coastal suburban area and the other in a remote rural location. In focus groups, students at the rural location reported more experience in the workplace or in college.

Table 8: Mean Age of AF-TEN Participants, by Year and College

	Project-wide	Wallace	LBW	Chipola	NWFSC	Pensacola
Year 1	26.6	26.6	26.5	N/A	28.1	N/A
Year 2	26	26	24.7	28.1	28.1	30.6
Year 3	24.4	22.2	23.1	23.8	24.3	29.0
Year 4	25.1	22.3	24.6	N/A	26.1	27.6

Source: AF-TEN program data from COMPETE database

2.9. Entering Education Level

The majority of AF-TEN students, 588 or 71% of the total, had a high school diploma or less as their highest level of education (Table 9). Another 12% or 104 students had earned a General Educational Development (GED) diploma. Nearly 13%, or 106 students, had taken some college courses prior to AF-TEN but did not earn a degree. Two percent of students had an associate’s degree while 1 percent had earned a bachelor’s degree.

Table 9: Highest Entering Education Level for AF-TEN Students

	All Colleges	Wallace	LBW	Chipola	NWFSC	Pensacola
Some high school	14	1	0	2	2	9
High school diploma	574	169	310	27	25	43
GED	104	37	35	11	6	15
Some college	106	22	26	12	21	25
Two-year degree	19	1	6	2	7	3
Four-year degree	8		2	1	2	3
Graduate school	2			1	1	
Certificate	6		3		2	1

Source: AF-TEN program data from COMPETE database

The entering education level of students looked much different at Florida colleges than at the Alabama colleges, as Florida students were much more likely to have had prior college experience. The overwhelming majority of Alabama students had a high school diploma (Table 10). Half of NWFSC’s students in AF-TEN had some college or a college degree/certificate, while nearly one-third of Pensacola’s students had prior college experience. By comparison, only about one in 10 students at Wallace or LBW had previous exposure to college. This is consistent with findings in student focus groups, as students at Florida schools were more likely to cite prior work in college, typically in liberal arts programs of study.

Table 10: Prior College Experience of AF-TEN Students by Institution

Highest level of education	All colleges	Wallace	LBW	Chipola	NWFSC	Pensacola
High school diploma	68.9%	73.4%	81.1%	48.2%	37.8%	43.4%
Some college or degree/certificate	18.1%	10.0%	9.8%	28.6%	50.0%	32.3%

Source: AF-TEN program data from COMPETE database

2.10 Students with Academic Deficiencies

More than 70% of AF-TEN students, or 596, had at least one academic deficiency that could include English or Mathematics (Table 11). This indicated that a majority of students were not academically prepared for college work. Wallace Community College had the highest rate of students with deficiencies, at 89.5%. One institution, NWFSC, did not require assessments for academic deficiencies before students could start their program; however, a local industry group conducted assessments on some of these students. All other participating colleges had deficiency rates of at least 70%.

Table 11: Students with Academic Deficiencies, Total and by Campus

	Total students	Students with deficiencies	Percent of students with deficiencies
Wallace	230	206	89.6%
LBW	382	274	71.7%
Chipola	56	41	73.2%
Northwest	66	0	0.0%
Pensacola	99	75	75.8%
All colleges	833	596	71.5%

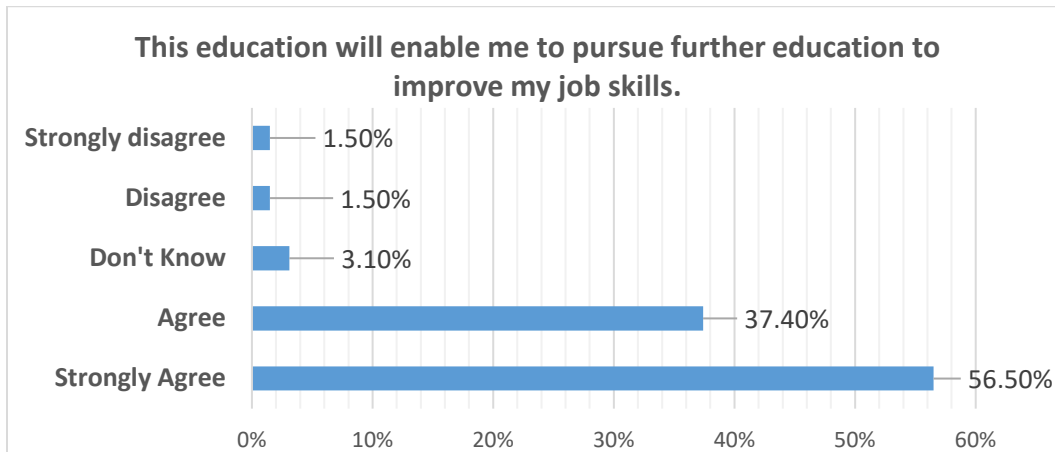
Source: AF-TEN program data from COMPETE database

2.11. Attitudes of AF-TEN Students

Through the life of the program, 141 students completed this survey which has been available online and by smartphone, with paper available on request. The goal of the survey was for students to express their attitudes about learning along with their comfort level with education and the expectation that they may need help with academic or technical content. The survey also sought to obtain early student satisfaction with their program of study.

Overall, 76% said they enrolled in the program to start a career in welding, while 13% sought to begin a career in electronics. Only 6% of students said they main reason they enrolled was to pursue additional education after they completed AF-TEN, and 4% said their main goal was to obtain a better job at a different company. These findings are consistent with opinions expressed during student focus groups throughout the life of the grant, as nearly all said their main aim was to secure a well-paying job. However, most students – 94% -- believed that participating in AF-TEN will enable them to pursue additional education later that can further improve their job skills (Fig. 3). More than half of those surveyed strongly agreed that the program will allow them to continue their education in the future.

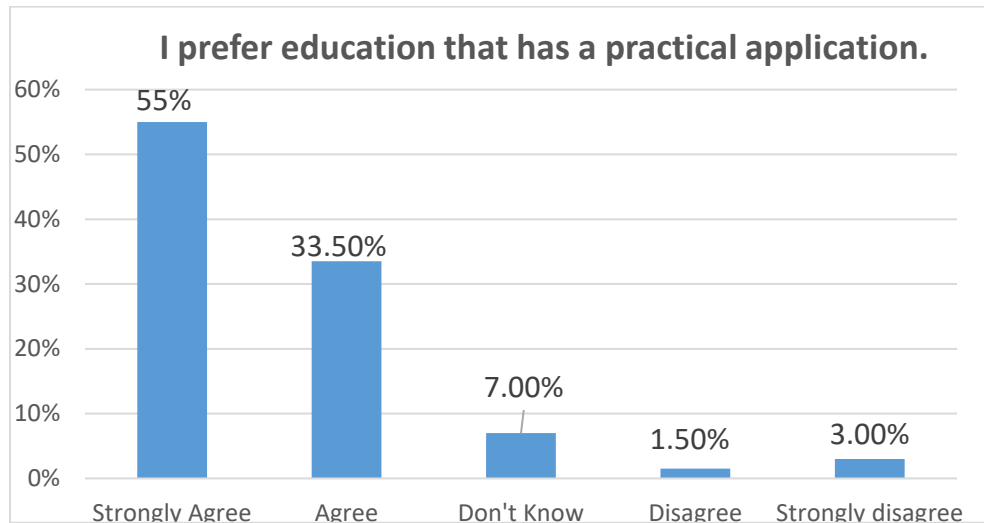
Figure 3: Perceived Value of AF-TEN Education



Source: AF-TEN attitudinal surveys

Students in the survey also indicated they prefer education with a practical application. This finding is consistent with student focus groups, in which participants frequently commented that they enjoyed hands-on activities and learning. Based on these findings, AF-TEN students appear well-prepared for this program based on their attitudes and goals. For example, 88.5% of students surveyed said they preferred education with a practical application, including 55% who strongly agreed with that statement (Fig. 4).

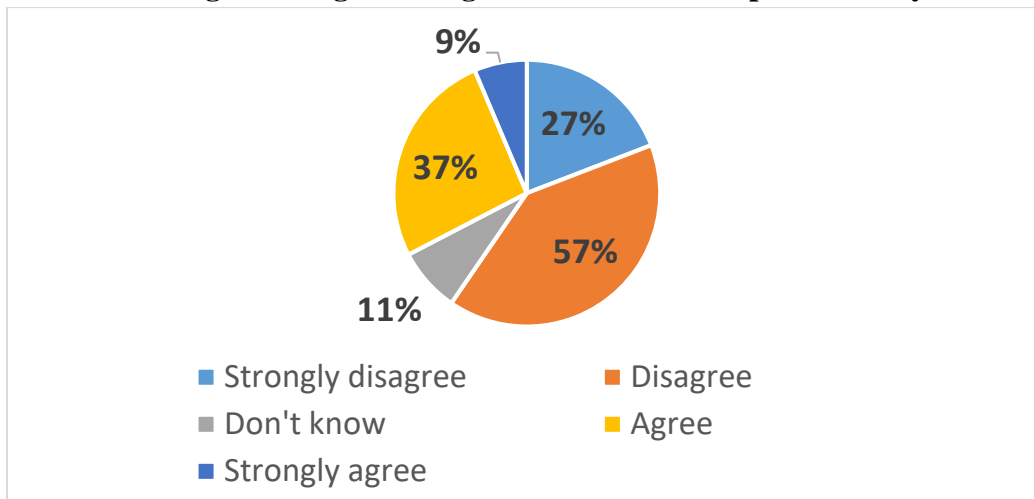
Figure 4: Student Views on Education



Source: AF-TEN attitudinal surveys

Overall, most students believed they would succeed without help, and most were not concerned about returning to school. However, about one in three said they need some type of assistance to be ready for college (Figure 5). Overall, 29% agreed with the statement while 7% strongly agreed. While services varied from campus to campus, assistance generally included educational counseling, tutoring, and in some cases, financial aid assistance. Nonetheless, in a separate question, only 12.1% said they were nervous about returning to college.

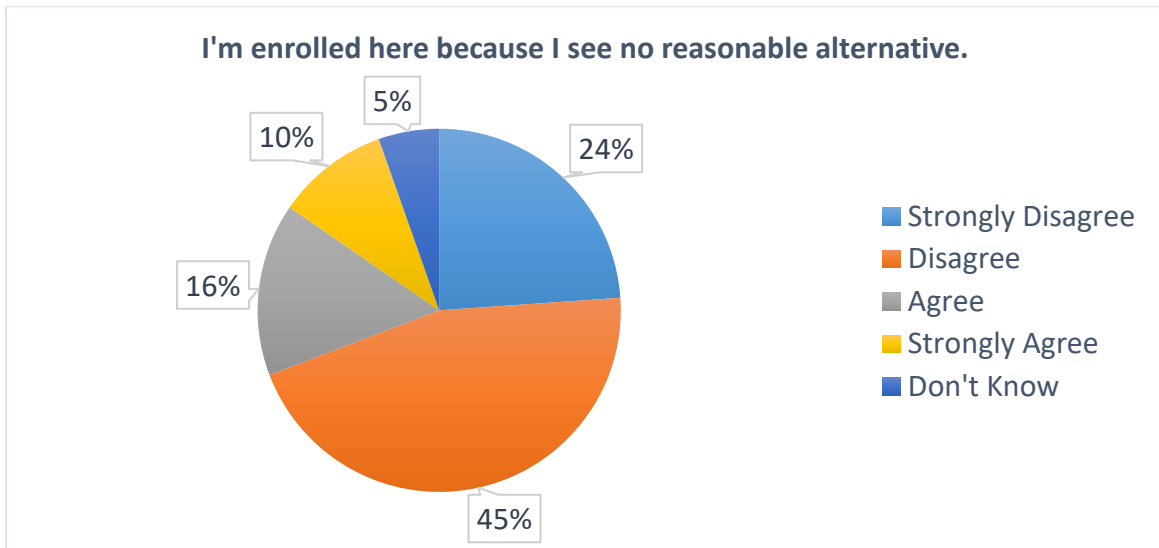
Figure 5: Agree/Disagree: I need some help to be ready for college.



Source: AF-TEN attitudinal surveys

Another survey question focused on whether students believed they had other options available to them in addition to the welding and electronics programs offered by AF-TEN. The survey asked students to state if they enrolled because they had few reasonable alternatives. Most students said they did have other options, although 26% agreed that they had few other options for employment and career (Fig. 6). It should be noted that the amount believing they had no reasonable alternative declined from fall 2014 onward, perhaps as a result of an improved economy in the south Alabama/Florida Panhandle area. For example, in the first full year of the program alone, 36.5% of students said they had no reasonable alternative to AF-TEN.

Figure 6: Student Views of Education/Career Options



Source: AF-TEN attitudinal surveys

Overall, the overwhelming majority of AF-TEN students were satisfied with their programs during their first semester. More than 80% agreed that they are personally satisfied with the program and more than 90% would recommend the program to others (Table 12). These findings echoed views provided by students during focus groups, when a majority of students expressed satisfaction with the program and said they planned to complete their studies.

Table 12: Program Satisfaction during First Year of Study

	Agree	Strongly Agree	Total in Agreement
I am personally satisfied with the program	34.0%	48.9%	81.9%
I would recommend the program to others	31.2%	63.1%	94.3%

Source: AF-TEN attitudinal surveys

3. Operation of AF-TEN

This chapter examines the operation of AF-TEN across the five participating colleges. It utilizes consortium-wide data as well as information for specific colleges, all gathered from the COMPETE database used by the member colleges and from interviews/observations during site visits. This chapter will examine the operation of the consortium, the curriculum used by colleges, equipment and technology purchased by the colleges through the grant, and services provided to students.

3.1. Consortium and Campus Structure

Two colleges in this grant – Wallace and LBW – had existing welding programs prior to the TAACCCT grant and used grant funds to expand their programs. Chipola, NWFSC and Pensacola utilized the grant to establish welding programs where none existed, and LBW also expanded its industrial electronics program through the grant. Table 13 outlines the grant-funded programs available at each institution.

Table 13: AF-TEN Programs of Consortium Colleges

	Wallace	LBW	Chipola	NWFSC	Pensacola
12-month welding certificate program	✓	✓	✓	✓	✓
24-month welding certificate program (long certificate)	✓	✓			
2-year associate degree in industrial electronics		✓			

As fiscal agent for the grant, Wallace convened regular meetings of the AF-TEN consortium through the early years of the grant. This occurred primarily through monthly telephone calls with annual or semi-annual face-to-face meetings. The AF-TEN project director stated that as Year 2 began, his primary mode of communication was one-to-one meetings with each college, as each had unique issues related to their equipment purchases and rollout of AF-TEN programs. Equipment was a particularly challenging issue at the Florida colleges, some of whom altered the design of and equipment for their programs as they moved from planning to implementation of welding. A typical issue was the number of welding simulation machines and their stationing on campuses. At Pensacola, the AF-TEN director worked closely with this college to offer welding at two sites – an isolated rural location and at a suburban campus near the Gulf Coast. The coastal campus built welding units in an old softball dugout while keeping simulators in a nearby trailer. The rural location also had outdoor welding stations as well as indoor welding stations and simulators in a trailer. These decisions required careful scrutiny, as Wallace’s welding technology director visited each of the Florida campuses to provide input on design. The AF-TEN project director also spent considerable time re-working budgets and purchase orders to meet the Florida colleges’ emerging needs while adhering to U.S. Department

of Labor procurement standards. The AF-TEN director believed this one-to-one communication was the best way to communicate with individual schools, and instructors and administrators at the various campuses indicated they were pleased with the level of communication with Wallace, even though full meetings of the consortia declined over time.

On each campus, the grant funded a career coach who helped link students to support services or career resources. This individual also was responsible for data collection and reporting in the COMPETE database provided by PTB. Most campuses also had support from a higher-level administrator who helped manage the campus AF-TEN budget and oversee development of the program. This person typically was a mid- to senior-level administrator in occupational/technical education who also was the main budget point of contact for the AF-TEN project director at Wallace. Faculty members at each campus helped design curricula; at the Florida colleges, Wallace sometimes provided assistance in the development of new curriculum as these colleges rolled out their welding programs.

AF-TEN supported expansion of welding at Wallace and welding and electronics programs at LBW as well as new welding programs at three colleges in the Florida Panhandle. AF-TEN assisted the Florida colleges in establishing their programs, providing expert input into the design of ground-based labs, the purchase of welding labs and simulators, and the hiring of instructors. However, AF-TEN did not have authority to impose a particular approach, design or vendor; instead, it served as the coordinating entity among the colleges, dealing directly with the U.S. Department of Labor on budget issues and facilitating the completion of key project deliverables.

All colleges also had in place advisory committees that solicited and received input from regional experts in welding and electronics. Company representatives also occasionally visited classes at most colleges to observe and critique student work and to test students for possible jobs upon completing the program. Most instructors said they were in regular contact with employer contacts about job openings whether along the Gulf Coast or in other areas. Leaving the region is a reality given the economy, several instructors said. “Around here the pay is only about \$13 an hour,” one instructor said. But there are higher-paying opportunities closer to the coast or on oil rigs, “so students often are more interested in these jobs.” At least three colleges – Wallace, NWFSC and Chipola – had business input into its equipment purchases under the grant, and staff said this input was important in configuring classrooms and labs. In addition, businesses contributed consumables and other in-kind materials to AF-TEN programs.

3.2 Student Recruitment

Through interviews with AF-TEN project directors and instructors, colleges said they had specific efforts to recruit unemployed or dislocated workers, veterans, recent high school graduates, and others for welding and electronics programs. Typically these efforts included offering tours and open houses; in many locations, colleges funded local billboards targeted to potential students particularly in welding. A common message on these billboards was “It’s

Getting Hot in Here!” accompanied by pictures of a student or students engaged in welding activities. For most colleges this was a new element in their recruitment efforts. As Alabama schools often had wait lists prior to AF-TEN, the grant provided an opportunity to conduct outreach. The Florida colleges, all new to welding, had no history of offering a similar advertising program. Once colleges received their welding simulators and mobile welding units, or trailers, member colleges took them to job fairs, high schools, work sites and community events, and trailers typically had a photo of a student engaged in welding along with the college’s name. College officials said these activities were a major selling point in attracting prospective students, many of whom may not have considered welding in the past. Tours also were a popular activity, as visitors could enter the trailers and learn about the welding simulators. During one site visit, PTB observed prospective students, sometimes with a parent, touring the trailer and getting an introduction from the instructor. Colleges viewed both informal and formal tours as a major factor in promoting student enrollment.

Similar to other TAACCCT programs, AF-TEN had a priority to enroll workers impacted by foreign trade (TAA workers) and veterans. Most colleges addressed this issue by reaching out to the career office on their campuses encouraging them to refer veterans or TAA-eligible individuals to AF-TEN. Member colleges also publicized the receipt of the grant, along with receipt of trailers, simulators and other equipment, via news releases and, occasionally, press conferences.

In focus groups conducted throughout the grant, some students said they heard about the program from friends or family members who work at the AF-TEN member colleges. Many also said they saw the ‘It’s Getting Hot in Here!’ billboards and then called or visited the college to obtain information. A small number of students said they signed up after seeing the trailer or a presentations during a job or career fair.

3.3 Curriculum

For welding, the colleges had two distinct curricular approaches, each reflecting ongoing changes in the welding profession. As they have done for many years, the Alabama colleges, Wallace and LBW, continued to offer two tracks toward either a short certificate (approximately two semesters/30 weeks) or a long certificate (two years/60 weeks) in welding. For the long certificate, both colleges required technical English and Mathematics in addition to welding, which focuses on both plate and pipe welding and covers Shielded Metal Arc Welding and Gas Tungsten Arc Welding. The Florida programs were created based on the NCCER curriculum, with students eligible to obtain up to four NCCER certificates while working toward a college certificate in applied welding technologies. Florida colleges believed NCCER was a strong fit to meet its goal, which was to create a 12-month welding program that quickly prepares students for welding employment. In NCCER welding, students can earn up to four separate credentials (Core and Levels 1-3) during their study. These credentials are industry certified and can lead to immediate employment. For example, a potential employer can enter a student’s NCCER

number in a national registry and see what credentials that student has earned. At Pensacola, one teacher is also a master trainer with NCCER.

The two states also had different operational requirements; while Alabama uses a credit-based model, Florida has a clock-hours model that was converted to credit hours for the purpose of TAACCCT reporting rules. The Florida program consists of 1,170 clock hours in six classes completed over three consecutive semesters. As currently structured at the Florida colleges, students complete studies in one calendar year after attending fall, spring, and summer semesters. Despite these differences, all of the AF-TEN colleges have an approach that required the majority of time (at least 75%) be spent in lab activities.

Yet while colleges in each state have taken a different approach, faculty at most sites say they find something to like in what programs in the other state are offering. During 2015 site visits to all colleges, the AF-TEN project director and some faculty members provided evidence that the colleges are moving closer to each other in their offerings. The Florida colleges now plan to offer a second, longer option focused on pipe welding, similar to the long certificate option in place at the Alabama colleges. For their part, the Alabama colleges have signaled they may align their programs with NCCER standards because they are gaining more favor in the industry. In interviews with faculty, several factors appear to contribute to this convergence, including industry demand for pipe welding and increased visibility of NCCER standards nationwide. Yet some also may be due to the increased level of communication between instructors in the region owing to the work of AF-TEN. Instructors note that they have visited other member campuses and engaged in discussions about the best curricula for students, and this work has helped inform the evolution of the colleges' welding curricula.

LBW also is enhancing its industrial electronics program through the grant. Through this program students obtain competencies in direct current, alternating current, solid state electronics, digital electronics, motors, and blueprint reading. It requires 73 credit hours and includes requirements in English and humanities. LBW considers it a five-semester program, with instruction that leads to an associate degree. Rather than creating new courses or specialties, LBW has invested its electronics grant funding in development of hybrid curriculum detailed in subsection 3.4.

3.4. Use of Technology

One major theme across the colleges is the purchase of new technology to support new or expanded programs. At all colleges, this work involved the purchase of ground-based labs and welding simulators. Colleges also purchased trailers so that they could have fully mobile welding labs that could be deployed in the community or at employer sites. Typical was the trailer used at LBW, which included six welding booths, two simulators and a rod oven. Instructors said the welding simulators were used heavily by students at the beginning of their programs to help them learn to weld at precise angles. "The simulator helped them get up to speed," one instructor

said. “It saves a lot of time and keeps them from wasting a lot of metal.” Instructors and staff also cited the simulators as a recruiting tool. Some colleges took the mobile labs to career fairs and other community events to attract interest from potential students. Any student visiting one of the colleges also could view the simulator and learn more about how it can prepare students for actual welding. One college deployed the mobile labs at an economically disadvantaged area 30 miles north of its campus. Overall, instructors and staff from four colleges indicated that they were highly satisfied with their equipment purchases. The fifth college, Pensacola, faced numerous challenges with its equipment; at one point, some equipment was not functioning in part because the configuration of the trailer did not allow enough space for the machinery. However, the program had overcome most of these issues by Year 3. Colleges also stationed some of these simulators at branch campuses to encourage student enrollment from more rural, isolated areas.

AF-TEN leaders, instructors, and career coaches cited the grant’s positive effect on building capacity at the colleges. This capacity is largely due to a focus on new equipment in the \$10.1 million federal grant, which provided funds to start welding programs at three colleges and expand offerings at two others. This equipment has included new ground-based stations to expand the number of workstations – thereby allowing programs to enroll more students – as well as simulators to help new students grasp basic welding techniques. In interviews with staff and a review of AF-TEN documents, it is clear that these purchases have greatly expanded the size of regional welding programs as evidenced at these institutions. Overall, colleges allotted \$4.365 million to new equipment (Table 14), which represents 43% of the total AF-TEN grant funding. Wallace and Pensacola spent the most on equipment, based on the breakdown below:

Table 14: Equipment Purchases through AF-TEN Grant

College	Total purchases of items of less than \$25,000 each	Total for large equipment purchases	Total equipment
Wallace	\$216,072	\$839,156	\$1,055,228
LBW	\$37,997	\$639,128	\$677,125
Chipola	\$397,578	\$422,253	\$819,831
NWFSC	\$324,675	\$474,975	\$799,650
Pensacola	*	*	\$1,013,738
Total			\$4,365,572

*Data reported in aggregate only

Here is a look at how this equipment was implemented at specific campuses:

Wallace: At the college’s main campus in Dothan, the number of welding booths has increased from 36 to 60 since the start of the grant. This allowed the college to enroll more than

100 welding students at a time, nearly double its pre-grant capacity. It also has reduced from 70 to 30 the size of its wait list of students seeking entry into the program.

LBW: In the welding program, grant funds have supported the purchase of six booths and two simulators at a branch campus as well as additional machines and simulators at the main campus. As a result, enrollment has grown from 25 students per semester to about 60 students. In the electronics program, enrollment has grown from 50 to nearly 100 students due to new equipment as well as technology. The purchase of NIDA trainers includes hardware and software. These console trainers provide students with hands-on experience with various circuit examples including positive and negative power supplies. Grants funds also were used to design a hybrid learning approach in which students view instructor lectures via computer at any time of the day. “Students can watch the lecture at 2 a.m. if they want to,” the instructor said. In addition, the instructor says the new approach “has allowed me to spend much more time in the lab working directly with students.”

Chipola College: This college started its welding program under the grant by purchasing equipment and consumables to staff 15 booths. The college has now expanded to 29 booths to meet demand. This college also has taken its mobile lab to regional career fairs so that prospective students can get a brief introduction to welding to see if they have interest.

NWFSC: The college launched its welding program through AF-TEN and has designed it to accommodate daytime and evening shifts of students. In 2016, the program will serve 15 students attending from 7:30 a.m. to 3 p.m. and another similar group attending from 4 p.m. to 10 p.m. four days a week.

Pensacola: This college is offering AF-TEN-supported training at two sites, including a rural area largely underserved by postsecondary education. One site makes extensive use of simulators in a trailer located on campus. Instructors say these simulators help students build muscle memory and hand/eye coordination so they can progress into live welding.

3.5. Online/Hybrid Instruction

Another goal of the grant was to create online/hybrid course modules. This task was assigned to LBW, which completed work during Year 2. These online/hybrid course components impacted both welding and electronics courses. The redesign included several key components such as:

- Tegrity lecture capture, with faculty recording theory instruction that students can view online;
- Lesson plans and syllabi that link to Alabama’s Program of Instruction;
- ePortfolios for each student that include resumes and certifications that can be viewed online by potential employers.

The faculty member responsible for these hybrid/online modules utilized Creative Commons for much of this work. She also developed math modules for blueprint reading courses and revamped course sequencing for clarity and so that low-income students could receive the maximum amount of financial aid for which they are eligible. The faculty member said she “immersed” herself in the program and curriculum, spending time in labs with students and instructors. While not having direct experience in welding and electronics, she directs LBW’s math/science division as well as its online programs. Despite the presence of online modules in welding, however, colleges did not appear to be utilizing them as yet.

However, the hybrid courses have changed some operations within the electronics program, an instructor said. Where hybrid instruction is in use, courses are about 60% online and 40% lab, with the online course replacing traditional lectures. Students are often assessed through computer-based activities. Due to the large growth in electronics, “These classes are a major help and some students learn better this way,” the instructor said. LBW also has put some of its welding theory online. It has used grant funds to add occupational safety and health training, something that employers welcome, an instructor said. Illustrative of this work is LBW’s hybrid course, Concepts in Alternating Current (AC). Included in the course is an introduction to AC electrical theory, AC electrical measurements, and constructing and measuring different types of AC circuits. Students view lectures online through lecture capture software, then come to class to complete various laboratory problems and utilize test equipment for analysis and troubleshooting. The course is listed at www.skillscommons.org.

Despite the innovations introduced by LBW, the move toward online and hybrid instruction may have limited replication across the partnership. As LBW is the only AF-TEN member to offer industrial electronics, courses such as Concepts in Alternating Current will not be adopted by the other colleges. Where online resources are available in welding, instructors and college officials say replication is unlikely because the Florida colleges, with their clock-hour requirements, must base their programs on actual seat time spent in a class. As a result, the multi-state approach of AF-TEN is a weakness in promoting replication of some welding instructional innovations.

3.6. Student Services

Every AF-TEN college had funding to support an individual responsible for providing and/or coordinating services to students. At four of the five colleges, this individual was formally identified as a career coach; at the fifth institution, NWFSC, this person held the job of program coordinator with responsibilities that included student outreach. These individuals are expected to have experience working with students. While not required to have welding or electronics experience, these individuals were to have experience working with students and have an interest in helping adults and recent high school graduates return to school. As part of their jobs, these staff members were to linking students to needed support services. In its grant application to US DOL, the consortium outlined plans for students to access a variety of services, such as basic

skill assessments, tutoring, help with basic skill deficiencies, job search assistance, job readiness skills and career planning. Colleges had many reasons to offer support services, based on data showing that 71% of students had at least one academic deficiency (p. 15 of this report). To collect this data, PTB set up screens and dropdown menus in its COMPETE database for colleges to record support services data.

Based on data entered by colleges into COMPETE, however, only about one-third of AF-TEN students received some type of support service (Table 15). Yet participation varied widely across the consortium members. Chipola College and Pensacola State College each reported that seven of every eight students, or 87%, received some support service during their time in the AF-TEN program. At Wallace, the grant fiscal agent, no students were recorded as having received any support services. However, annual site visits to each campus has provided more details behind all of these numbers.

Table 15: Students Receiving Services through AF-TEN

College	Number of students receiving a service	Percent of AF-TEN students receiving service at the college
Wallace	0	0.0%
LBW	112	29.3%
Chipola	49	87.5%
NWFSC	16	24.2%
Pensacola	86	86.9%
Total, all colleges	263	31.6%

Source: Data entered by individual colleges in COMPETE database

AF-TEN students were most likely to receive workshops or seminars that help prepare them for employment. Overall, 177 students, or 21.2% of all participants, attended these events offered by three of the colleges – LBW, NWFSC and Pensacola (Table 16). Thirteen percent of students, or 110 total, participated in counseling sessions.

Table 16: Breadth of Services Provided to Students

Type of service	Total number receiving service	Colleges offering service
Field trips	39	Chipola, NWSFC, Pensacola
Pre-employment experience	44	Chipola, Pensacola
Workshops / seminars	177	LBW, NWFSC, Pensacola
Counseling	110	Chipola, Pensacola
Assessment	31	LBW, Chipola
Job placement	26	Chipola, Pensacola

Source: Data entered by individual colleges in COMPETE database

3.6.1. Services at Florida Colleges

Counseling was the most prevalent activity at Chipola College and Pensacola State College. At Chipola, 88% of students received counseling; at Pensacola, 62% received this service. Based on site visit focus groups and interviews, this counseling covered subjects such as financial aid and academic assistance with coursework. At Pensacola, the career coach also developed a soft skills training program that includes help in developing a resume, using e-mail and sending e-mails to prospective employers, and mock interviews. Another service at Pensacola was job placement, used by 22 of the 99 college's AF-TEN students. Most of these students completed an exit survey when they finished their welding program; of this group, 82% described the job placement services as "very helpful" while the remaining 18% called the services "somewhat helpful" in locating employment. Among 11 students who utilized tutoring, all but one described the service as "very helpful."

At NWFSC, 24% of students received one or more support services, based on data entered into COMPETE. The predominant service was workshops, in which students heard from businesses and other guest speakers. The college also had a math lab where AF-TEN students could obtain help from upper-level college math majors. To support job readiness, the college's student success center helped welding students develop resumes for employers.

3.6.2. Services at Alabama Colleges

At LBW, 112 participants, or 29.3% of the college's total AF-TEN enrollment, received at least one support service during their time on campus. The most common service at LBW was workshops/seminars, attended by 111 students. One of the main activities here was a mock interview program for industrial electronics students. Partnering with AF-TEN for this were representatives from Power South Energy Cooperative, headquartered nearby LBW in Andalusia, AL. Power South is a generation and transmission cooperative providing wholesale power to 16 electric cooperatives and four municipal power systems in Alabama and northwest Florida.

Wallace Community College did not list any students as receiving services, although information from interviews, focus groups and student exit surveys indicated that some services occurred in the AF-TEN program. For example, 13 students indicated in exit surveys that they received educational advising, with 11 describing it as very helpful. Job placement and tutoring services also were cited by seven and five students, respectively, based on survey data. Students in focus groups at Wallace indicated that they did receive help from their instructor in making contact with employers and that they participated in group meetings with the career coach to learn about support services and receive services such as help in writing resumes and preparing for interviews. Despite these examples, support services at Wallace did appear to lag those available at the other colleges. As noted by administrators and instructors at Wallace, students tended to rely on informal contact with their instructors for job placement and career advice as

the faculty members were familiar with employers and would connect them to students. It is likely that this informal contact was not reflected in data entry for student services.

PTB's annual site visits included semi-structured interviews with career coaches / coordinators for AF-TEN on each campus. It was evident that several colleges had turnover in these positions throughout the grant, particularly in the last two years as coaches sought to move from shorter-term, grant-funded employment to permanent, long-term jobs. At Wallace, for example, the career coach moved to another position during the last year of the grant and the position was not filled due to the time remaining in the grant.

4. Perceptions of Students, Faculty, and Administrators

This evaluation has provided annual qualitative information on student, faculty and administrator views of the program annually through site visits. PTB has published an annual formative report examining these perceptions in detail. This section of the final report summarizes findings across all of the program years.

4.1 Student Perceptions

As noted in Section 1.4.2, PTB conducted focus groups at all colleges operating AF-TEN-funded programs during Years 1-3 of the grant. Overall, 178 students provided feedback across the five participating colleges. Virtually all students in focus groups had positive views of the program, saying they welcomed its hands-on approach. Many began their programs of study by working on simulators initially to gain a better understanding of how to make a high-quality weld. However, most believed it was important to move quickly beyond a simulator to an actual setting. "It's definitely hotter in a welding booth," one student noted. Yet another said that having the simulators is always helpful when students are asked to perform new skills. "You can always go back to the simulators to reinforce what you have learned," this student said.

Students also said that, while it may be difficult at first, they welcomed the job-like focus of the program. At one college, for example, the instructor locks the door promptly at 8 a.m., when all students are to be in class. Those who arrive late must wait until the next class starts at about 9:15 a.m. "The lock the door at 8 a.m. because they treat it like a job," one student said.

Focus group participants also believed their instructors were knowledgeable about welding and electronics as well as the local and regional job markets. Because instructors are in close touch with employers, they refer specific students who are nearing the end of their studies. One instructor also helped several students get part-time jobs at Ace Hardware so they could make money while paying for the welding program. "That was a huge step to help me stay in the program," one student said.

Most students were satisfied with their welding program even though those programs varied in the type of classroom setting. For example, unlike the other colleges, most welding

students at Pensacola State College weld in a trailer or outside due to space challenges. At one Pensacola site, the college has retrofitted baseball dugouts to serve as a series of welding booths. Each outside station has a roof over it, although their work can be affected by wind and rain that can blow into the booth. In the early years of the grant, a minority of students voiced concern that there were not enough welding stations for the growing number of enrolled students. This was noted in particular at the Chipola and Pensacola welding programs. In Year 2, this issue was most acute at Pensacola, largely because of problems in a mobile welding trailer where some simulators did not work properly. “We had to wait a lot,” one student said, noting that there were only six live welding units for 23 students in fall 2014. However, the college subsequently was able to have all simulators working properly and students did not cite this issue in 2015.

Some students indicated that employers visiting their campus welcomed this outdoor setting, since it can mimic the conditions in a shipyard or offshore rig. However, it does mean that on some days, inclement weather keeps students inside focusing on bookwork or safety procedures rather than working on welds at the outside booths. Yet, one student noted, “I think it’ll prepare us for what we’ll see after we finish the program.”

4.2 Instructor and Career Coach Perceptions of the Program

The site visits included semi-structured interviews with 26 instructors and career coaches at the five colleges involved in AF-TEN. Overall, these individuals had a positive view of the program, noting that it has filled a gap in the local community by providing young adults and displaced workers with skills to find higher-paying jobs. Instructors and career coaches said the grant has had significant effects on building capacity and promoting collaboration not only among the colleges but also between colleges and industry. This capacity building is largely due to a focus on new equipment in the \$10.1 million federal grant, which provided funds to start welding programs at three colleges and expand offerings at the other two colleges. This equipment has included new ground-based stations to expand the number of workstations – thereby allowing programs to enroll more students – as well as simulators to help new students grasp basic welding techniques. In interviews with staff and a review of AF-TEN documents, it is clear that these purchases greatly expanded the size of regional welding programs as evidenced at these institutions. In the early years of the grant, some faculty members expressed concern that student enrollment had outpaced new equipment at some colleges, which resulted in moderate wait times at welding stations. “There is just such a boom in [welding] that we need more room, equipment, and instructors to meet the needs,” one welding instructor said in 2014. However, as colleges addressed issues related to the functioning of new simulators and welding booths and added new booths, faculty no longer cited this as a concern.

Site visit interviews and observation also showed extensive collaboration between welding instructors and career coaches on many of the campuses. At two colleges, the instructor has much more experience with technical employers than the career coach. As a result, students said they looked to the instructor for job leads, and the career coach provided support services in

helping students compile resumes and prepare for job interviews. One instructor said the career coach provides “eyes and ears” for the instructor because students are more likely to talk with the coach about individual challenges that might impede their success in school. The coach at this college “goes well beyond his job description in working with students,” the instructor said.

AF-TEN institutions approached the issue of collaboration in several ways, according to program administrators, instructors, and career coaches. Since Year 1, the AF-TEN Project Director and a Wallace welding instructor visited each Florida college to offer advice on designing a welding lab. Most colleges said they found this input helpful in selecting lab space, utilizing simulators to best effect, choosing curricula, and making equipment purchases. Based on observation during site visit as well as staff and instructor views, guidance about set-up and equipment provided by Wallace appeared to be a factor that contributed to success of the Florida programs under the grant.

Collaboration has taken other forms as well, interviewees said. Faculty noted how NWFSC loaned its mobile welding lab to Pensacola to help meet surging demand in 2015. NWFSC has daytime and evening welding programs through its ground-based lab, and as such had less need for the mobile lab that year. Yet Pensacola used this mobile lab to operate at two branch campuses about 40 minutes apart serving vastly different communities – a city near the coast and a rural area near the Alabama border.

5. Student Outcomes

This section will examine student progress in the aggregate and by campus. The first subsection will include descriptive analyses looking at completion rates among students and employment data where available. It also will report on aggregate and campus-wide totals on industry credentials earned by AF-TEN students. Included in this analysis will be a look at how AF-TEN has fared on the U.S. Department of Labor program measures. The second subsection will focus on impact study findings using a participant group and a matched comparison group through Propensity Score Matching, or PSM. This analysis is currently available on the question of program completion, comparing AF-TEN participants with a set of non-participants who studied welding prior to receipt of the grant. PTB will conduct a separate analysis on the employment of the participant and matched comparison groups when such data are complete. AF-TEN members have been successful in gaining employment data from Florida workforce agencies; it only recently received all information from the Alabama Department of Labor for participant and comparison students. AF-TEN should have this Alabama data processed in time for its Final Performance Report; however, data were not available in sufficient time prior to Sept. 30, 2016 for inclusion in this report. While PTB’s contract with AF-TEN will end with the filing of the final AF-TEN performance report, the evaluator expects to update this evaluation report with impact study data on employment within a matter of weeks.

5.1. Descriptive Analyses

5.1.1. Student Completion Rates

Overall, 61% of AF-TEN welding participants had completed a credential as of spring 2016, when activity on non-evaluation grant activities concluded (Table 17). Some program participants were still enrolled in their programs at that time, so additional AF-TEN students may complete within the next year. Only about 25% of electronics students at LBW had completed their program as of spring 2016; however, this data should be viewed with caution as electronics requires at least two years of study and is a degree program. Welding programs can run as short as one year but may last up to two years depending on the campus and program.

Looking at welding data by campus, LBW had the highest completion rate at 99% with 146 of 148 students finishing their programs. The Florida colleges had among the highest completion rates, led by 84% at Chipola College. NWFSC had 74% of welding students complete their programs, while the rate for Pensacola was 60%. The lowest completion rate was at Wallace Community College, where 27% of enrolled students were completers. Interviews with students as well as staff at Wallace indicated that it was not uncommon for students to leave for employment once they had obtained some skills for welding employment.

Overall, the Florida colleges had a 70% completion rate while the rate for Alabama schools was 55%. This difference may be due to length of programs, as the Florida colleges had shorter programs generally lasting no more than 15 months while the Alabama programs could last up to two years if students sought a long certificate. The Florida college programs covered primarily plate welding with little emphasis on pipe welding; long certificates in Alabama covered both of these specialty areas. It should be noted that the Florida colleges are considering adding more pipe welding instruction to their programs, so their programs and range of options may closely resemble the Alabama offerings in the near future. Fewer students enrolled at Florida colleges, which was not surprising as these colleges used the grant to create rather than expand their programs and only NWFSC enrolled students prior to Year 2 of the grant.

Table 17: Completion Rates by College

Welding	Number of Students	Number of Completers	Completion Rate
Wallace	230	63	27.39%
LBW	148	146	98.65%
Chipola	56	47	83.93%
NWFSC	66	49	74.24%
Pensacola	99	59	59.60%
All Schools	599	364	60.77%
Electronics - LBW	237	60	25.32%
Grand Total	836*	424	50.7%

*Note that 3 students enrolled in both welding and electronics. AF-TEN has 833 unique participants.

5.1.2 Completion Rates for Participants v. Non-Participants

This evaluation includes an impact study utilizing Propensity Score Matching to compare AF-TEN participants to a comparable group of pre-grant non-participants. Outcomes from this rigorous study are later in this chapter. However, descriptive statistics for completion rates of students are below (Table 18). This data show that completion rates for participants at Wallace and LBW increased were higher for the AF-TEN group than the pre-AFTEN group at those institutions.

Table 18: Completion Rates by Institution, AF-TEN and Pre-AF-TEN Groups

	Wallace	LBW
Students in pre-grant comparison group	85	67
Number of comparison group who were completers	8	14
% of comparison group who were completers	9.41%	20.89%
Grant participants	230	148
Number of participants who were completers	63	146
% of participants who were completers	27.39%	98.65%

Source: Program data provided in COMPETE database

As noted in chapter 3, the AF-TEN program included several innovations not present at these colleges previously, including a career coach to work with students and link them to support services and new learning tools such as welding simulators and electronics console trainers to provide more hands-on activities. AF-TEN also added more welding stations to member colleges. Students and instructors said the new stations provided greater opportunities for practical laboratory work.

5.1.3 Completion by Entering Education Level

As noted in Table 10 on p. 18, a minority of AF-TEN participants, 18.1%, had some prior college experience or a college degree/certificate prior to enrolling in these grant-funded programs. That college experience appeared to pay off based on completion rates for students by their education level. For this analysis, PTB examined completion based on whether students did or did not have any prior college experience. Among those with prior college, the completion rate was 62.4%. For those without prior college, the completion rate was 42.7%. In attitudinal surveys discussed in section 2.11, most students indicated that they enjoyed learning in a post-secondary environment. However, it is plausible to surmise that students with prior college believed it was important to attend for a sufficient length of time and earn enough credits/clock hours to attain a formal certificate or other measure of completion.

5.1.4. Industry Credentials

Overall, 272 AF-TEN students earned 705 industry credentials (Table 19). Aside from welding credentials, these could include CPR, OSHA 10, Gold Work Keys and others. Students at Florida colleges averaged more industry credentials, likely because their welding program adhered closely to NCCER standards. Under NCCER, students at the Florida colleges could earn up to four separate industry credentials by the time they complete the college welding program. For example, 49 students at NWFSC earned 181 industry credentials, for an average of nearly four credentials per student. At Chipola College, 47 students earned 175 industry credentials. No student at Wallace Community College was listed as having earned an industry credential; at LBW, many of the credentials earned were CPR or OSHA 10.

Table 19: Earned Industry Credentials

College	Industry Credentials	Students with Industry Credentials
Wallace	0	0
LBW	174	117
Chipola	175	47
Northwest Florida	181	49
Pensacola	175	59
Total	705	272

Source: AF-TEN data entered in COMPETE database

5.1.5 Employment

AF-TEN has collected employment data for participating students beginning in fall 2012. At the time of this report, all data has been received from Florida workforce agencies; fiscal agent Wallace Community College is still anticipating some additional employment data from the Alabama Department of Labor before it files its final performance report later in 2016. As a result, this data should be viewed cautiously as it may change prior to formal closeout of the grant. In addition, focus groups and interviews indicated that many students expect to or will go out of the region for employment in Mississippi, Louisiana and other states. Agencies in those states were not contacted for this report; however, this total does include self-reported data from students who completed a grant exit survey and indicated employment outside the region.

Based on available data, a majority of participants – 32.4% -- gained employment after they left their AF-TEN programs. LBW, Chipola and NWFSC all had employment rates of approximately 40%, while the rates at Wallace and Pensacola were lower at 22% and 20%, respectively. It should be noted that Pensacola’s campuses are located close to the major shipyards of Alabama and Mississippi, and information on Pensacola completers came primarily from Florida workforce agencies.

To provide a comprehensive picture of employment, these statistics include AF-TEN students who were both incumbent and non-incumbent workers as well as those who completed their program of study and those who did not. As a result, the totals are not aligned with TAACCCT measures, which focus on employment of non-incumbent workers who also were completers. Data on TAACCCT measures is in the next section, 5.1.6.

Table 20: Employment of AF-TEN Students

	# of AF-TEN Students	# Students employed post-enrollment	Employment rate for students
Wallace	230	51	22.2%
LBW	382	149	39.0%
Chipola	56	23	41.1%
NWFSC	66	27	40.9%
Pensacola	99	20	20.2%
Total	833	270	32.4%

Source: AF-TEN data in COMPETE database

5.1.6 U.S. Department of Labor Outcomes

All TAACCCT grantees must report on nine outcomes annually, and these outcomes include student enrollment, achievement, program completion and employment. As noted in Table 4, AF-TEN exceeded the number of unique participants it planned to serve. With 833 actual participants, the consortium met its goal to serve at least 720 students. In addition, 442 of these students completed a TAACCCT-funded program of study, a figure nearly 100 higher than the target in AF-TEN’s grant application.

AF-TEN students also earned triple the number of credentials initially projected back in 2012. Students received 1,120 credentials in years 1-4 of the grant, compared with a target goal of 340 (Table 21). This increase appears due in part to the structure of the new Florida welding programs. Under the NCCER curricular model, students can earn up to four credentials by the time they complete a 12-month program. Many sites also have encouraged students to attain other credentials such as OSHA 10 safety training, which is included in this number. As noted in the paragraph above, more students than expected enrolled in AF-TEN and completed programs of study, thereby contributing to the number of credentials earned.

Among completers, 166 were incumbent workers. These students will not count in DOL employment metrics, as that category is restricted to students who are not incumbent workers. Currently, 73 non-incumbent workers were employed after completing a program of study. This is below the 427 outlined in the grant proposal, although this data should be viewed with caution as many students indicated they would leave the region for employment, and additional data from Alabama Department of Labor is expected prior to closeout of the AF-TEN grant.

Eighty-nine participants were enrolled in further education after completing their TAACCCT program of study, which was below the initial target of 115 students. This is not surprising given the feedback of students in attitudinal surveys and focus groups, as most students indicated their immediate need was to find a higher-paying job.

Looking only at college-related certificates and credentials, 530 students earned credentials of one year of time or less. Seventy-six earned credentials of one year or more; however, it should be noted that many AF-TEN students are still in their programs of study and these programs can last for up to two years.

Table 21: U.S. Department of Labor TAACCCT Measures

Measure	Targets for TAACCCT Program		
	Proposed in Application	AF-TEN Grant Data	Difference Final v. Proposed
1. Total Unique Participants Served	720	833	+113
2. Total Number of Participants Completing a TAACCCT-Funded Program of Study	346	442	+96
3. Total Number of Participants Still Retained in Their Program of Study or Other TAACCCT-Funded Program	293	198*	-95
4. Total Number of Participants Completing Credit Hours	447	698	+251
5. Total Number of Credentials	340	1120	+780
6. Total Number of Participants Enrolled in Further Education After TAACCCT-funded Program of Study Completion	115	89	-26
7. Total Number of Participants Employed After TAACCCT-funded Program of Study Completion	427	73**	-354
8. Total Number of Participants Retained in Employment After Program of Study Completion	323	15**	-308
9. Total Number of Those Participants Employed at Enrollment Who Received a Wage Increase Post-Enrollment:	66	21**	-45

*This number represents students retained from grant year 3 into year 4 (fall of 2015), plus new enrollees in fall 2015 and spring 2016, minus those who completed through March 31, 2016. As indicated in measure #2, AF-TEN had more students complete programs than anticipated.

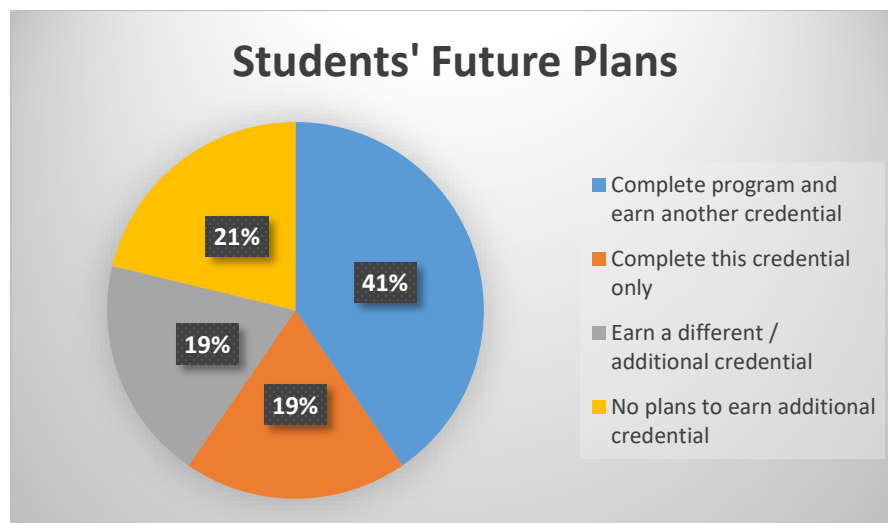
**AF-TEN expects to obtain additional employment data from the Ala. Department of Labor prior to filing its final performance report. However, wage data for completers in Alabama were not available on an individual student basis.

5.1.7 Student Exit Surveys

AF-TEN students were encouraged to complete an exit survey as they left the program. Staff at individual campuses noted that this was primarily done by those who completed the program and not by those who stopped out short of completion. Most of those completing the survey (78%) were from the Florida colleges; Wallace, the grant’s fiscal agent, cited difficulties in getting students to complete the survey which was available online or on paper. This was largely due to difficulties locating students, many of whom may have left the area to find employment near the Gulf Coast or in another state.

The exit survey examined student attitudes at completion and sought their impressions of the program as well as students’ future plans. Overall, 41% said they plan to earn another credential after completing their AF-TEN program, while 19% say they only plan to finish their AF-TEN program (Figure 7). Another 19% say they expect to earn a different or additional credential in the future, while 19% have no plans to earn other credentials. This is largely consistent with the findings of student focus groups throughout the projects. Most students say their main objective is to gain a higher-paying job, although some indicated an interest in further education and training at a future time.

Fig. 7: Future Plans



Source: AF-TEN exit surveys

Students had a positive impression of their courses and the value of this training in securing future jobs. Overall, 89% said they learned a lot in the courses, including 76% who strongly agreed with that statement (Table 22). About two-thirds agreed that taking these classes helped them get their current jobs and that the program was a factor in their ability to secure employment. In addition, 70% strongly agreed (and 19% agreed) that they have better job prospects after completing this program.

Table 22: Student Views on the Value of their AF-TEN Programs

	Strongly disagree	Disagree	Agree	Strongly Agree	Does not apply
I learned a lot in the courses I took	11%	0%	13%	76%	0%
Taking these classes helped me get the job I have now	8%	6%	19%	45%	23%
I don't have a job now, but I expect my participation in AF-TEN will help me get and keep future jobs	9%	6%	17%	43%	26%
This program helped me obtain a job in field after I finished	4%	4%	22%	46%	24%
I have better job prospects after completing this program	6%	2%	19%	70%	4%

Source: AF-TEN exit surveys

When asked about their individual courses, students generally believed that the courses were neither too difficult nor too easy (Table 23). Instead, 94% agreed that the courses covered what they needed to know in their occupational area. In addition, 90% said they were personally satisfied with the program (including 55% who strongly agreed with that statement), and 92% agreed or strongly agreed that they would recommend the program to other students.

Table 23: Student Satisfaction with Courses and Program

	Strongly disagree	Disagree	Agree	Strongly Agree	Does not apply
The courses were too difficult	15%	77%	2%	6%	0%
The courses were too easy	17%	75%	2%	6%	0%
The courses seemed to cover everything I need to know in a job in this area	4%	2%	49%	45%	0%
I am personally satisfied with the program	6%	4%	35%	55%	0%
I would recommend the program to other students	6%	2%	28%	64%	0%

Source: AF-TEN exit surveys

Some students said they received supportive services through the AF-TEN program or from their college. Based on original consortium plans, data were tracked based on whether

students received financial aid, educational advising, job placement assistance, and tutoring help. Overall, 61% found financial aid very helpful, while 59% had strongly positive views about educational advising (Table 24). Fifty-one percent of students found job placement assistance very helpful, while one-third had the same view of tutoring assistance. However, large groups of students did not receive one or more of these services, including 35% who cited no job placement assistance. Regarding advising and job placement assistance, campus personnel noted that much of this contact was informal in nature, such as unscheduled discussions between faculty members and individual students. With that in mind, it is possible that students did not view this informal communication as specific advising or job placement assistance.

Table 24: Views of AF-TEN Support Services

	Very helpful	Somewhat Helpful	Not at all helpful	Did not receive
Financial aid assistance	61%	4%	4%	31%
Educational advising	59%	14%	0%	27%
Job placement assistance	51%	12%	2%	35%
Tutoring assistance	31%	10%	2%	57%

Most students surveyed said they value work and enjoyed learning in college (Table 25). The latter finding is noteworthy, as some students in focus groups indicated they had unsuccessfully enrolled in college in the past. A large share of students also said they expect to succeed in whatever they do, and few said they signed up for AF-TEN because they saw no reasonable alternatives. Not surprisingly, 80% said they preferred education with a practical application such as the technical fields offered in AF-TEN. In addition, all exit survey respondents believed they had completed their program.

Table 25: Student Views on Education and College

	Strongly disagree	Disagree	Agree	Strongly Agree	Don't know
I enjoy learning in college	4%	0%	46%	50%	0%
I prefer education that has a practical application	10%	2%	45%	35%	8%
I enrolled here because I saw no reasonable alternative	18%	67%	12%	2%	2%
I expect to succeed in whatever I do	4%	2%	22%	70%	2%

More than two-thirds of survey respondents said they had a job, with only 17% indicating they had neither a job nor a job offer as they completed their studies (Figure 8). Of those with jobs, 72% said it was a long-term, permanent position and 79% said it was in their AF-TEN field

of study. Students in the survey also said they were working an average of 49 hours per week, or slightly more than full time.

Fig. 8: Employment of AF-TEN Students



Source: AF-TEN exit surveys

Looking five years into the future, most students also said they are likely to continue to be in their AF-TEN fields of study, even though many expect to be working for a different company (Table 26). Based on their skills and experiences so far, 80% of students also expect to receive a promotion within five years.

Table 26: Future Plans: Five Years from Now....

	Very likely	Somewhat likely	Not likely	Don't know
...do you expect to be working for the same company?	12%	28%	38%	22%
...how likely is it that you will be doing the kind of work you just trained for?	75%	15%	4%	6%
...how likely is it that you will have received a promotion?	59%	21%	0%	20%

Source: AF-TEN exit surveys

5.2. Impact Study Outcomes

PTB conducted an impact evaluation of AF-TEN throughout the grant period, from 2012 to 2016. The evaluation design is based on comparisons of newly enrolled AF-TEN students beginning in Spring 2013 to students enrolled in the previous welding programs during the two years prior to the grant at AF-TEN's two Alabama colleges, from 2010-2012. These institutions have available data on student demographics, employment, educational experience, and

performance that are directly relevant to creating propensity scores for use in matching. We used Propensity Score Matching (PSM) analysis based on a number of socio-demographic variables including age, gender, income, race, previous employment, and previous education level and achievement as co-variates in a multivariable logistic regression procedure to compare the historical sample of 2010-2012 students to the newly enrolled AF-TEN students at these two institutions (Guo & Fraser, 2010). This procedure was used to select a comparable group of comparison students from the historical sample. As recommended by Shadish and colleagues (2002) and by Pearl (2000), we used PSM to determine the subset of the historical sample that is statistically independent (un-confounded) based on comparison of the noted co-variates between the AF-TEN and historical samples. The resulting sub-set from 2012-13 represented our comparison sample for subsequent comparison to AF-TEN student outcomes.

Primary outcomes of interest were 1) program completion and 2) attainment of appropriate employment suited to AF-TEN training. We compared AF-TEN participants at the two Alabama colleges to welding students at the same two institutions during 2010-2012 prior to receipt of the AF-TEN grant –Wallace Community College in Dothan, Ala., and Lurleen B. Wallace Community College in Opp, Ala. – because these were the only AF-TEN institutions that had welding programs prior to the federal grant. The other three colleges, all located in Florida, used their federal grant to create welding programs where none existed at the time the grant was awarded.

PTB & Associates began the impact evaluation study in 2013. We first identified key variables for analysis from datasets that described student socio-demographic information, courses taken, grades given, credentials received, and AF-TEN programs attended. The evaluation team received student data from the Alabama colleges' institutional research (IR) offices and merged these data (based on college and student ID number) and reshaped it so that each student would have one observation with variables defining relevant outcome data.

PTB then identified students as being in the treatment or control group, determined by whether they were enrolled in any grant program year (from fall 2013 onwards). This split, described in methodological detail below, resulted in 393 students assigned to the control and 461 to the treatment group (n=854), where the treatment group was defined as students who participated in the AFTEN intervention after it was deemed to be fully operational in the 2014-15 and 2015-16 academic years. This resulted in a full sample of 854 for the impact study. (Note: PTB also conducted analyses to examine effects of program including students enrolled in the first grant year where treatment activities occurred, 2013-14, and we report these results for students “partially” exposed to the early treatment in separate analyses). PTB conducted descriptive analysis on the socio-demographic, educational attainment, and skill variables considered for a propensity score model.

From that point, PTB constructed a propensity score, using enrolled age, race, gender, three educational attainment variables, full vs. part time student status, Pell Grant eligibility, and

having a basic skills deficiency as potential predictors of treatment assignment. We examined covariate balance and performance of regression models with three potential outcomes (employment after graduation, credits earned, GPA) by examining standardized differences and variance ratios in the raw and matched analysis. We also evaluated several PS methods, including Propensity Score Matching (PSM) and PS Inverse Probability Weighting (IPW). The PS IPW was most effective in balancing covariates and contending with noted differences in group size (Guo & Fraser, 2010).

The following provides a detailed technical overview of the impact evaluation analysis and results to date. Note that at the time of this writing, wage data were not yet available for analysis. The current results reflect available educational and employment outcomes data including the specific variables and outcomes described earlier.

Methods

The PS IPW analysis used a propensity score method, termed inverse-probability weighted regression-adjustment (IPWRA). IPWRA estimators use weighted regression coefficients to compute averages of treatment-level predicted outcomes, where the weights are the estimated inverse probabilities of treatment. The contrasts of these averages provide the estimated treatment effect, in this case of participation in the AFTEN program either 1) anytime during the grant period from 2013-2016 (including the period in 2013-14 that we determined to be “partial” implementation) and 2) during the “full implementation” period from 2014-2016.

IPWRA estimators use probability weights to obtain outcome-regression parameters that account for the problem arising from the fact that each subject is observed in only one of the potential treatment outcomes. The adjusted outcome-regression parameters are used to compute averages of treatment-level predicted outcomes. The contrasts of these averages provide estimates of the treatment effects. IPWRA estimators use a model to predict treatment status, and they use another model to predict outcomes.

Table 25 summarizes results of these outcome analyses. As noted earlier, we ran two versions of these outcome models: 1) including all treatment participants exposed to any intervention during the grant period (partial and full implementation) and 2) including only participants during the period from 2014-2016. In both cases, the same historical comparison sample was used in the analysis.

We found that GPA increased substantially when all participants were included, with an Average Treatment Effect (ATE) of AFTEN enrollment of 0.813 ($p < .0001$), which indicates nearly a full grade higher (on a 4.0 scale) GPA for treatment participants compared to historical comparison. There is still a positive effect on GPA when the sample is restricted to 2014-2016, but the improvement is .176 ($p < 0.09$), or equivalent to about a graduation within a letter grade (eg, improvement from B- to B).

The ATE for credit hours was also significantly affected by AFTEN participation. There was a treatment effect of plus 5.04 hours (more than 5 more credit hours completed; $p < 0.024$) in the 2013-2016 group, and a significant but negative effect of minus 19.9 hours in the 2014-2016 group ($p < 0.001$). There were also significant ATE differences in the 2013-2016 group for possessing credentials at program completion (an increase of 11.9%, $p < 0.033$), and for employment during or after enrollment (an increase of 19.5%, $p < 0.001$). We saw no statistically significant effects of AFTEN enrollment on possessing credentials or employment in the 2014-2016 group analysis.

Table 27: Summary of AFTEN Treatment Effects on Selected Outcomes

Summary of Treatment Effects	Any Exposure to Intervention 2013-2016			Enrollment only during full implementation years 2014-2016		
	Average Treatment Effect	Mean Level/ Proportion	P value	Average Treatment Effect	Mean Level/ Proportion	P value
GPA	0.813	2.1	<0.001	0.176	2.61	0.09
Total Credit Hours	5.04	22.65	0.024	-19.9	33.09	<0.001
Possess Credentials	11.9%	35.7%	0.033	-0.09%	40.7%	0.985
Employed during and after enrollment	19.5%	27.8%	0.001	-0.50%	43.2%	91.5%

Overall, AFTEN participation produced mainly positive effects on educational and employment outcomes, based on this comparative analysis before and after the grant program. It is interesting to note the reduction in credit hours among the treatment group during the 2014-2016 period. While this evaluation was not designed to answer that question, it raises the question of whether other events in the local area, job market, or catchment group for program enrollment at the Alabama colleges may explain reduced credit hours. For example, the availability, or lack of availability, or jobs for program completers could lead some students to reduce their credit hours of enrollment (to seek other employment).

Appendix D provides a technical summary of the propensity scores (IPWRA) for each of the variables used to create the treatment and comparison groups.

6. Other Outcomes

Aside from student outcomes, it is important to analyze the impact that TAACCCT projects have had on the communities they serve. This section will examine outcomes for colleges participating in AF-TEN, as evidenced by site visit interviews and a final concluding survey of the five colleges in the consortium. It also will examine key grant deliverables and their status. Finally, the section will include feedback from employers who have been active in the program during the past four years.

6.1. Outcomes for Colleges

From site visit interviews and observations, college officials believe that the AF-TEN grant has had a significant impact on postsecondary institutions. With more than 40% of grant funding focused on equipment – with purchases totaling \$4.3 million – the enhanced capacity of colleges is the most often-cited outcome for these institutions.

- The Wallace main campus in Dothan expanded from 36 to 60 the number of welding booths since the start of the grant.
- LBW has seen its annual welding enrollment increase from 35 to 60 as a result of six new booths and two simulators, and the electronics program doubled to 100 students largely due to new technology that promoted a flipped classroom approach with students viewing lecture content online.
- Chipola, NWFSC and Pensacola all launched welding programs through the AF-TEN grant. Chipola initially created 15 welding booths through AF-TEN and eventually expanded this number to 29. Pensacola purchased equipment to launch welding programs at two sites, while NWFSC has structured its new program to provide both day and evening cohorts of students.

In a final survey sent to administrators at all AF-TEN institutions, the five colleges indicated that the grant has had a major positive effect on their institutions (Table 26). All colleges strongly agreed that AF-TEN has benefitted their institutions and that student enrollment has increased as a result of the grant. The colleges also believed that students had benefitted from the \$4.3 million in new equipment purchased under the grant. Colleges also agreed that students are succeeding in the program as evidenced by achievement and completion rates. A stronger curriculum was another positive cited by the colleges.

Table 28: College Views of AF-TEN’s Impact*

	Agree	Strongly agree
AF-TEN has benefitted my college	0%	100%
My college has strengthened curriculum and delivery	40%	60%
Students have benefitted from AF-TEN equipment purchases	0%	100%
Students are demonstrating increased achievement	40%	60%
Student enrollment in these programs has increased	0%	100%
Student completion rates in these programs have increased	60%	40%

*No college disagreed with any of these statements

Source: Final survey of AF-TEN colleges

In addition, colleges believe their programs will continue to undergo growth in the near term, including 80% who say this outcome is “extremely likely” (Table 29). All colleges also believed they are likely or very likely to add new credentials and new welding equipment in the future. Significantly, no college believed it would have to cut back on its welding programs in the near future. As an indication of this strong demand, two of the five colleges – NWFSC and Wallace – reported current wait lists to enroll in welding technology, indicating both consumer and employer demand for this instruction. Said one official, “We have a 90% placement rate for welding graduates at Northwest Florida State. These students’ average pay is \$1,500 a week, a large increase from their minimum wage jobs in the service industry. Our high placement rate of graduates in high demand/high wage jobs is our major success.”

Table 29: College Plans for the Future

	Extremely unlikely	Unlikely	Not sure	Likely	Extremely likely
Our welding program will continue to grow	0%	0%	0%	20%	80%
We will continue to work with other colleges in the consortium	0%	0%	40%	40%	20%
We plan to add credentials in welding	0%	0%	0%	60%	40%
We may have to cut back on welding programs in the future	60%	40%	0%	0%	0%
We expect to make additional improvements in welding facilities and equipment	0%	0%	0%	40%	60%

Source: Final survey of AF-TEN colleges

One area where colleges were unsure of the future is on the issue of whether these colleges would collaborate again. AF-TEN represented the first time these five institutions have partnered in a coordinated way on a technical education program. Yet while located in the same

large geographic area, these five colleges have some significant differences, as the Florida colleges are on or near the Gulf Coast while the Alabama colleges are located inland in smaller communities. Over the course of the grant, administrators have noted that coordination can be a challenge given different state rules and regulations; one example is that Alabama relies on a credit hour system while Florida uses a clock-hour system. As a result, the AF-TEN project director has noted, some of the online/hybrid course material developed in Alabama may have little practical use in Florida which is dependent on seat time for clock hours.

Among the colleges, only LBW thought it was extremely likely that it would work with other colleges in the consortium again, while NWFSC and Pensacola described it as likely. Wallace and Chipola were unsure.

As noted elsewhere, the faculty at fiscal agent Wallace visited all of the Florida colleges regularly during grant start-up to help them in selecting equipment and planning the layout of their programs. By the middle of the grant, however, all colleges had hired knowledgeable faculty and were operating programs at capacity. Meetings of the consortium also decreased during this time, as the project director said one-on-one meetings and calls were most useful to resolve individual procurement challenges. Given these factors, it is not surprising that some colleges are unsure if they will collaborate again. Nonetheless, the relationships created by AF-TEN have spurred cooperation in unexpected ways. Perhaps the strongest example is NWFSC loaning its mobile welding lab to Pensacola in 2015-16 to meet surging demand at Pensacola's two welding sites. That event would have been unlikely to happen had it not been for the AF-TEN partnership.

Another outcome for colleges was the expansion of partnerships in the region. AF-TEN was the first time these five colleges had partnered together, and officials from the Florida colleges said they welcomed input provided by their Alabama college partners regarding how to create welding programs. Employers also participated as partners, serving on advisory panels, donating consumables, and advising colleges on equipment purchases. Partnerships with workforce boards/agencies appeared sporadic, based on interviews and observations. In Alabama, the state Department of Labor did provide employment data but charged AF-TEN for running this information, so this was at best a limited example of partnership. State officials in Florida also required payment to process employment data; however, some colleges were successful in gaining this information from their local one-stop centers at little or no charge reflecting the mutual interest of both parties in obtaining this information.

6.2. Grant Deliverables

In its application to US DOL, AF-TEN outlined a variety of activities and deliverables for the grant. This subsection examines the extent to which colleges accomplished those targets. Table 30 provides an overview of completion status of these main deliverables.

Table 30: AF-TEN Deliverables

Deliverable	Status
Identify clear educational pathways with defined multiple entry points leading to certificate/degree	Complete
Design of Online/Hybrid Course Modules	Complete
Professional Development for Online/Hybrid Course Modules	Complete
Self-Paced Developmental Course Modules	Complete
Assessment Process for Prior Learning	Complete
Creating Community-Level Industry Advisory Boards	Complete
Engaging Employers in Curriculum Development and Implementation	Complete
Curriculum for every course, certificate, AAS program including syllabi and outline	Complete
Process to Engage Workforce Boards	Complete
Remediation curriculum with skill-specific modules and contextualized developmental instruction	Complete
Create Job Search Curriculum with Coaching, Mock Interviews	Complete
AF-TEN Web Site Linking Students & Employers	Changed – consortium concluded it was unworkable
Disseminate Innovative Practices via NTER	Complete but through different platform – dissemination through Skills Commons
New Articulation Agreements	Changed – limited work due to lack of student demand

By Year 4, the program had completed 12 of its 14 original deliverables. Among those complete is one for the design of online/hybrid course modules at LBW and another for instructor professional development for these modules. As noted elsewhere in this report, the work has focused largely on industrial electronics, where instructors deliver lectures online allowing them to spend more time in labs and giving students the flexibility to view the lectures from any location on a 24/7 basis. This work involved the use of tegrity lecture capture as well as student development of electronic portfolios. Much of this material is available for public use on www.skillscommons.org. AF-TEN also has completed self-paced developmental course modules and an assessment process for prior learning, and the material is available to all member colleges with an interest in using them.

In some cases, deliverables are complete even though AF-TEN changed its strategy for achieving the goal. One example is developing a process for engaging workforce boards. In Year 1, the AF-TEN project director sought for the consortium to adopt a central unifying process.

However, differences between the state-specific operation of boards in Alabama and Florida made it difficult to design one process, according to the project director and campus administrators. Instead, each campus has developed its own process, and the final deliverable is a document that summarizes these varied approaches so that colleges may view and adopt certain strategies as needed.

Also complete is a job search curriculum developed by career coaches that includes a mock interview process to prepare students to interact with prospective employers. This was a central activity at LBW, where employer representatives from Power South participated in mock interviews for electronics students. Some of this job search curriculum has been accepted for dissemination to Skills Commons, including a “Two-Minute Commercial” activity. In this exercise, students develop a general script to respond when asked to talk about themselves. Their four-part “commercial” includes time devoted to personal and education information, early career/life experiences, recent work history and reasons why the student came in for the interview. Other elements of this curricula uploaded to Skills Commons include a resume checklist and guidance on questions to ask a prospective employer during an interview. AF-TEN also has disseminated other practices and resources to Skills Commons, including syllabi for a course on special projects in welding, an online course with safety-related lectures, a hybrid course in blueprint reading and hybrid/blended learning approaches for teaching alternating current and direct current.

Each college has established industry advisory boards for their AF-TEN programs. While initially there was some thought of developing an advisory board for AF-TEN as a whole, the project director and campus administrators concluded that employers would provide more detailed input with advisory committees for each specific campus program. College administrators in Florida noted that employer input was a factor, for example, in selecting equipment for new welding programs. Self-paced developmental course modules and prior learning assessment guidelines also were developed as planned through the grant; however, few colleges seemed to be adopting them. The project director noted that this may be another casualty of different state rules and regulations for Alabama and Florida; nonetheless, the material is available for colleges to use as guidance in designing or updating their strategies.

AF-TEN changed one originally planned deliverable – dissemination of grant-delivered materials via the National Training and Education Resource (NTER) platform of open-source material. Upon closer examination, the project director found the significant cost of NTER was a deterrent to its use by the consortium, as no funding had been budgeted for this expense. Instead, he and campus partners concluded that Skills Commons would be a more cost-effective means of dissemination, and www.skillscommons.org has accepted multiple AF-TEN curricula.

Two deliverables were not completed – development of an AF-TEN web site and new articulation agreements between two- and four-year colleges to facilitate student transfer to bachelor’s degree granting institutions. Wallace took steps to develop a common website;

however, some consortium members expressed concern that U.S. DOL licensing requirements may not be consistent with requirements for the colleges based on internal and state policies. The AF-TEN project director said he repeatedly sought advice from his program officer and other DOL personnel on this issue, and he did include it as a question for DOL in his quarterly grant reports for more than two years. He said that when he finally received DOL input in 2015, the program was entering its final year with all programs at enrollment capacity (including some with wait lists). As a result, the consortium opted not to develop a web site given the timing and those factors. The project director notes that billboards and other branding efforts in the early years of the grant helped drive student interest in AF-TEN programming.

The 2012 grant application also called for new articulation agreements between two- and four-year colleges so that students could more easily transfer to four-year colleges to pursue engineering or science degrees. However, the AF-TEN project director said no student expressed a desire to move immediately to a four-year degree program, and the director viewed it as a low priority given other grant needs. AF-TEN member colleges have initiated discussions with two four-year colleges and universities on the issue of articulation, which is perhaps most likely among LBW’s electronics program for students who may seek a bachelor’s degree in electrical engineering. Yet no student has expressed an interest in continuing to this degree.

6.3 Expert Feedback on Curriculum

AF-TEN in summer 2016 sought the feedback of a welding expert on coursework developed by member colleges and submitted for national dissemination on the SkillsCommons network, www.skillscommons.org. Through SkillCommons, AF-TEN provides courses and course material that can be utilized by any institution as an open education resource. The expert reviewed three welding courses of AF-TEN institutions:

- Gas Tungsten Art Welding (GTAW) Stainless Pipe Lab (Course 1 in Table X)
- Shielded Metal Arc Welding (SMAW) Fillet Lab (Course 2 in Table X)
- Gas Metal Arc/Flux Cored Arc Welding (GMAW) Lab (Course 3 in Table X)

Curriculum in all three courses earned strong reviews, with strengths cited such as: well-developed course objectives; clear and precise lesson plans; and clearly written lab objectives. Table 29 provides a summary of responses on a rubric developed by PTB and AF-TEN for the expert review.

Table 31: Subject Matter Expert Review

	<u>Course #1 - GTAW</u>		<u>Course #2 -SMAW</u>		<u>Course #3 - GMAW</u>	
	Agree	Strongly Agree	Agree	Strongly Agree	Agree	Strongly Agree
The lesson plan for this course all essential topics	✓		✓			✓

The labs for this class are appropriate for welding students	✓		✓		✓	
The labs for this class are clearly stated and easy for teachers to use		✓		✓	✓	
The rubric used for this course is easy to understand and use	N/A	N/A	N/A	N/A		✓

Other choices in the rubric were Strongly disagree, Disagree and Not sure, none of which were checked for any of the questions for the courses.

6.4 Outcomes for Employers

Employers have played various roles in AF-TEN, such as advising colleges on new equipment, reviewing curricula, serving on advisory boards, and interviewing/hiring program graduates. With long-standing programs in welding and electronics, Wallace and LBW could count on long-standing relationships with regional employers. In using the grant to create welding programs, Chipola, NWFSC, and Pensacola forged new relationships. As these three Florida colleges also had to hire instructors for their new AF-TEN programs, these faculty members brought with them information about regional Florida employers and their particular needs. Florida colleges also sought to make inroads with the Gulf Coast Industry Association (GCIA), which operates in a unique space in the Florida Panhandle, Mississippi and Louisiana. A regional association of industry experts, GCIA conducts its own site visits, reviews curricula and can issue endorsements of specific technical education programs. Both NWFSC and Pensacola established relationships with GCIA, seeking their review. Given these diverse factors, this section of the report includes information from interviews with college faculty and administrators, interviews with Alabama employers, and interviews with GCIA, which had multiple employers review welding programs at two Florida colleges.

6.4.1 Business Involvement in Programs

As noted earlier, the AF-TEN project director originally envisioned a single large advisory board for the consortium, but this proved impractical given the distance between the members and the reality that colleges were in various stages of program development. As a result, each college created its own advisory boards for its AF-TEN programs, with each program recruiting members by Year 2 of the grant. At least three colleges – Wallace, NWFSC and Chipola – sought business input into its equipment purchases under the grant, and staff said this input was important in configuring classrooms and labs. Businesses also contributed consumables and other in-kind materials to AF-TEN programs. Both instructors and career coaches say that employers call frequently asking about hiring students. Businesses have heard about AF-TEN via community billboards and through relationships they have with instructors at the consortium colleges. “Employers call all the time looking for welders,” one instructor said.

Instructors note that employers in the region are seeking a variety of welders, including those with expertise in TIG, pipe, robotic, laser, and x-ray welding. “Some employers will come in and see if students can pass a test. If so, they can get hired,” one instructor said. Nonetheless, most employers are interested in students after they complete a short- or long-term program. Other examples of AF-TEN employer involvement include the following:

- Spanish Trail Lumber has provided part-time field jobs for participants;
- Green Circle Bio Energy and Marianna Airmotive offers plant tours to AF-TEN students;
- Thompson Tractor-CAT has tested students for welding competencies;
- Power South helped LBW conduct mock job interviews for electronics students; and
- Pensacola scheduled a welding competition with employers serving as judges.

One campus official noted that while some employers work with the college’s career center to advertise jobs, they often interact directly with faculty. At one campus, the welding instructor has more than 30 years of experience and is well known in the field. As a result, a campus official said, employers tend to make direct contact with him:

“They can work through our career center to advertise jobs. But many, many times, they will call our full time faculty member and ask for informal recommendations, so faculty will often times identify two or three students that would fit what they’re looking for and send them their way. It’s an informal network.”

Another respondent noted that employers are willing to invest in future and current employees because it is extremely difficult to find qualified, reliable workers. “[Employers] are to the point where they’re looking actually looking outside their boundaries in other states and paying for them to move to get them if they have that welding skill,” the official said.

In its final survey of colleges, PTB asked member colleges whether business involvement has increased as a result of participation in AF-TEN. All five colleges said involvement as increased, including three (LBW, Chipola and Pensacola) who strongly agreed that employer involvement has risen since launch of the grant. “We have students exiting class and finding jobs immediately,” one respondent said. Another noted that regional shipyards are employing AF-TEN graduates, providing high wages as well as opportunities for individuals to escape a cycle of generational poverty.

6.4.2. Employer Feedback

PTB contacted employers serving southeast Alabama and the Florida Panhandle for their views on welding and electronics programs offered by the AF-TEN colleges. In Alabama, employers generally praised the programs, with some exceptions. In Florida, a coalition of employers reviewed programs and provided input. Overall, this section of the report includes input from nearly a dozen employers.

One employer who recently hired three welding students in Alabama described the employees as “very good welders and workers,” including one who started work while finishing a welding certificate. “For the most part, they jump right in and catch on quickly.” This employer also donates welding supplies to the college. “They do a great job preparing kids,” the employer stated. Another Alabama employer said he regularly hires welding graduates and most – though not all – have worked out as employees. This employer specializes in metal inert gas (MIG) welding, the process of using electricity to melt and join pieces of metal together – something typically done in manufacturing and fabrication shops. This employer has found that MIG welding is a secondary focus of the college programs, which tend to emphasize stick, TIG and pipe welding. “We give them opportunities,” he noted, although some additional training is typically necessary although this is not uncommon in most welding settings.

In Florida, this evaluation relied heavily on the work of the Gulf Coast Industry Alliance (GCIA) for employer feedback. NWFSC and Pensacola both sought onsite reviews and endorsements of their welding programs from GCIA, which conducts independent reviews of occupational education offerings at local colleges. As these reviews were ongoing in 2015-2016, the colleges asked PTB not to contact employers directly but to obtain feedback from GCIA at the conclusion of the alliance’s work, which PTB did in summer 2016. According to GCIA, a review typically consists of two components – an onsite visit and review of a college program plus surveys of employers that have employed graduates. GCIA’s director said a site visit typically examines staffing of the education program, facilities, learning and training materials/content, safety procedures and level of employer engagement. Two to five subject matter experts conduct the visit and grade programs on up to six questions with a maximum possible total of 60 points. In addition, GCIA asks colleges for names of employers who rate the programs on a Likert scale, typically from low achieving (a score of 1) to high performing (a score of 5). These factors are analyzed as part of an industry confidence index.

Based on these reviews, NWFSC received a score of 5.2 out of 7, which qualified the program for the bronze level of endorsement. GCIA’s director told PTB that this rate is above average and fits into the top 25% of all programs surveyed, as more than half of reviewed programs receive no endorsement. GCIA also visited Pensacola and designated this welding program as an “emerging partner.” GCIA in particular found that instructors at Pensacola had strong credentials and maintained strong backup documentation on students and their work. No final grade was available yet, however, as the college must wait for any endorsement until two years after graduating its first completers. NWFSC enrolled its first students at the end of Year 1 of the grant – meaning that two full years had passed since the first completers – while Pensacola first enrolled students near the end of Year 2. GCIA noted that Pensacola’s program soon will be eligible for a full review.

One limitation in employer input is that many AF-TEN completers move away from south Alabama and the Florida Panhandle to gain employment. Faculty members noted that local employers may pay only \$11-18 per hour while jobs in offshore oil rigs or Louisiana shipyards

pay up to \$40 an hour. This is evident by the employment information provided by AF-TEN completers in their PTB-designed exit surveys. In these surveys, students cite employment as far away as Pascagoula, MS. AF-TEN instructors maintain formal and informal lists of students and their employers and regularly talk to students about alumni and their employment. This is perhaps most evident at NWFSC, where the instructor displays a large U.S. map with pins showing locations where his students are currently employed. The instructor said he keeps this map in a prominent place to show students on a daily basis the potential to gain productive employment through the program. “Around here the pay is only about \$13 an hour,” the instructor said. But there are higher-paying opportunities closer to the coast or on oil rigs, “so students often are more interested in these jobs.”

7. Conclusions and Recommendations

7.1 Conclusions

With the AF-TEN program concluding in fall 2016, the following are among major accomplishments of the program:

- AF-TEN colleges surpassed their student enrollment and completion targets.
- The grant appeared to have a major impact on colleges, particularly the \$4.3 million in new equipment that helped increase institutional capacity and student enrollment.
- The program achieved most of its original deliverables, including more hybrid/blended learning coursework, engagement of employers and workforce boards, job search curriculum and dissemination of effective practices.
- Three colleges in Florida established welding programs where none had existed prior to the grant, and two Alabama colleges expanded their offerings in response to local demand and changes in the industry.
- Students had positive views of the program, their instructors, and available support services.
- Though limited, data from employers indicated that most were satisfied with the AF-TEN offerings.

In addition, an impact study comparing AF-TEN students to a similar comparison group showed extensive gains for the TAACCCT participants. In grade point average, credits earned, program completion rates and employment, AF-TEN students from 2013 through 2016 showed gains compared to the comparison group. The employment data is noteworthy, as the consortium is still collecting employment information through mid-fall 2016.

The consortium also faced some challenges, including the following:

- Support services and their use by students were not consistent across campuses, as some institutions had more activities than others.

- Different state and individual campus policies – combined with lack of clarity from federal officials – limited some outreach efforts, such as development of a web site for the consortium.
- Information on employment of AF-TEN completers may be limited due to several factors. Students may leave the region in search of better-paying jobs in other states or on offshore oil rigs, and official employment data is only available from the state governments of Alabama and Florida. In addition, employment data from the Alabama Department of Labor does not specify whether students are enrolled in their occupational field after leaving their program, although students provided some sector-related data in their final exit surveys.

7.2 Recommendations

This subsection is divided into two parts – recommendations for AF-TEN-member institutions going forward and recommendations for colleges that may consider an AF-TEN-type program in the future. The recommendations for other colleges reflect both the successes as well as lessons learned from this grant.

Recommendations for the Consortium:

Colleges should continue to partner with each other. One unexpected outcome in AF-TEN is that colleges saw value in the somewhat different curricular approaches of other member institutions. With that in mind, one recommendation is for the colleges to continue to partner and learn from each other’s programs. Curricular differences were generally evident by state, with Alabama colleges offering more conventional short- and long-certificate programs in welding while Florida colleges with brand new welding programs opted for NCCER curricula that includes stacked credentials as students can earn up to four different industry credentials in addition to a college credential. By the end of the grant, however, instructors at Alabama colleges indicated greater interest in exploring NCCER options they saw at work in Florida. For their part, Florida colleges appeared to realize that their shorter, year-long programs – with an emphasis on plate welding – could be broadened to include the pipe welding components in the Alabama programs, where programs last up to two years. As a result, there are ample reasons for colleges and, in particular, their welding instructors, to remain in close contact moving forward.

Encourage and expand employer reviews of programs. The independent employer assessments done by the Gulf Coast Industry Alliance is a model for AF-TEN colleges to monitor and follow wherever possible. A coalition of employers, GCIAC conducts independent reviews of welding and other technical programs, which can result in valuable endorsements of the college programs. NWFSC already has received an endorsement, and Pensacola is on its way for such review. Undergoing GCIAC review should be a priority for Chipola College as well as the Alabama institutions as they seek to remain current in industry trends.

Explore options for more ‘flipped classrooms.’ Other colleges in the AF-TEN consortium should consider adopting the ‘flipped classroom’ approach developed by LBW for certain elements of its welding and electronics programs. Under this approach, students through lecture

capture technology could view lectures on safety and basic course material online 24/7. This innovation then allowed instructors to serve more students in class time and students could engage in more hands-on laboratory activities. This could be particularly useful at Florida colleges that have heavy demand for welding. While Florida colleges rely on clock (seat) hours, colleges could work with their state leaders to incorporate online/hybrid components in welding or other occupational programs as they can serve more students and do so in an efficient manner.

Recommendations for Colleges Considering an AF-TEN-Like Program:

Build in Planning Time. Colleges would be well served to invest time in planning for a multi-institution, multi-state and multi-program initiative. In AF-TEN's case, the grant required colleges to start programs as soon as possible, which for Wallace and LBW meant enrolling students shortly after grant receipt because of their existing welding programs. This led to a sense of "flying a plane while building it," since Wallace and LBW made major technology upgrades and equipment purchases while some AF-TEN students were already in the program. To their credit, these colleges worked quickly to designate AF-TEN site coordinators, hire career coaches and, in the case of Wallace, hire a consortium-wide AF-TEN director. At the Florida colleges creating welding programs, planning also was essential. As might be expected, those involved in writing this grant had limited knowledge of how to build a welding lab from scratch using existing campus space. In addition, faculty members ultimately hired by the Florida colleges wanted input into the structure of classes and lab space. Having six months to a year to plan for AF-TEN-like improvements likely would give colleges sufficient time to ensure a successful program launch. Planning time can ensure buy-in at all levels, allow time for hiring, equipment purchases, and curricular development. It also could be valuable time needed to assess further the state procedures, laws and regulations that might affect the partnership.

Create Mentoring Relationships: Officials at the Florida AF-TEN colleges said they welcomed site visits by welding instructors from fiscal agent Wallace to provide input into their equipment purchases and the layout of welding structures. They viewed this support as helpful even if they did not ultimately take all of the advice provided by Wallace. Instead, they factored it into their decisions alongside employer involvement. It was clear then, that having one college serve as a mentor or advisor to a new welding program was an effective strategy.

Adopt Online/Hybrid Approaches Where Possible: The online/hybrid courses developed by LBW in welding and electronics are innovative and worthy of replication in other sites. Under this approach, the college used online platforms and lecture capture technology so students could view lectures about theory, safety, and other topics on a 24/7 basis outside class time. Covering everything from electrical concepts to blueprint reading and safety, these instructional modules can be adapted by many colleges and can build capacity of colleges to enroll more students. As noted in the report, LBW nearly doubled its electronics enrollment in part due to these new courses.

Support Rigorous Evaluation: While TAACCCT grants required external evaluation, there are many steps in the evaluation process that can be of value in helping colleges collect feedback and make improvements. One important element is to collect solid baseline data on students and their completion rates in order to document the impact of any changes. Another key step is collecting input from faculty and employers. As one of several “consumers” of college technical programs, employers can offer targeted feedback on the quality of instruction and the employability of program completers.

- Agree
- Strongly agree
- Don't know

7. I believe education is important for finding a good job.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

8. I prefer education that has a practical application.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

9. I think my skills aren't rewarded in education.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

10. I tend to do well in school/college.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

11. I'm enrolled here because I see no reasonable alternative.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

12. I'm nervous about resuming my education.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

13. I need some help to be ready for college.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

14. I will achieve all of my educational objectives in this program.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

15. I will successfully complete this program.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

Don't know

16. Through this program, I will attain a strong set of welding skills that I can use in future jobs.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

17. This program will enable me to pursue future education to improve my job skills.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

18. This program will help me obtain a job in the field after I finish.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

19. I will have better job prospects after I complete the program.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

20. I will get a better job after I finish the program than I had before I enrolled.

- Strongly disagree

- Disagree
- Agree
- Strongly agree
- Don't know

21. I am personally satisfied with the program.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

22. I would recommend the program to other students.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

23. I have told people I know about the program.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

24. If I had the chance to decide again, I would enroll in the program.

- Strongly disagree
- Disagree
- Agree
- Strongly agree
- Don't know

Appendix B: AF-TEN Student Exit Survey

Name of Student:

Student DOB:

Student ID:

College:

Date:

You are receiving this questionnaire because you either completed your educational program or indicated that you would not be returning the next term.

1. Which of the following best describes your current status? *(Please select the answer that best applies.)*

- I completed and earned a certificate.
 - I completed and earned a degree.
 - I'm leaving or putting my education on hold because...
 - I am ill.
 - I have a job-related injury.
 - I have financial reasons.
 - I'm starting a new job.
 - I must deal with work requirements or changes at work.
 - I have family obligations.
 - I have moved or am moving out of the area.
 - I received a dismissal for academic reasons.
 - I received a dismissal for disciplinary reasons.
 - Other *(please specify below)*
-

2. Do you plan to complete or earn any work or education certificates in the future? *(Please select the answer that best applies.)*

- Yes, I plan to both complete the certificate I started to work on and earn an additional certificate
- Yes, I plan to complete only the certificate I started to work on

- Yes, I plan to earn a different or additional certificate (please describe below)
- No

3. Do you plan to complete or earn any education degrees in the future? (Please select the answer that best applies.)

- Yes, I plan to complete both the degree I started to work on and another degree
- Yes, I plan to complete only the degree I started to work on
- Yes, I plan to earn a different or additional degree (please describe below)
- No

4. How satisfied are you with the education program in which you just participated? Mark one for each row.

	Strongly agree	Agree	Disagree	Strongly disagree	Does not apply
a. I learned a lot in the courses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. My participation in the courses helped me to get the job I have now.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I don't have a job now, but I expect my participation in the program to help me to get and keep jobs in the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. This program helped me obtain a job in the field after I finished.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. I have better job prospects after completing the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. The courses were too difficult.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. The courses were too easy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. The courses seemed to cover everything I will need to do in a job in this area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. I am personally satisfied with the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. I would recommend the program to other students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. **Have you received any of the following types of assistance from the college? If yes, how helpful was that assistance? (Mark one for each row.)**

	Received assistance		How helpful the assistance was		
	Yes	No	Very helpful	Somewhat helpful	Not helpful
a. Financial aid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Educational advising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Job placement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Tutoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. **Have you worked with any businesses in any of the following types of cooperative arrangements with the college? (Mark one for each row.)**

	Yes	No
a. Internship at the business	<input type="checkbox"/>	<input type="checkbox"/>
b. Joint projects as part of class work	<input type="checkbox"/>	<input type="checkbox"/>

If you answered No to questions 6a and 6b, skip to question 8.

7. **Please assess the usefulness of your participation in internships or other cooperative arrangements with local businesses. (Mark one for each row.)**

	Strongly agree	Agree	Disagree	Strongly disagree
a. I developed a relationship that seems likely to or that did to turn into a job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I better understand what skills I need to develop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I feel more motivated to continue my education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. I learned that I would not fit well in the manufacturing job area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 1) What was your primary reason for enrolling in the program? Check only one response.
- a. Start a career in welding ___
 - b. Start a career in electronics ___
 - c. Get a promotion ___
 - d. Get a better job at another company ___
 - e. Increase salary at my current job ___
 - f. Pursue further education after the program ___
 - g. Other (please specify): _____

- 2) Do you believe that you successfully completed this program (did you achieve your goals)?
- a. Yes ___
- b. No ___
- c. Don't know ___

8. Which of the following describe your attitudes towards education? (Mark one for each row.)

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
a. I enjoy learning in school/college.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I believe education is important for finding a good job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I prefer education that has a practical application.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. I think my skills aren't rewarded in education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. I tend to do well in school/college.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. I'm enrolled here because I saw no reasonable alternative.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. I am nervous about resuming my education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. I need some help to be ready for school/college.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Which of the following describe your attitudes towards work? (Mark one for each row.)

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
a. I expect to succeed in whatever I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I believe success mainly depends on being willing to work hard.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Finding a good job is largely a matter of luck.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Going to work helps to give my life meaning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. If I had a choice, I wouldn't work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Do you currently have a job or job offer? (Please select the answer that best applies.)

- Yes, I have a job
- Yes, I have a job offer
- No

If you answered No to question 10, skip to question 15.

11. Is your current job or job offer a permanent/long-term position or a temporary position?

- Permanent position
- Temporary position

12. Is your current job or job offer in the area of training you have just completed?

- Yes
- No

13. What of the following occupations best describes your job or job offer?

- Welding/metalworking
- Electronics
- Other

14. If you have a current job or job offer, please provide the following information.

Name of company _____

Number of hours per week _____

Hourly wage \$ _____

15. Thinking ahead to 5 years from now, how likely would you consider each of the following?
(Mark one for each row.)

	Very likely	Somewhat likely	Not likely
a. I will be at the same company.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I will be doing the same kind of work as I have just been trained for.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. I will have received a promotion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. We would like to contact you in 6 months to learn whether this program has helped you. Please provide the best information you can on how to locate you.

Street address: _____

City: _____ **State:** _____

Home telephone:

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 -

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 -

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Cell phone:

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 -

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E-mail address: _____

17. In case we have difficulty locating you, please provide the name and contact information for a friend or relative who would know how to find you in 6 months.

Name: _____

Street address: _____

City: _____ **State:** _____

Home telephone:

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 -

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Cell phone:

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 -

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E-mail address: _____

Appendix C: Fall 2015 Site Visit Protocols

(representative of protocols for site visits conducted in Years 1-3 of grant)

Evaluation of Alabama / Florida Technical Employment Network Year 3 Site Visit Protocols October 2015

Submitted by:
PTB, LLC
7901 Maryknoll Ave.
Bethesda, MD 20817

AF-TEN Year 3 Site Visit Overview

I. INTRODUCTION

The external evaluation of the Alabama / Florida Technical Employment Network (AF-TEN) has both formative (process) and summative (outcome) components. As part of the formative evaluation, at least one site visit will be conducted annually to ascertain information from key stakeholder groups including AF-TEN staff, student participants, faculty, and other identified individuals.

The site visit will focus on examining the implementation of AF-TEN in its first two years and the degree to which these programs are: 1) being implemented as planned and 2) are having the intended impact on program participants based on participant perception. Therefore, the guiding questions for this year's site visit are:

- What are the goals of AF-TEN programs? Are they being achieved?
- How are AF-TEN courses and programs being implemented?
- How do staff, faculty, and participants view effectiveness of the programs?

The site visit is not intended as an evaluation of staff members or faculty instructors. It is designed to provide a detailed picture of early AF-TEN implementation, including the courses provided to students, degree of student engagement, challenges in program implementation, and efforts to develop an effective consortium serving southeast Alabama and the Florida Panhandle. Information from the site visit will be used to assess implementation of the program in PTB's Year 3 Evaluation Report.

Site visit team: Chuck Dervarics

Projected date: October 2015

II. SITE VISIT PROTOCOLS

Alabama/Florida Technical Employment Network October 2015 Site Visit: AF-TEN Project Director Interview Protocol (Wallace Community College)

Interviewer Guidelines:

- Briefly discuss the purpose of the interview: *As external evaluator for AF-TEN, PTB, LLC is looking to better understand strategies that grantees and partners use to meet program goals. Your contribution to the evaluation effort is extremely valuable and will give you the opportunity to share your perspective on the successes, benefits, and challenges in implementing the program. As an independent, external evaluator, PTB is seeking input that will help understand the program.*
- Convey to interview participant our confidentiality policy: *(1) the interview is voluntary; (2) you can decline to answer any questions, or you can stop the interview at any time; (3) the information will be held in confidence by the evaluation team who have signed confidentiality agreements ensuring the protection of data; and (4) interview data will be maintained in secure areas.*
- Ask if they have any questions for you before you begin. *Explain that the interview should take no longer than 30 minutes.*

Note to interviewer: *Italicized questions are to be used as probes to encourage respondents to expand upon their responses. Consider prior responses to customize the inclusion, order, and language of questions as appropriate.*

Interview Questions

- 1) Please briefly describe your role in AF-TEN.
 - a. *What is your role in working with individual colleges?*
 - b. *What types of supports do you provide?*
 - c. *What types of compliance/monitoring do you engage in?*
 - d. *What is a typical day/week in your AF-TEN work?*
- 2) Who are the key players that you work with regularly and in what ways do you engage with them?
 - a. *With whom do you interact with regularly within WCC? What roles do they / will they play in program implementation? Are you satisfied with this level of interaction – do you get the information/support you need?*
 - b. *With whom do you interact with at AF-TEN participating colleges (names/job titles)? How do you contact them (phone, site visit, e-mail)? How often do you communicate with them? Are you satisfied with this level of interaction and their commitment to the project? Why or why not?*

- c. *In what ways do you engage with Dept. of Labor or other TAA grantees? How frequent is this contact? Are you satisfied with the level of contact and answers you receive?*
- 3) How would you describe implementation of the program so far (consortium-wide)?
- a. *How far along did you expect to be at this point? How far along are you in implementation?*
 - b. *What factors have hindered implementation this year? How have you addressed these challenges?*
 - c. *What factors have facilitated AF-TEN implementation this year?*
 - d. *How would you describe the level of buy-in from AF-TEN colleges?*
 - e. *What unexpected issues have you encountered?*
- 4) What are the most pressing issues facing AF-TEN members? How have you / will you address them?
- a. *What is the status of equipment installation at the colleges?*
 - b. *What challenges are you having in completing originally planned deliverables (web site, etc.)? How have you changed your policies/approaches to these deliverables? Are there other mid-course corrections you have planned?*
 - c. *Please describe employer involvement in the project. Is it meeting expectations?*
- 5) How would you describe program implementation at Wallace Community College?
- a. *What factors have hindered implementation this year? How have you addressed these challenges?*
 - b. *What factors have facilitated AF-TEN implementation this year?*
 - c. *How would you describe the level of buy-in WCC faculty? From WCC administrators?*
 - d. *What unexpected issues have you encountered?*
 - e. *Have you expended funds in line with expectations / plans? Why or why not?*
- 6) What is the status of AF-TEN student activities/courses this semester?
- a. *Has delivery of courses at your school (and others) changed due to AF-TEN? If so, how? Prompt for: blended/online learning, use of simulators, etc.*
 - b. *How many students are enrolled in AF-TEN? What are their characteristics? (Prompt for traditional/non-traditional students, demographics, income, employment status - including incumbent worker – and prior education). What challenges do they encounter?*
 - c. *Is all AF-TEN related equipment installed and in use? What equipment have you purchased? How are you utilizing it?*
 - d. *What support services are available to AF-TEN students? What is your perception of these services?*

- 7) How are AF-TEN students assessed for prior skills? How do you address any basic skill deficiencies?
- 8) What data have you collected on AF-TEN participants so far?
 - Probe for:
Grades, attendance, competencies
 - a. *What challenges have you faced in collecting data? In entering data?*
 - b. *What data have you entered into the AF-TEN database?*
 - c. *Have you faced any challenges in using the AF-TEN database?*
 - d. *What is the status of collecting data on completers with jobs (wage data)?*
- 9) Have many AF-TEN students completed their programs of study? What factors are facilitating or hindering student success?
- 10) What lessons learned or best practices have you encountered in the project to date?
 - a. *What support services for students are most needed / popular?*
 - b. *What services might students need that are not currently being provided?*
- 11) With site visits planned in fall 2015, what would you like to know about program operation at each college?
 - a. *What are the strengths / challenges facing each institution?*
 - b. *Who are the key AF-TEN contacts at each institution?*
- 12) What other comments do you have about AF-TEN and its implementation?

**Alabama/Florida Technical Employment Network
October 2015 Site Visit: Interview Protocol
AF-TEN Site Coordinators and Career Coaches
(All colleges – including Wallace career coach)**

NOTE: These individuals may have different titles from college to college.

Interviewer Guidelines:

- Briefly discuss the purpose of the interview: *As external evaluator for AF-TEN, PTB, LLC is looking to better understand strategies that grantees and partners use to meet program goals. Your contribution to the evaluation effort is extremely valuable and will give you the opportunity to share your perspective on the successes, benefits, and challenges in implementing the program. As an independent, external evaluator, PTB is seeking input that will help understand the program.*
- Convey to interview participant our confidentiality policy: *(1) the interview is voluntary; (2) you can decline to answer any questions, or you can stop the interview at any time; (3) the information will be held in confidence by the evaluation team who have signed confidentiality agreements ensuring the protection of data; and (4) interview data will be maintained in secure areas.*
- Ask if they have any questions for you before you begin. *Explain that the interview should take no more than 30 minutes.*

Note to interviewer: *Italicized questions are to be used as probes to encourage respondents to expand upon their responses. Consider prior responses to customize the inclusion, order, and language of questions as appropriate.*

Interview Questions

- 1) Please briefly describe your role in AF-TEN.
 - a. *What is a typical day/week in your AF-TEN work?*
 - b. *Who else at your campus works on the AF-TEN project? What are their responsibilities? How would you describe their level of commitment to the project?*
 - c. *What is your role in working with other colleges?*
- 2) How would you describe implementation of the program so far?
 - a. *How far along did you expect to be at this point? How far along are you now?*
 - b. *What factors have hindered implementation so far? How have you addressed these challenges?*
 - c. *What factors have facilitated AF-TEN implementation this year?*
 - d. *How many students are enrolled in welding? In electronics (for LBWCC only)?*
 - e. *What unexpected issues have you encountered? How have you overcome them?*

- 3) What is the status of AF-TEN student activities/courses this semester?
 - a. *What welding / electronics / other courses are being offered? What is the format? Has delivery of courses changed due to AF-TEN? If so, how? Prompt for: blended/online learning, use of simulators, etc.*
 - b. *How many students are enrolled in AF-TEN? What are their characteristics? (Prompt for traditional/non-traditional students, demographics, income, employment status - including incumbent worker – and prior education). What challenges do they encounter?*
 - c. *Is all AF-TEN related equipment installed and in use? What equipment have you purchased? How are you utilizing it?*
 - d. *What support services are available to AF-TEN students? What is your perception of these services?*
- 4) How are AF-TEN students assessed for prior skills? How do you address any basic skill deficiencies?
- 5) What data have you collected on AF-TEN participants so far?

Probe for:
Grades, attendance, competencies

 - a. *What challenges have you faced in collecting data? In entering data?*
 - b. *What data have you entered into the AF-TEN database?*
 - c. *Have you faced any challenges in using the AF-TEN database?*
- 6) Have many AF-TEN students completed their programs of study? What factors are facilitating or hindering student success?
- 7) What data are available on AF-TEN students?
(Probe for enrollment and post-program information)

Generic probes:

- a. Would you be able to give me an example of that?
- b. Could you please tell me more about that?
- c. What does that look like?
- d. I'm curious to know more about what you said regarding X.

This concludes our discussion. Thank you so much for your ideas and your time.

Alabama/Florida Technical Employment Network
October 2015 Site Visit: Interview Protocol for AF-TEN Faculty/Instructors
(All colleges)

Interviewer Guidelines:

- Briefly discuss the purpose of the interview: *Explain that PTB, LLC is the external evaluator for the Alabama/Florida Technical Employment Network (AF-TEN), a federally funded strategy to help veterans and trade-displaced workers gain well-paying employment. Explain that Wallace and LBW are part of AF-TEN and that the students in their classes are part of the AF-TEN program. Please know that PTB is an independent, external evaluator. We expect this interview to take approximately 30 minutes.*
- Convey to each interview/focus group participant our confidentiality policy: *(1) the interview is voluntary; (2) you can decline to answer any questions, or you can stop participating in the interview/focus group at any time; (3) information will be held in confidence by the evaluation team who have signed confidentiality agreements ensuring the protection of data; and (4) interview/focus group data will be maintained in secure areas.*
- Ask if they have any questions for you before you begin.
- Note to facilitator: *Italicized questions are to be used as probes to encourage respondents to expand upon their responses.*

First, I would like to begin by gathering some background information on you.

1. Please tell me your first name, how long you have been working at this college, and how long you have been a teacher.
Probe for: full-time / part-time status; expertise in technical training field; subjects taught
2. Tell us about your course – including the schedule, syllabus, learning objectives.
 - a. *How often does the class meet? What is the format (lecture, lab, combination)?*
 - b. *How is technology used in the course?*
 - c. *What skills do your students typically possess at the start of the course? How do you deal with differences in basic skills / technical skills?*
 - d. *What are the objectives for end of the semester? How do students meet these objectives (test / formal assessment / work product)?*
3. What are your students' greatest challenges in mastering the course content?
 - a. *Is attendance strong? What components do students master easily...or find most difficult? What is your attrition rate?*
 - b. *What is the next course they would take in this technical education sequence?*

- c. *Who are your students (traditional college age / non-traditional / incumbent worker)? What are their goals? Their needs (if any)?*
 - d. *What support services has AF-TEN made available to students at this college?*
4. What suggestions would you have to improve this course?
Probe for: technology improvements, materials, employer input
 5. What do you know about the AF-TEN program?
Probe for: Knowledge of program and its goals; if teachers have little or no prior knowledge, what would they like to know?
 - a. *One goal of AF-TEN is to promote career pathways. How interested do you believe your students are in pursuing certificate or degree programs?*
 - b. *How interested do you believe AF-TEN students are in further education?*
 6. How are employers involved in the AF-TEN program on this campus?
 7. The AF-TEN project has supported the purchase of equipment to be used by students. What equipment has the grant purchased? How are you utilizing it? What challenges, if any, have you had in procuring / setting up / maintaining the equipment?
 8. How else have you utilized the AF-TEN grant to support / enhance welding or industrial electronics instruction (probe for blended/online learning, student assessment).
 9. How would you describe the job market for welding, electronics and/or applied technology in this area?
 - a. Do you work closely with employers? What are they looking for from those who complete your welding / electronics program?
 - b. *What welding or electronic specialties will be in particularly strong demand in the future?*
 10. Do you have any additional comments?

That concludes the interview. Thanks so much for your ideas and your time.

**Alabama/Florida Technical Employment Network
October 2015 Site Visit: Student Focus Group Guide
(All Colleges)**

Facilitator Guidelines:

- Introduce yourself and/or leaders of the focus group as representatives of PTB, LLC and describe your roles in supporting the meeting (i.e., facilitator, note taker).
- Briefly discuss the purpose of the focus group: *Explain to students that that they are part of the Alabama/Florida Technical Employment Network (AF-TEN), a new federally funded consortia to prepare adult workers for high-growth jobs. Explain that PTB, as external evaluator for AF-TEN, is interested in students' experience with courses, technologies, and support services this semester. Explain that this is not an evaluation of the college or its instructors. The purpose of this focus group is getting variety of views about the program, so that we can gather information to help plan for the future. People can agree or disagree with comments. The session will take 30 minutes.*
- Convey to each focus group participant our confidentiality policy: *(1) the interview/focus group is voluntary; (2) you can decline to answer any questions, or you can stop participating at any time; (3) the information will be held in confidence by the evaluation team who have signed confidentiality agreements ensuring the protection of data; (4) interview/focus group data will be maintained in secure areas; and (5) please respect others' privacy by not sharing any information outside of the focus group.*
- Ask if they have any questions for you before you begin.

Materials

Index cards and pen for each participant. Chart paper for facilitator if appropriate/available.

Time	Opening Questions	Aspects to be covered	Facilitator's Activity
2min	INTRODUCTION Please introduce yourself, your name and have others introduce themselves.		
5 min	PARTICIPANT BACKGROUND We would like to know why you enrolled in this course(s). What are you hoping to accomplish?	<ul style="list-style-type: none"> ○ Past education and employment ○ Education plan for the future 	Look for commonalities in experiences and backgrounds

5 min	<p>EXPERIENCE WITH WELDING AND ELECTRONICS COURSES</p> <p>We would like to know the range of experiences you had in the welding/electronics program here. What did you do? When did you do it? If you need assistance, who do you talk to?</p>	<ul style="list-style-type: none"> ○ When ○ Nature of activity ○ Content covered 	List activities by roughly chronological order. Query about use of technology and prior learning assessments.
5 min	<p>LEARNING / ATTITUDE CHANGE</p> <p>Take an index card in front of you. Write down things you learned from these courses and activities. Write as many as possible. (Note: Use list of activities created in the previous discussion).</p> <p>(after 2min)</p> <p>I'd like each of you to select the most valuable learning experience from your list. Please share with the group and talk about why you selected it. Ask if others in the group agree.</p>	<ul style="list-style-type: none"> ○ Change in attitude ○ Change in knowledge 	List ideas shared. Discuss how different ideas may be related. Collect cards.
5 min	<p>EFFECTIVENESS</p> <p>We would like you to tell us what is "working well" and what issues we might want to look at to improve for the future in welding and/or electronics at this institution. Take an index card in front of you and write down your thoughts. Who wants to go first?</p>	<ul style="list-style-type: none"> ○ Implementation issues ○ Student learning ○ Outcome (change in attitude, views, knowledge) 	If possible, use chart paper to list students' ideas. Prompt for advising, mentoring, technology, and other areas.
5 min	<p>SOURCES OF INFORMATION</p> <p>We would like to create a map of where information and knowledge about local jobs are coming from. Could you list where you learn about college and career? Please list as much as you can think of. Who wants to go first?</p>	<ul style="list-style-type: none"> ○ Formal (school, college) ○ Informal (friends, family, media) 	List and group student responses.
3 min	<p>STUDENT SUGGESTIONS</p>	<ul style="list-style-type: none"> ○ Implementation issues ○ Content ○ Delivery 	List and group responses.

	<p>Do you have any suggestions to improve the welding and/or electronics program? Possible follow up questions to their ideas: “Why is that important?” “How will it change the way you learn?”</p>	<ul style="list-style-type: none"> ○ Resources ○ Where students are in their learning 	
2 min	<p>CLOSING</p> <p>Is there anything else we should know when looking at these welding and electronics programs?</p>		
	Thank you very much for your time.		

**Alabama/Florida Technical Employment Network
October 2015 Site Visit: Observation of AF-TEN Classes and Activities**

Purpose:

The purpose of observation is to acquire a snapshot of what the AF-TEN program looks like on a day-to-day basis in the classroom. The observation will focus on how instructional priorities are delivered to students and how students respond to them. The observer will use low inference description to capture interaction between the faculty member and students or among students.

The observation note will include the following types of information.

Background: Context of observed session (e.g. goals of session was...)

Description of the Classroom

- Description of layout of the place in which session took place.
- Materials and technology used, and how they are used. How place is set up (e.g. students sitting in a group, each student has computer etc.)
- Number of participants.

Activities observed during the session and time spent on activities.

- Time, to capture how much time is spent for a particular activity.
- Description of interaction between the instructor and students, including types of questions asked, students response, providers’ comments, feedback collected by the

instructor to learn where students are in their understanding and/or progress of a project or assignment.

- Description of how materials are used in the session, and how students worked on them, including levels of engagement.

Observer's comments

- Describe students' response to the faculty instruction
- Describe how the provider supported students' work, including the learning of technical skills.
- Describe how materials/tasks facilitated student learning.
- Describe factors that shaped the way session was delivered, and consequently, factors that shaped student learning of basic and technical skills

Appendix D: PSM Weightings

