Program Evaluation Final Report

BOOST
New Pathways to Healthcare Careers

Midlands Technical College, TAACCCT

Better Occupational Outcomes with Simulation Training

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Submitted by:
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Executive Summary

In September 2013, Midlands Technical College (MTC), as lead for a six-college consortium, was awarded a $25 million round three TAACCCT grant titled *Better Occupational Outcomes with Simulation Training* (BOOST). Under the grant, lead college MTC and co-grantees Central Carolina Technical College (CCTC), Florence-Darlington Technical College (FDTC), Robeson Community College (RCC), Wallace Community College in Selma (WCCS) and Wallace State Community College in Hanceville (WSCCH), implemented short-term stackable certificates in healthcare that utilized human simulation and 3D technology. In designing the program, the consortium conducted an extensive labor market analysis to identify the occupations that were most in-demand in each college's region.

The BOOST *(Better Occupational Outcomes with Simulation Training*) program was intended to address three main needs: 1) to prepare workers for jobs in the stable, critical and high demand field of healthcare in 22 counties in North Carolina, South Carolina and Alabama; 2) to provide highly skilled workers for local employers who will be faced with a shortage of trained workers over the next ten years; and 3) to offer colleges an alternative pathway into health careers for the multitude of students who were attempting admission to limited yet highly competitive health programs. The program offered multiple certificates in Nurse Aide/Assistant, Phlebotomy and Cardiac Care. One college also included EMT/Paramedic training, Home Health Aide and Medication Aide in their certificate offerings. Courses were taught in human simulation labs and supplemented with 3D technology. When students completed three stackable certificates, they were eligible to sit for the national Patient Care Specialist exam. The program also provided students with an industry-validated core set of pre-health courses plus comprehensive wrap-around services, career coaching, job placement services, case management, and referral to services.

Using TAACCCT grant funding, the consortium served a total of 1,292 participants across North Carolina, South Carolina, and Alabama in gaining skills and knowledge needed to be successful in entry-level healthcare jobs as nurse aides/assistants, phlebotomists, cardiac care technicians and patient care technicians. The BOOST students were predominantly African American females in their early to mid-twenties. The majority of students were low-income (mean personal income $13,000 & mean family income $27,000) with 74% eligible for the federal Pell Grant program and 68% living below the poverty line (accounting for family size).

BOOST focused on students who wanted to work in healthcare who were not qualified for highly competitive programs. They recruited students who were in pre-health holding codes or had low grade-point averages to offer them academic strengthening and an alternative pathway to healthcare. Students were required to master skills using the simulators and then participate in clinical experiences. This hands-on program methodology helped students succeed, complete credentials and become employed.

Evaluation Design Summary

Conceptual Framework

The program used multiple strategies to support the grant objectives. They 1) provided a hands-on, technology-enriched curriculum, 2) built state-of-the-art simulation labs, 3) provided comprehensive and continuous wrap-around student services, 4) created an aggressive marketing and outreach plan, 5) worked collaboratively as a six college, three state consortium, 6) provided training and professional development for faculty, staff and simulation techs, and 7) collaborated with local employers before, during and after the grant programmatic period.

It was hypothesized that a technology-enhanced, hands-on curriculum plus comprehensive wrap-around services would support the needs of under-prepared, under-served populations of students. Students responded to the program, were successful, accumulated credit and earned 1,609 credentials.

Formative Evaluation Questions and Design

The evaluation of the BOOST program contained a formative component that determined the extent to which the program was implemented as designed. The evaluation also contained a summative component that assessed the outcomes and impacts of the BOOST program. Logic models were developed for the major components of the grant (curriculum development and delivery, wrap-around services, obtainment of short-term, stackable certificates and employer involvement). Logic models were utilized to determine the steps in the evaluation process and the logical flow of activities. They were also used to develop assessments, focus group and surveys questions, to evaluate individual activities and the outcomes of those activities, to facilitate lab and classroom observations and attendance at advisory committee meetings.

Formative Evaluation Questions

1. *How was the program selected?*
2. *How was the program improved or expanded using grant funds?*
3. *Were wrap-around services provided to students; and if so, how were they developed and utilized?*
4. *How were students admitted to the program?*
5. *What professional development did faculty receive?*
6. *What contribution did local business and industry make to the program?*

The goals of the formative evaluation were to understand the program model, the opportunities and challenges experienced by students and faculty/staff during the first two years of implementation. There were six formative evaluation questions. To address these questions, data were collected from multiple sources: student intake information, two sets of focus groups at each college, observations in the simulation labs, faculty and staff interviews, observations and interactions with advisory committees, student surveys and semester data from the college's student information systems.

The focus of the formative evaluation was to document the implementation of the DOL BOOST program components to ensure that all of the key elements were implemented as planned and to determine if the components of the program were effective and sustainable beyond the grant period.

The colleges built capacity throughout the four years of the grant. They added simulation labs (for some, the only one in the region in their state), added new programs that created an alternative pathway into healthcare for students who were not qualified for competitive programs. They educated students for entry level positions in the highly paid field of healthcare and added a coaching component to the health sciences area of their colleges. The majority of the coaches will be retained beyond the four years of the grant.

Summative Evaluation Questions and Design

To evaluate the BOOST program's outcomes and impacts, five research questions were developed. These summative questions were addressed to determine the impact the BOOST program had on grant participants and identify the factors that impacted participant outcomes.

The evaluators conducted a quasi-experimental design using propensity score matching (PSM) to identify a matched comparison group from a list of students in pre-health codes attempting to gain entry to highly competitive health programs. These are the same lists from which many of the BOOST students were recruited. A matched group was selected each term from each of the six colleges.

Summative Evaluation Questions

1. *Will a larger percentage of students participating in technology-enhanced health courses complete degrees/certificates than those taking courses through the traditional route?*
2. *Will students participating in technology-enhanced coursework complete short-term stackable certificates more quickly than those taking courses through traditional methods?*
3. *Do students participating in technology-enhanced courses have a better quality of learning and educational and employment outcomes than those taking courses through the traditional route?*
4. *Is there an added benefit to receiving wrap-around support services such as counseling, academic advising, career counseling, and tutoring services in addition to the technology-enhanced courses?*
5. *Does employer support and interaction increase outcomes for students and the college?*

To address the research questions, the following data sources were selected: unit record level students data from the colleges' student information systems (credit accumulation, grades, retention and GPA); the student intake (entrance) data base; records from the simulators; employment records from state departments of labor and student follow-up; the National Student Clearinghouse; Student Track (tracking system used by the colleges for BOOST students); and additional focus groups, interviews and observations.

To address ***research questions 1 and 2***, BOOST students were compared to the matched comparison group and to the traditional degree/certificate completers at the colleges. The factors that were examined were the number of credentials completed and time to completion for each college for BOOST students, the comparison group and the IPEDS 150% (three year) completion rates and the number of semesters to completion. To address ***research question 3***, course completion rates, grades and GPA were compared between the BOOST students and the matched comparison group. Simulation data were also analyzed for the BOOST students to address practice to mastery.

To address ***research question 4***, data on the number and nature of coaching visits and interactions were measured and entered into Student Track. The student interactions were classified by type and student outcomes were also entered into the system (credentials completed, wages, employment data, and transfer information). The number of credentials was correlated with the number of coach visits/interactions. The more interactions students had with coaches, the greater the number of credentials they received. To address ***research question 5***, information was collected from faculty, coaches and recruiters on the involvement of local employers in the BOOST program. Employers visited the programs, some observed students in the SIM labs, raised awareness of the higher skill level of the students in the program, allowed students to interact with healthcare professionals prior to employment, helped the colleges secure clinical space, and helped students gain employment.

BOOST Implementation Findings

Findings of steps taken by the BOOST consortium to create and implement the program are summarized, followed by a discussion of the operational strengths and weaknesses of the program and evidence of its sustainability.

After analyzing all the data collected throughout the performance period, findings suggest that all seven strategies were largely implemented across the consortium. By the end of the grant, the colleges had several new healthcare credentials to offer students, had state-of-the-art simulation centers and had served 1,292 students. All six colleges intend to continue the programs (although not called BOOST) and retain much of the staff, especially the coaches. Findings are as follows:

- BOOST colleges developed program curricula that provided hands-on, technology-enriched coursework. All skills-based courses were built around the use of simulation and the use of 3D technology, followed by clinical experiences. For most of the programs, these certificates were new to the college and required that the consortium work together on course content and delivery. All of the colleges, but one, received approval for their program from their state system offices. The one that did not, submitted all required materials in fall 2014 but the approval was hampered by internal issues within the state system office. The final program was approved and eligible for Pell Grant funding in summer 2016.
- The colleges developed state-of-the arts simulation centers. All of the colleges built or expanded simulation labs, hired SIM Techs, trained faculty and staff and added 3D technology in the second year. Using TAACCCT funding, all six colleges purchased state-of-the-art equipment currently being used in health science programs across the country. Students indicated that the hands-on practice with the simulators was the main reason they entered the program.
- The BOOST colleges implemented comprehensive and continuous wrap-around student support services. All six programs hired coaches to work only with BOOST students. Coaches provided case management, career guidance, and assistance. Students interacted with coaches on a weekly basis and communicated in focus groups that the assistance of the coach was critical to their success. The background of the coaches was slightly different so students at some colleges received more personal counseling and others received more career-focused assistance.

- The BOOST recruiters developed an aggressive marketing campaign. Recruiters used every method available to them to market the program and recruit students. First they located students who were on waitlists or in pre-health holding codes attempting to qualify for programs such as nursing and physical therapist assistant. They also received referrals from faculty in regards to students performing poorly in current programs. Recruiters created flyers, developed BOOST webpages, called referred students, went to high schools, churches, local labor boards and agencies, military bases and solicited help from local hospitals and health agencies. They place ads in newspapers, on the radio and TV and went to classrooms to talk to students about BOOST. Despite all of these recruitment methods, the colleges did not meet their enrollment targets.
- The BOOST colleges worked collaboratively as a consortium. The consortium held bi-weekly conference calls, met face-to-face quarterly and attended training together. Other groups such as the SIM Techs, the coaches and recruiters held their own separate phone conversations and shared information with one another.
- The BOOST consortium staff provided training and professional development for faculty, staff and Simulation Techs. Training was offered through the consortium and through external entities. Faculty were trained by Healthcare Simulation of South Carolina. The instructional designer at the consortium developed webinars that were recorded so faculty and staff could attend at their leisure. Faculty and staff also attended external training funded by the grant.
- Colleges continued their tradition of engaging with local employers before, during and after the grant programmatic period. Local healthcare agencies and hospital staff helped develop the content for the BOOST program. The colleges developed employer-validated, skills-based courses for the program. The colleges also had an advisory board and local hospitals and healthcare facilities participated in program activities and provided clinical space for the program.

Fidelity to the Program Design

The colleges implemented the program as it was intended with few missteps. To evaluate fidelity to the original design, interviews were conducted with faculty, coaches, recruiters, SIM Techs, and program directors during each site visit and responses were compared. Focus groups were conducted with students and surveys were distributed and analyzed. Observations were made in the SIM labs and marketing materials were viewed. Questions were asked about each of the above mentioned strategies. Triangulation among the sources of data cross validated the work going on within the program. Student satisfaction with various aspects of the program improved from year to year. The areas that were not implemented according to plan were:

- The 3D technology should have been implemented in the first year but was not received by most colleges until the 2015-16 year.
- The 3D object development was delayed significantly. Faculty and the instructional designer had to utilize existing objects to supplement instruction in the 3-D labs until developers produced the 77 expected objects in the final implementation year.

- Some colleges did not develop the same stackable certificate that were outlined in the plan. Due to staffing and administrative changes, some certificates were dropped. One college added additional certificates. Three colleges offered the certificates as planned. Students were admitted to the program expecting to complete three certificates and were very disappointed when they could only enroll in one or two.
- The backgrounds of the coaches varied which affected the content and delivery of their wrap-around services program. Coaches did not develop a uniform program for students across the colleges. The coach's background played a role in what the wrap-around services entailed at the colleges.

Strengths and Weaknesses

- The program delivered technology-enhanced, hands-on classroom experiences to students. Students responded well to the simulators and mastered the skills necessary to obtain credentials. The aspect of the program that students appreciated and utilized most was the availability of coaches to help them succeed and to assist them with personal, learning-related and career education.
- These students accumulated credentials more quickly and at higher rates than the matched comparison group. A unique aspect of this program was offering an alternative pathway to higher paid healthcare jobs for students who might never be competitive for programs with selective admission. Students quickly entered clinical settings and obtained jobs after one semester in the simulation labs. The experience they received helped them gain confidence and become successful employees in healthcare.
- Colleges with large numbers of students attempting to get into competitive healthcare programs could implement this program. Students are often under exposed to healthcare jobs and only consider nursing. Students did not know about the fields included in the three certificate programs and once exposed, entered the program and were able to go to work as CNAs after one semester in the SIM labs.
- Students responded well to the use of active learning strategies, coupled with simulation experience. Because the majority of these students were low income with little success in higher education, the coaches made a huge impact. Most colleges intend to retain the coaches and several plan to scale up coaching college-wide so students in other programs have the same opportunities that the BOOST students had.
- The BOOST students were much better prepared than other CNAs hired in the colleges' regions and comments were made that "the BOOST program has raised the skill level of entry-level healthcare workers in the region." One hospital created a separate "BOOST hourly wage", which was higher than for employees trained elsewhere.

Participant Impacts & Outcomes

The following are key participant impact and outcomes findings. The outcomes shown below measure how successful the BOOST program was in serving participants and in participant completion, credential attainment and employability, showing the nine outcomes articulated in the SGA.

DOL TAACCCT Grant Outcome Measures for the BOOST Program				
	Outcomes	Goal	Current through June 2017	% of Target Met
		#	#	%
1	Total unique participants receiving services through the BOOST program (52% non-incumbent and 48% incumbent workers).	2,016	1,292	64%
2	Students who completed a grant-funded program of study	1,382	659	48%
3	Students retained in grant-funded program of study	433	296	68%
4	Total number of students completing credit hours	1,470	1,382	94%
5	Total number of students earning credentials	1,382	659	51%
6	Total number of students enrolled in further education after completion	276	29	10%
7	Students who become employed one quarter after program completion	1,038	139	13%*
8	Students who remain employed three quarters after program completion	624	98	15%*
9	Students employed at program enrollment who received a wage increase	80	219	273%
Modified to Exclude Incumbent Students at Entry*				
2*	Students who completed a grant-funded program of study (52% of 1,382)	718	659	92%
7*	Students who become employed one quarter after program completion (75% of 718)	539	139	26%
8*	Students who remain employed three quarters after program completion (60% of 539)	295	98	33%

**Note: the original projections mistakenly included participants who entered the program employed. These students do not qualify in the outcomes calculations and once removed, the performance outcomes improve substantially (see modified 2, 7 & 8.). Approximately 52% of students were non-incumbent. It was estimated that 75% would become employed and 60% of those would remain employed three quarters after completion.*

To summarize the results of the nine outcomes are as follows:

1. BOOST students were recruited, entered the program, accumulated credits and completed credentials. The original enrollment target of 48 students per semester (fall, spring and summer) for

all six BOOST colleges (total =2,016) was somewhat unrealistic considering the size of the colleges, their locations and the available pool of applicants. College recruiters worked hard to uncover potential students but only reached 64% of projections. All but one of the colleges were in rural areas and several in small towns with limited numbers of potential students. Additionally, community college enrollment across the country was in decline during the grant period, which could also have contributed to enrollment numbers not being met.

2. A total of 659 BOOST students completed 1,609 stacked and latticed credentials (mean=2.4) which accounted for 51% of participants. Students completed more credentials and earned them faster than the comparison group.
3. BOOST students were retained at higher levels than projected completing their programs in 4 semesters. A total of 51% earned credentials and an additional 296 (22%) were still retained in the program.
4. A higher percentage of BOOST students accumulated credit hours than was projected, which is a reflection of the high retention rates.
5. The income for BOOST students who were incumbent workers increased over the course of the program at a much higher rate than was projected. Employed participants saw an average of $2.21 per hour increase and an average of 4.6 more hours worked per week than pre-BOOST.

Other Outcomes and Impacts

BOOST students had many successes in the program.

- Between 8% and 24% of first-time students who entered the colleges indicating that they wanted to earn a degree, diploma or certificate had done so within three years of entry. Of the BOOST students who entered the stacked and latticed credential programs, 2% to 49% had completed at least one certificate within three years.
- The number of “barrier-related” coach visits in which the students engaged were highly correlated to the number of credentials they received (r=.32).
- The average number of semesters to completion for BOOST students was 4 compared to 4.5 semesters for the comparison group
- Mean GPA for BOOST students was 2.49 compared to 2.31 for the comparison group.
- BOOST students earned an average of 48 credits at their respective colleges compared to 45 credits for the comparison group.
- Unemployment decreased among BOOST from 218 pre-BOOST to 96 post-BOOST. Employment in the field increased from 42 pre-BOOST to 229 post-BOOST.
- All six colleges have developed sustainability plans that continue to support many of the aspects of BOOST. Several colleges have developed a college-wide coaching program, most are keeping the short-term stackable certificates with some adjustment in scheduling and others have absorbed the program into pre-healthcare certificates.

Limitations

The findings give rise to several issues with respect to the limitations of the evaluation.

- The analyses were limited to available data which impacted the analysis of employment outcomes. The State Departments of Labor agencies did not provide employment data to the colleges. Most of the colleges relied on student follow-up for employment data.
- Access to public workforce records needs improvement. Colleges have an educational need to know about the employment outcomes of their students. It is understood that the staff needed to provide these data to the more than 1,100 community colleges in the country would be immense, but the work could be automated to reduce the effort on the part of both parties.
- A student job readiness assessment was delayed. CareerChoice GPS was not implemented until fall 2016, the final year of the grant. This would have provided additional useful information about BOOST students and could have been used as additional data from which to select the comparison groups. Data from this assessment tool might have accounted for factors that drive student outcomes.
- The 3D iBenches, a critical piece of the technology-enhanced courses were also delayed. Once they arrived, there was not adequate 3D objects available to utilize on them for the specific healthcare courses. Faculty and instructional developers had to create those themselves putting the use of the product even further behind.
- Enrollment targets were somewhat unrealistic giving the impression that the outcomes of BOOST were not as strong as they were. Community college enrollment across the country has been declining since the economy began to recover from the recession of 2007. Increasing enrollment in this one program at the level projected would be difficult under normal circumstances. The BOOST students were low-income students, many with low GPAs. They needed heavy support to succeed in the program yet they were retained and completed credentials at higher levels than the comparison group and the standard population at the colleges.

Conclusions

The following are conclusions and implications for future workforce and educational research:

- Programs that aim to serve under-prepared, under-represented populations should consider the inclusion of hands-on approaches to learning and the insertion of success coaches.
- As observers of this program in action, students in the simulation lab on the first day of the first semester were dramatically different than those observed toward the end of their program. They had increased knowledge but the psycho-social impacts and non-cognitive factors appear to have played a major role in their success. More research needs to be conducted on these factors to promote a deeper understanding of variables that promote success with underserved populations in higher education.
- Coaching was significantly correlated to program completions. The coaches provided academic, personal and career assistance and stayed in personal contact with students. When asked, students claimed they went to their coach for everything. They indicated that the coach was one of the best parts of the program and claimed their support was critical to their success. Coaching needs to be strongly supported in future program efforts from the DOL.

I. Introduction

Between 2011 and 2014, the US Department of Labor (DOL) awarded nearly $500 million per year in grants to individuals or groups of community colleges through the Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant initiative. In September 2013, Midlands Technical College (MTC), as lead for a six-college consortium, was awarded a $25 million round three TAACCCT grant titled *Better Occupational Outcomes with Simulation Training* (BOOST). Under the grant, lead college MTC and co-grantees Central Carolina Technical College (CCTC), Florence-Darlington Technical College (FDTC), Robeson Community College (RCC), Wallace Community College in Selma (WCCS) and Wallace State Community College in Hanceville (WSCCH), implemented short-term stackable certificates in healthcare that utilized human simulation and 3D technology.

The focus of the round three TAACCCT grants was to develop new undergraduate education and career training program strategies that have built upon previously established evidence of successful implementation. The DOL sought to ensure that institutions of higher education were able to help TAA-eligible workers, economically dislocated and other low-skilled adults acquire the skills, degrees, and credentials needed for high-wage, high-skilled employment while also meeting the needs of employers for skilled workers. The core elements of the round three grants were focused on evidence-based design, stacked and latticed credentials, transferability and articulation credit, advanced online and/or technology-enabled learning, strategic alignment and alignment with previously-funded TAACCCT projects (Mikelson, 2017).

As part of the grant's requirements to engage a third-party evaluator, MTC contracted with the Center for Applied Research (CFAR) to be the evaluator for the BOOST program. CFAR was tasked with evaluating the implementation, outcomes, and impacts of the BOOST program. CFAR is submitting this final report to MTC and to the BOOST consortium colleges as the final requirement of the contract.

This report analyzes the education and employment outcomes of BOOST participants at the six colleges during the four years of the grant. It is the second of two reports, drawing on the interim report written at the end of year two, which examined program development, implementation and participation across the six colleges, identifying challenges, successes and strategies to improve programs and services.

This report is organized into five chapters: 1) an introductory chapter that provides background on the BOOST program, summarizes the findings of the interim report, includes an overview of the participants and the research questions addressed in the implementation evaluation; 2) the summative evaluation design, including the research questions and outcomes of the BOOST program; 3) factors influencing outcomes for participants; 4) results of the quasi-experimental outcomes analyses and how participants performed compared to a matched comparison group on program outcomes; and 5) a discussion of conclusions and findings, lessons learned including limitations and implications for future programs.

A. The BOOST Program Description and Activities

The BOOST program was conceived by six colleges in South Carolina, North Carolina, and Alabama with Midlands Technical College (MTC) in Columbia, South Carolina serving as consortium lead.

Midlands Technical College, Florence-Darlington Technical College and Central Carolina Technical College are three of 16 colleges in the Technical College System in South Carolina. Robeson Community College is one of the 58 colleges in the North Carolina Community College System. Wallace Community College in Selma and Wallace State Community College in Hanceville are two of the 26 colleges in the Alabama Community College System. The six colleges worked together for months before the proposal was submitted, sought input from local employers in their regions and have continued to collaborate throughout the four-year period of the grant. Except for MTC, all of the colleges are in rural areas. The colleges, location, student enrollment, counties served and service area population can be seen in Table 1.

Table 1. BOOST Colleges by Counties Served

College	Location	Enrollment Fall 2015	Counties Served	Approximate Service Area Population
Central Carolina Technical College (CTCC)	Sumter, SC	4,864	Clarendon, Kershaw, Lee and Sumter	223,000
Florence-Darlington Technical College (FDTC)	Florence, SC	8,214	Florence, Darlington and Marion	315,000
Midlands Technical College (MTC) (lead)	**Columbia, SC**	**15,072**	**Lexington, Richland and Fairfield**	**712,000**
Robeson Community College (RCC)	Lumberton, NC	2,707	Robeson	135,000
Wallace Community College (WCCS)	Selma, AL	7,132	Dallas, Perry, Autauga, Chilton, Lowndes and Wilcox	169,000
Wallace State Community College (WSCCH)	Hanceville, AL	2,671	Blount, Cullman, North Jefferson, Morgan, and Winston	580,000

The BOOST *(Better Occupational Outcomes with Simulation Training*) program was intended to address three main needs: 1) to prepare workers for jobs in the stable, critical and high demand field of healthcare in 22 counties in North Carolina, South Carolina and Alabama; 2) to provide highly skilled workers for local employers who will be faced with a shortage of trained workers over the next ten

years; and 3) to offer colleges an alternative pathway into health careers for the multitude of students who were attempting admission to limited, yet highly competitive allied health and nursing programs.

All of the colleges had more students aspiring to work in healthcare than they had available slots in the programs. Many students wanted to work in highly visible fields such as nursing but there are not enough programs in the region where they live to accommodate the demand. Community colleges, being open access institutions, may have many low performing or poorly educated students who will never be competitive enough to be admitted to high demand, competitive health programs. Midlands Technical College, for example, had 2,958 students in their pre-healthcare and pre-nursing holding codes in fall 2014. The college had 516 possible slots across 13 health sciences and nursing programs for the entire 2014-15 year. Unprepared students can spend years taking and retaking courses in hopes of being admitted to competitive programs and often end up with very little except a loss of their limited Pell grant dollars. Due to these same issues, local employers across the country have difficulty finding competent employees for entry level healthcare positions. According to Jobs EQ, an employment database, employers will need 17,422 BOOST program-specific jobs in the next four years in the counties served by the BOOST colleges in South Carolina. Those jobs include home health, nursing assistants/aides, phlebotomists, healthcare support occupations and EMT/paramedics. Robeson County North Carolina employers will need 2,941 employees and Alabama employers will need 645 employees in these rural counties.

B. Program Model

The primary goals of the BOOST program were to: 1) create new short-term stackable certificates aligned with employer needs to address skills gaps; 2) accelerate the completion of credentials in healthcare; 3) increase retention through the use of work-based human simulation and 3D technology; 4) prepare students to gain employment in the high demand field of healthcare; and 5) encourage students to continue their education either at the BOOST colleges or as transfer students. In order to guide the development work, four logic models were developed: one for adapting the courses using simulation manikins and 3D technology; one for wrap-around services involvement one for employer involvement and one for short-term stackable certificates (see Appendix A).

The BOOST program was developed with heavy input from of local employers. The program consists of a set of general education and entry level healthcare courses referred to as the Quickstart Core (QC). The QC was assembled based on identified skills gaps from local employers in hospitals and medical practices. These courses included: Intro to Healthcare, Intro to Computers, Reading in Health Sciences, Medical Terminology, and Basic Anatomy and Physiology. Faculty received professional development on active learning strategies and innovative teaching strategies such as flipping classrooms (lecture at home via video and hands-on work in class). Once they completed the QC, students were able to complete multiple credentials in Nurse Aide/Assistant, Phlebotomy and Cardiac Care. One college also included EMT/Paramedic training, Home Health Aide and Medication Aide in their credentials offerings. Courses were taught in human simulation labs and supplemented with 3D technology. When students completed three stackable academic certificates, they were eligible to sit for the national Patient Care

Specialist exam. However, students could go to work immediately once they completed their Nurse Aide/Assistant training. Originally, students entered BOOST as a cohort and the program was full-time.

One of the issues that limits the number of students who can enroll in and complete healthcare programs is the limited amount of clinical space in hospitals for student practicums. The BOOST program sought to create an innovative learning environment that integrated work-based simulation (high-fidelity human mannequins) with 3D/Virtual Reality technology.

Research has shown that simulation is a useful training technique that enables small groups of students to learn how to react adequately in a critical patient care situation while practicing in a safe and controlled environment. "This type of training is very valuable to equip students due to a minimum of technical and non-technical skills before they use them in practice settings" (Alinier, 2006). There are many advantages to simulation such as:

- Clinical settings can be realistically simulated;
- No threat to patient safety;
- Active learning can occur;
- Specific and unique patient situations can be presented;
- Errors can be recorded and discussed/corrected immediately (Practice to Mastery);
- Consistent and comparable experiences can occur for all students.

In addition to these benefits, communication, teamwork, and delegation can be simulated. Thus, a mix of technical and non-technical experiences can be offered (Fletcher, 1995). Human simulators were purchased to support students in the following courses: Nurse Aide/Assistant, Phlebotomy, and Cardiac Care. Students utilized SIMPads, specially equipped iPads to interact and track progress. The simulation equipment included video recording capabilities so students could watch themselves performing in the lab, have a debrief session with the instructor or SIM tech and improve their skills.

To supplement their technical education, BOOST provided students with intensive wrap-around services through their recruiter, project director, program faculty and career coaches which included: case management; personal counseling and referrals; academic counseling and referrals; and job-seeking skills. At most colleges, students met with the coach at regular intervals (weekly or monthly) and also dropped in or saw them almost daily. Career coaches offered structured meetings, visited classrooms and held regular office hours.

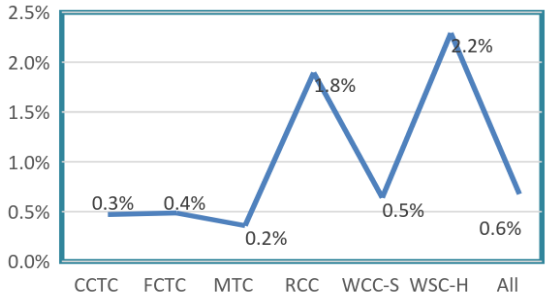
During program planning and design, the colleges continued their relationships with program advisory committees that included staff from local hospitals, medical practices, home health services and nursing homes. These advisory committee members supported the academic goals and priorities of the program, provided clinical space and assisted with mock interviews, skills demonstrations, and job fairs. The local healthcare community gave input into the BOOST curriculum helping them create workforce-validated coursework and credentials.

C. Program Implementation Outcomes and Refinements

Implementation Study

For the implementation study, CFAR sought to understand the program model, the opportunities and challenges experienced by students and faculty/staff during the first two years of implementation. Colleges used the data to inform program improvements.

Figure 1: BOOST as a Percent of Population in Fall 2015



Student Characteristics

Over the four years of the grant, the consortium served 1,292 unique participants: 147 at CCTC; 158 at FDTC; 258 at MTC; 325 at RCC; 210 at WCCS; and 194 at WSCCH. The BOOST enrollment accounted for a small percent of total college enrollment, slightly more at the smaller colleges (RCC & WCCS). See Figure 1. The colleges also identified a large pool of students that were considered pre-health science students who were waiting for a limited number of healthcare program slots. Using propensity score matching, the evaluators selected a group of 872 of these students to serve as the comparison group.

Students in the BOOST program were mostly female (91%), minority (≥65%) and had a mean age of 27 (62% were 25 and younger; Table 2). The comparison group was 90% female, ≥59% minority and had a mean age of 29. Demographic data by college can be found in Appendix B.

Table 2. Demographic Characteristics of Students

Variables	BOOST Cohort		Comparison Group	
	#	%	#	%
Gender				
Female	1,177	94%	783	90%
Male	75	6%	89	10%
Race				
Black/African American	612	47%	335	41%
Hispanic/Latino	43	3%	27	3%
Asian	10	.8%	4	.5%
White/Caucasian	457	35%	343	41%
Mixed/More than One Race	4	.3%	16	2%
Native American	141	11%	98	12%
Native Hawaiian	7	.5%	2	.1%
Unknown	18	1%		
Age				
Mean	27	-	28	-
Range	16-93		16-65	

Economic Conditions of BOOST Students

For the most part, BOOST students were low-income students with 81% having applied for the Federal Pell Grant, a program designed to assist low-income individuals attending higher education. Pre-BOOST, the mean personal income for these students was $13,328 and the mean hourly wage was $9.29 (average 23 hours a week). Approximately 10% of the population qualified as TAA, WIA, a veteran, a disabled veteran, or the dependent of a veteran. The majority of the students had a goal to earn some type of degree or certificate (37% certificate, 53% associate's degree). However, by the end of the program, students participating in focus groups indicated they wanted to obtain bachelor's and master's degree. BOOST students were asked about household size and annual income.

Table 3. Economic Indicators of BOOST Students

Variables	#	%
Mean Personal Income	**$13,328**	
Income zero $	721	52%
Income under $25,000	545	42%
Applied For Financial Aide	894	81%
Eligible for the Pell Grant	647	58%
Unemployed	673	52%
Eligible for unemployment	38	3%

BOOST students had an average household size of 3.2 with a range of 1 to 10. Annual household income varied greatly with 13% claiming no annual income and 8% claiming annual incomes of greater than $50,000. Table 4 below identifies the annual income of BOOST students based on family size and broken out by college. The US poverty level by family size is also included. Wallace Community College in Selma and Robeson Community College had the lowest income students (mean $17,566 and $19,925 respectively). Across the six colleges and for students with household sizes of 2 or less, 68% were below the poverty lines. For households of 3-4, 72% were below the poverty line. For households of 5-6, 78% were below the poverty line and for households of 7 or more, 70% were below the poverty line.

Table 4. Number in Household and Mean Income

College	2 or less		3 or 4		5 or 6		more than 6		All
	#	Income	#	Income	#	Income	#	Income	
CCTC	23	$27,227	48	$23,183	6	$19,667	2	$21500	$24,051
FDTC	4	$16,450	15	$25,914		**	1	$60,000	$25,725
MTC	73	$25,116	84	$26,840	20	$44,653	8	$33,652	$28,380
RCC	42	$22,327	102	$19,108	20	$16,176	16	$23,512	$19,925
WCCS	23	$8,660	42	$20,959	7	$25,349	2	21,500	$17,566
WSCCH	26	$27,719	37	$68,832	8	$43,903	3	$22,448	$49,812
Total		$22,948		$27,842		$30,545		$26,836	$26,531
US Poverty Level		**$16,240**		**$24,600**		**$32,960**		**$41,320**	

**No income data available

D. Implementation Research Questions

For the implementation study, CFAR examined six research questions. To address these questions, CFAR collected data from the student intake database, conducted two sets of focus groups at each college, made observations in the simulation labs, interviewed individual faculty, recruiters, program directors, career coaches, SIM Techs, other involved staff, and attended several advisory committee group meetings. A current student survey was developed to obtain information from students and semester data was collected from the colleges. The following are brief overviews of the research questions addressed in the interim report.

1. How was the program selected?

Through the implementation process, the colleges sought input from local hospitals, medical clinics, home health agencies and nursing homes. The general education and entry level healthcare courses were selected by those business representatives in concert with the colleges' healthcare faculty. The colleges selected the use of human simulators and 3D technology because there was a lack of clinical space for student practicums in their areas. Previously, human simulation was only being used in advanced medical courses, not entry level courses. Employers validated the use of simulation to hone skills and then provided clinical space for the program. Health Science colleges all over the country are developing human simulation labs to help students master skills before they work with live patients. All of the colleges wanted to build a state-of-the-art SIM center or greatly expand what they had. Furthermore, the program was proposed because a large number of students are interested in healthcare programs, spend time and resources in pre-health programs, and often times these students may not be a good fit for careers in healthcare. An entry level healthcare program, like BOOST, provides students with the opportunity to build a strong academic foundation for future learning and also exposes them to what it would be like to work in a clinical healthcare setting.

2. How was the program improved or expanded using grant funds?

For several of the colleges, this was their first use of human simulators. Once the project was implemented, the colleges had state-of-the-art simulation centers and for many, they were the only one in their region. The program was completely new to many of the colleges and an expansion for others. Because the program was designed for educate entry-level healthcare students, even marginal students had an opportunity to hone their skills and enter the healthcare field. The students commented in focus groups that as hands-on learners, they were able to grasp the content and practice to mastery with the simulators. As these students completed credentials and began work in local hospitals and healthcare, their experience made them eligible to continue their education in other competitive fields such as Nursing, Surgery Tech, Physical Therapy Assistant and Dental Hygiene.

3. Were wrap-around services provided to students; and if so, how were they developed and utilized?

Wrap-around services were provided to students. Coaches communicated with each other and shared strategies. Students commented in focus groups that their coaches were a huge help and critical to their success. The background of the coaches varied greatly, so their services varied slightly. Over the course of the grant, career coaches met regularly with students, offered workshops, held group meetings, and

held office hours for drop-in visits. The coaches communicated that they were surprised at the level of case management these students required to be successful. The types of services they provided included academic and employment related services and referrals, but also personal and crisis counseling. By the end of the grant, students had been offered more than 15,000 coaching sessions and activities.

4. How were students admitted to the program?

Recruiters utilized a multitude of strategies to recruit students. Upon application to the program, students completed an intake form with demographic data, completed a background check, a health physical and took English and math placement tests. If students placed into developmental courses, they had to take them before entering the program. The first semester consisted of the QuickStart Core and then students entered the healthcare courses in their second semester. BOOST was open to all students and some programs recruited student with 1.5 to 2.0 grade point averages to give lower performing students an opportunity to work in healthcare.

5. What professional development did faculty receive?

Professional development was offered by many sources. Medical University of South Carolina's Healthcare Simulation of South Carolina conducted training on the human simulators both in their facility and on-site at the colleges. The BOOST consortium hired an instructional designer who developed online training courses on classroom strategies such as principles of active learning and how to teach in a flipped classroom. Faculty and staff also received training at the quarterly directors' meetings and through outside sources. When the interim report was written, staff were not satisfied with the professional development they had received and suggested topics to be included over the next two years. Professional development activities were offered over the four years of the grant.

6. What contribution did local business and industry make to the program?

Local employers were heavily involved in the BOOST program. Each college had an advisory committee that met at regular intervals. The healthcare employer partners provided clinical sites for students to gain their required hours needed for licensing exams. Additionally, employers conducted class presentations, mock interviews, and were in attendance at job fairs. More importantly, the employers allowed the students to participate in the care of patients entrusted to them.

E. Challenges During Program Implementation

Several challenges arose during the first few years of the grant. The major challenges and program refinements were as follows.

The Complexities of Six Colleges in Three States and two Time Zones

The procurement process, curriculum development, and program approval procedures were very different across the colleges. It took some colleges into the second year before they received the 3D technology for their classrooms due to procurement rules in the various states. Some of the colleges

submitted the program plan to the state system office before they received the grant and others waited until the grant was received. One college did not receive approval in time so students who wanted to enroll in BOOST could not receive federal financial aid. Courses also changed numbers over the course of the grant so colleges had to keep a matrix of courses that were a part of the BOOST program. Across colleges, students had different issues. All colleges attempted to utilize a cohort model to increase engagement and deliver wrap-around services to students. Some colleges experienced "student clique behavior" in the cohort groups which detracted from optimal learning environments. This, in conjunction with difficulty with student schedules and students wanting to attend part-time led to some colleges dissolving the cohort model and moving to both full- and part-time program offerings. Others continued the cohort model. The colleges had six budgets and some allocated money for things that others did not. Some had no funds for faculty stipends while others could pay part-time faculty to teach.

Program Recruitment

Colleges were given funding to hire recruiters for the BOOST program. Because each college had a goal of enrolling 48 students per semester (including fall, spring and summer), an aggressive marketing approach that included site visits, marketing materials, college student services staff, labor centers, partner networks, and military base contacts were used to recruit the required number of students. Recruiters also accessed the list of students intending to enter healthcare programs identified by either a pre-health holding program code or a unique series of courses. Faculty made referrals for students who were failing out of or doing poorly in other health programs. Many programs experienced a loss of students in the first two weeks of the semester because students did not pass the background check, sometimes as much as 20%. Staff learned to have the background check completed before classes started so they could recruit addition students to meet their enrollment goal.

During the first site visit, staff members were enthusiastic about the program, thought it would be of interest to students, and claimed that recruiting students was not difficult. Students were coming in through admissions, filling out intake forms, and being referred to the program. Midway through the grant period, recruitment became more difficult. In the first few years of the grant, recruitment relied heavily on pre-health holding code lists. However, with the implementation of BOOST in fall 2014, staff who had previously focused entirely on recruitment, now had additional job duties, such as assisting enrolled students, success coaching, and managing and tracking reports. Thus, recruitment was not given full focus as it was in the first years of the grant. The greatest challenges with recruitment were student personal issues such as lack of transportation, childcare, and work schedules. The recruiters at the colleges shared strategies with each other in hopes of uncovering more students to admit to the program.

The colleges aspired to recruit 48 students per semester from fall 2014 through fall 2016, the anticipated enrollment numbers were 336 per college and 2,016 across the consortium. This was somewhat unrealistic in that Selma, Alabama has a population of 18,983 and 169,000 in the college's service region while Columbia, South Carolina has a population of 134,309 and 712,000 in the college's service region. WCCS had only one other health program (nursing) while MTC had 12 other health

programs. Actual enrollment ranged from 148 to 323 per college. The highest semesters of enrollment were spring 2015, fall 2015 and spring 2016. Over the four years of the grant, BOOST served 1,292 students, (64% of projected). Enrollment by college and by semester can be seen in Table 5 below.

Table 5. Enrollment Numbers by College and by Semester							
Semester	**CCTC**	**FDTC**	**MTC**	**RCC**	**WCCS**	**WSCCH**	**Total**
Fall 2014	32	27	44	42	34	5	184
Spring 2015	**37**	**44**	**36**	**51**	**42**	**36**	**246**
Summer 2015	12	5	18	19	24	0	78
Fall 2015	**17**	**30**	**36**	**48**	**36**	**58**	**225**
Spring 2016	**21**	**24**	**35**	**48**	**28**	**72**	**228**
Summer 2016	8	7	18	9	5	4	52
Fall 2016	10	24	48	50	30	12	171
Spring 2017	11	0	23	56	11	7	108
Total	148	159	258	323	210	194	1,292

Lack of Initial Involvement in Professional Development Activities

Professional development, although plentiful, did not meet expectations in that faculty were in class or clinicals during the time allotted for training. Trainings were recorded and placed online but faculty still did not attend. Directors identified that more training is needed on developing objects for the 3D technology (iBenches), open source materials, simulation training for new faculty, and additional simulation training for current faculty. Project Directors sent their staff to some training external to the project. The directors communicated that they had too much money allotted for marketing and professional development and they wished they had allotted more to other areas such as faculty stipends or part-time faculty salaries. By the end of the grant, across the 6 institutions, faculty and staff had 614 counts of professional development activities at 303 different events or professional development course offerings. In Table 6, professional development activities were grouped into five categories.

Table 6. Description and Examples of Professional Development Categories		
PD Category	**Description**	**Examples**
Grant management	Events related to management of the BOOST grant	TAACCCT meetings; BOOST Consortium meetings; Department of Labor visits
Classroom/learning/instruction format	Events related to classroom instruction and student learning	Faculty orientation; workshops on flipped classrooms, student engagement, course design
Technology	Events related to technology including the use of simulation and online tools and programs for learning	Healthcare simulation training; national conferences on technology based learning; iBench training
Advising, coaching, student resources	Events related to advising, counseling, coaching, and resources for students	Advising and coaching training; workshops on early alert, at-risk and diverse student populations, career services, learning style assessments
Other	A wide range of events that do not fit in the other categories	National conferences for nursing practice; workshops for Microsoft office and stress management; supervisor training
Students Tracking	Once the consortium purchased Student Track to track students, the coaches had to learn how to use it.	Coached learned how to code their activities with students, how to get information from students who exited the program and income data. Twenty-four training were held over the last six months.

Of the five categories of professional development activities, 45% of all events were technology related; professional development activities related to coaching and advising were the least sought, with only 7% of all activities being from this category. Faculty and staff from WSCCH had the most counts of professional development completions (145) and faculty and staff from FDTC had the fewest counts of professional development completions (74). Faculty did receive adequate on developing open educational resources and 3D objects. By the end of the grant, they had uploaded 277 objects to the skills commons.

Table 7. Number and Percentage of Professional Development Activities by Category and by College						
College	**Grant Management**	**Learning/ Instruction**	**Technology**	**Advising, Coaching, Resources**	**Other**	**Total**
CCTC	14 (10.6%)	12 (10.6%)	32 (28.3%)	3 (2.7%)	52 (46.0%)	113 (18.4%)
FDTC	9 (10.8%)	8 (10.8%)	42 (56.8%)	2 (2.7%)	13 (17.6%)	74 (12.1%)
MTC	5 (5.7%)	11 (12.5%)	57 (64.8%)	2 (2.3%)	13 (14.8%)	88 (14.3%)
RCC	15 (15.6%)	2 (2.1%)	41 (42.7%)	9 (9.4%)	29 (30.2%)	96 (15.6%)
WCCS	31 (31.6%)	13 (13.3%)	48 (49.0%)	6 (6.1%)	0 (0.0%)	98 (16.0%)
WSCCH	7 (4.8%)	21 (14.5%)	55 (37.9%)	22 (15.2%)	40 (27.6%)	145 (23.6%)
Total	81 (13.2%)	67 (10.9%)	275 (44.8%)	44 (7.2%)	147 (23.9%)	614 (100%)

Student Complaints about Extra Costs (apart from Tuition/Fees)

During the first few years of the grant, students were admitted to the program not realizing (although they were informed) that they were going to have to purchase uniforms, pay for background checks and health screening which sometimes included vaccinations. Pell will pay for tuition, fees, and books; but will only cover uniforms if they are sold in the college bookstore. The colleges had trouble recruiting 48 students per semester and this made it even more difficult when students had to drop out because they couldn't afford the prerequisite costs for the program. Some of the colleges sought additional funding from churches, philanthropic organizations, and their own college foundations to assist students. Some areas had small grant programs or emergency funds students could utilize. Students dropping out from pre-program expenses was greatly reduced during the last two years of the grant.

Delayed Equipment Purchase

The equipment purchased with grant funds received mixed reviews. Human simulators were ordered and installed and faculty were trained in time for fall 2014 classes. A few colleges were slightly delayed due to the new construction of SIM suites for BOOST students. The 3D technology did not meet expectations in that it did not arrive until the end of the second year for most of the colleges. The equipment required subject specific 3D objects to be used in the classroom and machines came with very few health-related objects included in the system. Consortium college partners were contracted as 3-D object developers to create objects to be used with the 3D technology, but there were also delays in this procurement process and the development of the objects. By the end of the program, faculty and staff had attended training and produced 77 3D objects to use with the 3D iBenches. Other areas of the college also became interested in the 3D technology and it is anticipated that the iBenches will continue to be used in the future. Project Directors felt that too many iBenches were ordered sight unseen. If they had it to do over again, they would have ordered 1/3 as many and utilized the funds for something else.

Some of the directors felt faculty could also use more training on the simulators so they could utilize all of the available support pieces included in the technology, especially the SIM Manager that would allow them to run reports on student outcomes from the simulators. The colleges paid Healthcare Simulation of South Carolina a rather large membership fee annually for assistance in Simulation Center design, development and access to training scenarios and support. Some colleges reported they did not get much from the contract. The SIM Techs attended training and came back to the colleges and trained faculty.

Fidelity to the Program Design

The colleges implemented the program as it was intended with few missteps. They had some difficulty receiving their 3D technology until the end of the second year due to contract issues. Once received, they did not have adequate 3D objects to utilize to teach healthcare courses. Instructional developers and faculty had to build objects that could be used with these high tech machines. Except for the

simulation training, professional development implementation was slow. In part it had to do with faculty schedules and availability of training courses. By the end of the project, faculty were trained on use of the simulators, classroom strategies, developing 3D objects and developing open education resources (OER).

To evaluate fidelity to the original design, interviews were conducted with faculty, coaches, recruiters, SIM Techs, and program directors during each site visit and responses were compared. Focus groups were conducted with students and surveys were distributed and analyzed. Observations were made in the SIM labs and marketing materials were viewed. Questions were asked about each of the above mentioned strategies. Triangulation among the sources of data cross validated the work going on within the program. Student satisfaction with various aspects of the program improved from year to year. Areas where the colleges diverted from the original plan were:

- The development of short-term stackable credentials. The original plan was to offer one semester of core courses (Quickstart Core) followed by three semesters of skills-based courses in nurse aide/assistant, phlebotomy and cardiac care technician. Once those were completed, students could sit for an exam to become licensed patient care technicians. One college added additional certificates in paramedic/EMT, home health and medication aide. Three colleges offered the certificates as planned. Two did not offer phlebotomy, only the two certificates in nurse aid/assistant and cardiac care. Students were admitted to the program expecting to complete three certificates and were very disappointed at the colleges where the curriculum offerings had been changed.
- The backgrounds of the coaches varied which affected the content and delivery of their wrap-around services program. One coach was a social worker, one was an advisor who taught some of the student success courses that absorbed the role of coach. One was a job placement/career advisor, two came from a coaching/advising initiative at their college and became the advisor to the healthcare program. One had many years of experience working with students in a health science college. At some colleges, student receive case management while others worked on resumes and interviewing. Even though these differences were evident to an observer, students rated their coaches high on a satisfaction survey regardless of the college.

II. Summative Evaluation Design, Methods, Research Questions and Outcomes of the BOOST Program

The comprehensive evaluation of the BOOST program included regular formative feedback on the implementation progress among the six colleges and a rigorous analysis of outcomes and impacts using propensity score matching (PSM) to identify a matched comparison group. In this chapter, the methodology and approach to the evaluation is described. The research questions will be addressed including the factors believed to have had the most impact on participant outcomes.

A. Evaluation Design

The goal of the evaluation was to provide the colleges with information, data, and analysis to determine the effectiveness of the BOOST program. A secondary goal was to determine if human simulators (manikins) and 3D/virtual reality were an effective alternative to traditional coursework in allied health training and if the new short-term stackable credentials helped students gain entry into new career pathways in healthcare.

The impact study utilized a rigorous quasi-experimental matched comparison group analysis to examine the impact of participation in stacked and latticed credentials on educational outcomes, transfer and employment including credit accumulation, credential attainment, employment after program exit, and earnings increases after program entry.

Both quantitative and qualitative data were utilized in this study. Sources of quantitative data were student unit record level data extracted from the colleges' student information systems, wage data, and transfer data from the National Student Clearinghouse. Sources of qualitative data were student focus groups, classroom/lab observations, surveys and interviews with various staff members.

Table 8 below illustrates the work of the evaluators over the course of the grant. The evaluators worked with the college to develop data collection protocols and assessment tools to obtain insights from faculty members, project directors, career coaches, SIM Techs, and students. Observations were made in the simulation labs for the nurse aide/assistant program, phlebotomy, and cardiac care courses. Focus groups were conducted once in the first two years at all six colleges and once in the final two years. Two focus groups were conducted at each college in the first two years, one with new students and one with continuing students for a total of 18 focus groups over the four years of the grant. Surveys were developed and distributed to current students twice (fall 2015 and 2016), completers (spring 2017) and employers of completers (spring 2017). Interviews were conducted on each site visit with individual faculty members, the project steering committees, several advisory committees, career coaches, recruiters, and other key staff. Survey results can be found in Appendix C.

Table 8. Evaluation and Data Collection Timeline		
Date	**Action**	**Data Collected**
Fall 2013	Grant Awarded, Program Planning and Design Phase, interaction with consortium steering committee	Begin Implementing Data Mart at Colleges
Spring/ Summer 2014	Detailed Evaluation Plan Completed Site Visit to Consortium Office	Interviews/Discussion with Consortium Lead and Steering Committee
Fall 2014	Introduction to Evaluation and Expectations Provided to Colleges during 1st Site Visits, SIM Lab Observations	Semester Data Uploaded, Observations in the SIM Labs
Spring/ Summer 2015	2nd Site Visits to Colleges, SIM Lab Observations	Faculty, Staff, Director & Steering Committee Interviews, Observations in the SIM Labs Semester Data Uploaded
Fall 2015	3rd Site Visit First Year Report Submitted by CFAR	Student Focus Groups, Faculty, Staff, Director and Steering Committee Interviews, Current Student Survey Semester Data Uploaded
Spring 2016	First Interim Report Delivered to Consortium and Colleges	Semester Data Uploaded
Summer 2016	4th Site Visits to colleges to Work on Student Track Templates and Procedures created	Faculty, Staff, Director & Steering Committee Interviews Semester Data Uploaded
Fall 2016	5th Site Visits to Colleges	Student Focus Groups, Faculty, Staff, Director and Steering Committee Interviews, Current Student Survey Semester Data Uploaded
Spring 2017	Complete 5th Site Visit to Colleges Collect Career GPS and SIM tech databases	Semester Data Uploaded Employment Data Requested of Cooperative State DOLs
Summer 2017	Write Final Evaluation Report Collect transfer and employment data	National Student Clearinghouse Submitted and Received

CFAR has worked with many colleges to develop and implement a SAS-based internal data-mart system at colleges titled Jumpstart for Institutional Research. This was an added benefit for grantees because it had the ability to dramatically increase the IR capacity of the colleges. CFAR signed data-sharing agreements with all six colleges and they uploaded semester files from their student information systems (Banner or Colleague) to a secure cloud-based server with each college receiving a secure login and password. Once the files were edited for errors, SAS datasets were created. A CFAR staff member visited each of the colleges, installed their data-mart and left them with multiple programs they could run against their semester files to create useful reports. The data uploaded to CFAR allowed the evaluators to analyze eight semesters of enrollment data from fall 2014 through spring 2017 (ending March 31). Information about Jumpstart can be found in Appendix D.

The evaluators used propensity score matching (PSM) to generate a comparison group that was similar to the intervention group based on a set of characteristics that could create bias. To conduct PSM for the impact study, student characteristics available in the student information system were collected for

both the BOOST students and the pool of potential comparison group students. The comparison group consisted of students who wanted to enter healthcare programs at the colleges based on a pre-health holding code or a unique set of courses taken only by pre-health majors. The colleges provided the list of cohort students participating in the BOOST program, with different entry points or semesters, and CFAR staff determined multiple BOOST cohorts and comparison groups using a matching procedure. A student research identification number was established and retained in the dataset. Student characteristics were coded to structure the data for multiple analyses and logistic regression was used to determine significant differences on pre-intervention characteristics in the two groups. The findings indicated that besides intent to enter a health program, receiving a Pell Grant award was the only significant characteristic of participation for the BOOST cohorts. After the matching procedure, outcomes and program impact were analyzed and compared for the matched groups and measured the statistical difference in outcomes between the two groups. See Appendix E.

The impact study focused on five outcomes: increased number of credentials obtained, decreased time to completion; success of technology enhanced courses/programs; quality of learning (practice to mastery); impact of wrap-around services; and employer support for the program. The specific research questions for each outcomes are listed below.

B. Increased Number of Completions

Research Question 1: Will a larger percentage of students participating in technology-enhanced healthcare courses complete degrees/certificates than those taking courses through the traditional route?

A larger percentage of BOOST students earned certificates than the traditional college population or the comparison group. BOOST students had several types of credentials they could earn. They could complete a skills-based course such as Certified Nursing/Aide Assistant (CNA) earning an industry recognized credential that qualifies them for state licensure and an entry-level job in healthcare. They could also complete a college certificate in Nurse Aide/Assistant. Furthermore, students could complete the quick start core and go on to earn one to three college certificates (CNA, phlebotomy and cardiac care) and, with all three, earn a college cumulative certificate in Patient Care Technician. The latter also qualifies them to take a national industry recognized certification exam to become a certified Patient Care Specialist. Students could also complete certificates and apply to an associate's degree health care program like nursing or surgical technology and obtain an associate's degree. The BOOST students earned more skills-based, industry-recognized credentials than the longer college certificates. Of the entire BOOST cohort, 53% earned at least one industry-recognized credential and 32% earned college certificates. Of those, 146 took the national nurse assisting exam (NNAAP) and became certified. An additional 27 BOOST students earned associate's degrees, some in healthcare fields and some in other majors. Of the BOOST students, 200 earned only one certificate, 127 earned two, 56 earned three and 37 earned four. Table 9 below indicates the number of skills-based course credentials and certificates earned by college and by term within the BOOST program.

Table 9. BOOST Students Completing at Least One Skills Course or Certificate					
College	BOOST Cohort	Number completed any skills course credential within 2.5 years		Number earned any certificate	
	#	#	%	#	%
CCTC	148	73	49%	72	49%
FDTC	159	80	49%	75	46%
MTC	258	112	43%	97	38%
RCC	323	134	41%	7	2%
WCCS	210	111	53%	92	44%
WSCCH	194	177	91%	75	39%
Total	1,292	686	53%	418	32%

Many of these students had low grade point averages or had failed out of other healthcare programs or courses but were recruited and admitted to the BOOST program.

C. Decreased Time to Completion

Research Question 2: Will students participating in technology-enhanced coursework complete short-term stackable certificates more quickly than those taking courses through traditional methods?

Table 10 below compares the BOOST students to the first-time, full- and part-time credential seeking students reported to IPEDS by each college. The latest year for which we have IPEDS three-year (150%) graduation/completion rates is fall 2011. Fall 2011 is also three years earlier than the BOOST program began thus insuring that no BOOST students were in the cohort. Of those students who entered the college indicating that they wanted to earn a degree, diploma or certificate, between 8% and 24% had done so within three years of entry. Of the BOOST students who entered stacked and latticed credential programs, 2% to 49% had completed at least one academic certificate within three years.

Table 10. IPEDS First-time Full- and Part-time Credential-seeking Students (degree, certificate, diploma) Compared to BOOST Certificate Seeking Students		
Central Carolina Technical College		
Variables	Number in Cohort	3 year completion rate
Latest IPEDS Cohort - Fall 2011	506	11%
All BOOST Students	148	49%
Florence Darlington-Technical College		
Variables	Number in Cohort	3 year completion rate
Latest IPEDS Cohort - Fall 2011	956	8%
All BOOST Students	170	47%
Midlands Technical College		
Variables	Number in Cohort	3 year completion rate
Latest IPEDS Cohort - Fall 2011	1,627	8%
All BOOST Students	258	43%
Robeson Community College		
Variables	Number in Cohort	3 year completion rate
Latest IPEDS Cohort - Fall 2011	232	6%
All BOOST Students	324	2%
Wallace Community College – Selma		
Variables	Number in Cohort	3 year completion rate
Latest IPEDS Cohort - Fall 2011	**376**	20%
All BOOST Students	211	44%
Wallace State Community College – Hanceville		
Variables	Number in Cohort	3 year completion rate
Latest IPEDS Cohort - Fall 2011	896	24%
All BOOST Students	194	39%

While the BOOST students earned more certificated than degrees and the IPEDS cohort earned more degrees than certificates, the percentage of BOOST students who earned a credential in three years was much higher than the students reported to IPEDS in all but one college. See Appendix for individual reports by college.

D. Success of Technology Enhanced Courses and Quality of Learning

Research Questions 3: Do students participating in technology-enhanced courses have a better quality of learning and educational and employment outcomes than those taking courses through the traditional route?

The BOOST student courses were taught in state-of-the-art simulation labs. The courses had a faculty member and a simulation technician (SIM Tech) in the lab with the students. Students worked together on the skills needed to complete the course and could return to the labs as often as they wanted to work with the SIM Tech to improve their skills. The Certified Nurse Aide/Assistant course consisted of 22 skills that students had to master to complete the course. Students could practice as many times as they wanted to master a skill. Some skills such as hand washing were mastered quickly (2-3 attempts) while other, more complicated skills such as taking blood pressure, took many more practice attempts (7-10).

While the number of attempts varied, 96% of students who were present at the census point passed the Certified Nurse Aide/Assistant course.

One of the unique features of the simulation equipment was the recording capability. Student performance was recorded and played back in group debriefing sessions. The labs were equipped with several video screens where a group of students would watch their performance, learn from one another's successes and mistakes and have a debriefing session with the faculty or SIM Tech to improve their skills. This ability to practice as many times as needed, record and watch themselves on video, proved to be an important learning tool.

Students were surveyed in year two and year four and asked questions about their experiences in the SIM labs and with the simulation equipment. Students rated their experience with the simulation labs highly in the first two years (80% satisfied) but that increased to 91% by the end of the program (Table 11).

Table 11. The Experience I Received from the Simulation Labs

College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	18	4.11	67%	27	4.56	93%
FDTC	23	3.87	65%	13	4.08	77%
MTC	16	3.81	63%	22	4.45	86%
RCC	15	4.27	80%	36	4.64	94%
WCCS	44	4.41	93%	31	4.42	91%
WSCCH	40	4.35	88%	12	4.19	100%
Total	156	4.21	80%	141	4.43	91%

Current students also rated the equipment used in the labs highly in the first two years (83% satisfied) but that had increased to 91% by the end of the program. Completers were also surveyed and 94% were satisfied with their experiences in the simulation labs (Table 12).

Table 12. The Equipment I Used in Labs

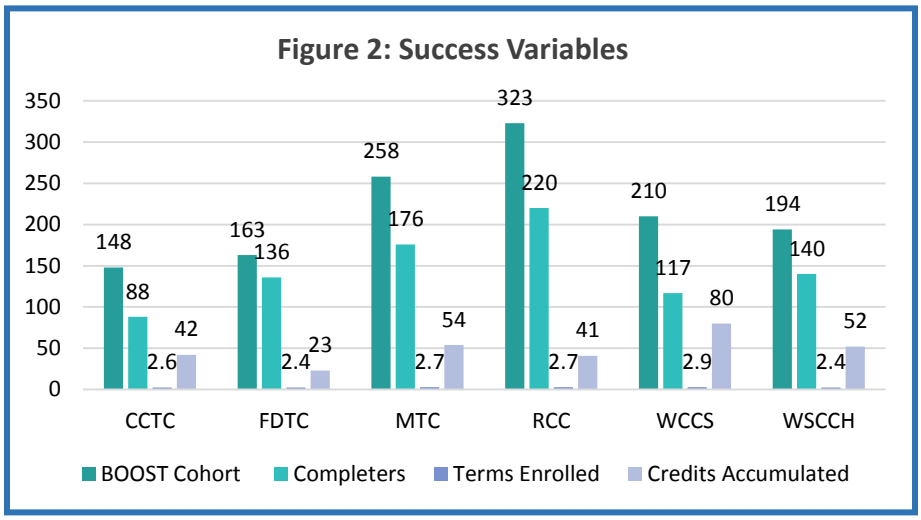
College	Fall 2015 Survey			Fall 2016 Current Student Survey			Spring 2017 Completer Survey		
	Satisfied or Very Satisfied			Satisfied or Very Satisfied			Satisfied or Very Satisfied		
	#	Mean	%	#	Mean	%	#	Mean	%
CCTC	17	4.12	71%	28	4.54	89%	5	4.80	**100%**
FDTC	19	1.05	68%	13	4.08	69%	22	4.41	**87%**
MTC	13	4.38	92%	19	4.68	100%	24	4.67	**96%**
RCC	13	4.38	85%	38	4.42	87%	12	4.75	**100%**
WCCS	46	4.24	87%	28	4.33	97%	18	4.67	**100%**
WSCCH	43	4.30	86%	12	4.39	92%	29	4.62	**89%**
Total	151	4.25	83%	138	4.43	91%	110	4.62	**94%**

Students were observed by the evaluator in every course in the simulation labs in the first two years of the program and again toward the end of the program. The students matured over the course of the program and became confident and self-assured working in the simulation labs. For information on practice to mastery of skills in the simulation lab can be found in Appendix G.

In focus groups, students identified the "hands on" nature of the BOOST courses as the major reason they came to the program and as the best part of the courses. Students also commented on being ready to work with live patients in clinicals due to the exposure they had in the SIM labs. Students enjoyed working with patients and learned a lot from working in a healthcare facility.

E. Quality of Learning

In the end, BOOST students did well in their program. Of the 1,292, 877 (68%) earned a credential, either an industry recognized credential or a college-identified certificate. Their mean GPA at the end of the program was 2.6 and they accumulated an average of 49 credits (Figure 2).



F. The Impact of Wrap-around Services

Research Question 4: Is there an added benefit to receiving wrap-around support services such as counseling, academic advising, career counseling, and tutoring services in addition to the technology-enhanced courses?

While there are many student support activities in place at each college, BOOST activities targeted completion of academic goals that focused on employment driven skills and academic success. Student job seekers had access to a robust variety of resources (resources that are typically not available to certificate seekers) that helped them choose new career tracks and prepare them for their subsequent careers. The most important aspect of wrap-around services from the students' perspective was access to a Career Coach. The students recruited into the BOOST program were given a host of support services

from their Career Coach, faculty teaching in the program and the Project Directors. Over the four years of the program, surveys and focus groups of current students were conducted twice and a survey of program completers was conducted once. Faculty, directors, simulation technologists, recruiters, and coaches were interviewed about the success of and importance of wrap-around services for students.

As the program matured, program directors, faculty, SIM Techs and coaches realized that wrap-around services had made a significant impact. "Wrap-around services are what made the program different from other programs. One coach said, "We are giving students who wouldn't have had a chance – a second chance at life. Students are being exposed to others with goals in life and they are inspired."

Career Coaches

Career Coaches assisted the program by serving as the admissions contact, success coach, and retention specialist. At some colleges, the coaches taught some of the entry level BOOST courses so students got to know them early. Because the majority of these students came from rural areas with high unemployment and low income, poverty has been a big issue. Colleges lost some students because they could not pay for uniforms, background checks, and health assessments. To address this issue, some colleges found funds to assist students until their Pell Grant funds came through.

The colleges were surprised at the case-management needs that occurred with students in this program. Because of this, some colleges wished they had additional coaches for BOOST and could offer the same services in all of their programs. Coaches were able to give individualized care to students and students fully utilized their services. Coaches were the first face students saw and they stayed in constant contact having built relationships with them. Having coaches also provided students with employment assistance. Students were asked about their satisfaction with the assistance from their Career Coach. Current students were satisfied (87%) and 90% of completers were satisfied with the assistance they received from their Career Coach (Table 13).

Table 13. The Assistance I Received from the Career Coach

College	Fall 2015 Current Student Survey			Fall 2016 Current Student Survey			Spring 2017 Completer Survey		
	Satisfied or Very Satisfied			Satisfied or Very Satisfied			Satisfied or Very Satisfied		
	#	Mean	%	#	Mean	%	#	Mean	%
CCTC	18	4.33	89%	29	4.48	90%	5	4.60	**100%**
FDTC	34	3.79	68%	22	3.77	59%	22	4.41	**77%**
MTC	23	4.48	87%	36	4.42	83%	24	4.58	**96%**
RCC	21	4.57	90%	43	4.79	97%	12	4.83	**92%**
WCCS	55	4.67	98%	30	4.36	94%	18	4.50	**95%**
WSCCH	38	4.29	87%	14	4.43	86%	29	4.62	**89%**
Total	189	4.37	87%	174	4.40	87%	110	4.57	**90%**

While the student services staff and the career coaches provided excellent services to students, students also received support from BOOST program directors and program faculty. Students were comfortable going to their faculty or program staff if they had classroom issues or personal problems. Student survey responses midway through the grant period indicated that 83% of students were satisfied with the care and support they receive from program faculty and 85% with other faculty. By the final year of the program, 87% were satisfied with the program faculty and 89% with other faculty across the college.

Data from Student Track

The initiative purchased student tracking software to allow coaches to create a detailed database of services provided to students, number of coaching sessions, and the outcomes of those activities. The software product (Student Track) was developed by Computer Applications International. This software allows educational institutions to track information about prospective and enrolled students from initial contact through graduation. Student Track is designed for use in all higher education settings including colleges, universities, trade schools, nursing schools, etc. Key features are the ability to track all student information such as contact information, grades, student schedules, and graduation; the ability to customize Student Track to meet the institution's needs; and the ability to scan documents into the database.

Since the tracking software had the ability to create a customized tracking process, data were collected from the colleges on the types and nature of the counseling, coaching, and educational activities provided. The services provided by the career coaches included career related services, academic related services, program issues, and community based needs. The individual types of services that staff wanted to code and include in Student Track can be seen in Table 14 below.

Refinements were made to the system and data were entered according to broad categories. The Career Coaches spent the fall semester 2016 entering the data for all of the counseling sessions, case management records, and group educational activities for each student from fall 2014 through spring 2017. Reports were run from Student Track and a total of 1,268 students entered into the system participated in 15,314 (mean 12.0) support services (including academic advising, tutoring, academic workshops, etc.) (Table 14). Students at WCCS had the highest number of support service visits per student and FDTC had the lowest.

Table 14. Number of Total Wrap Around Support Services by College

College	Total Students	Total Number of Visits	Total Range	Total Mean (SD)
CCTC	131	787	1-12	6.01 (3.21)
FDTC	159	824	1-18	5.18 (3.39)
MTC	258	3,721	2-40	14.42 (6.721)
RCC	324	3,198	1-56	9.87 (7.83)
WCCS	208	3,815	3-43	18.34 (8.93)
WSCCH	194	2,992	5-40	15.42 (5.90)
Total	1,274	15,337	1-56	12.04 (8.10)

When looking at the types of services utilized by students, they participated in more coaching sessions about academic issues (mean = 7.3) and the least number of coaching sessions addressing personal barriers (mean = .8) (Table 15). WSCCH and WCCS delivered the highest number of sessions on academic-related issues. MTC and WSCCH delivered the highest number of sessions on career-related issues.

Table 15. Types of Wrap Around Support Services Utilized by Students at the Colleges

College	Academic Related Mean (SD)	Personal Barriers Related Mean (SD)	Career Related Mean (SD)
CCTC	2.37 (1.12)	1.34 (0.92)	1.81 (1.07)
FDTC	2.30 (1.50)	0.38 (0.82)	1.72 (1.60)
MTC	7.20 (3.51)	0.13 (0.41)	6.58 (4.23)
RCC	7.06 (6.41)	0.81 (1.43)	1.65 (1.74)
WCCS	12.73 (6.79)	2.00 (2.28)	3.01 (2.19)
WSCCH	9.65 (3.92)	0.10 (0.39)	5.19 (2.88)
Total	7.33 (5.87)	0.76 (1.43)	3.44 (3.29)

To determine if wrap-around services were correlated with skills course credentials and certificate completion, Pearson correlation coefficients were calculated (Table 16). The number of visits for wraparound support services were significantly correlated to completions. In other words, receiving more support services was associated with earning more certificates and completing more skills course credentials. Information on wrap-around services and Student Track can be found in Appendix H.

Table 16. Correlations between Number of Wraparound Support Services and Certifications Earned and Skills Courses Completed

Variable	Total number of certificates earned	Total number of skills courses completed
Total number of coaching visits	**.16***	**.30***
Number of academic related visits	-.00	**.26***
Number of barrier related visits	**.20***	**.32***
Number of career related visits	**.25***	**.10***

*p<.05

CareerChoice GPS

The colleges originally selected a job readiness tool that did not deliver as they expected. One year into the implementation, they select a new product, CareerChoice GPS. Licenses were provided to the colleges to administer CareerChoiceGPS to students in the program to determine job readiness and fit. CareerChoice GPS is a product designed to help students find programs from which they can graduate by assessing key values and characteristics that make one “fit” for the field. Serving as an admissions and career placement tool, it is easy for students to take and has been mapped to 73 career fields, two of which are health services and medical and healthcare. Students were assessed using predictive

constructs, learned behaviors and styles and attitudes and beliefs. The BOOST students' scores indicated they were aligned to health careers (Table 17). More information about CareerChoice GPS can be found in Appendix I.

Table 17. CareerChoice GPS Fit with Health Careers – Score

College	Medical and Healthcare	Health Services
	% 3 & up	% 3 & up
CTCC	100%	78%
FDTC	100%	89%
MTC	100%	79%
RCC	100%	79%
WCCS	100%	81%
WSCCH	100%	85%

G. Importance of Employer Support

Research Question 5: Does employer support and interaction increase outcomes for students and the college?

All six colleges had advisory committees. At some colleges, employers participated in career fairs, mock interviews with students, and visited the simulation labs to watch students demonstrate skills. One college was successful in getting those responsible for hiring to come into the SIM labs on a "skills demonstration" day and watch the students demonstrating the 22 skills they mastered in the Nurse Aide/Assistant course. Many of these students were hired on the spot. Students had some direct exposure to employers but there was variation among colleges. Feedback from hospitals in the regions around the BOOST colleges have commented on how much better prepared BOOST students were and they got "three in one" when they hired a BOOST students (a nurse aide, a phlebotomist and a cardiac care assistant). One hospital had an hourly wage for CNAs and a BOOST-specific hourly wage for CNAs. They felt their skills were so much higher than typical CNAs that they raised their entry salary. Many of the hospitals claimed that BOOST had raised the skill levels of entry level workers in phlebotomy, cardiac care, and nurse aide in their counties. Employer involvement in the program did benefit students in that it raised awareness of the skill level of the students in the program, allowed students to interact with healthcare professionals prior to employment, helped the colleges secure clinical space and helped students gain employment.

Local employers who had hired BOOST students completed a survey about the skills observed in the BOOST student. A total of 24 employers who had hired CNA completers, phlebotomists, cardiac care technicians and patient care technicians.

Table 18. Employer Survey Results	
Percent who said they were satisfied or very satisfied with the job-related skills for the BOOST students	
Oral Communication	92%
Written Communication	92%
Problem-solving skills	83%
Organization and planning	88%
Quality of Work	83%
Specific job-related skills	71%
Percent who said BOOST students were better or much better prepared when compared to graduates of other programs	
Oral Communication	67%
Written Communication	63%
Problem-solving skills	71%
Organization and planning	71%
Quality of Work	67%
Specific job-related skills	63%

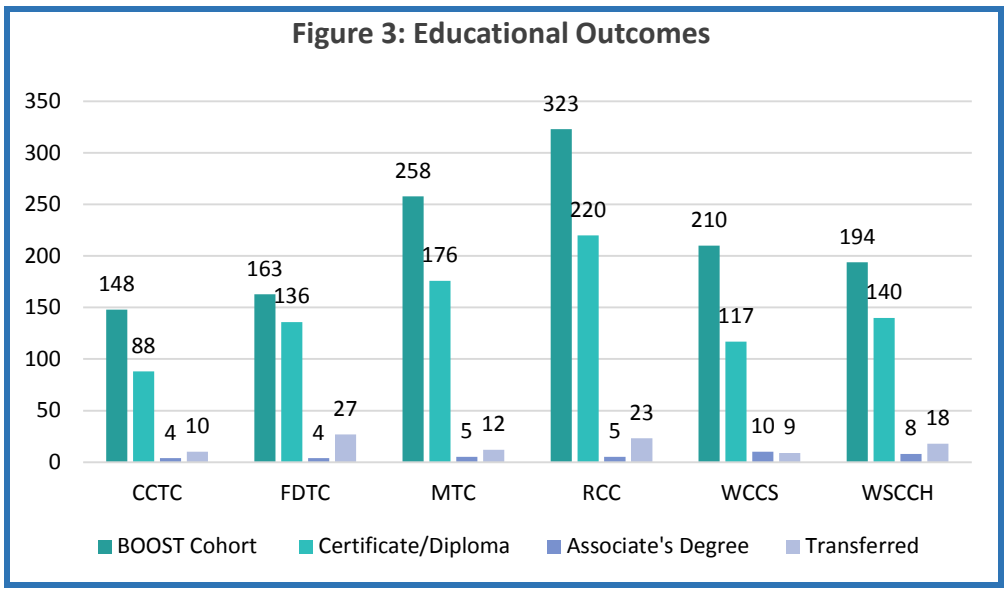
Overall, employers were satisfied with the job related skills of the BOOST students with students receiving the highest scores for oral and written communication.

H. Cumulative Education and Employment Outcomes for Participants

The TAACCCT grant program identified several participant outcome indicators for analysis through grantee evaluation. This section focuses on the key outcomes of program completion, credential completion, employment and earnings.

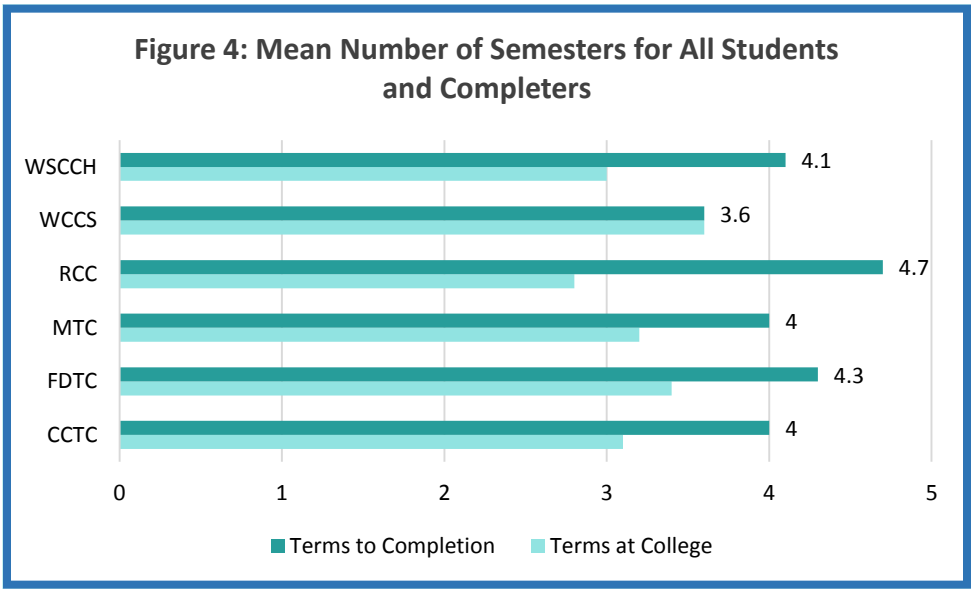
A large portion of participants completed industry recognized credentials, preparatory courses (QuickStart Core), and college certificates and degrees.

Consortium-wide, 659 (51%) students had completed a skills course credential, certificate or diploma. An additional 36 (3%) received associate's degrees and 99 (8%) had transferred to another community college or a university to continue their education.



Participants Completed Programs in a Relatively Short Amount of Time

Consortium-wide, the average number of semesters to completion was 4.0. Considering that the program was designed to be completed in three to four semesters, student completers did well (range 3.6 to 4.7). Across the consortium, all students (including drop-outs) stayed at the college an average of 3.1 semesters.



Changes in Wages

Students were asked about employment, annual family income, hourly wage and hours worked per week in the intake process for the BOOST program. Consortium-wide, m=wages increased from initial program enrollment through the end of the study period. Table 18 reports average wages and hours

worked per week pre- and post-BOOST. Employed participants saw an average of $2.21 per hour increase and an average of 4.6 more hours worked per week than pre-BOOST.

III. Factors Influencing Outcomes for Participant

Chapter II presented the results of the descriptive analysis of education and employment outcomes for the BOOST participants. In this chapter, we address the factors that influenced participant outcomes.

A. Participant Characteristics and Program and Credential Completion

Participant characteristics we identified in Chapter I, Tables 2, 3 and 4. The majority of students were female (81%) and minority (70%) with a mean age of 29. Coaches commented multiple times during interviews about the poverty level of their students. Of BOOST participants, 81% applied for the federal Pell Grant and 41% were unemployed. Students came from large households whose annual income placed them below the poverty line. BOOST students were not atypical of other students at their colleges or other community college students across the country with a few exceptions. Some of the colleges were located in extremely low-income areas with very high unemployment rates. Coaches commented that their students were "one flat tire away from dropping out of school." The variables identified by faculty, project directors and coaches as being the most influential in the success of BOOST students were their complicated lives. Being low income, they had transportation issues, childcare issues and spent time away from work when they had classes. Colleges tried to find supplemental funds to help those they could but there was more need across the consortium than there were funds. Coaching was a critical factor. Because students had complicated lives, the support of their coach was critical to their success. Coaches identified critical issues that students experienced that impacted their attendance and classroom success (Figure 5).

Figure 5: Issues That Impacted Student Progress

- Family life (children/parents in need)
- Pregnancy
- Marital Issues
- Addiction
- Family health issues
- Work/school/life balance
- Transportation
- Faculty relationships
- Childcare
- Financial situation
- Personal health
- Belief in themselves (lack of can do attitude)
- Personal mental health
- Low expectations
- Academic difficulties
- Lack of social skills
- Lack of soft skills

Students in the BOOST program presented to their coaches as students in need and utilized their coaches as social workers. Coaches discussed employment issues with students but spent more time coaching them academically. BOOST students attended 15,337 coach activities/visits. An average of 7.3 per student were for academic reasons, 1 was personal and 3.4 were career/job-related. Coaching was significantly correlated to student completion. Success rates were high for the BOOST students.

IV. Results of the Quasi-Experimental Outcomes Analyses and Comparison of Program Outcomes to the Matched Comparison Group

As part of the grant requirements, DOL directed grantees to use the most rigorous quantitative evaluation design appropriate for each grantee's institutional capacity and characteristics. Across the consortium, colleges focused on building capacity in their health programs by constructing simulation centers with human manikins and the use of 3D technology. Their emphasis was on providing an alternative pathway to high demand, high income jobs in healthcare for students who would not otherwise be competitive for other health programs with rigorous entrance requirements such as nursing. They also focused on capacity building in students services with the addition of coaches and many are continuing their coaching work across larger programs or across their entire institution as a result of what they learned through the DOL funded TAACCCT grant. They were also able to increase the capacity of their institutional research area with the addition of a SAS-based data mart at each college. Because 1) programs had difficulty meeting their recruitment quotas and 2) the nature of community college students in this program (limited number of pre-health majors), an experimental design with random selection and distribution would not have been appropriate. To add rigor to the evaluation, a quasi-experimental design using PSM to create a matched comparison group was utilized.

In this chapter, the results of the comparison between the treatment group and the matched comparison group will be explored. The research questions were centered around BOOST student outcomes. The focus of the comparison will be on credit accumulation, grade point average, semesters to completion, graduation rates, transfer rate and completions at the transfer institution. Employment comparison data for the comparison group was not collected due to the lack of participation on the part of the state employment agencies in these three states.

A. The Matched Comparison Group

The matched comparison group pool was selected from like students who were attempting to be admitted to health programs at their college. These students were identified by carrying a pre-allied health or pre-nursing program code (e.g. pre-dental hygiene, pre-physical therapy assistant) or from a unique pattern of courses indicating pre-health programs (Alabama did not have pre-health program [holding] codes). Health programs are different than other programs at community colleges in that they are typically cohort-based programs with students entering as a group and progressing as a group. Health programs often have their own advisors, orientation and early alert system and they are externally accredited. Selecting students from other programs would not be as accurate a comparison as other pre-health students. Because of this, the groups were very similar. The BOOST group was 94% female, age 28 and 70% minority (matched group 90%, 29 and 59%). The only variable that was significant in the regression analysis was applying for the federal Pell grant (low income students).

B. Comparing Outcomes for BOOST Students and the Comparison Group

The colleges uploaded their semester data to CFAR with a secure login and password. CFAR researchers were able to look at student records in Banner or Colleague (student information systems). Comparison analyses were examined for cumulative grade point average, total credits completed, number of semesters enrolled, earning a credential, transfer rates, graduation rates, and time to completion.

Cumulative GPA

To examine differences in GPA between BOOST students and the comparison group, independent samples t-tests were used (Table 19). BOOST students had statistically significant higher cumulative GPA (M=2.49, SD=0.80) than students in the comparison group (M=2.31, SD=1.07), t(1743)=-4.04, p <.05. In other words, BOOST students had cumulative GPAs that were .18 points higher than students in the comparison group. At individual colleges, only BOOST students at FDTC and RCC had significantly higher cumulative GPAs than comparison group students.

In addition to conducting t-tests, multiple regression was used to examine whether being in BOOST (versus being in the comparison group) predicted cumulative GPA. Being in BOOST was associated with a .18 point increase in cumulative GPA (*b* =.18, p < .01).

Table 19. BOOST vs. Comparison Students on Cumulative GPA

College	Cumulative GPA				
	BOOST		Comparison		Test
	#	M (SD)	#	M (SD)	t (p)
CCTC	88	2.80 (0.80)	89	2.66 (.78)	-1.21 (.229)
FDTC	135	**2.44 (0.87)**	138	**2.21 (1.03)**	**-2.04 (.043)***
MTC	176	2.58 (0.71)	164	2.56 (0.92)	-0.15 (.878)
RCC	220	**2.15 (0.90)**	215	**1.79 (1.15)**	**-3.68 (.000)***
WCCS	117	2.85 (0.49)	120	2.67 (1.16)	-1.59 (.113)
WSCCH	140	2.49 (2.39)	143	2.39 (0.94)	-0.98 (.330)
Total	876	**2.49 (0.80)**	869	**2.31 (1.07)**	**-4.04 (.000)***

*p<.05

Total Credits Completed

There were no statistically significant differences between BOOST students and comparison group students in the total number of credits completed (Table 20). BOOST students at FDTC and WCCS completed significantly more credits than students in the comparison group; BOOST students at CCTC and MTC completed significantly fewer credits than students in the comparison group.

Multiple regression was used to examine whether being in BOOST (versus being in the comparison group) predicted number of credits completed. There was no effect of being in BOOST on the total number of credits completed (*b* =.04, p =.12).

Table 20. BOOST vs. Comparison Students on Total Credits Completed

College	Total Credits Completed				
	BOOST		Comparison		Test Statistics
	#	M (SD)	#	M (SD)	t (p)
CCTC	88	**41.75 (31.95)**	89	**57.22 (34.63)**	**3.09 (.002)***
FDTC	135	**23.51 (14.95)**	138	**14.88 (14.26)**	**-4.88 (.000)***
MTC	176	**54.40 (33.31)**	164	**66.68 (44.23)**	**2.90 (.004)***
RCC	220	40.82 (29.34)	215	37.07 (31.03)	-1.30 (.196)
WCCS	117	**80.48 (24.78)**	120	**46.66 (32.07)**	**-9.07 (.000)***
WSCCH	140	52.20 (21.45)	143	54.94 (37.96)	0.66 (.510)
Total	876	48.09 (32.76)	869	45.46 (37.62)	-1.56 (.120)

*p<.05

Number of Semesters Enrolled

An independent samples t-test indicated that BOOST students were enrolled for more semesters at the BOOST college (M=2.62, SD=1.38) compared to students in the comparison group (M=2.39, SD=1.45), t (1743)=-3.42, p <.01 (Table 21). Therefore, BOOST students were enrolled for .23 more semesters than students in the comparison group. The only college with a statistically significant difference in number of semesters enrolled in the BOOST colleges was WSCCH.

Multiple regression was used to examine whether being in BOOST (versus being in the comparison group) predicted number of semesters enrolled at the BOOST colleges. Being in BOOST was associated with a .23 increase in the number of semesters enrolled in the BOOST college (*b* =.23, p < .01).

Table 21. BOOST vs. Comparison Students on Number of Semesters Enrolled at BOOST College

College	Number of Semesters Enrolled at BOOST College				
	BOOST		Comparison		Test Statistics
	#	M (SD)	#	M (SD)	t (p)
CCTC	88	2.60 (1.42)	89	2.60 (1.47)	-0.03 (.975)
FDTC	135	2.44 (1.36)	138	2.14 (1.39)	-2.84 (.067)
MTC	176	2.71 (1.34)	164	2.51 (1.37)	-1.35 (.179)
RCC	220	2.65 (1.48)	215	2.43 (1.45)	-1.48 (.139)
WCCS	117	**2.89 (1.12)**	120	**2.23 (1.32)**	**-4.02 (.000)***
WSCCH	140	2.44 (1.47)	143	2.41 (1.67)	-0.12 (.902)
Total	876	**2.62 (1.38)**	869	**2.39 (1.45)**	**-3.42 (.001)***

*p<.05

In addition to examining total number of semesters enrolled, the number of students enrolled in $\geq$ 3, 4, 5, and 6 semesters was examined (Table 22a & 22b). Chi-square tests were used to examine whether the percentage of students enrolled for at least 3 semesters, 4 semesters, 5 semesters, and 6 semesters differed between BOOST and comparison group students. BOOST students were more likely to be enrolled at their BOOST college for $\geq$ 3 semesters (59%) compared to comparison group students (46%), $X^2(1, N = 1704) = 29.48$, $p < .05$). Furthermore, BOOST students were more likely to be enrolled at their BOOST college for $\geq$ 4 semesters (40%) compared to comparison group students (28%), $X^2(1, N = 1704) = 26.89$, $p < .05$).

Table 22. BOOST vs. Comparison Students on Selected Number of Semesters Enrolled at BOOST College						
College	Enrolled in ≥ 3 Semesters			Enrolled in ≥ 4 Semesters		
	BOOST	Comparison	Test Statistics	BOOST	Comparison	Test Statistics
	# (%)	# (%)	X^2 (p)	# (%)	# (%)	X^2 (p)
CCTC	54 (61%)	51 (58%)	0.14 (.761)	37 (42%)	29 (33%)	1.41 (.277)
FDTC	**89 (65%)**	**63 (46%)**	**10.47 (.002)***	60 (44%)	48 (35%)	2.35 (.138)
MTC	105 (59%)	89 (54%)	0.89 (.382)	69 (39%)	58 (35%)	0.48 (.503)
RCC	**111 (47%)**	**61 (31%)**	**11.30 (.001)***	**75 (32%)**	**31 (16%)**	**14.72 (.000)***
WCCS	63 (53%)	58 (45%)	1.28 (.309)	41 (34%)	37 (29%)	0.80 (.413)
WSCCH	**92 (77%)**	**55 (47%)**	**22.42 (.000)***	**69 (58%)**	**30 (26%)**	**24.86 (.000)***
Total	**514 (59%)**	**377 (46%)**	**29.48 (.000)***	**351 (40%)**	**233 (28%)**	**26.89 (.000)***
College	Enrolled in ≥ 5 Semesters			Enrolled in ≥ 6 Semesters		
	BOOST	Comparison	Test Statistics	BOOST	Comparison	Test Statistics
	# (%)	# (%)	X^2 (p)	# (%)	# (%)	X^2 (p)
CCTC	18 (20%)	21 (23%)	0.34 (.590)	9 (10%)	13 (15%)	0.88 (.372)
FDTC	33 (24%)	33 (24%)	0.00 (1.00)	18 (13%)	11 (8%)	1.95 (.175)
MTC	39 (22%)	29 (18%)	1.01 (.344)	19 (11%)	14 (9%)	0.47 (.583)
RCC	33 (14%)	18 (9%)	2.36 (.136)	13 (6%)	8 (4%)	0.47 (.654)
WCCS	22 (18%)	26 (20%)	0.16 (.749)	13 (11%)	15 (12%)	0.05 (.844)
WSCCH	**24 (20%)**	**11 (10%)**	**5.29 (.027)***	7 (6%)	3 (3%)	1.57 (.333)
Total	169 (19%)	138 (17%)	1.99 (.166)	79 (9%)	64 (8%)	0.92 (.382)

*p<.05

Earning a Credential

Chi-square tests and logistic regression were used to examine differences in certificates and degrees earned from BOOST or transfer institution between the two study groups (Table 23). A higher percentage of BOOST students obtained certificates or diplomas (33%) compared to comparison group students (5%) ($X^2(1, N = 1723) = 223.870$, $p < .05$). Additionally, at every college except RCC, BOOST students had higher percentages of obtaining a certificate or diploma than comparison group students. Logistic regression indicated that BOOST students were over 900% more likely to earn a certificate or diploma compared to students in the comparison group (OR = 9.79, 95% CI: 6.94, 13.80)

Statistics were also used to examine whether, to date, BOOST students have earned associate's or bachelor's degrees at higher rates than comparison students. However, it should be noted that the 150% time frame required to earn a degree would not have been meet by students entering after the Fall 2014 semester. Therefore, final and accurate conclusions cannot be made for several more years.

A lower percentage of BOOST students (4%) earned an Associate's degree or higher compared to 10% of comparison group students ($X^2(1, N = 1723) = 26.17, p < .05$). A total of 108 obtained an associate's degree and five obtained a bachelor's degree. Furthermore, comparison group students at CCTC, FDTC, and MTC obtained at least an Associate's degree at higher rates than BOOST students. Logistic regression indicated that BOOST students were 33% less likely to obtain an Associate's Degree or higher compared to students in the comparison group (OR = 0.36, 95% CI: 0.23-0.54).

Among the 99 BOOST students (11%) who transferred, only 3 (3%) earned a certificate at their transfer institution and 2 (2%) earned an Associate's degree, and no BOOST students earned Bachelor's degrees. Of the 157 comparison group students who transferred (19%), 2 (1%) earned a certificate at their transfer institution, 8 (5%) earned an Associate's degree, and 5 (3%) earned Bachelor's degrees.

Table 23. BOOST vs. Comparison Students on Number Earning a Certificate/Diploma and Earning an Associate's Degree or Higher

College	Students Earning a Certificate or Diploma					Students Earning an Associate's Degree or Higher				
	BOOST		Comparison		Test Statistics	BOOST		Comparison		Test Statistics
	#	%	#	%	X^2 (p)	#	%	#	%	X^2 (p)
CCTC	48	**54%**	29	**22%**	**19.67 (.000)***	4	**5%**	14	**16%**	**6.31 (.013)***
FDTC	66	**48%**	5	**4%**	**71.44 (.000)***	4	**3%**	18	**13%**	**9.58 (.003)***
MTC	76	**43%**	3	**2%**	**82.68 (.000)***	5	**3%**	23	**14%**	**13.65 (.000)***
RCC	8	3%	2	1%	2.76 (.117)	5	2%	9	5%	1.98 (.181)
WCCS	59	**47%**	7	**5%**	**58.38 (.000)***	8	5%	12	9%	1.86 (.223)
WSCCH	38	**32%**	5	**4%**	**30.16 (.000)***	10	8%	9	8%	0.04 (1.00)
Total	295	**33%**	41	**5%**	**223.87 (.000)***	34	**4%**	85	**10%**	**26.17 (.000)***

*p<.05

Transfer Rates

Data from the National Clearinghouse was used to examine transfer rates. There were 41 fewer students in this database compared to the institutional research extracted database files because 41 students initially were included in the matched comparison group and several semesters later, were admitted into BOOST.

Chi-square tests were also used to examine whether BOOST students transferred to other colleges at a higher rate than comparison group students (Table 24). Overall, BOOST students transferred at lower rates (11%) than comparison students (19%), ($X^2(1, N = 1723) = 19.50, p < .05$). Additionally, comparison group students at RCC, WSSCH and WCCS also transferred at higher rates than BOOST students. When examining transfer rates specifically to 2-yr institutions, BOOST students had lower transfer rates (6%)

compared to comparison students (11%). Similarly, BOOST students had lower transfer rates to 4-year institutions (6%) compared to comparison group students (9%).

Table 24a. BOOST vs. Comparison Students on % Transferring to Other Institutions

College	% Transfer-Total				
	BOOST		Comparison		Test Statistics
	#	%	#	%	X^2 (p)
CCTC	10	11%	15	17%	1.23 (.289)
FDTC	27	20%	25	18%	0.03 (.878)
MTC	12	7%	22	13%	3.87 (.070)
RCC	23	**10%**	35	**18%**	**5.67 (.023)***
WCCS	18	**14%**	33	**25%**	**4.67 (.041)***
WSCCH	9	**8%**	27	**23%**	**10.98 (.001)***
Total	99	**11%**	157	**19%**	**19.50 (.000)***

*p<.05

Table 24b. BOOST vs. Comparison Students on % Transferring to Other Institutions

College	% Transfer (2-Year College)					% Transfer (4-Year College)				
	BOOST		Comparison		Test Statistics	BOOST		Comparison		Test Statistics
	#	%	#	%	X^2 (p)	#	%	#	%	X^2 (p)
CCTC	2	2%	8	9%	3.89 (.067)	8	9%	7	8%	0.06 (1.00)
FDTC	15	11%	13	10%	0.18 (.695)	14	10%	13	10%	0.00 (1.00)
MTC	8	5%	13	8%	1.56 (.262)	4	2%	10	6%	3.02 (.104)
RCC	17	7%	24	12%	2.93 (.100)	6	3%	11	6%	2.53 (.138)
WCCS	3	2%	8	6%	2.14 (.218)	15	12%	26	20%	2.93 (.092)
WSCCH	7	**6%**	22	**19%**	**9.14 (.003)***	2	**2%**	9	**8%**	**4.80 (.033)***
Total	52	**6%**	88	**11%**	**12.03 (.001)***	49	**6%**	76	**9%**	**8.34 (.005)***

*p<.05

Graduation Rates and Time to Completion

Data from the National Clearinghouse was used to examine graduation rates and time to completion. Again, there were 41 fewer students in this database compared to the institutional research extracted database files. Any student in the National Clearinghouse file with a graduation flag, which included diplomas, certificates, credentials, and degrees, were counted as graduates. Chi-square tests were used to examine whether BOOST students had higher graduation rates than comparison group students (Table 24). Overall, there were no statistically significant differences in graduation rates between BOOST and comparison students ($X^2(1, N = 1636) = 2.17$, p = .15). However, BOOST students at FDTC did have significantly higher graduation rates than comparison group students.

Independent samples t-tests indicated that BOOST students who graduated did so more quickly (M = 4.05 semesters, SD=1.63) than comparison students (M= 4.47 semesters, SD=1.67), t(246)=-2.10, p<.05 (Table 25). Furthermore, BOOST students who graduated at FDTC and WSSCH did so in fewer semesters than comparison students who completed.

Table 25. BOOST vs. Comparison Students on % Who Graduate at BOOST College, and # of Semesters to Graduation at BOOST College

% Graduated at BOOST College					
College	BOOST		Comparison		Test Statistics
	#	%	#	%	X^2 (p)
CCTC	39	85%	31	72%	2.13 (.197)
FDTC	41	**30%**	17	**12%**	**12.84 (.000)***
MTC	16	9%	25	15%	2.81 (.099)
RCC	6	3%	11	6%	2.53 (.138)
WCCS	14	11%	15	11%	3.84 (.066)
WSCCH	23	19%	12	10%	0.00 (1.00)
Total	139	17%	111	14%	2.17 (.149)

Average Time to Graduation (in Semesters)					
College	BOOST		Comparison		Test Statistics
	#	M	#	M	X^2 (p)
CCTC	38	3.95	31	4.03	0.24 (.813)
FDTC	41	**4.32**	17	**5.65**	**2.67 (.010)***
MTC	16	4.00	25	4.20	0.38 (.704)
RCC	6	4.67	11	3.55	-1.56 (.139)
WCCS	14	4.14	15	5.00	1.31 (.201)
WSCCH	23	**3.57**	12	**4.75**	**2.06 (.047)***
Total	**138**	**4.05**	**111**	**4.47**	**-2.10 (.037)***

*p<.05

C. Pre-Post Employment Status for BOOST Students

At BOOST enrollment, 52% of students were unemployed, 34% were employed in a non-health related field, and 14% were employed in a health related field (Table 26). MTC had the highest rate of employed students at enrollment (65%) and WCCS had the lowest employment rate among students (24%). Students worked for a wide variety of employers including healthcare organizations, retail stores, and restaurants. Students had job titles such as managers, attendant, server, customer service representative, CNA, receptionist, nurse aide, patient care assistant, and office assistant.

Table 26. Number and Percentage of BOOST Students Employed at BOOST Enrollment				
College	Unemployed	Employed in Unrelated Field	Employed in Related Field	Total Employed
CCTC	88 (59.9%)	45 (30.6%)	14 (9.5%)	59 (40.1%)
FDTC	84 (52.2%)	71 (44.1%)	6 (3.7%)	77 (47.8%)
MTC	89 (34.6%)	121 (47.1%)	47 (18.3%)	168 (65.4%)
RCC	161 (49.5%)	102 (31.4%)	62 (19.1%)	164 (50.5%)
WCCS	161 (76.3%)	37 (17.5%)	13 (6.2%)	50 (23.7%)
WSCCH	90 (46.6%)	63 (32.6%)	40 (20.7%)	103 (53.3%)
Total	673 (52.0%)	439 (33.9%)	182 (14.1%)	621 (48.0%)

Among students who were employed at BOOST enrollment, the average wage was around $9/hr (M=8.97, SD=3.10; Table 27). Students at MTC and WSCCH had the highest hourly wages at $9.80/hr and $9.70/hour, respectively. Employed students at WCCS had the lowest average hourly wage at $8.01/hr across the colleges, students worked an average of 28 hrs/wk, ranging from an average of 26 hrs/wk for students at WSCCH to an average of 29 hrs/wk at MTC.

Table 27. Average Hourly Wage and Hours/Week Worked by BOOST Students at BOOST Enrollment				
College	Average Hourly Wage		Average Hours/Week	
	#	M (SD)	#	M (SD)
CCTC	57	$8.29 ($2.24)	55	27.60 (8.76)
FDTC	74	$8.17 ($2.06)	71	28.86 (9.23)
MTC	166	$9.80 ($3.27)	163	29.08 (9.91)
RCC	160	$8.57 ($2.62)	153	28.45 (12.35)
WCCS	50	$8.01 ($1.53)	50	26.71 (11.33)
WSCCH	97	$9.70 ($4.47)	95	26.00 (9.89)
Total	604	$8.97 ($3.10)	590	28.04 (10.56)

Note. Some individuals did not have hourly wage and/or average hrs/wk listed, and these data are excluded.

Analyses were conducted to compare employment status, hourly wage, and hours worked per week at enrollment and after completing BOOST. BOOST completers were defined as students who completed at least one skills course credential and/or who obtained at least one certificate. Only those who had employment data at both pre- and post-BOOST time points and who had complete data were included in the analyses. After completing BOOST, the majority of students worked in healthcare settings including hospitals, medical offices, home health, and nursing homes. The most common job titles included CNA, medical surgical technician, medical assistant, patient care technician, patient support technician, patient care assistant, phlebotomist, RN, and support aide.

A total of 661 students completed a skills course credential or certificate. Of those, 400 had both pre- and post-BOOST employment status data. Chi-square tests were used to determine whether the number of students employed (employed compared to unemployed) was significantly different from pre- to post-BOOST (Table 27). Across the colleges, there was a statistically significant increase in the number of students employed by 31%; 46% of students employed at entry to BOOST compared to 76% of students employed after BOOST completion, ($X^2(1, N = 1) = 30.03$, $p < .05$). Every college saw an increase in the percentage of students employed from pre-BOOST to BOOST completion. However, the only statistically significant increase was for MTC (27% increase)

Table 28a. Employment Status Among BOOST Completers from Pre- to Post-BOOST												
College	Unemployed				Employed in Unrelated Field				Employed in Related Field			
	Pre		Post		Pre		Post		Pre		Post	
	#	%	#	%	#	%	#	%	#	%	#	%
CCTC	31	54.4	18	31.6	22	38.6	4	7	4	7	35	61.4
FDTC	24	42.9	9	16.1	31	55.4	7	12.5	1	1.8	40	71.4
MTC	28	42.4	10	15.2	34	51.5	7	10.6	4	6.1	49	74.2
RCC	23	52.3	7	15.9	14	31.8	16	36.4	7	15.9	21	47.7
WCCS	75	83.3	49	54.4	11	12.2	19	21.1	4	4.4	22	24.4
WSCCH	37	42.5	3	3.4	28	32.2	22	25.3	22	25.3	62	71.3
Total	218	54.5	96	24	140	35	75	18.8	42	10.5	229	57.3

Table 28b. Employment Status Among BOOST Completers from Pre- to Post-BOOST						
College	Total Employed					
	Pre		Post		Difference	Test Statistics
	#	%	#	%	%	X^2 (p)
CCTC	26	45.6	39	68.4	22.8	3.37 (.089)
FDTC	32	57.2	47	83.9	26.7	2.48 (.151)
MTC	**38**	**57.6**	**56**	**84.8**	**27.2**	**6.81 (.014)***
RCC	21	47.7	37	84.1	36.4	2.69 (.188)
WCCS	15	16.6	41	45.5	28.9	0.22 (.079)
WSCCH	50	57.5	84	96.6	39.1	4.20 (.073)
Total	182	45.5	304	76.1	**30.6**	**30.03 (.000)***

*p<.05

Paired samples t-tests were used to determine whether there were statistically significant differences in hourly wage and hours worked per week from BOOST enrollment to BOOST completion. A total of 157 students completed a skills course credential or certificate, were employed at both pre- and post-BOOST and had data on average hourly wage at both time points. The number of students employed (employed compared to unemployed) was significantly different from pre- to post-BOOST (Table 28). BOOST completers had a statistically significant wage increase of $2.21/hr after BOOST completion ($t(156)=-8.50$, $p < .05$). Additionally, students from every college saw a statistically significant increase in hourly wages, which ranged from a $1.55/hr increase for WCCS completers to a $2.94/hr increase for RCC completers.

A total of 145 students, who completed a skills course credential or certificate, were employed at both pre- and post-BOOST and had data on average hours worked per week at both time points. BOOST completers had a statistically significant increase in the number of hours worked per week; students worked 4.64 more hours after completing BOOST compared to number of hours worked at enrollment ($t(144)=-4.43$, $p < .05$). At every college, the average number of hours worked per week increased after BOOST completion, but only CCTC and FDTC had statistically significant increases (11.38 hr/wk increase and 7.56 hr/wk increase, respectively).

Table 29. Comparison of Average Hourly Wage and Average Hours/Week Worked Among BOOST Completers from Pre-BOOST to BOOST Completion						
Average Hourly Wage						
College	**Pre-BOOST**		**Post-BOOST**			**Test Statistics**
	#	**M (SD)**	**#**	**M (SD)**	**Wage Difference**	**t (p)**
CCTC	21	$7.85	21	10.34 (2.42)	**$2.49**	**-3.85 (.001)***
FDTC	28	$7.98	28	9.94 (1.04)	**$1.96**	**-6.30 (.000)***
MTC	36	$9.18	36	10.92 (1.58)	**$1.74**	**-3.36 (.002)***
RCC	19	$7.97	19	10.91 (4.57)	**$2.94**	**-2.44 (.025)***
WCCS	6	$8.93	6	10.48 (1.59)	**$1.55**	**-2.80 (.038)***
WSCCH	47	$9.42	47	11.77 (2.81)	**$2.35**	**-4.78 (.000)***
Total	157	$8.70	157	10.91 (2.60)	**$2.21**	**-8.50 (.000)***
Average Hours/Week						
College	**Pre-BOOST**		**Post-BOOST**			**Test Statistics**
	#	**M (SD)**	**#**	**M (SD)**	**Hour Difference**	**X^2 (p)**
CCTC	17	**27.21 (9.77)**	17	**38.59 (3.37)**	**11.38**	**-5.35 (.000)***
FDTC	26	**28.38 (9.61)**	26	**35.94 (6.10)**	**7.56**	**-3.08 (.005)***
MTC	31	28.74 (8.23)	31	32.00 (8.58)	3.26	-1.72 (.096)
RCC	17	25.09 (3.48)	17	30.65 (2.89)	5.55	-1.26 (.227)
WCCS	7	31.29	7	33.36 (11.56)	2.07	-0.38 (.715)
WSCCH	47	25.84	47	27.37 (9.63)	1.53	-0.94 (.371)
Total	145	**27.25**	145	**31.89 (9.45)**	**4.64**	**-4.43 (.000)***

*p<.05. Only individuals employed at both time points AND who had data at both time points were included in the analyses.

BOOST Non-Incumbent Workers

At time of BOOST enrollment, 673 were not employed. Descriptive statistics including frequencies, means, and standard deviations were calculated on these non-incumbent workers. Among the 673 non-incumbent workers, 315 (47%) had completed at least one skills course credential or a certificate 218 of these completers had post-BOOST employment data.

Of the 218 non-incumbent workers who had completed at least one skills course credential or a certificate and had post-BOOST employment data, 143 (65%) were employed. Over three-quarters of students were employed in a health related field (74%) and 26% were employed in a non-health related field (Table 29). Students earn an average of $10.31/hr and work 31 hrs/wk (Table 31).

Table 30. Number and Percentage of Non-Incumbent Workers Employed after BOOST Completion

College	Unemployed	Employed in Unrelated Field	Employed in Related Field	Total Employed
CCTC	13 (41.9%)	1 (3.2%)	17 (54.8%)	18 (58.0%)
FDTC	6 (25.0%)	3 (12.5%)	15 (62.5%)	18 (75.0%)
MTC	8 (28.6%)	2 (7.1%)	18 (64.3%)	20 (70.4%)
RCC	6 (26.1%)	6 (26.1%)	11 (47.8%)	17 (73.9%)
WCCS	40 (53.3%)	17 (22.7%)	18 (24.0%)	35 (46.7%)
WSCCH	3 (8.1%)	8 (21.6%)	26 (70.3%)	34 (91.9%)
Total	76 (34.9%)	37 (17.0%)	105 (48.2%)	143 (65.2%)

Table 31. Average Hourly Wage and Hours/Week Worked by Non-Incumbent Students after BOOST Completion

College	Average Hourly Wage		Average Hours/Week	
	#	M (SD)	#	M (SD)
CCTC	17	$9.60 ($0.82)	1	40.00 (--)
FDTC	18	$9.40 ($1.22)	18	34.89 (8.12)
MTC	20	$10.15 ($1.99)	20	26.90 (9.23)
RCC	26	$9.07 ($2.01)	12	31.88 (10.00)
WCCS	35	$8.98 ($1.30)	27	30.61 (9.03)
WSCCH	34	$13.23 ($6.34)	29	30.00 (10.14)
Total	141	$10.31 ($3.74)	107	30.70 (9.50)

Note. Some individuals did not have hourly wage and/or average hrs/wk listed, and these data are excluded.

V. Discussion of Findings and Conclusions, Program Impact, Limitations and Implications for Future Programs.

This chapter includes findings and conclusions for the entire BOOST program. Additional program impacts from the perspective of the program faculty and staff are included, as well as lessons learned. The limitations of the study will be identified and discussed. Suggestions will be made for future programs and others wanting to develop a program such as the BOOST program.

A. Findings and Conclusions

BOOST may have helped level the playing field for many students. TAACCCT participants in the BOOST program received positive education and employment outcomes. The consortium colleges had some difficulty recruiting the number of students they estimated up front but the students in the program were successful. They earned industry-recognized credentials and college-recognized certificates. They found jobs and their income increased. Most importantly, students were given an alternative pathway into high wage jobs in healthcare, something they did not have before this funded program. While still early, many BOOST students who completed the certificates and went to work in the hospital or a healthcare setting have accumulated relevant experience and are now competitive for rigorous admission programs in healthcare. Multiple students participating in focus groups were beginning new programs this fall in respiratory therapy, nursing, surgical technology and physical therapy. These students now aspire to go on for their bachelor's and master's degrees.

A total of 659 students earned 1,609 industry recognized credentials. Students completed after an average of 4 semesters with a mean GPA of 2.6 and 49 earned credits. The stacked and latticed career pathways in healthcare may improve employment outcomes for non-incumbent worker participants.

The comparison between BOOST students and a matched comparison revealed significant differences. BOOST students had higher GPAs, completed in fewer semesters, earned more credentials and had accumulated more credit hours than the comparison.

B. Program Strengths

The BOOST program was well planned and implemented. The consortium met multiple times prior to the grant submission and continued to collaborate throughout the four years of the grant. The program directors sought input from local medical facilities and their advisory committees and the program was developed based on workforce-validated skills. The three stacked and latticed certificates provided structure and students progressed through them. The simulators were a good fit for students who would rather learn by doing than watching. The colleges solidified their relationships with local employers and utilized them for more than an advisory breakfast once or twice a year. As the grant is ending, the colleges are sustaining the majority of the program. See Appendix J. These six colleges have alternative pathways to better serve all their students regardless of academic background and

preparation. As the grant is ending, the stacked and latticed credentials in healthcare have been established as a core foundation for organizing and delivering an alternative pathway into healthcare.

C. Other Program Impacts

Institutions of Distinction

The BOOST colleges were able to build state-of-the-art simulation centers with the funds from the TAACCCT grants. In many cases, they are the only institution in their region with simulation centers. The 3D technology purchased with grant funds has 3D objects for a multitude of fields and the 3D lab will most likely be heavily used in the future. The 3D technology allows students to see things, whether a heart or an automobile engine, in the true dimensions of the object. Students can rotate images and open them to look inside. Other healthcare programs will benefit from the human simulators and 3D technology.

Others Served by the TAACCCT Grant

Faculty and staff kept track of both the BOOST students and the non-BOOST students who participated in events or activities or used rooms, faculty, staff or equipment funded by the grant. The colleges had multiple types of events on-site and off-site over the four years of grant funding. In order to keep track of these numbers, an online registry tool was developed so faculty and staff could input data for each event as it happened. Table 32 below shows the types of events held by the colleges. The largest number of participants and the greatest number of hours accounted for were from the category "other" and from students in other courses (non-BOOST students) who utilized the labs and/or equipment. The 318 events listed that did not fit the designated categories were events such as special training sessions, testing sessions, and various types of interviews.

Table 32. Number of Events by College

Type of Event	CCTC	FDTC	MTC	RCC	WCCS	WSCCH	Total
Other	9	2	107	158	11	31	318
Other Classes Using Equipment	43	0	189	0	0	13	245
Off-site Presentation	40	11	45	2	0	3	101
Community Event (Visit to Campus/Open House)	23	10	19	0	2	8	62
Field Trip (K-12)	1	3	12	0	0	42	58
In-house Professional Development	29	0	9	0	1	6	45
Facility tour	1	5	0	0	0	39	45
Career Development	16	2	3	0	0	0	21
Conference on Site Using/Training with Equipment	4	0	2	4	7	0	17
Site-visit Off-campus	11	0	0	0	0	0	11
Career Fair	1	5	0	0	0	5	11
Total	178	38	386	164	21	147	934

Table 33. Total Number of People Touched by the Grant and Hours of Involvement		
Type of Event	**Total Attendees**	**Total Hours**
Off-site Presentation	4,017	118,366
Other	13,439	101,052
Other Classes Using Equipment	4,382	31,282
Career Fair	1,915	8,722
Conference on Site Using/Training with Equipment	2,976	8,188
Community Event (Visit to Campus/Open House)	2,267	6,764
Field Trip (K-12)	9,227	5,660
Career Development	787	4,986
Facility tour	671	836
In-house Professional Development	280	790
Site-visit Off-campus	194	588
Total	40,155	287,234

The equipment faculty and staff allocated through the DOL funds reached an additional 40,000 people besides the almost 1,300 BOOST students. Those additional events held in the facilities or using grant funded equipment or staff accounted for 287,234 hours of engagement.

D. Limitations

The findings give rise to several issues with respect to the limitations of the evaluation. The analyses were limited to available data which impacted the analysis of employment outcomes. The State labor agencies in South Carolina would give a limited amount of information to colleges for a fee per student. Alabama and North Carolina agencies would not provide any employment data. The colleges relied on student follow-up for employment data.

Initially, the student assessment (e.g., job readiness) used was the Patient Care Technician Assessment developed by from Research Associates. However, these reports were not given to the Consortium and thus, these data could not be analyzed. Beginning in fall 2016, CareerChoice GPS was implemented. Given that this was the final year of the grant, limited data were available for analysis. Had this tool been implemented earlier, additional useful information about BOOST students and could have been used from which to select the comparison groups. Data from this assessment tool might have accounted for factors that drive student outcomes.

Three and a half years is not long enough to follow students to their ultimate outcomes. Most of these students are attempting to become employed but with high unemployment rates in some of their service regions and the fact most of these colleges are rural, finding jobs will take some time. It will also be important to follow the BOOST students to determine what happens to them. The BOOST program

served as an entry-level pathway to healthcare. Once these students complete one or two credentials, additional options will become available. Furthermore, the positive impact of coaching may facilitate positive long-term outcomes for students.

Some of the students in the program came to the college immediately after high school with no previous higher education experience. Other students had been attending the colleges for multiple semesters attempting to take courses to be admitted to healthcare programs. Some had been admitted to programs and failed out. While researchers attempted to create a matched comparison group, this difference in higher education experience might have impacted the outcomes in positive or negative ways.

The 3D iBenches, a critical piece of the technology-enhanced courses were also delayed. Once they arrived, they did not include adequate 3D objects for the specific healthcare courses. Faculty and instructional developers had to create those themselves, putting the use of the product even further behind.

Enrollment targets were somewhat unrealistic giving the impression that the outcomes of BOOST were not as strong as they were. Community college enrollment across the country has been declining since the economy began to recover from the recession of 2007. Increasing enrollment in this one program at the level projected would be difficult under normal circumstances. The BOOST students were low-income students, many with low GPAs. They needed heavy support to succeed in the program yet they were retained and completed credentials at higher levels than the comparison group and the standard population at the colleges.

E. Implications for Future Programs

Through observation, the evaluator noted that students in the simulation lab on the first day of the first semester were dramatically different than those observed toward the end of their program. They had increased knowledge but the psycho-social impacts and non-cognitive factors appeared to have played a major role in their success. More research needs to be conducted on these factors to promote a deeper understanding of variables that promote success with underserved populations in higher education.

Coaching was significantly correlated to program completions. The coaches provided academic assistance and personal contact with students. When asked, students claimed they went to their coach for everything. They felt the coach was one of the best parts of the program and claimed they would have been lost without them. Coaching needs to be strongly supported in future program efforts from the DOL.

Access to public workforce records needs improvement. Colleges have an educational need to know about the employment outcomes of their students. It is understood that the staff needed to provide these data to the 1100 community colleges in the country would be immense, however, the work could be automated to reduce the effort on the part of either party.

VI. References

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VII. Appendices

Appendix A. Program Logic Models

Program Component: Revising Courses to Include Simulation and 3D Virtual Reality Technology
Situation: Faculty buy-in across six institutions with different cultures, students may not have the technology outside of the college
Priorities: Improve learning, retention, graduation, provide accessibility, ability to complete quickly, recruit students to the correct courses, showing sustainability

Inputs	Activities	Outputs	Initial Outcomes	Intermediate Outcomes	Long-term Outcomes
Grant funds Talented staff Equipment purchased Technology infrastructure Relationship with local labor and external stakeholders	Select courses Revise syllabi, assignments, classroom activities, interactions and student involvement Train faculty and staff Pilot test the courses Develop marketing materials Distribute marketing materials	Number of courses adapted Number of faculty trained Course redesign process developed to help with scale up # students recruited # students enrolled # contact hours of training delivered	Equivalent or better success rate as traditional methods Semester-to-semester retention improves Time to completion decreases Student recruit by word of mouth Improved faculty technology skills	Students become employed Students continue their education Students utilize technology strategies in other classes Increase number of technology enhanced courses at the college	Increased enrollment Better serving the rural population Be a model site for simulation/3D driven learning Put people to work in health field Health jobs don't go unfilled

Assumptions: Faculty at the colleges will cooperate and work together. Students will have access to technology. Faculty will want to do this.
External Factors: Varying size of colleges, healthcare job availability

Program Component: Wrap around student and academic support services (student navigator, career, tutoring, recruiting, admitting) and employer support.

Situation: Varying levels of student support at colleges and through workforce boards/local employers

Priorities: Supporting high need students

Inputs	Activities	Outputs	Initial Outcomes	Intermediate Outcomes	Long-term Outcomes
Staff funded by grant Employer identified resources Counselors, advisors and career specialists at the colleges	Career services Recruitment techniques Advisement sessions Students admitted Students assessed Tutoring services Students referred for services (personal counseling)	# recruited # oriented # enrolled (registrations) receiving advising # services provided to students # utilizing services	Course completion rates Credits accumulated Better retention rates Career-seeking skills utilized	Employment for students Program completion Transfer rates	Increase in enrollment, retention and graduation Continued relationship with local employers and workforce boards

Assumptions: Students will take advantage of services provided, enough staff to handle the load

External Factors: High unemployment, high veteran population

Program Component: Employer Involvement
Situation: The College currently employs advisory committees in its applied science areas.
Priorities: Employer feedback, opportunities for student clinical placements and internships.

Inputs	Activities	Outputs	Initial Outcomes	Intermediate Outcomes	Impacts
Local hospital community, medical practices, home health and nursing home staff Employer comfort with college faculty and staff Grant funds Talented faculty and staff State DOL, employers, workforce board relationships	Obtain labor information about needed skills from employers Conduct advisory group meetings Provide simulation/3D enhanced learning classrooms Provide job training opportunities to students	Process of utilizing healthcare data in program design Qualitative data on program strengths and weaknesses Students participate in courses and job opportunities Students use employer resources Transfer records to track employment data	Courses improve Increased employer involvement Student skills improve Students complete courses	Students graduate Students transfer Students become employed	Strengthened position in the community College seen as model site

Assumptions: Employers will participate in focus groups and offer opinions to the college
External Factors: Competition for clinical space, student enrollment limited by clinical spots in some programs.

Program Component: Short-term, Stackable Certificates
Situation: The colleges have created new short-term stackable certificates.
Priorities: Student completions to enter the workforce quickly.

Inputs	Activities	Outputs	Initial Outcomes	Intermediate Outcomes	Impacts
Grant funds Trained Faculty State Coordinating Boards High job needs in communities	Needs assessment Faculty teams developed Certificates developed	# certificates developed # certificates approved through curriculum approval process # new certificates in catalog and ready for enrollment	Student enroll in certificate programs Enrollment in health programs increase	Student complete certificates Student continue to enroll in additional certificates	Students are employed Students continue their education Students complete degrees Students transfer to four-year institutions

Assumptions: Employers will validate the certificates by hiring completers. Students will re-enroll and complete multiple certificates.
External Factors: Available entry level jobs for students.

Appendix B. Demographic Data

Demographic Data by College												
	CCTC		FDTC		MTC		RCC		WCCS		WSCCH	
	#	%	#	%	#	%	#	%	#	%	#	%
Total Participants	**148**		**161**		**257**		**322**		**210**		**194**	
Female	142	97%	149	94%	239	93%	263	81%	202	96%	5	93%
Male	5	3%	10	6%	19	7%	20	6%	8	4%	13	7%
Asian	1	1%			5	2%					4	2%
Black/African American	82	56%	107	67%	135	52%	89	28%	186	88%	12	6%
Hispanic/Latino	4	3%	4	2%	6	2%	221	7%	2	1%	6	3%
Native Hawaiian			1	1%	2	1%	2	1%	1	1%	1	1%
Native American					1	0.40%	137	42%			3	2%
Two or More Races	2	1%	1	1%	1	0.40%						
White	58	39%	46	29%	107	42%	61	19%	19	9%	165	85%
Race Unknown							13	4%	1	1%	3	2%
Mean Age	29		25		28.5		26.2		23.1		26.2	
Unemployed	88	59%	83	51%	88	29%	161	48%	159	75%	90	46%
Underemployed	13	0.80%	2	0.10%	1	0.03%						
Average Number in Household	3.1		3.2		3.0		3.5		3.3		3.2	
Veteran	4	3%	6	4%	16	6%	8	2%	2	1%	4	2%
Disabled Veteran	1	1%	1	1%	3	1%	6	2%	0	0%	1	1%
Spouse of a Veteran	3	2%	4	2%	9	4%	2	1%	2	1%	4	2%
Eligible for TAA	1	1%	4	2%	4	2%	3	1%	0	0%	0	0%
Eligible for Unemployment (not receiving)	6	4%	0	0%	8	3%	14	4%	2	1%	2	1%
Applied for Financial Aide	97	66%	128	80%	195	76%	246	76%	130	62%	81	42%
Eligible for Pell grant	63	43%	76	47%	135	53%	187	58%	129	61%	52	27%

Appendix C. Three Comparison Surveys

A survey was distributed to current students in both fall 2015 (n=218) and fall 2016 (n=183). In spring 2017, a completer survey was administered (n=110). Below is the comparison of the responses of the three groups.

Table 1. Overall Quality or Experience of the BOOST Program

College	Fall 2015 Survey			Fall 2016 Current Student Survey			Spring 2017 Completer Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	22	4.32	82%	31	4.42	87%	5	4.60	**80%**
FDTC	33	3.45	61%	18	4.00	67%	22	4.14	**72%**
MTC	23	4.35	96%	33	4.39	91%	24	4.25	**96%**
RCC	21	4.71	95%	45	4.71	98%	12	4.67	**91%**
WCCS	52	4.50	90%	30	4.21	93%	18	4.33	**89%**
WSCCH	42	4.33	83%	14	4.37	86%	29	4.72	**97%**
Total	193	4.27	84%	171	4.42	89%	110	4.43	**90%**

Table 2. The Overall Support I Received from College Faculty and Staff

College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	22	4.36	82%	31	4.48	90%
FDTC	32	3.88	63%	17	4.00	70%
MTC	24	4.50	96%	34	4.32	85%
RCC	21	4.62	95%	45	4.73	98%
WCCS	54	4.48	93%	14	4.21	86%
WSCCH	43	4.09	84%	29	4.24	89%
Total	196	4.30	85%	170	4.41	89%

Table 3. The Care and Support I Received from Program Faculty						
College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	23	4.09	70%	31	4.45	91%
FDTC	35	3.69	60%	22	3.77	63%
MTC	23	4.30	83%	37	4.38	84%
RCC	21	4.76	95%	46	4.63	94%
WCCS	55	4.51	95%	31	4.36	97%
WSCCH	44	4.30	89%	14	4.42	86%
Total	201	4.27	83%	181	4.39	87%

Table 4. The Experience I Received from the Simulation Labs						
College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	18	4.11	67%	27	4.56	93%
FDTC	23	3.87	65%	13	4.08	77%
MTC	16	3.81	63%	22	4.45	86%
RCC	15	4.27	80%	36	4.64	94%
WCCS	44	4.41	93%	31	4.42	91%
WSCCH	40	4.35	88%	12	4.19	100%
Total	156	4.21	80%	141	4.43	91%

Table 5. The 3D Technology I Worked with in the Classroom									
College	Fall 2015 Survey			Fall 2016 Current Student Survey			Spring 2017 Completer Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	12	4.08	67%	26	4.42	85%	5	4.80	**100%**
FDTC	11	2.55	27%	9	3.33	44%	22	4.27	**87%**
MTC	10	3.80	70%	12	4.00	75%	24	4.50	**93%**
RCC	12	4.33	83%	27	4.59	89%	12	4.25	**75%**
WCCS	42	4.24	86%	23	3.86	96%	18	4.39	**89%**
WSCCH	21	3.90	67%	7	4.30	58%	29	4.62	**93%**
Total	108	3.95	72%	104	4.26	82%	110	4.45	**89%**

Table 6. The Equipment I Used in Labs									
College	Fall 2015 Survey			Fall 2016 Current Student Survey			Spring 2017 Completer Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	17	4.12	71%	28	4.54	89%	5	4.80	**100%**
FDTC	19	1.05	68%	13	4.08	69%	22	4.41	**87%**
MTC	13	4.38	92%	19	4.68	100%	24	4.67	**96%**
RCC	13	4.38	85%	38	4.42	87%	12	4.75	**100%**
WCCS	46	4.24	87%	28	4.33	97%	18	4.67	**100%**
WSCCH	43	4.30	86%	12	4.39	92%	29	4.62	**89%**
Total	151	4.25	83%	138	4.43	91%	110	4.62	**94%**

Table 7. The Assistance I received from the SIM Tech in the Labs						
College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	16	4.00	63%	28	4.50	85%
FDTC	18	3.89	67%	11	4.09	72%
MTC	11	4.18	91%	18	4.67	94%
RCC	11	4.27	82%	27	4.37	82%
WCCS	40	4.10	85%	26	4.00	96%
WSCCH	32	4.22	81%	10	4.38	70%
Total	128	4.11	79%	120	4.39	86%

Table 8. The Assistance Received from the BOOST Recruiter						
College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	23	4.48	87%	31	4.55	93%
FDTC	35	3.77	69%	22	3.77	54%
MTC	24	4.42	88%	38	4.37	82%
RCC	21	4.71	95%	47	4.70	94%
WCCS	53	4.38	89%	30	4.33	93%
WSCCH	42	4.24	81%	15	4.23	87%
Total	198	4.29	84%	183	4.39	86%

Table 9. The Assistance I Received from My Admissions Counselor						
College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	22	4.23	77%	29	4.52	94%
FDTC	34	3.62	59%	22	4.05	68%
MTC	23	4.22	87%	33	4.24	79%
RCC	21	4.76	95%	47	4.60	91%
WCCS	54	4.50	94%	30	4.09	97%
WSCCH	35	3.97	77%	12	4.40	75%
Total	189	4.21	82%	173	4.38	79%

Table 10. The Assistance I Received from My Advisor						
College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	22	4.00	68%	30	4.53	93%
FDTC	35	3.31	46%	21	3.95	62%
MTC	24	4.33	88%	35	4.23	80%
RCC	21	4.76	95%	47	4.72	96%
WCCS	53	4.60	96%	30	4.15	96%
WSCCH	37	3.97	76%	13	4.43	78%
Total	192	4.16	79%	176	4.41	87%

Table 11. The Assistance I Received from the Career Coach									
College	Fall 2015 Survey			Fall 2016 Current Student Survey			Spring 2017 Completer Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	18	4.33	89%	29	4.48	90%	5	4.60	**100%**
FDTC	34	3.79	68%	22	3.77	59%	22	4.41	**77%**
MTC	23	4.48	87%	36	4.42	83%	24	4.58	**96%**
RCC	21	4.57	90%	43	4.79	97%	12	4.83	**92%**
WCCS	55	4.67	98%	30	4.36	94%	18	4.50	**95%**
WSCCH	38	4.29	87%	14	4.43	86%	29	4.62	**89%**
Total	189	4.37	87%	174	4.40	87%	110	4.57	**90%**

Appendix D. IR Data Solution (Jumpstart)

The Center for Applied Research – Central Piedmont Community College

THE CENTER FOR APPLIED RESEARCH

EXPLANATION OF INSTITUTIONAL RESEARCH SOLUTION – JUMPSTART FOR INSTITUTIONAL RESEARCH

The Center for Applied Research at Central Piedmont Community College has been helping community colleges by increasing institutional research capacity through a solution using SAS and data extractions from the home institution. The solution involves the following:

1. Identification of the data elements needed to populate the model in anticipation of point-in-time data reporting and cohort reporting over extended periods of time.
2. A data dictionary to define the data elements.
3. A practical process and structure to maintain the integrity of the data model and its components.
4. Definition of the process by which and the frequency with which the data will be captured from the college.
5. Identification of any security issues we should consider with the data being captured and how to address those issues.
6. The functionality/capability should allow for scheduled, ongoing reporting and ad hoc reporting as the need arises.

Implementation Strategy

The delivery of this solution will take place in three phases: preparation, installation and training, and ongoing assistance. The tasks and activities for each phase are as follows:

1. **Preparation:**

   CFAR staff will work with the Registrar/IR and/or IT programmers to create the "data extraction program" to be used by the college. During this process, the data dictionary will be delivered to the programmer plus the layout for the extraction program. This process can be accomplished from a distance using phone and email. CFAR staff will also prepare a CD and load it with the SAS install program, the data extraction program and a sample of SAS programs. NOTE: each institution must purchase their own SAS site license.

Tasks in this stage: delivery of a data dictionary, work with the college on the data extraction, download the data file, trouble-shoot and clean the file. Make sure programs run cleanly. Correct any issues that arise.

2. Installation and Training:

CFAR staff will travel to the college to work on the ground to install and train staff on the use of the system. One CFAR staff member will be with the college on site for 1 day. When they leave, programs will have been installed, the data extraction program run, a data-mart set up and created and multiple SAS programs run to make sure the product works effectively.

Tasks in this phase: travel to college, work onsite with the college to install and train staff, program installation, data extraction, set up of data-mart, SAS programs run, programmers work with IT professionals on unique variables at each institution, training on use of data.

3. Ongoing Assistance:

Once staff members are trained and the system is installed and working correctly, CFAR staff will be available by phone and email to trouble shoot and address system needs. Specific days have not been selected yet (see example below).

Activity	Location	Dates
Preparation	Offsite	Late Spring/early Summer (1 day) – year 1
Installation and Training	Onsite	Late Summer/Early Fall (1-2 days per college) – year 1
Ongoing Assistance	Offsite	Fall-Spring (1-2 days) – year 2

Tasks: Available by phone and email for trouble-shooting and work on programs for the college during date of installation and for one year, use of listserve and website (in development).

Appendix E. Fall 2015 Pre/Post Results of Propensity Score Matching

Central Carolina Technical College Fall 2015 Pre/Post Results of Propensity Score Matching									
Group Statistics	**Group**	**Pre-Matching**				**Post-Matching**			
Variable		**N**	**Mean**	**SD**	**P Value**	**N**	**Mean**	**SD**	**P Value**
Developmental English	Comparison	32	0.000	0.000		14	0.000	0.000	
	Cohort	14	0.000	0.000		14	0.000	0.000	
Developmental Math	Comparison	32	0.000	0.000		14	0.000	0.000	
	Cohort	14	0.000	0.000		14	0.000	0.000	
Developmental	Comparison	32	0.000	0.000		14	0.000	0.000	
	Cohort	14	0.000	0.000		14	0.000	0.000	
Pell	Comparison	32	0.530	0.507		14	0.860	0.363	
	Cohort	14	0.860	0.363	0.036*	14	0.860	0.363	1.000
Gender	Comparison	32	0.840	0.369		14	0.790	0.426	
	Cohort	14	1.000	0.000	0.122	14	1.000	0.000	0.071
Less than or equal to	Comparison	32	0.250	0.440		14	0.214	0.426	
	Cohort	14	0.571	0.514	0.036*	14	0.571	0.514	0.056
23-28 years old	Comparison	32	0.406	0.499		14	0.357	0.497	
	Cohort	14	0.214	0.426	0.217	14	0.214	0.426	0.422
29-35 years old	Comparison	32	0.125	0.336		14	0.214	0.426	
	Cohort	14	0.143	0.363	0.872	14	0.143	0.363	0.637
36 + years old	Comparison	32	0.219	0.420		14	0.214	0.426	
	Cohort	14	0.071	0.267	0.234	14	0.071	0.267	0.297
Black	Comparison	32	0.250	0.440		14	0.214	0.426	
	Cohort	14	0.429	0.514	0.235	14	0.429	0.514	0.240
Hispanic	Comparison	32	0.000	0.000		14	0.000	0.000	
	Cohort	14	0.000	0.000	1.000	14	0.000	0.000	1.000
White	Comparison	32	0.500	0.508		14	0.643	0.497	
	Cohort	14	0.286	0.469	0.185	14	0.286	0.469	0.061
Other/Unknown	Comparison	32	0.250	0.440		14	0.143	0.363	
	Cohort	14	0.286	0.469	0.805	14	0.286	0.469	0.376
Estimated Probability	Comparison	32	0.275	0.150		14	0.371	0.108	
	Cohort	14	0.371	0.108	0.036*	14	0.371	0.108	1.000

Note: ***p<.001. ** p <.01. *p <.05.

Central Carolina Technical College Logistic Regression Results Predicting Membership in BOOST Group Before Propensity Score Matching- Fall 2015						
Variables	**B**	**S.E.**	**Wald**	**Df**	**P Value**	**Exp(B)**
Pell	2.769	1.289	4.612*	1	0.032	15.944
Less than or equal to 22 years old	1.785	1.375	1.685	1	0.194	5.962
23-28 years old	-0.814	1.453	0.314	1	0.575	0.443
29-35 years old	-0.375	1.641	0.052	1	0.819	0.687
Black	-0.456	1.195	0.146	1	0.703	0.634
White	-1.929	1.231	2.456	1	0.117	0.145
Constant	-2.342	1.508	2.413	1	0.120	0.096

Florence Darlington Technical College Fall 2015 Pre/Post Results of Propensity Score Matching									
Variable		Pre-matching				Post-matching			
	Group	N	Mean	SD	P Value	N	Mean	SD	P
Developmental English	Comparison	88	0.020	0.150		27	0.040	0.192	
	Cohort	27	0.040	0.192	0.686	27	0.040	0.192	1.000
Developmental Math	Comparison	88	0.070	0.254		27	0.110	0.320	
	Cohort	27	0.220	0.424	0.022*	27	0.220	0.424	0.282
Developmental Reading	Comparison	88	0.010	0.107		27	0.040	0.192	
	Cohort	27	0.070	0.267	0.075	27	0.070	0.267	0.561
Pell	Comparison	88	0.490	0.503		27	0.740	0.447	
	Cohort	27	0.740	0.447	0.021*	27	0.740	0.447	1.000
Gender	Comparison	88	0.880	0.333		27	0.960	0.192	
	Cohort	27	0.930	0.267	0.469	27	0.930	0.267	0.561
Less than or equal to 22 years old	Comparison	88	0.307	0.464		27	0.222	0.424	
	Cohort	27	0.407	0.501	0.335	27	0.407	0.501	0.148
23-28 years old	Comparison	88	0.330	0.473		27	0.444	0.506	
	Cohort	27	0.333	0.480	0.971	27	0.333	0.480	0.412
29-35 years old	Comparison	88	0.182	0.388		27	0.111	0.320	
	Cohort	27	0.074	0.267	0.181	27	0.074	0.267	0.646
36 + years old	Comparison	88	0.182	0.388		27	0.222	0.424	
	Cohort	27	0.185	0.396	0.969	27	0.185	0.396	0.741
Black	Comparison	88	0.341	0.477		27	0.444	0.506	
	Cohort	27	0.704	0.465	0.001**	27	0.704	0.465	0.055
Hispanic	Comparison	88	0.034	0.183		27	0.074	0.267	
	Cohort	27	0.000	0.000	0.335	27	0.000	0.000	0.155
White	Comparison	88	0.534	0.502		27	0.482	0.509	
	Cohort	27	0.185	0.396	0.001**	27	0.185	0.396	0.021*
Other/Unknown	Comparison	88	0.091	0.289		27	0.000	0.000	
	Cohort	27	0.111	0.320	0.757	27	0.111	0.320	0.077
Estimated Probability	Comparison	88	0.224	0.092		27	0.270	0.082	
	Cohort		0.270	0.082	0.021*	27	0.270	0.082	1.000

Note: ***p<.001. ** p <.01. *p <.05.

Florence-Darlington Technical College Logistic Regression Results Predicting Membership in BOOST Group Before Propensity Score Matching- Fall 2015						
Variables	**B**	**S.E.**	**Wald**	**Df**	**P Value**	**Exp(B)**
Developmental Math	1.197	0.720	2.763	1.000	0.096	3.311
Pell	0.774	0.569	1.849	1.000	0.174	2.168
Gender	0.143	0.915	0.024	1.000	0.876	1.153
Less than or equal to	1.138	0.777	2.144	1.000	0.143	3.121
23-28 years old	0.125	0.742	0.028	1.000	0.866	1.133
29-35 years old	-0.592	1.016	0.340	1.000	0.560	0.553
Black	0.674	0.793	0.723	1.000	0.395	1.962
White	-1.324	0.864	2.349	1.000	0.125	0.266
Constant	-2.235	1.202	3.456	1.000	0.063	0.107

Note: ***p<.001. ** p <.01. *p <.05.

Chi-Squared= 23.406 p<.05, -2 LL 101.942, Nagelkerke R Square, 0.277

78.3% Predicted Correctly

Midlands Technical College Fall 2015 Pre/Post Results of Propensity Score Matching									
Group Statistics	**Group**	**Pre-Matching**				**Post-Matching**			
Variable		**N**	**Mean**	**SD**	**P Value**	**N**	**Mean**	**SD**	**P Value**
Developmental English	Comparison	202	0.030	0.170		37	0.000	0.000	
	Cohort	37	0.030	0.164	0.930	37	0.030	0.164	0.321
Developmental Math	Comparison	202	0.020	0.140		37	0.030	0.164	
	Cohort	37	0.000	0.000	0.390	37	0.000	0.000	0.321
Developmental	Comparison	202	0.020	0.140		37	0.000	0.000	
	Cohort	37	0.000	0.000	0.390	37	0.000	0.000	1.000
Pell	Comparison	202	0.360	0.480		37	0.650	0.484	
	Cohort	37	0.650	0.484	0.001**	37	0.650	0.484	1.000
Gender	Comparison	202	0.920	0.278		37	0.950	0.229	
	Cohort	37	0.950	0.229	0.536	37	0.950	0.229	1.000
Less than or equal to	Comparison	202	0.302	0.460		37	0.216	0.417	
	Cohort	37	0.378	0.492	0.359	37	0.378	0.492	0.131
23-28 years old	Comparison	202	0.257	0.438		37	0.351	0.484	
	Cohort	37	0.243	0.435	0.856	37	0.243	0.435	0.316
29-35 years old	Comparison	202	0.208	0.407		37	0.270	0.450	
	Cohort	37	0.108	0.315	0.158	37	0.108	0.315	0.077
36 + years old	Comparison	202	0.233	0.424		37	0.162	0.374	
	Cohort	37	0.270	0.450	0.624	37	0.270	0.450	0.265
Black	Comparison	202	0.342	0.475		37	0.460	0.505	
	Cohort	37	0.514	0.507	0.046	37	0.514	0.507	0.647
Hispanic	Comparison	202	0.035	0.183		37	0.027	0.164	
	Cohort	37	0.000	0.000	0.252	37	0.000	0.000	0.321
White	Comparison	202	0.530	0.500		37	0.514	0.507	
	Cohort	37	0.378	0.492	0.091	37	0.378	0.492	0.248
Other/Unknown	Comparison	202	0.094	0.293		37	0.000	0.000	
	Cohort	37	0.108	0.315	0.791	37	0.108	0.315	0.040
Estimated Probability	Comparison	202	0.148	0.076		37	0.194	0.077	
	Cohort	37	0.194	0.077	0.001**	37	0.194	0.077	1.000

Note: ***p<.001. ** p <.01. *p <.05.

Midlands Technical College Logistic Regression Results Predicting Membership in BOOST Group Before Propensity Score Matching- Fall 2015						
Variables	**B**	**S.E.**	**Wald**	**Df**	**P Value**	**Exp(B)**
Developmental English	-0.165	1.173	0.02	1	0.888	0.848
Pell	1.137	0.401	8.052**	1	0.005	3.118
Gender	0.286	0.823	0.121	1	0.728	1.331
Less than or equal to 22 years old	0.015	0.535	0.001	1	0.977	1.016
23-28 years old	-0.347	0.539	0.415	1	0.520	0.707
29-35 years old	-0.835	0.658	1.610	1	0.205	0.434
Black	0.637	0.638	0.995	1	0.318	1.89
White	0.085	0.630	0.018	1	0.892	1.089
Constant	-2.633	1.106	5.667	1	0.017	0.072

Note: ***p<.001. ** p <.01. *p <.05.
Chi-Squared= 15.864 p<.05, -2 LL 190.138, Nagelkerke R Square, 0.111
84.5% Predicted Correctly

Robeson Community College Fall 2015 Pre/Post Results of Propensity Score Matching									
Group Statistics	**Group**	**Pre-matching**				**Post-matching**			
Variable		**N**	**Mean**	**SD**	**P Value**	**N**	**Mean**	**SD**	**P Value**
Developmental English	Comparison	212	0.340	0.476		48	0.400	0.494	
	Cohort	48	0.270	0.449	0.330	48	0.270	0.449	0.198
Developmental Math	Comparison	212	0.030	0.179		48	0.040	0.202	
	Cohort	48	0.020	0.144	0.660	48	0.020	0.144	0.562
Pell	Comparison	212	0.660	0.476		48	0.770	0.425	
	Cohort	48	0.830	0.377	0.016*	48	0.830	0.377	1.000
Gender	Comparison	212	0.910	0.286		48	0.940	0.245	
	Cohort	48	0.940	0.245	0.544	48	0.940	0.245	0.310
Less than or equal to 22 years old	Comparison	212	0.571	0.496		48	0.604	0.494	
	Cohort	48	0.500	0.505	0.375	48	0.500	0.505	1.000
23-28 years old	Comparison	212	0.170	0.376		48	0.167	0.377	
	Cohort	48	0.167	0.377	0.958	48	0.167	0.377	0.376
29-35 years old	Comparison	212	0.132	0.339		48	0.104	0.309	
	Cohort	48	0.167	0.377	0.533	48	0.167	0.377	0.568
36 + years old	Comparison	212	0.127	0.334		48	0.125	0.334	
	Cohort	48	0.167	0.377	0.473	48	0.167	0.377	0.838
Black	Comparison	212	0.193	0.396		48	0.271	0.449	
	Cohort	48	0.146	0.357	0.445	48	0.146	0.357	0.134
Hispanic	Comparison	212	0.066	0.249		48	0.125	0.334	
	Cohort	48	0.083	0.279	0.671	48	0.083	0.279	0.509
White	Comparison	212	0.175	0.380		48	0.125	0.334	
	Cohort	48	0.208	0.410	0.584	48	0.208	0.410	0.278
Other/Unknown	Comparison	212	0.566	0.497		48	0.479	0.505	
	Cohort	48	0.563	0.501	0.965	48	0.563	0.501	0.419
Estimated Probability	Comparison	212	0.183	0.000		48	0.183	0.000	
	Cohort	48	0.183	0.000	0.000***	48	0.183	0.000	1.000

Note: ***p<.001. ** p <.01. *p <.05.

Robeson Community College Logistic Regression Results Predicting Membership in BOOST Group Before Propensity Score Matching- Fall 2015						
Variables	**B**	**S.E.**	**Wald**	**df**	**P Value**	**Exp(B)**
Developmental English	-0.328	0.369	0.791	1.000	0.374	0.720
Developmental Math	-0.597	1.145	0.271	1.000	0.602	0.551
Pell	1.024	0.419	5.957**	1.000	0.015	2.783
Gender	0.299	0.660	0.206	1.000	0.650	1.349
Less than or equal to 22 years old	-0.462	0.484	0.910	1.000	0.340	0.630
23-28 years old	-0.363	0.586	0.383	1.000	0.536	0.696
29-35 years old	0.020	0.592	0.001	1.000	0.972	1.021
Black	-0.278	0.478	0.338	1.000	0.561	0.757
Hispanic	0.409	0.633	0.418	1.000	0.518	1.506
White	0.192	0.434	0.196	1.000	0.658	1.212
Constant	-2.129	0.826	6.634	1.000	0.010	0.119

Note: *****p<.001. ** p <.01. *p <.05.**
Chi-Squared= 10.542 p>.05, -2 LL 238.184, Nagelkerke R Square, 0.065
81.7% Predicted Correctly

Wallace Community College – Selma Fall 2015 Pre/Post Results of Propensity Score Matching									
Group Statistics	**Group**	**Pre-Matching**				**Post-Matching**			
Variable		**N**	**Mean**	**SD**	**P Value**	**N**	**Mean**	**SD**	**P Value**
Developmental English	Comparison	37	0.000	0.000		26	0.000	0.000	
	Cohort	26	0.120	0.326	0.035*	26	0.120	0.326	0.077
Developmental Math	Comparison	37	0.030	0.164		26	0.000	0.000	
	Cohort	26	0.000	0.000	0.406	26	0.000	0.000	1.000
Developmental	Comparison	37	0.000	0.000		26	0.000	0.000	
	Cohort	26	0.000	0.000	1.000	26	0.000	0.000	1.000
Pell	Comparison	37	0.760	0.435		26	0.850	0.368	
	Cohort	26	0.920	0.272	0.090	26	0.920	0.272	0.395
Gender	Comparison	37	1.000	0.000		26	1.000	0.000	
	Cohort	26	0.960	0.196	0.236	26	0.960	0.196	0.322
Less than or equal to	Comparison	37	0.460	0.505		26	0.462	0.508	
	Cohort	26	0.654	0.485	0.132	26	0.654	0.485	0.169
23-28 years old	Comparison	37	0.189	0.397		26	0.192	0.402	
	Cohort	26	0.115	0.326	0.438	26	0.115	0.326	0.452
29-35 years old	Comparison	37	0.162	0.374		26	0.192	0.402	
	Cohort	26	0.192	0.402	0.761	26	0.192	0.402	1.000
36 + years old	Comparison	37	0.189	0.397		26	0.154	0.368	
	Cohort	26	0.039	0.196	0.079	26	0.039	0.196	0.164
Black	Comparison	37	0.622	0.492		26	0.539	0.508	
	Cohort	26	0.923	0.272	0.006**	26	0.923	0.272	0.001**
Hispanic	Comparison	37	0.027	0.164		26	0.039	0.196	
	Cohort	26	0.039	0.196	0.803	26	0.039	0.196	1.000
White	Comparison	37	0.324	0.475		26	0.385	0.496	
	Cohort	26	0.039	0.196	0.005**	26	0.039	0.196	0.002**
Other/Unknown	Comparison	37	0.027	0.164		26	0.039	0.196	
	Cohort	26	0.000	0.000	0.406	26	0.000	0.000	0.322
Estimated Probability	Comparison	37	0.413	0.000		26	0.413	0.000	
	Cohort	26	0.413	0.000	1.000	26	0.413	0.000	1.000

Note: ***p<.001. ** p <.01. *p <.05.

Wallace Community College-Selma Logistic Regression Results Predicting Membership in BOOST Group Before Propensity Score Matching- Fall 2015						
Variables	**B**	**S.E.**	**Wald**	**Df**	**P Value**	**Exp(B)**
Pell	1.31	0.896	2.141	1	0.143	3.708
Less than or equal to 22 years old	1.698	1.144	2.205	1	0.138	5.465
23-28 years old	0.844	1.294	0.425	1	0.514	2.325
29-35 years old	1.858	1.262	2.167	1	0.141	6.413
Constant	-2.904	1.313	4.891	1	0.027	0.055

Note: *****p<.001. ** p <.01. *p <.05.**
Chi-Squared= 7.344 p>.05, -2 LL 78.062, Nagelkerke R Square, 0.148
61.9% Predicted Correctly

Wallace State Community College – Hanceville Fall 2015 Pre/Post Results of Propensity Score Matching									
Group Statistics	**Group**	**Pre-Matching**				**Post-Matching**			
Variable		**N**	**Mean**	**SD**	**P Value**	**N**	**Mean**	**SD**	**P Value**
Developmental English	Comparison	556	0.110	0.313		33	0.060	0.242	
	Cohort	33	0.000	0.000	0.045	33	0.000	0.000	0.156
Developmental Math	Comparison	556	0.270	0.446		33	0.090	0.292	
	Cohort	33	0.090	0.292	0.021*	33	0.090	0.292	1.000
Developmental	Comparison	556	0.010	0.103		33	0.000	0.000	
	Cohort	33	0.000	0.000	0.549	33	0.000	0.000	1.000
Pell	Comparison	556	0.530	0.499		33	0.700	0.467	
	Cohort	33	0.700	0.467	0.068	33	0.700	0.467	1.000
Gender	Comparison	556	0.820	0.381		33	0.790	0.415	
	Cohort	33	0.910	0.292	0.207	33	0.910	0.292	0.175
Less than or equal to	Comparison	556	0.689	0.463		33	0.364	0.489	
	Cohort	33	0.364	0.489	0.000***	33	0.364	0.489	1.000
23-28 years old	Comparison	556	0.131	0.338		33	0.333	0.479	
	Cohort	33	0.333	0.479	0.001**	33	0.333	0.479	1.000
29-35 years old	Comparison	556	0.070	0.256		33	0.091	0.292	
	Cohort	33	0.091	0.292	0.653	33	0.091	0.292	1.000
36 + years old	Comparison	556	0.110	0.313		33	0.212	0.415	
	Cohort	33	0.212	0.415	0.074	33	0.212	0.415	1.000
Black	Comparison	556	0.074	0.262		33	0.152	0.364	
	Cohort	33	0.030	0.174	0.347	33	0.030	0.174	0.089
Hispanic	Comparison	556	0.045	0.207		33	0.121	0.331	
	Cohort	33	0.061	0.242	0.677	33	0.061	0.242	0.400
White	Comparison	556	0.822	0.383		33	0.697	0.467	
	Cohort	33	0.879	0.331	0.404	33	0.879	0.331	0.073
Other/Unknown	Comparison	556	0.059	0.237		33	0.030	0.174	
	Cohort	33	0.030	0.174	0.488	33	0.030	0.174	1.000
Estimated Probability	Comparison	556	0.054	0.041		33	0.086	0.053	
	Cohort	33	0.086	0.053	0.000***	33	0.086	0.053	1.000

Note: ***p<.001. ** p <.01. *p <.05.

Wallace State Community College-Hanceville Logistic Regression Results Predicting Membership in BOOST Group Before Propensity Score Matching- Fall 2015						
Variables	**B**	**S.E.**	**Wald**	**df**	**P Value**	**Exp(B)**
Developmental Math	-1.39	0.627	4.915*	1	0.027	0.249
Pell	0.768	0.404	3.604	1	0.058	2.154
Gender	0.605	0.633	0.914	1	0.339	1.832
Less than or equal to 22	-1.329	0.51	6.796**	1	0.009	0.265
23-28 years old	0.198	0.527	0.140	1	0.708	1.218
29-35 years old	-0.32	0.734	0.190	1	0.663	0.726
Black	-1.22	1.476	0.683	1	0.409	0.295
Hispanic	0.831	1.294	0.412	1	0.521	2.295
White	0.301	1.065	0.080	1	0.778	1.351
Constant	-3.147	1.235	6.491	1	0.011	0.043

Note: ***p<.001. ** p <.01. *p <.05.

Appendix F. Completion Rates Compared to IPEDS by College

Central Carolina Technical College IPEDS #218858 First-time Full and Part-time Credential-seeking Students (degree, certificate, diploma)					
	Cohort	2 year	3 year	4 year	
Fall 2011 Graduation Rates	**506**	7%	11%	13%	
Fall 2010 Graduation Rates	**543**	9%	11%	23%	
Fall 2009 Graduation Rates	**472**	7%	18%	24%	
CCTC- Students Completing at Least 1 Skills Course or Certificate by Entry Semester					
Semester	**BOOST Cohort**	**Number completed any skills course within 2.5 years**		**Number earned any certificate**	
	#	**#**	**%**	**#**	**%**
Fall 2014	32	18	56%	18	56%
Spring 2015	37	19	54%	20	59%
Summer 2015	12	5	42%	5	42%
Fall 2015	17	10	59%	10	59%
Spring 2016	22	13	59%	13	63%
Summer 2016	8	5	63%	5	56%
Fall 2016	9	2	27%	2	22%
Spring 2017	11	0	0%	0	0%
Total	**148**	**73**	**49%**	**72**	**49%**

Florence Darlington Technical College IPEDS #218025 First-time Full and Part-time Credential-seeking Students (degree, certificate, diploma)					
Semester	**Cohort**	**2 year**	**3 year**	**4 year**	
Fall 2011	**956**	4%	8%	13%	
Fall 2010	**915**	6%	12%	16%	
Fall 2009	**1006**	8%	16%	20%	
FDTC- Students Completing at Least 1 Skills Course or Certificate by Entry Semester					
Semester	**BOOST Cohort**	**Number completed any skills course within 2.5 years**		**Number earned any certificate within 2.5 Years**	
	#	**#**	**%**	**#**	**%**
Fall 2014	27	20	78%	20	74%
Spring 2015	44	18	50%	18	41%
Summer 2015	5	5	100%	5	100%
Fall 2015	30	17	57%	17	57%
Spring 2016	24	12	50%	12	50%
Summer 2016	9	3	33%	3	33%
Fall 2016	31	0	0%	0	0%
Spring 2017	0	0		0	
Total	**170**	**80**	**47%**	**75**	**44%**

Midlands Technical College IPEDS #218353 First-time Full and Part-time Credential-seeking Students (degree, certificate, diploma)					
Semester	Cohort	2 year completion rate	3 year completion rate	4 year completion rate	
Fall 2011	**1,627**	3%	8%	11%	
Fall 2010	**1,573**	3%	10%	14%	
Fall 2009	**1,672**	4%	10%	15%	
MTC- Students Completing at Least 1 Skills Course or Certificate by Entry Semester					
Semester	BOOST Cohort	Number completed any skills course within 2.5 years		Number earned any certificate within 2.5 Years	
	#	#	%	#	%
Fall 2014	44	21	48%	18	41%
Spring 2015	36	19	53%	14	39%
Summer 2015	18	12	67%	11	61%
Fall 2015	36	16	44%	12	33%
Spring 2016	35	16	46%	16	46%
Summer 2016	18	7	39%	7	39%
Fall 2016	48	15	31%	15	31%
Spring 2017	23	5		4	
Total	**258**	**111**	**43%**	**97**	**38%**

Robeson Community College IPEDS #199476 First-time Full and Part-time Credential-seeking Students (degree, certificate, diploma)					
Semester	Cohort	2 year completion rate	3 year completion rate	4 year completion rate	
Fall 2011	**232**	5%	6%	9%	
Fall 2010	**283**	14%	22%	28%	
Fall 2009	**415**	9%	17%	22%	
RCC- Students Completing at Least 1 Skills Course or Certificate by Entry Semester					
Semester	BOOST Cohort	Number completed any skills course within 2.5 years		Number earned any certificate within 2.5 Years	
	#	#	%	#	%
Fall 2014	42	42	100%	0	0%
Spring 2015	51	35	69%	1	2%
Summer 2015	19	8	42%	0	0%
Fall 2015	48	22	46%	5	10%
Spring 2016	49	11	22%	1	2%
Summer 2016	9	2	22%	0	0%
Fall 2016	50	6	12%	0	0%
Spring 2017	56	8	14%	0	0%
Total	**324**	**134**	**41%**	**7**	**2%**

Wallace Community College - Selma IPEDS #101301 First-time Full and Part-time Credential-seeking Students (degree, certificate, diploma)					
Semester	Cohort	2 year completion rate	3 year completion rate	4 year completion rate	
Fall 2011	**376**	9%	20%	26%	
Fall 2010	**415**	11%	25%	27%	
Fall 2009	**462**	12%	24%	26%	
WSCCS- Students Completing at Least 1 Skills Course or Certificate by Entry Semester					
Semester	BOOST Cohort	Number completed any skills course within 2.5 years		Number earned any certificate within 2.5 Years	
	#	#	%	#	%
Fall 2014	34	19	56%	17	50%
Spring 2015	42	19	45%	14	33%
Summer 2015	24	16	67%	13	54%
Fall 2015	37	21	57%	18	49%
Spring 2016	28	19	68%	16	57%
Summer 2016	5	3	60%	3	60%
Fall 2016	30	14	47%	11	37%
Spring 2017	11	0	0%	0	0%
Total	**211**	**111**	**53%**	**92**	**44%**

Wallace State College - Hanceville IPEDS #101295 First-time Full and Part-time Credential-seeking Students (degree, certificate, diploma)					
	Cohort	2 year completion rate	3 year completion rate	4 year completion rate	
Fall 2011	**896**	11%	24%	30%	
Fall 2010	**1,091**	12%	20%	24%	
Fall 2009	**1,108**	10%	23%	28%	
WSCCH Students Completing at Least 1 Skills Course or Certificate by Entry Semester					
Semester	BOOST Cohort	Number completed any skills course within 2.5 years		Number earned any certificate within 2.5 Years	
	#	#	%	#	%
Fall 2014	5	4	80%	4	80%
Spring 2015	36	32	89%	28	78%
Summer 2015	0	0	0%	0	0%
Fall 2015	58	53	91%	15	26%
Spring 2016	72	70	97%	14	19%
Summer 2016	4	3	75%	3	75%
Fall 2016	12	10	83%	7	58%
Spring 2017	7	5	71%	4	57%
Total	**194**	**177**	**91%**	**75**	**39%**

Appendix G. Success of Technology Enhanced Courses

The BOOST student courses were taught in state-of-the-art simulation labs. The courses had a faculty member and a simulation technologist in the lab with the students. Students worked together on the skills needed to complete the course. The Certified Nurse Aide consisted of 22 skills that students had to master to complete the course (Figure 2 below). The equipment in the labs had the capability of recording student performance and playing it back. The labs were equipped with several video screens where students could watch their performance, have a debriefing session with the faculty or SIM Tech and improve their skills.

Figure 2: Skills to Mastery in the CNA Course					
1	Hand Hygiene	9	Dresses client with affected (weak) Right arm	16	Performs modified PROM for one shoulder
2	Applies one knee-high	10	Feeds client who cannot feed self	17	Positions on side
3	Assist to ambulate using transfer belt	11	Gives modified bed bath	18	Provides catheter care for female
4	Assist with use of bedpan	12	Measures & records Blood Pressure	19	Provides foot care on one foot
5	Cleans upper or lower denture	13	Measures & records urinary output	20	Provides mouth care
6	Counts & records radial pulse	14	Measures & records Weight of ambulatory client	21	Provides perineal care for female
7	Counts & records respirations	15	Performs modified PROM for one knee & ankle	22	Transfer from bed to wheelchair
8	Donning & removing PPE				

Students could practice as many times as they wanted to master a skill. Some skills were mastered quickly and others took multiple attempts. While the number of attempts varied, 96% of students passed the certified nurse aide course (see Figure 3).

Figure 3: Mean Practices to Mastery and Maximum Attempts in CAN								
Skill	Mean	Max	Skill	Mean	Max	Skill	Mean	Max
1	4.7	60	9	3.4	25	16	3	20
2	3.6	30	10	3.4	45	17	3.4	25
3	3.6	30	11	3.6	20	18	3.6	25
4	3.6	30	12	7.1	60	19	3.1	20
5	3	30	13	3	15	20	3.2	32
6	4.9	40	14	3.2	30	21	3.8	20
7	4.4	29	15	3.3	28	22	3.6	25
8	2.9	25						

Students had difficulty with some skills and were able to practice until they mastered the skill. The colleges held open lab time for students to come in on their own and practice. On average, students had to practice a skill 3-4 times to master it but the maximum number of attempts to master a skill ranged from 16 to 60.

Appendix H. Success of Wrap-around Services and Student Track

Coaches have provided additional staff by serving as the admissions contact, career coach, and retention specialist. At some colleges, the coach(es) conduct some teaching in the BOOST courses so students get to know them early. Students meet regularly with the advisors/support staff. Because the majority of these students come from rural areas with high unemployment and low income residents, poverty has been a big issue. Colleges have lost some students because they could not pay for uniforms, background checks, and health assessments. To address this issue, some colleges found funds to assist students until their Pell funds came through.

The colleges were surprised at the case-management needs that occurred with students in this program. Because of this, some colleges wish they had additional coaches for BOOST and could offer the same services to all of their programs. Coaches are able to give individualized care to students. Students have enjoyed having another person to talk to. “If only all students could get these services it would great.” One college is expanding coaching across many programs and the BOOST coach will supervise them.

Coaches were the first face students saw, and they knew how best to deal with students of various backgrounds. They kept in regular contact having built relationships with the students. Having coaches provides students with someone to help with placement and to serve as a reference. Coaches have played a big role in retention. They have become the most valuable tools students have and the students recognize it.

During the first year, students were placed in a cohort model program where they moved through courses as a group. Students responded well to the cohort model. They supported each other, studied together, assisted each other in the SIM labs, and encouraged each other around tests and grades. In student focus groups, students identified the career coaches as their support person at the college. All 11 focus groups from the six colleges had the highest praise for the support they received from the career coach, BOOST admissions process, program director, faculty teaching in the program, and the regular college services they utilized (e.g. tutoring center.) Tables 8, 9, 10, & 11 below indicate that 87% of students were satisfied with their career coach, 82% with their admissions counselor, 79% with their academic advisor, and 89% with the faculty support they received in their program.

Table 1. The Assistance I Received from My Advisor						
College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	22	4.00	68%	30	4.53	93%
FDTC	35	3.31	46%	21	3.95	62%
MTC	24	4.33	88%	35	4.23	80%
RCC	21	4.76	95%	47	4.72	96%
WCCS	53	4.60	96%	30	4.15	96%
WSCCH	37	3.97	76%	13	4.43	78%
Total	192	4.16	79%	176	4.41	87%

While the student services staff and the career coaches did a good job serving these students, students also received support from BOOST program directors and program faculty. Students were comfortable going to their faculty or program staff if they had classroom issues or personal problems. Student survey responses midway through the grant period indicated that 83% of students were satisfied with the care and support they receive from program faculty and 85% with other faculty (Table -). By the final year of the grogram, 87% were satisfied with the program faculty and 89% with other faculty across the College.

Table 2. The Care and Support I Received from Program Faculty						
College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	23	4.09	70%	31	4.45	91%
FDTC	35	3.69	60%	22	3.77	63%
MTC	23	4.30	83%	37	4.38	84%
RCC	21	4.76	95%	46	4.63	94%
WCCS	55	4.51	95%	31	4.36	97%
WSCCH	44	4.30	89%	14	4.42	86%
Total	201	4.27	83%	181	4.39	87%

Table 3. The Overall Support I Received from College Faculty and Staff						
College	Fall 2015 Survey			Fall 2016 Current Student Survey		
	#	Mean Score	% Satisfied or Very Satisfied	#	Mean Score	% Satisfied or Very Satisfied
CCTC	22	4.36	82%	31	4.48	90%
FDTC	32	3.88	63%	17	4.00	70%
MTC	24	4.50	96%	34	4.32	85%
RCC	21	4.62	95%	45	4.73	98%
WCCS	54	4.48	93%	14	4.21	86%
WSCCH	43	4.09	84%	29	4.24	89%
Total	196	4.30	85%	170	4.41	89%

Wrap-around Services and Student Track

The initiative purchased a student tracking software to allow coaches to create a detailed database of services provided to students, number of coaching sessions and the outcomes of those activities. The product they purchased was developed by Computer Applications International. This software allows educational institutions to track information about prospective and enrolled students from initial contact through graduation. Student Track is designed for use in all higher education settings including colleges, universities, trade schools, nursing schools, etc. Key features are the ability to track all student information, such as contact information, grades, student schedules, and graduation, the ability to customize Student Track to meet the institution's needs, and the ability to scan documents into the database.

Since the tracking software had the ability to create a customized tracking process, data were collected from the colleges on the types and nature of the counseling, coaching and educational activities provided. The third party evaluator made site visits between July 26th and August 24th, 2016 to five of the colleges and conducted three phone call with the sixth college. The meetings included the career coaches, directors and some faculty/staff. The services provided by the Career Coaches included career related services, academic related services, program issues and community based needs. The individual types of services provided can be seen in the table below.

Career Related Topics Addressed through Counseling Sessions and Group Educational Activities		
Goal setting and planning	Sustaining a job	Job placement
Professionalism	Etiquette on the job	How to exit a job
Professional communication	Social media footprint	Résumé writing
Mock interviews	Importance of benefits	
Academic Related Topics Addressed through Counseling Sessions and Group Educational Activities		
Overall classroom performance	Organizational skills	Attendance issues
Test-taking strategies	Personal effectiveness	General attitudes
Ethics in healthcare	Instructor issues	Commitment to education
Study skills	Tone and voice/body language	Motivation
Time management	Language issues (ESL students)	Need for/finding tutoring
Note-taking strategies	Low expectations	
Programmatic Topics Addressed through Counseling Sessions and Group Educational Activities		
Lack of engagement with program staff	Lack of engagement with BOOST students	Responsiveness to program communication
Commitment to coursework		
Referrals Made to Students for Services and Support in the Community		
Transportation	Subsistence – food/food bank	Subsistence – clothing closets
Financial issues (community agency)	Subsistence – clothing	Domestic violence agencies
Financial assistance (College Foundation)	Subsistence – housing services	Reading issues – library services
Social services agencies (personal counseling)		Language – ESL services

Coaches, faculty and staff were also asked about the issues that impacted a student's performance in the program and in college in general. The following were cited as major debilitating and critical issues for students.

Common Issues Students Face that Impact their Progress	
Family life (children/parents in need)	Pregnancy
Marital Issues	Addiction
Family health issues	Work/school/life balance
Transportation	Faculty relationships
Childcare	Financial situation
Personal health	Belief in themselves (can do attitude)
Personal mental health	Low expectations
Low expectations	Academic difficulties
Lack of social skills	Lack of soft skills

Because of this information pulled together from the coaches and other college staff, a set of codes were developed for Student Track to assist the coaches in entering their data in a logical and simple format. Customizations were made to the system and data were entered according to these broad categories:

Coding for Student Tack

Academic Monitoring	ACM-SK Student Skills	Test-taking strategies
		Study Skills
		Time management
		Note-taking strategies
		Organization skills
		Instructor interaction
		Additional clinical SIM practice
	ACM-PT Participation	Personal effectiveness
		Expectations
		Attendance issues
		Participation
		Attitude
		Commitment to education/coursework
		Ethics in healthcare
	ACM-P Progression	Initial intake – academic planning
		Tutoring
		Deferment
		Grades
		Unsatisfactory academic progress – Dismissed from BOOST
		Unsatisfactory clinical performance – Dismissed from BOOST
Personal Barriers	BAR-FN Financial	Financial aid (academic)
		Basic needs
		Transportation
		Child care
		Subsistence (housing, food, clothing etc.)
	BAR-CL Counseling	Family issues
		Engagement with BOOST program staff
		Engagement with BOOST students
		Responsiveness to program
		Other: Internal
		Other: External
Career	CAR-JR Goal Setting & Planning	Initial intake – career planning
		Professional appearance
		Communication (professional)
		Social media footprint
	CAR-JR Job Readiness	Mock interviews
		Résumé writing
		Importance of fringe benefits
		Leaving a job
		Certification

	Remediation for NNAAP repeats
CAR-JP Job Placement	Interviews
	Etiquette on the job
	How to keep a job (sustainability)

The Career Coaches spent the fall semester 2016 entering the data for all of the counseling sessions, case management records and group educational activities for each student from fall 2014 through spring 2017. Reports were run from Student Track and a total of 1,274 students entered into the system participated in 15,337 (mean 12.0) sessions with the coach. Students at Wallace State Community College in Selma had the highest number of visits per student and Florence-Darlington Tech the lowest.

When looking at the types of services utilized by students, they participated in more counseling and advising about academic issues (mean = 7.3) and the least addressing personal barriers (mean = .8). Wallace State Colleges in Hanceville and Selma delivered the highest number of sessions on academic-related issues. Midlands Tech and Wallace State College in Hanceville delivered the highest number of sessions on career-related issues.

Appendix I. CareerChoice GPS Career Readiness Assessment for Student

In order to assess career readiness, the BOOST Consortium purchased licenses to administer CareerChoice GPS to students in the program at the six colleges. CareerChoice GPS is a product designed to help students find programs from which they can graduate by assessing key values and characteristics that make one "fit" for the field. Serving as an admissions and career placement tool, it is easy for students to take and has been mapped to the following disciplines/fields.

CareerChoice GPS Mapping to Occupations		
AC, Heating and Plumbing	Engineering and Technicians	Mining and Energy
Achievement Potential Level	Enterprising Potential Level	Miscellaneous Professions
Advertising/Marketing/Promotions	Finance	National Security
Agent/Distributor	Fitness and Recreation	Networking/Self Promotion Level
Agricultural and Environmental	Franchise	People Orientation Level
Architecture and Fine Arts	Fulfillment/Production	Performing Arts and Entertainment
Art and Design	General Industrial	Point of Purchase Sales
Automotive/Transportation	General Services	Procurement
Aviation	Hardware	Production
Building and Construction	Health Services	Professions/Professional Support
Business	Hotel	Project Management
Business and Office	Human Resources	Relationship Sales
Carpentry and Woodworking	Independence Potential Level	Relocation Services
Civil Service	Independent Contractor/Consultant	Research and Development
Comfort with Conflict Level	Internal Communications/Public Relations	Resort/Leisure and Recreation
Competitive Sales	Internet and Web	Sales/Service
Corporate Logistics	IT Architecture and Design	Small Business
Cosmetology and Therapy	IT Services/Support	Social and Family Services
Culinary/Food Services	Law and Order	Social Services
Customer Service	Legal	Software
Database Management	Lifestyle Management Level	Telecommunications
Distribution/Logistics	Marine	Travel
Education and Instruction	Marketing/Merchandising	Uncertainty Indicator
Engineer	Media	Writing and Communications
	Medical and Healthcare	

The assessment looks at cognitive structures (inherent traits) that "forms the basis for how individuals interpret and apply their experience, interactions, and prior learning, thereby highlighting their preferred approach to developing and adapting in school and in the ever-changing world of work."

The questions cluster into three inherent characteristics: Enterprising Potential, Achievement Potential and Independence Potential (see Table – below), three learned behaviors and styles: Comfort with Conflict, People Orientation and Analytical Orientation (see Table – below), and four attitudes and

beliefs: Uncertainty Indicator, Self-confidence, Lifestyle Management and Networking/Self Promotion (see Table – below).

Enterprising Potential—a measure of your potential for planning and directing yourself effectively; an indication of your ability to establish, focus on, and achieve your goals.
Achievement Potential—an assessment of the factors that motivate you to achieve and spur you to do your best, the *internal* motivators for you.
Independence Potential—a measure of your need for structure, your need for feedback or affirmation, and your team orientation; that is, do you prefer going your own way or working with others, especially when it comes to decision-making?

Comfort with Conflict—reflects your comfort with situations where conflict exists or where there is the potential for conflict.
People Orientation—reflects your approach to building relationships and meeting new people.
Analytical Orientation—reflects your interest in learning for its own sake, and your preference for dealing with technical, detailed information.

The CareerChoiceGPS™ provides one important indicator, plus results for three attitudes and beliefs:

Uncertainty Indicator—an indicator of how accurate your Attitudes and Beliefs measurements are.
Self Confidence scale—a measure of how much you feel in control of your life and circumstances.
Lifestyle Management scale—a measure of how well you're coping with the stresses in your life.
Approach to Networking and Self-Promotion scale—a measure of your attitude toward networking, dealing with rejection, and promoting yourself or your organization.

CareerChoiceGPS Predictive Constructs																		
Students with these inherent character traits enjoy these kinds of assignments:																		
Enterprising Potential (EP) scale is a measure of your potential to plan and direct yourself effectively; an indicator of whether you enjoy initiating activities or being more responsive																		
75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15
Proactive							Proactive but measured						More responsive					
*very strong internal initiative *very strong self-direction *goals that drive constant performance *desire to move quickly *adaptable, fluid, non-systemic approach							Balanced						* a strong desire to respond to the needs of others * a desire for external guidelines/procedures * longer-term goal orientation *strong detail orientation * relaxed, dependable, steady approach					
The Achievement Potential (AP) scale is an assessment of the factors that motivate you to achieve and spur you to do your best																		
50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40
$$ and/or change							People and service						Duty/dependability					
*a strong need for challenge/money *bottom-line, results-focused orientation *task orientation *a strong personal ambition *a strong sense of urgency							Balanced						*a desire for security over risk * a strong service orientation *progress orientation * a strong need to serve *long-term goal orientation					
The Independence Potential (IP) scale is a measure of your need for structure, your need for feedback, and your team orientation.																		
50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40
Very independent																Very team oriented		
*a need for independence/solo performance *very limited need for external structure *talent for innovative thinking * little need for rules and procedures *ability to make decisions with limited input *little need for external affirmation							Independence oriented						Team oriented			*preference for a team-based environment *preference for existing systems & structure *a desire to keep things the same/orderly *a preference to follow rules/process-oriented *a desire for external affirmation			

BOOST students were more responsive (67%) than proactive in regard to Enterprise Potential. On achievement potential, they were motivated by people and service (42%) and duty and dependability (54%). On the independence Potential, they were not independent but 100% were either team oriented or very team oriented.

Inherent Character Traits – Range, Mean and Standard Deviation of BOOST Students			
	Range	**Mean**	**SD**
Enterprise Potential	-15 to 75	10.06	19.987
Achievement Potential	-40 to 50	-16.00	19.569
Independence Potential	-40 to 50	-24.45	17.581

Predictive Constructs – Scores for BOOST Students		
Enterprise Potential Level		
	#	**%**
Proactive	10	4.6%
Proactive but Measured	61	28.1%
More Responsive	146	67.3%
Total	217	100%
Achievement Potential Level		
	#	%
$$ and/or Challenge	11	5.1%
People and Service	90	41.5%
Duty/Dependability	116	53.5%
Total	217	100%
Independence Potential Level		
	#	**%**
Very Independent		
Independence Oriented		
Team Oriented	108	49.8%
Very Team Oriented	109	50.2%
Total	217	100%

BOOST student scores on the Predictive Constructs were evaluated and there was some variation by college. On Enterprise Potential, the percentage of students scoring in the “more responsive” category ranged from 57% to 88%. On Achievement Potential, students leaned more toward duty and dependability but responses by college ranged from 25% to 69%.

Predictive Constructs – Scores for BOOST Students by College

Enterprise Potential Level

College	Proactive		Balanced		More Responsive		Total #
	#	%	#	%	#	%	
CCTC	0	0%	1	13%	7	88%	8
FDTC	4	11%	11	31%	20	57%	35
MTC	2	3%	17	25%	49	72%	68
RCC	3	6%	13	27%	32	67%	48
WCCS	1	3%	12	35%	21	62%	34
WSCCH	0	0%	7	29%	17	71%	24

Achievement Potential Level

College	$$ and/or Challenge		Balanced		Duty/Dependability		Total #
	#	%	#	%	#	%	
CCTC	0	0%	3	38%	5	63%	8
FDTC	3	9%	8	23%	24	69%	35
MTC	1	1%	27	40%	40	59%	68
RCC	3	6%	23	48%	22	46%	48
WCCS	1	3%	14	41%	19	56%	34
WSCCH	3	13%	15	63%	6	25%	24

Independence Potential Level

College	Very Independent		Independence		Team Oriented		Very Team Oriented		Total #
	#	%	#	%	#	%	#	%	
CCTC	0	0%	0	0%	4	50%	4	50%	8
FDTC	0	0%	0	0%	21	60%	14	40%	35
MTC	0	0%	0	0%	37	54%	31	46%	68
RCC	0	0%	0	0%	24	50%	24	50%	48
WCCS	0	0%	0	0%	13	38%	21	62%	34
WSCCH	0	0%	0	0%	9	38%	15	62%	24

CareerChoiceGPS Predictive Constructs		
Students with these learned behaviors and styles require individuals who:		
Comfort with Conflict (CWC) scale is a reflection of your comfort with situations where there's conflict or the potential for it. The extremes on this scale are "comfortable with conflict" and "avoids conflict."		
50 45 40 35 30 25 20 15 10 5 0 -5 -10 -15 -20 -25 -30 -35 -40		
Comfortable with conflict		Avoids conflict
*are comfortable with existing conflict * stir the pot to see what surfaces *handle tense interactions with others well	Balanced	*prefer little to no conflict in job setting * generally like steady and calm *prefer harmony
The People Orientation (PO) scale reports on your approach to building relationships with other people and the degree to which you enjoy meeting new people.		
30 25 20 15 10 5 0 -5 -10 -15 -20 -25 -30		
Very sociable		Builds relationships gradually
*focused on people and relationships *outgoing/interpersonal *motivated by social interaction	Balanced	*longer-term relationship-builders *more reserved *comfortable or work best alone
The Analytical Orientation (AO) scale evaluates your interest in learning for its own sake, and your comfort dealing with technical, detailed information		
30 25 20 15 10 5 0 -5 -10 -15 -20 -25 -30		
Analytical/systematic		Learns the essentials
*a strong need for data *strong analytical thinking *preference for extensive data-gathering before decision-making	Balanced	*prefer big picture over data *are strong conceptual thinkers *prefer to learn only the essentials before making a decision

Learned Behaviors – Range, Mean and Standard Deviation of BOOST Students			
	Range	Mean	SD
Comfort with Conflict		2.10	10.591
People Orientation	-30 to 30	17.10	14.493
Analytical Orientation	-30 to 30	2.82	8.728

Learned Behaviors and Styles of BOOST Students		
Comfort With Conflict Level		
	#	**%**
Comfort with Conflict	19	8.8
Balanced	151	69.6
Avoids Conflict	47	21.7
Total	217	100.0
People Orientation Level		
	#	**%**
Very Sociable	160	73.7
Balanced	44	20.3
Builds Relationships Gradually	13	6.0
Total	217	100.0
Analytical Orientation Level		
	#	**%**
Analytical/Systematic	44	20.3
Balanced	161	74.2
Learns the Essentials	12	5.5
Total	217	100.0

Student scores on the learned behaviors and styles were grouped by those who scored left to right across the continuum. The majority of BOOST students scored in the balanced category on the behavioral and lifestyle characteristics of comfort with conflict, people orientation and analytical orientation (see Table below).

Comfort With Conflict Level							
College	**Comfort with Conflict**		**Balanced**		**Avoids Conflict**		**Total**
	#	**%**	**#**	**%**	**#**	**%**	
CCTC	0	0%	3	38%	5	63%	8
FDTC	8	23%	18	51%	9	26%	35
MTC	6	9%	50	74%	12	18%	68
RCC	3	6%	38	79%	7	15%	48
WCCS	1	3%	27	79%	6	18%	34
WSCCH	1	4%	15	63%	8	33%	24
People Orientation Level							
College	**Very Sociable**		**Balanced**		**Builds Relationships Gradually**		**Total**
	#	**%**	**#**	**%**	**#**	**%**	
CCTC	5	63%	2	25%	1	13%	8
FDTC	26	74%	9	26%	0	0%	35
MTC	49	72%	11	16%	8	12%	68
RCC	36	75%	10	21%	2	4%	48
WCCS	27	79%	6	18%	1	3%	34

WSCCH	17	71%	6	25%	1	4%	24

Analytical Orientation Level							
College	**Analytical/ Systematic**		**Balanced**		**Learns the Essentials**		**Total**
	#	**%**	**#**	**%**	**#**	**%**	
CCTC	3	38%	5	63%	0	0%	8
FDTC	5	14%	28	80%	2	6%	35
MTC	13	19%	51	75%	4	6%	68
RCC	7	15%	37	77%	4	8%	48
WCCS	15	44%	18	53%	1	3%	34
WSCCH	1	4%	22	92%	1	4%	24

CareerChoiceGPS Predictive Constructs															
Students with these attitudes and beliefs have the following characteristics:															
The Uncertainty Indicator (UI) is a measure of how accurate you attitudes and beliefs measurements are. This indicator helps you verify that you were answering the opinion section of the assessment as honestly as possible.															
60	55	50	45	40	35	30	25	20	15	10	5	0			
Your attitudes and beliefs results may not reliably reflect how you felt at the time when you took the assessment.									Your attitudes and beliefs results reliably reflect how you felt at the time when you took the assessment						
The Self Confidence (SC) scale is a measure of how much you feel in control of your life - your ability to influence the events and situations that you may face on a daily basis.															
60	55	50	45	40	35	30	25	20	15	10	5	0			
You have an exceptionally high sense of self-confidence and personal control over things in your life.									You do not feel much in control of or especially optimistic about your future.						
The Lifestyle Management (LM) scale is a measure of how well you're doing with the demands of your life and the things that may be creating stress for you.															
60	55	50	45	40	35	30	25	20	15	10	5	0			
You have a tremendously strong sense of physical and psychological well-being, found in people who are physically fit and emotionally at peace.									You should consider help in learning how to deal with your current stress levels.						
Networking/Self Promotion (NSP) scale is a measure of your attitudes toward networking, dealing with rejection, and promoting yourself or your organization, especially in a social setting.															
60	55	50	45	40	35	30	25	20	15	10	5	0			
You are comfortable networking with others and creating business opportunities									You could benefit from coaching to enhance your ability to network effectively.						

Student scores on the attitudes and beliefs were grouped by those who scored low, medium or high on the construct. The BOOST students were split fairly evenly across the three categories on the attitudes and beliefs of uncertainty indicator, self-confidence, lifestyles management and networking/self-promotion (see Table below).

Attitudes and Beliefs – Range, Mean and Standard Deviation of BOOST Students			
	Range	**Mean**	**SD**
Uncertainty Indicator	0 to 60	32.83	19.365
Self-confidence	0 to 60	37.81	16.157
Lifestyle Management	0 to 60	40.47	21.507
Networking and Self-promotion	0 to 60	29.64	14.810

Attitudes and Beliefs – High to Low							
	High		**Medium**		**Low**		**Total**
	#	**%**	**#**	**%**	**#**	**%**	
Uncertainty Indicator Score Level			51	24%	166	77%	217
Self Confidence Score Level	11	5%	32	15%	174	80%	217
Lifestyle Management Score Level	20	9%	29	13%	168	77%	217
Networking/Self Promotion Score Level	19	9%	72	33%	126	58%	217

Attitudes and Beliefs - Uncertainty Indicator Score Level							
College	**Not Reliable**		**Balanced**		**Reliable**		**Total**
	#	**%**	**#**	**%**	**#**	**%**	
CCTC	0	0%	2	25%	6	75%	8
FDTC	0	0%	10	29%	25	71%	35
MTC	0	0%	11	16%	57	84%	68
RCC	0	0%	13	27%	35	73%	48
WCCS	0	0%	12	35%	22	65%	34
WSCCH	0	0%	3	13%	21	88%	24
Self Confidence Score Level							
College	**High Self-Confidence**		**Balanced**		**Lack control/not optimistic**		**Total**
	#	**%**	**#**	**%**	**#**	**%**	
CCTC	0	0%	1	13%	7	88%	8
FDTC	2	6%	3	9%	30	86%	35
MTC	2	3%	3	4%	63	93%	68
RCC	3	6%	8	17%	37	77%	48
WCCS	1	3%	8	24%	25	74%	34

WSCCH	3	13%	9	38%	12	50%	24

Lifestyle Management Score Level							
College	**Strong Sense of well-being**		**Balanced**		**Need help with stress**		**Total**
	#	**%**	**#**	**%**	**#**	**%**	
CCTC	3	38%	0	0%	5	63%	8
FDTC	3	9%	7	20%	25	71%	35
MTC	3	4%	5	7%	60	88%	68
RCC	5	10%	4	8%	39	81%	48
WCCS	5	15%	5	15%	24	71%	34
WSCCH	1	4%	8	33%	15	63%	24
Networking/Self Promotion Score Level							
College	**Comfortable Networking**		**Balanced**		**Benefit from Coaching**		**Total**
	#	**%**	**#**	**%**	**#**	**%**	
CCTC	2	25%	2	25%	4	50%	8
FDTC	1	3%	15	43%	19	54%	35
MTC	8	12%	21	31%	39	57%	68
RCC	2	4%	15	31%	31	65%	48
WCCS	2	6%	11	32%	21	62%	34
WSCCH	4	17%	8	33%	12	50%	24

Alignment of BOOST Student Scores to Health Careers

Because the BOOST students were all earning certificated in healthcare, their assessment scores being aligned with the two occupational areas of health services and medical and healthcare were evaluated.

According to CareerChoiceGPS, the **Medical and Healthcare** career path is focused on the health and wellbeing of individuals and groups. The focus can be on proactive, preventative services or the diagnosis and treatment of problems and illness. **Sample Jobs:** Audiologist, Addiction Counsellor, Cardiologist, Certified Nursing Assistant, Computed Tomography Technician, Chiropractor, Dental Assisting, Dental Hygienist, Dentist, Diagnostic Medical Sonographer, Emergency Medical Services, General Practitioner, Gerontologist, Health Information Management, Kinesiologist, Licensed Practical Nurse, Medical Lab Technician, Medical Transport, MRI Technician, Nutritionist, Occupational Therapist, Occupational Therapy Assistant, Oncologist, Personal Care Attendant, Pharmacist, Pharmacy Technician, Podiatrist, Psychiatrist, Physician, Radiological Technician, Radiologist, Registered Nurse, Respiratory Care, Sterile Processing Technician, Surgical Technician, Veterinarian and Veterinarian Technician

According to CareerChoiceGPS, **Health Services** careers include Healthcare Plan providers, hospitals, nursing homes, home healthcare providers, medical laboratories, private clinics and Executive Medical organizations. The aging population has resulted in substantial growth of both services and products. **Sample Jobs:** Clinic Director, Communications Specialist, Emergency Medical Services, Food Inspector,

Medical Air Transporter, Medical Secretary, Outreach Program Coordinator, Palliative Care Administrator, Public Health Nurse and Psychiatric Nurse.

BOOST students from the six colleges will more than likely work in the career fields of medical and healthcare or health services. Receiving a score of 3 or greater on a sub-score indicates alignment with a career pathway, the scaled score for 1) health services and 2) medical and healthcare were extracted. It was found that 83% of BOOST students were well aligned with jobs in health services (60% 4s and 5s) and 100% were well aligned with medical and healthcare (20% 4s and 5s) (see Table below).

Mapping to Health Careers of BOOST Students				
Health Services (mean=3.8)			Medical and Healthcare (mean=3.4)	
Score	#	%		
2.0	9	4.1		
2.5	26	12.0		
3.0	2	.9	173	79.7
3.5	50	23.0		
4.0	72	33.2		
5.0	58	26.7	44	20.3
Total	217	100.0	217	100.0

Student scores indicate that 100% of BOOST students were aligned with medical and healthcare and 80-85% of students were aligned with health services.

Raw Scores by College										
	Medical and Healthcare			Health Services						
Score	3.0	5.0	Mean	2.0	2.5	3.0	3.5	4.0	5.0	Mean
CTCC	5	4.0	3.9		2		4	2	1	3.6
FDTC	30	5.0	3.3	1	3		9	8	14	4.1
MTC	35	8.0	3.4	3	6		13	11	10	3.7
RCC	37	6.0	3.3	3	6	1	7	16	10	3.8
WCCS	18	14.0	3.9	1	5		6	13	7	3.8
WSCCH	19	1.0	3.1	1	2	1	6	7	3	3.1

Fit with Health Careers – Score		
College	Medical and Healthcare	Health Services
	% 3 & up	% 3 & up
CTCC	100%	78%
FDTC	100%	89%
MTC	100%	79%
RCC	100%	79%

WCCS	100%	81%
WSCCH	100%	85%

Appendix J. Sustainability Plans for the Colleges

Central Carolina Technical College

The Curriculum Team proposed a transition of the BOOST program to a Patient Care Technician (PCT) program with the intent of sustaining the majority of the BOOST curriculum. While most of the curriculum will be retained, some modification to the curriculum is needed to meet the college Academic Program Review and Assessment policy. The new PCT program will offer accelerated certifications by allowing student to complete three stackable certifications in three semesters, rather than four semesters as designed in the BOOST program. Additionally, the PCT program will work collaboratively with Central Carolina Technical College Workforce Continuing Education program in transitioning Continuing Education students into a PCT college credit program.

The newly-approved Patient Care Technician Certificate program is designed to prepare individuals for employment in three entry-level positions in the healthcare field. This program will provide a foundation in basic patient care, phlebotomy, cardiac care, anatomy and physiology, healthcare careers, communication skills, and healthcare technology.

Central Carolina Technical College will continue with the annual Advisory Committee meeting to provide insight on local area healthcare industry demands for future graduates of the Patient Care Technician program. Additionally, CCTC will continue to identify and maintain business, higher education partnership, and legislative partnership to accomplish the mission and plan-of-action goals of the college.

Florence-Darlington Technical College

The BOOST grant program has been located in the nursing department, and it was determined that the program would remain located there. The responsibility for the administrative management of the program was transferred from BOOST staff to the Program Director of the Practical Nursing program in the last months of the program. This was planned to link several health science certificates or diplomas together to extend the stackable feature that was so successful during the grant period. The Nursing department houses an ADN program, Practical nursing diploma program, and the three nursing assistant stackable certificates—Basic, Advanced and Cardiac Care. The Medical Assisting diploma program will also be migrating into the Nursing department. Faculty within the nursing program manage the courses and clinical rotations for these programs. No additional FTE positions were added, but adjunct clinical faculty are hired as class size dictates.

All academic administrative functions for the on-going nursing assistant programs have been and will continue to be managed through the nursing department structure.

The community partners for BOOST have continued to work with the program as it has reviewed the curriculum and looked for ways to sustain the best features of the program. Community partner input was obtained by the Nursing department advisory board as well as through the close relationships between the department chair and chief nursing officers at one of the large health systems in the region. The overall best practice identified was the soft skills/professionalism feature of the graduates. The overall skill set of BOOST graduates was preferred over other CNA programs. Two items mentioned also included the need to train the graduates for hospital acute care practice and some additional add-on roles for CNAs in the assisted living settings. These items were pivotal in the curriculum decisions for sustainability.
The curriculum for the nursing assistant programs was altered as part of the sustainability process. It was realigned into three stackable certificates: a basic CNA; an advanced CNA and the Cardiac Care Vascular Technician program. Each of these programs is one semester. Curricular change was initiated by the Nursing Curriculum Committee, approved by the nursing chair/AVP Health Sciences, and then submitted to the FDTC Curriculum committee. Changes were approved by the committee and submitted to the VP for Academic Affairs for final approval.

Midlands Technical College

The Health Sciences and Nursing Departments worked together to identify what will be necessary during the transition phase. For the most part, MTC has in place almost all of the necessary pieces to maintain the capacity building benefits of the BOOST grant. With limited resources and clinical sites, the Health Sciences Department will continue to provide opportunities for students to enter the workforce through these entry level positions. MTC will continue to offer the three (3) pre-healthcare clinical certificates so that entry-level healthcare students can have early clinical exposure while building their academic foundation.

MTC has a Pre-Nursing and Pre-Healthcare Certificate program. Midlands Technical College has agreed to reclassify two (2) nursing positions. One position will be dedicated for hiring a full-time Nursing Assistant Program Coordinator, to be housed in the Health Sciences Department and a Simulation Lab Coordinator, to be housed in the Nursing Department. The Nursing Assistant Program Coordinator will be responsible for students in Health Sciences Pre-Healthcare Clinical Certificate for Nursing Assistant. The Simulation Lab Coordinator will support all learning opportunities for both the Health Sciences and Nursing Programs.

MTC has the support of the community-based healthcare facilities and agencies. Even with the tremendous support, what is still needed is financial support for equipment, personnel and indirect costs associated with any educational program. The programs at MTC are strong and well respected by the community. By way of invitation from MTC's Office of Philanthropy, CEOs from the 3 major hospital systems have toured the facility, including the Simulation Lab, and are very impressed by what MTC has to offer its students and future employees of the Healthcare System. The major benefit of the Simulation Center is that it has provided students the ability to work with equipment found in today's healthcare settings. Students are learning on the same equipment that they will be using once they graduate and enter the workforce. In order to keep pace with the ever changing technology in

healthcare, MTC has been working with the Foundation to solicit funds from Lexington Medical Center, Palmetto Healthcare System and Providence Hospitals. The hope is to have each hospital systems donate 3 million dollars over the next 5 years. This would provide for the 1.3 million dollars' expansion as well as create a trust fund for future Simulation Lab expenses.

Future plans for students that complete all three certificates: nursing assistant; phlebotomy and cardiac monitoring have the possibility of earning an Associate in Applied Sciences in Health Sciences (AAS.GEN.HLC3). Additional plans include the possibility of merging the Pre-Healthcare and Pre-Nursing Certificates to be more in line with each other.

Robeson Community College

Faculty support for the BOOST grant was evident as "master instructors" worked across the consortium to redesign and create new technologically enhanced courses and programs. Involvement in a professional community of learning facilitated by the TAACCCT network strengthened the college's efforts to focus on student retention and success. Specific academic supports included the creation and promotion of stackable credentials, Course Redesign via Quality Matters, Prior Learning Assessments (PLA) and integration of 3D/Virtual Reality (VR).

The BOOST Director, Workforce Development Coordinator, and Simulation Specialist worked with the Vice President of Workforce Development along with other college representatives to support a statewide effort to develop a certified Nursing Healthcare Pathway sponsored by the NC Division of Workforce Solutions. In April 2017, the state approved the pathway supporting preparation of a globally competitive workforce. Much like BOOST, the NC Works Career Pathways program seeks to provide certifications that ensure participants "have access to the best education, training, and work-based learning as they pursue high-demand careers" (NC Department of Commerce).

The college recognizes the importance of stackable credentials and is currently pursuing grant funding that supports lattices. In order, to enhance options for employability the college will continue to promote the attainment of industry-recognized credentials through structured advising and record keeping. This practice will be scaled and applied to all relevant academic programs.

The college is now a state testing site for Nurse Aide I certification. This service increased student access, limited travel constraints, and reduced test anxiety by providing a familiar space for the examination. The college intends to sustain all of the efforts as they support student success. The college will sustain a full-time Nurse Aide faculty position based on an increased focus on stackable credentials.

Sustainability of a formalized process is warranted based on strengthened employer and industry relationships developed during implementation of the TAACCCT grant. Notable contributions have included assistance in program review, planning, evaluation, recruitment, and student employment. Local Labor Market Index data and a purposeful relationship with our Workforce Development Board will continue to inform the curricula and training provided to our students.

The college acknowledges and wishes to sustain positive outcomes associated with structured wrap-around support services employed by TAACCCT initiatives. As a result, administrators and staff have aggressively pursued additional funding sources to support restructured student services.

Through the grant, courses and programs were redesigned and/or created to enhance the outcomes of pre-health students and will be sustained. The college will sustain the Nursing Healthcare Pathway, curricula and academic supports, personnel, employer and community engagement strategies, wrap around support services, and marketing strategies dependent upon college resources.

Wallace Community College - Selma

The BOOST program has been successful and is adequately preparing students for the workforce development needs of the region. Therefore, all courses that were modified or created by the BOOST grant and the stackable certificates will be maintained with continued simulation enhancements.

The college has realigned some staff positions funded by the BOOST grant to keep all program pieces functioning. The nursing assistant instructor position will remain and be assumed by the College. The other instructors who teach BOOST classes are not paid by the grant. They were already employed by the college as Health Science faculty and will be maintained in their positions. Other Health Science faculty teach both BOOST and nursing courses which provides a smooth transition for career ladder for students. The full-time position of simulation technician will not be maintained because all Health Science faculty were cross trained by Healthcare Simulation of South Carolina (HCSSC) to operate the simulation lab. Simulation will be integrated in BOOST and nursing classes by the Health Science faculty. Two career coaches will be maintained for the Health Science program to provide the wrap around support that has been so beneficial to program participants. The college will assume these salaries.

The part-time simulation position was not funded in the grant after 2016, however this individual was hired full time by the College as simulation/E-learning specialist. The simulation/E-learning specialist will remain available to manage all technical needs related to the simulation equipment and I-Benches.

The Patient Care Technician, EKG, Phlebotomy and Nursing Assistant certificates will be sustained beyond the grant period. The 3D I-Bench, EKG machines, simulation manikins, phlebotomy training arms, plasma training screens and headphone sets in the Health Science Lab and lap top computers will continue to be utilized in certificate programs.

The simulation lab, virtual learning lab, phlebotomy practice labs, and corporative class room will be sustained or expanded. These will be utilized by all health science programs and biology classes. The College renovated the Student Success Center which is an expansion of the simulation center. The Student Success Center will house all student success/career coaches in an area that is accessible to students. The College is committed to expanding the career/success coaching concept. One of the BOOST career coaches will serve as lead career success coach for the College. Quality Matters will be

sustained to enhance the quality of the College's online courses. The use of SAS and the internal data mart will be sustained by the office of Institutional Effectiveness to track student data.

The College also intends to maintain the workforce partnership established through the grant. Work based learning opportunities were offered through partnerships with business and industry and will continue to be a major component of BOOST training. The Program Advisory Committee's input will continue to be vital to the program success. Clinical agreements have been secured with one hospital, five long term care facilities, three physician's clinics, and four urgent care facilities. These clinical agreements are vital to the training needs of the program and will be sustained. Supportive relationships also exist with community partners such as Career Link, employment office, Department of Human Resources, Dallas County Schools, Selma City Schools, and Perry County schools. The workforce and partnership role will remain one of support as well as contributing to program enhancements.

Partnerships with high school Health Science programs in the service area for prior learning experience (PLA) agreements for NAS certifications were obtained at the high school, thereby increasing the number of certificate completers each year. The College will apply for approval to offer Phlebotomy and EKG as short certificate programs, thereby increasing the number of students who obtain short term certificates of completion from the College. The college will also seek tuition assistance scholarships to provide additional funding to students to supplement Pell grant funding.

Wallace State Community College – Hanceville

Courses and certifications modified and/or created by the grant will be continued at the college as long as there is a demand. Certifications were created utilizing labor market information data and show a strong correlation with the needs of the job market in Cullman County. The Certified Nursing Assistant (C.N.A.) credential is an industry recognized credential which aids in preparing students for the workforce. This course will be continued as a non-credit Short Term Health Certificate. Resources to sustain the course will be continued through the Division of Workforce Development. Additionally the C.N.A. credential will continue to be offered to students who successfully complete the first semester of nursing school. This will provide an alternative pathway should the student fail to progress in subsequent nursing courses.

The Simulation Center was designed to facilitate simulations in the Health Science Division. Nine high-fidelity manikins are housed in the Simulation Center allowing students to practice skills and conduct healthcare simulations across the lifespan. The Simulation Center will be housed under the Department of Nursing Education (DNE). All resources and faculty needed to sustain the Simulation Center will be continued through the DNE. The Skills Laboratory consists of 30 patient care areas designed for students to practice basic and advanced skills, health assessment, and healthcare simulations. Four Advanced Life Support manikins are housed in the Skills Laboratory to facilitate low fidelity healthcare simulations and skills scenarios. The Skills Laboratory is housed under the DNE. All resources needed to sustain the area will be continued through the DNE.

Success Coaching and Student Support Services were created/modified for BOOST students to assist them with selecting a healthcare pathway, academic and professional support and determining alternative pathways as needed. Success Coaches regularly meet with students to provide resources which enables students to persist through challenges and maximize their education. The coaches also assist students as they seek out additional pathways to success in their academic career which include job search and career planning. Support services include group coaching sessions, additional instructor support, and skills and content review. These sessions may include life skills or soft skills as well as opportunities to reinforce classroom knowledge. Success Coaches are housed under the Advancement division. All resources and staff needed to sustain the Success Coaches will be continued through the Director of Advancement. Student support services are part of normal faculty duties and will be continued as such.

The college is seeking new resources to continue to develop new programs and services to students. Wallace State has already identified and submitted state grant funding to support additional equipment, supplies and salaries/benefits to support the continuation of programs and services. The college is looking for ways to place staff and faculty in the operating budget and the ongoing operations of the college in order to scale grant ideas and functions. The college has committed the following faculty and staff: the success coach who will continue to focus on pre-health and nursing students as a part of an overall roster of first-time students attending the college; and the simulation coordinator who will continue to provide simulation coordination across multiple health programs. The health programs will continue their partnerships with the regional healthcare industry to continue to enhance student programs and provide experiential learning opportunities, to provide the College with students and resources for students to reach completion and to serve as a referral resource for students working to overcome barriers.