ACT-VT: Accelerated Career Training in Vermont

Final Evaluation

Community College of Vermont

September 30, 2018

This document contains the final evaluation report of the ACT-VT Workforce Development Program offered between 2014 and 2018 by the Community College of Vermont. This initiative was funded in part by the U.S. Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) Round 4 Grant Program.

Academic Research & Consulting Services
Fairfax Vermont -- 2018

Accelerated Career Training in Vermont

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Prepared by:

Academic Research & Consulting Services, LLC
Fairfax, Vermont
http://arcsvt.com

Prepared by:

Carol Vallett and Sandra A. Lathem
Academic Research & Consulting Services, LLC
Fairfax, Vermont
http://arcsvt.com
802-578-1196

September 30, 2018

This report was funded by a grant awarded to Vermont State Colleges / Community College of Vermont by The Employment and Training Administration (ETA), U.S. Department of Labor, Grant Number TC-26517-14-60-A-50. The product does not necessarily reflect the official position of the U.S. Department of Labor. The U.S. Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.

Acknowledgements

ARCS evaluators would like to thank the staff and instructors at the Community College of Vermont for their support and cooperation with all evaluation efforts during the last four years. We also would like to acknowledge the support and guidance we received from the Vermont Department of Labor in undertaking the Aggregated Wage Study and incorporating variables in their study related to evaluation research. Our thanks also extend to all ACT-VT participants, CCV instructors and staff, and the Vermont employers who gave us their time and attention through surveys and telephone interviews.

Table of Contents

Table of Tables

Table of Figures

Table of Acronyms

ACRE	Association of Community Rehabilitation Educators
ACT-VT	Accelerated Career Training in Vermont (name assigned by CCV to US/DOL TAACCCT, Round 4 grant project)
APL	Assessment of Prior Learning
CCV	Community College of Vermont
CHCW	Community Health Worker – a credential awarded by CCV
CPT	Certified Production Technician – a credential awarded by MSSC
CRC	Career Readiness Certificate
IRC	Industry-recognized credential
LMI	Labor Market Information, a Division of the Vermont Department of Labor
Moodle	A free and open source learning management system
MOS	Microsoft Office Specialist – a credential awarded by Microsoft Imagine Academy
MSSC	Manufacturing Skill Standards Council
SGA	Solicitation for Grant Application
TAACCCT	U.S. Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant.
TAA-eligible	TAA is a benefit for individuals who have lost their jobs because of trade with foreign countries.
TANF	Temporary Assistance for Needy Families
T4	Abbreviation for Round 4 of TAACCCT funding (October 2014 – September 2018)
VNA	Vermont Nursing Association
Voc Rehab	Vermont Agency of Vocational Rehabilitation
VSAC	Vermont Student Assistance Corporation
VT/DOL	Vermont Department of Labor
US/DOL	United States Department of Labor

Executive Summary

TAACCCT Program/Intervention Description and Activities

In Fall 2014 the U.S. Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) program (Round 4) awarded Community College of Vermont (CCV) approximately $2.4 million to create innovative workforce education programs to benefit un-employed or under-employed Vermonters. This four-year award (named Accelerated Career Training in Vermont (ACT-VT)) enabled CCV to design and implement instructional programs aligned with industry-recognized credentials (IRCs) in three career sectors: health, manufacturing, and technology. The ACT-VT program represented a deliberate strategy to expand CCV's capacity to provide workforce education training within the State of Vermont. ACT-VT enabled CCV to expand its institutional capacity to provide industry-recognized credentials alongside academic course offerings and demonstrate that IRC training programs in Vermont were desirable and in demand.

Three goals were established to assess the successes and challenges of this effort:

1. implement training and academic programs in Vermont that aligned with industry-recognized credentials,
2. enhance college and career counseling services as well as college and career pathways within the Vermont State Colleges system, and
3. expand CCV's outreach efforts with Vermont employers, nonprofit organizations and agencies.

Activities Leading to IRCs

In the manufacturing sector, CCV became a Manufacturing Skill Standards Council (MSSC)[1] Authorized Assessment Center and certified 16 CCV instructors to teach MSSC Certified Production Technician (CPT) course modules. In the health sector, CCV became a member of the Association of Community Rehabilitation Educators (ACRE)[2] and now serves as an authorized trainer for the Basic Employment Services (BES) Certificate. Information-technology related courses (such as Microsoft Word, Excel, PowerPoint) initially were aligned with the Microsoft Office Specialist (MOS) certificate offered by Microsoft Imagine Academy,[3] but this certificate was replaced in 2017 with Brainbench[4] certifications.

Activities to Increase College and Career Counseling

CCV enhanced career counseling opportunities for students with the employment of five part-time career consultants and a Career Pathways Manager. (The Career Pathways Manager was funded by ACT-VT from 2015 – 2017). Although the Manager and Consultants are currently funded by different outside sources, ACT-VT helped establish the Manager position and formalize a structure for offering career guidance opportunities for all CCV students.

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[1] See: https://www.msscusa.org/ for additional information.
[2] See: http://www.acreducators.org/ for more information.
[3] See: https://www.microsoft.com/en-us/education/imagine-academy
[4] See: https://www.brainbench.com/

Activities to Increase Career Pathways

CCV and Vermont Technical College (a four-year college granting bachelor and master degrees)[5] established additional career pathways for CCV students. These include: 1) A STEM Studies Certificate[6] (developed at CCV in 2015) that enables CCV students to enter Vermont Tech's Engineering and Manufacturing[7] programs; and 2) a direct channel for students completing CCV's MSSC Certified Production Technician (CPT) program into Vermont Tech's Manufacturing Engineering Technology programs.

Activities to Enhance Business and Community Outreach

TAACCCT funds allowed CCV to create the position of Business and Community Outreach Manager within the Workforce Education Department. CCV was successful in actively engaging over twenty-six (n=26) businesses or non-profit agencies in support of ACT-VT programs. The partners helped promote enrollment in ACT-VT courses by encouraging their employees or clients and individuals they served to enroll in an ACT-VT course of study. This strategy was a contributing factor to the success of the MSSC/CPT and ACRE programs in terms of exceeding projected enrollments.

The Promise of IRCs and Career Pathways

CCV Academic Center Staff are starting to recognize the value of IRCs and short-term workforce and academic education. Interviews with personnel indicate that IRCs are now considered the first step in educational attainment and are becoming the foundational block for building a career and educational path. This strategy is referred to as "nesting" a short-term credential inside an academic degree and can be found in new CCV offerings such as the Certified Public Bookkeeping pathway.[8]

ACT-VT Evaluation Design

The third party evaluators for ACT-VT designed a concurrent mixed-method evaluation that followed a developmental evaluation method (Patton, 2010). The primary objective of the evaluation was to determine how well CCV met the goals of ACT-VT as it developed the courses, partnerships, and activities that were key to its design.

Research Questions

Three research questions to assist the evaluation and assessment of ACT-VT were:

1. How has CCV increased institutional capacity with the integration of industry-recognized credentials and academic course offerings, career counseling services, and improved competency-based routes to credit?
2. What new relationships, linkages and sustainable partnerships have been established between CCV and employers in Vermont?
3. To what extent has the strategy of offering new programs aligned with industry-recognized credentials been effective for students and for CCV?

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[5] See: https://www.vtc.edu/
[6] See: http://catalog.ccv.edu/preview_program.php?catoid=9&poid=362&returnto=849
[7] See: https://www.vtc.edu/academics/program/manufacturing-engineering-technology
[8] See: https://ccv.edu/explore-ccv-programs/credentials-training/certified-public-bookkeeping-pathway/

a. What are the employment and wage outcomes for students who have participated in ACT-VT?
b. To what extent have IRC courses served as an on-ramp to continuing education?

Logic Model / Theory of Change

A Logic Model was developed to define the program inputs, activities, outputs, and short-and long-term outcomes. Subsequently, a detailed Evaluation Plan was written to describe a mixed-methods approach using two studies -- an Implementation Study and an Outcome Study. Data collection included: demographic data of ACT-VT participants, program completer information, course offerings and enrollment, participant and instructor surveys, and interviews with ACT-VT leadership team members, business and non-profit partners, and case study interviews.

Implementation Study

The Implementation Study employed the Logic Model to compare projected activities, outputs, and outcomes to actual implementation results and capacity building. The Implementation Study also addressed CCV research questions and the required research questions found in the TAACCCT Solicitation for Grant Application (SGA).

A variety of methods were used to gather data concerning implementation and institutional capacity. CCV shared participant enrollment data, course offering data, and program completion data with third party evaluators via electronic transfer. Thirty-minute conference calls were scheduled on bi-monthly and "as needed" basis to discuss status of implementation activities. The third-party evaluators conducted annual interviews with each ACT-VT Leadership Team member. Third-party evaluators surveyed participants at the beginning of their programs and at completion. CCV instructors were surveyed annually. Evaluators made occasional site visits to classrooms to observe participants and instructors. Business partners were interviewed via telephone annually. Evaluators held a midterm "retreat" with the Leadership Team to discuss implementation progress and make modifications to initial concepts and plans.

Outcomes Study

The Outcome Study examined participant demographic descriptive statistics, required SGA Outcome Measures and results from surveys prepared by the third-party evaluators. A case study of a sample of ACT-VT participants was analyzed and reported by themes and illustrative case study portraits. The Vermont Department of Labor independently conducted an Aggregated Wage Study using demographic and program completion data supplied by CCV. In addition, wage data were compared by career cluster (health, manufacturing, and technology) for participant completers and non-completers. Given the small population of the State and the unique nature of this program, no comparison group was used. Rather, a Wage Premium Benchmark Study analyzed the Vermont DOL median and mean wage data by educational attainment (high school diploma and/or Associate Degree or higher) given research (Ewert & Kominski, 2014) which posited a greater wage premium of non-traditional credentials for individuals with lower levels of educational attainment.

Implementation Study Findings

CCV successfully created industry-recognized credentials in the health and manufacturing sectors and developed new career pathways and credentials in several health-related fields. Information technology certification shifted from Microsoft Office Specialist (MOS) to Brainbench examinations. CCV and Vermont Tech strengthened career pathways in STEM and manufacturing in large part due to Vermont employers' interest in the MSSC Certified Production Technician (CPT) training programs. ACT-VT programs expanded CCV's outreach with business and non-profit agencies, strengthening its capacity and reputation as a provider of workforce education in Vermont. These findings are summarized below:

- Between 2015 and 2018, 27 unique courses were funded by ACT-VT with 160 course offerings scheduled at 11 different locations across Vermont. These courses included: career-readiness trainings, assessment of prior learning, introductory college level courses, short trainings related to specific IRCs (primary focus), and increased numbers of technology-enhanced course offerings.
- These IRC-aligned instructional modules began in February 2015 and, by the end of March 2018, 778 people in Vermont had enrolled, with 444 (approximately 57%) participants successfully completing a course of study and earning an IRC or a credential offered by CCV.
- Nine (n=9) credentials were developed as part of the ACT-VT initiative. They were:
    - MSSC / Certified Production Technician (6)
    - ACRE / Basic Employment Services (1)
    - Community Health Worker (1)
    - Brainbench (1)
- The MSSC /CPT program now provides a direct connection with Vermont Tech's Manufacturing Engineering Technology programs.
- Business and community outreach expanded CCV partnerships to twenty-six businesses or organizations.

CCV increased its institutional capacity regarding the integration of industry-recognized credentials and academic course offerings as a result of developing and delivering the ACT-VT program. Notably the following changes provide evidence of increased organizational capacity regarding integration of workforce and academic areas of the college.

- Workforce personnel and activity are now under the purview of the Academic Dean of the College allowing for close alignment of all types of education.
- Competency based routes to credit through portfolio review (Assessment of Prior Learning) are also now under the direction of the Academic Dean.
- The MSSC/CPT certification and courses have been reviewed and moved into a credit model; completion of all four CPT certifications is now equivalent to the completion of two, 3-credit courses (MEC 1310 Principles of Manufacturing and MEC 1320 Manufacturing Technology).
- These courses are part of the academic STEM Studies Certificate, STEM Studies A.S. Degree and can lead to the Manufacturing Engineering B.S. degree at Vermont Technical College.
- The addition of a second Associate Dean for Workforce Education results in two individuals in this position, doubling the geographic and subject matter expertise.
- CCV Academic Center staff have started to become engaged in workforce and IRC activities and have begun to recognize the value of IRCs and short-term workforce and academic education.

Interviews with personnel indicate that IRCs are now thought of as the first step in educational attainment and have become the foundational block for building a career and educational path.

- The recently released 2018-2028 Strategic Plan[9] is evidence of the attitudinal shift inside the College. Workforce and related activities are noted in every pillar of the new plan.
- The College enhanced career counseling opportunities for students with the employment of five part-time career consultants and a Career Pathways Manager. (The Career Pathways Manager was funded by ACT-VT from 2015 – 2017). Although the Manager and Consultants are funded by different outside sources, ACT-VT helped establish the Manager position and formalize a structure for offering career guidance opportunities for all CCV students.
- The inclusion of IRC attainment (particularly for CPT) was a major leap forward for the College in terms of recognizing that short-term, training-based courses could also carry college credit when outside certified credentials are successfully completed.
- There is also evidence that the short-term nature of IRC instruction has been adopted by the College in other offerings. For example, the Certified Public Bookkeeper Certificate was developed by CCV to offer 8 credits and four IRCs in bookkeeping over the course of 15 weeks. This program, while not a part of ACT-VT, is an example of how the College has adopted the IRC model into a sustainable career pathway in the business sector.

Outcome Study Findings

At the end of March 2018, CCV reported a total of 778 participants in the program. Of this number, 400 participants were enrolled in the Manufacturing cluster (approximately 51%), 277 in the Health cluster (36%), with 101 (13%) in the Technology cluster.

Participant Demographics

This data indicate that—

- 53% of participants identified as female and 47% male. Women represented the majority of participants in both the Technology (77%) and Health (82%) clusters, while men represented 73% of participants in the manufacturing career cluster.
- Participants' age ranged from under 20 to over 70, with the mean age being 37 years.
- Most participants (nearly 84%) identified their race as white.
- The majority of ACT-VT participants were non-Hispanic (93%).
- Thirty (n=30) individuals indicated veteran status.
- About 73% of participants were first-generation college students.
- Approximately 27% (n=207) indicated they had already earned an Associate or higher degree. Participants in the Health or Technology clusters were more likely to have previously earned an Associate degree than those in Manufacturing.
- Most participants (66%) were employed full-time, while the remaining who responded to this question were divided between unemployed and part-time employment.

[9] See http://ccv.edu/learn-about-ccv/ccv-strategic-plan-2018-2028/

Case Study Interviews

Thirty-eight participants (n=38) were interviewed as part of an intensive case study of ACT-VT. This study included 12 participants in the Health sector (including ACRE or medical coding/terminology), 21 in Manufacturing (all MSSC/CPT) and 5 participants in either combination of Assessment of Prior Learning or Technology. Themes emerging from these interviews included: 1) motivations for enrollment, 2) experiences in the program, 3) challenges, 4) hopes for the future, and 5) outcomes including wage growth or other changes.

This analysis found that –

- Those who were already employed in a related career field saw an IRC completion as either advancing their skills or positioning them for career advancement.
- The vast majority of participants interviewed had positive experiences in the program.
- Finding time to attend and complete their course work was mentioned most often as a challenge or barrier to completion.
- Most had not received a wage increase as a result of the ACT-VT program, but felt that the IRC would definitely help them in the future either with higher wages, more opportunities, or to reach other goals.

SGA Outcome Measures

As required by the SGA for this project, nine key outcome measures were reported.

Outcome Measure	Number
Total Unique Participants Enrolled	778
Total Number of Participants Completing a TAACCCT-Funded Program of Study	444
Total Number of Participants Still Retained in Their Program of Study or Other TAACCT Funded Program	16
Total Number of Participants Earning Credit Hours	51
Total Number of Participants Earning Credentials	444
Total Number of Participants Enrolled in Further Education	16
Total Number of Participants Employed After TAACCCT-Funded Program of Study Completion	20
Total Number of Participants Retained in Employment After Program of Study Completion	14
Total Number of Participants Employed at Enrollment who Received a Wage Increase Post-Enrollment	542

The number of participants enrolled and those earning credentials far surpass the original goals (300 and 210 respectively).

Vermont DOL Aggregated Wage Data

The LMI Division of the Vermont Department of Labor conducted an aggregated wage study of ACT-VT participants at the conclusion of the grant period. For all participant groups, wage data were reported for averages as well as medians. The following data were reported:

- The majority of both program participants and program completers were incumbent workers.
- Incumbent IRC completers saw an average one year post program exit (quarterly) wage increase of $1,220 or 13% compared with their entry level wage.
- Incumbents who did not complete a program and did not earn an IRC also received a one year post program exit (quarterly) wage increase. However, this was a more modest $124.
- Incumbent IRC earners in both the health and manufacturing clusters realized wage gains when compared to incumbent workers in the same cluster who did not complete an IRC. (Numbers in the Technology cluster were suppressed in many cases so comparisons were not made.)
- In the manufacturing program, incumbent workers who earned the maximum credential possible (all MSSC certifications) saw the highest levels of wage growth, with some earning a 1 year post exit wage increase of nearly 20%.

Analysis Based on Prior Education

As noted in the Detailed Evaluation Plan (May, 2015), due to various constraints of the program, a comparison group was not included in the wage and employment study. However, based on work by Ewert & Kominski (Ewert & Kominski, 2014), wage outcomes were analyzed by prior educational levels of participants.

Ewert & Kominski concluded through their analysis of data from the Survey of Income and Program Participation (SIPP) that the ratio of earning of those with a professional certification or license to earnings of those without any alternative credential was greater for people with lower levels of educational attainment (less than high school completion to some college but no degree). In their analysis, people with less than high school completion or a high school diploma saw an increased median wage differential ratio of 1.26 to 1.22 respectively when they earned an alternative credential.

With this study in mind, we also analyzed participants' wage and employment outcomes by two educational attainment levels: 1) less than an Associate Degree, and 2) Associate Degree or higher. Because slightly over 60% of ACT-VT participants had less than an Associate Degree, this analysis carried additional interest.

When comparing the median income in the year post program, the participants in the Health program could be compared by wage premium ratio based on IRC attainment and level of education. However, in Manufacturing, only the wage premium ratio for the participants in one education category could be analyzed due to small numbers of non-completing participants. See table below.

Education Level	One Year Post Exit Median Wage- IRC Completer	One Year Post Exit Median Wage- IRC Non-Completer	Earnings Ratio
Health			
Less than AD	$8,171	$7,313	1.12
AD +	$9,023	$8,385	1.08
Manufacturing			
Less than AD	$11,011	$7,204	1.53

In the Health program, those participants with less than an Associate Degree realized a higher earning premium of 1.12 compared to the premium of college degree holders of 1.08. While this does show some bonus to those without a college degree, the ratio is short of the 1.26 to 1.22 ratio found in the Ewert & Kominski study.

In Manufacturing, the earnings premium ratio of 1.53, for those without a college degree, surpassed the 1.26 to 1.22 expected ratio. Therefore, in this sector, wage data appear to support Ewert & Kominski's expectations of increased wages for those participants with lower educational levels who earn a credential or IRC.

Additional Findings

Several surveys were administered during the grant period to solicit information from participants and CCV instructors about their experiences with ACT-VT. Due to low response rates, these findings cannot be generalized to represent the entire ACT-VT population. Nevertheless, for these respondents, most found the ACT-VT experience to be positive and worthwhile.

Limitations

Due to the small projected number of participants (initially 300) and their unequal distribution across career clusters, a quasi-experimental methodology was not possible, and outcomes and findings of the study were not generalizable to larger populations. Our ability to compare individual employment and wage records was not possible due to the Vermont Department of Labor's policy to supply wage and earnings data in an aggregate form only. Information collected via evaluator surveys was self-reported by those individuals who consented to participate in our study, providing a small sample that cannot be considered representative of the larger population. The benchmark earnings premium (Ewert & Kominski, 2014) is from a nationally representative sample, but may not be applicable in Vermont. The three-year time frame of the study posed challenges for ascertaining the long-term influence of ACT-VT interventions, as we speculate that these types of benefits may not be realized by the completion of grant funding.

Conclusion

The ACT-VT initiative strengthened CCV's institutional capacity to design workforce education programs that align with industry-recognized credentials. It expanded CCV's outreach in the business community, especially in the manufacturing sector, and forged new partnerships that will be sustained beyond grant funding. CCV has learned that IRCs are desired by employers seeking professional development for members of its current workforce and by employees eager to gain new skills and knowledge within their current field. Through this experience, CCV has learned that IRCs must match a specific need within an industry and also be valued by both the industry and the participant. CCV's strategy to partner directly with industry employers to recruit their employees into IRC-aligned programs was very successful. Participants interviewed in the case study appreciated being able to acquire this in-house training, in part because it created a shared experience with their co-workers that provided them with a common language, understanding, and expectation about the work they do every day.

CCV recently published a ten-year vision (CCV Strategic Plan, 2018-2028) that lists nine priorities to drive policy in the decade ahead. The first priority is to "offer academic programs with clear, streamlined pathways that are aligned with requirements for future education and employment." The second priority is to "increase occupational credentials with learning outcomes that are aligned with Vermont employer and industry sector needs." Strategies to meet this second priority include creating stackable credentials as well as occupational certificates and degree programs that respond to Vermont Labor Market data and trends. These priorities and strategies reflect many of the activities and outcomes initiated by the ACT-VT project and are mirrored in CCV's commitment to increased integration of academic programs aligned with workforce and occupational needs.

Overview of ACT-VT

In Fall 2014 the U.S. Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) program (Round 4) awarded Community College of Vermont (CCV) approximately $2.4 million to create innovative workforce education programs to benefit un-employed or under-employed Vermonters. This four-year award (named Accelerated Career Training in Vermont (ACT-VT)) enabled CCV to design and implement instructional programs aligned with industry-recognized credentials (IRCs) in three career sectors: health, manufacturing, and technology. Instructional modules began in February 2015 and, by the end of March 2018, 778 people in Vermont had participated in ACT-VT programs. Of these 778 students, 444 (approximately 57%) participants successfully completed a course of study and received an IRC or a credential offered by CCV.

The ACT-VT program represented a deliberate strategy to expand CCV's capacity to provide workforce education training within the State of Vermont. It offered participants options to take an accelerated course delivery format (4-6 week modules rather than semester-length courses) and awarded participants industry-recognized credentials (rather than solely academic credit). ACT-VT generated new relationships and articulated agreements between CCV and several national organizations that certify IRCs. It increased the number of CCV instructors certified and qualified to teach industry-related courses in health and manufacturing sectors. Partnerships with Vermont businesses and human service agencies were strengthened and expanded due to the instructional offerings made available through this US/DOL TAACCCT grant. ACT-VT enabled CCV to expand its institutional capacity to provide industry-recognized credentials alongside academic course offerings and demonstrate that IRC training programs in Vermont were desirable and in demand.

ACT-VT Leadership Team

The CCV Executive Director of Workforce Education, the Director of Workforce Education, and the Director of Institutional Research and Planning comprised the ACT-VT Leadership Team. Supporting team members included the Business and Community Outreach Manager, the College and Career Pathways Manager, and a Program Assistant for Workforce Education. Vermont Department of Labor representatives and the third-party evaluators for the project frequently conferred with the ACT-VT Leadership Team about program goals and activities.

Program Goals

When envisioning the program, the ACT-VT Leadership Team developed the following three goals by which to assess the successes and challenges of this effort:

1. implement training and academic programs in Vermont that aligned with industry-recognized credentials,
2. enhance college and career counseling services as well as college and career pathways within the Vermont State Colleges system, and
3. expand CCV's outreach efforts with Vermont employers, nonprofit organizations and agencies.

As this report will describe, these goals have been addressed and met in varying degrees during the four-years of the grant.

Research Questions

Three research questions to assist the evaluation and assessment of ACT-VT were:

1. How has CCV increased institutional capacity with the integration of industry-recognized credentials and academic course offerings, career counseling services, and improved competency-based routes to credit?
2. What new relationships, linkages and sustainable partnerships have been established between CCV and employers in Vermont?
3. To what extent has the strategy of offering new programs aligned with industry-recognized credentials been effective for students and for CCV?
    a. What are the employment and wage outcomes for students who have participated in ACT-VT?
    b. To what extent have IRC courses served as an on-ramp to continuing education?

Organization of this Report

To respond to the above research questions, this report contains both an Implementation Study and an Outcomes Study. These studies encapsulate and expand the findings summarized in the Mid-Point Evaluation Report written in November, 2017[10]. In this final evaluation report, we integrate all findings to address questions concerning institutional capacity building (both within and outside of CCV) and include answers to required questions posed by the US/DOL grant. By using this two-study approach, we strive to provide CCV and the US/DOL with a comprehensive assessment of the successes and challenges of the ACT-VT initiative, describe the current context for workforce development sustainability at CCV, and summarize and share the lessons learned from this experience.

[10] The Mid Point Evaluation Report was submitted to the U.S. Department of Labor on November 8, 2017 and revised and corrected on December 1, 2017.

Evaluation Design and Methodology

The third party evaluators for ACT-VT designed a concurrent mixed-method evaluation that followed a developmental evaluation method (Patton, 2010; Griffin et al., 2014). The primary objective of the evaluation was to determine how well CCV met the goals of ACT-VT as it developed the courses, partnerships, and activities that were key to its design.

Logic Model / Theory of Change

The evaluators facilitated a meeting with the Leadership Team at the outset of the project to articulate program goals, research questions, and to create a logic model that would illustrate the program inputs, activities, outputs, and short-and long-range outcomes. This model was first constructed in January 2015 and revised in June 2016 to reflect dynamic changes that had occurred since the grant's inception. The revised logic module is illustrated in Figure 1 and explained in this section.

Inputs The US/DOL $2.4 million award provided CCV with an opportunity to develop new programs aligned with industry-recognized credentials within its existing workforce education programs. These funds also allowed CCV to expand the Workforce Education Team (formerly consisting of CCV's Executive Director of Workforce, Workforce Education Director, and Director of Institutional Research & Planning), to include two new leadership positions: a Business Outreach Manager and a College and Careers Pathways Manager. These two positions were considered essential to the implementation of ACT-VT, especially in terms of expanding business and community outreach in Vermont. Leveraging current business and community partnerships, CCV used its existing workforce program infrastructure to increase awareness within the Vermont business community of CCV's mission to provide innovative workforce programs to meet industry needs and demands.

Activities Project activities were categorized into three components: 1) programs and services, 2) business and community outreach, and 3) administration, policy development, and data management. Within each component, major activities were envisioned, as follows:

Programs and Services

- Courses and IRCs in health, manufacturing, and technology
- Certificates and/or IRCs aligned with programs of study
- Accelerated career pathways with Vermont Technical College
- Internal and external career pathways
- Staff development
- Training and certification of ACT-VT instructors
- An online learning option in Healthcare Administration with Vermont Tech
- Participant recruitment

Business Partnerships and Community Outreach

- Industry and non-profit agency collaborations to promote ACT-VT and assist recruitment
- Raised awareness of ACT-VT statewide
- Researched trends and needs in workforce training and industry-recognized credentials

Administration, Policy, and Data Management

- Administration and oversight of T4 funds and project activities
- Preparation and submission of quarterly and annual reports
- Articulation agreements between CCV and Vermont Tech
- Development of participant intake databases and tracking systems
- Collaboration with Vermont Department of Labor (DOL) to attain relevant wage and employment data
- Contract agreement with third party evaluators to develop evaluation plan, assessments, and reports

These major activities defined the outputs and outcomes for the project and provided direction for the work to be accomplished.

Outputs Anticipated outputs from the project were:

Programs and Services

- IRCs in health, manufacturing and technology
- Degree in Healthcare Administration
- Pre-tech Certificate
- Pathways to continued education at Vermont Tech
- Course offerings (including career-readiness training, assessment of prior learning, introductory college level courses, short trainings (primary focus), and increased numbers of technology-enhanced course offerings)
- Enrollment projections of at least 300 participants (210 completers, 210 earning credentials, 53 continuing education, and 90 completing credit hours)

Business Partnerships and Community Outreach

- Industry-based Advisory Board
- New partnerships with business and non-profit organizations
- Increased awareness of ACT-VT and workforce training initiatives
- Increased participant recruitment through ACT-VT business and partnership channels

Administration, Policy, and Data Management

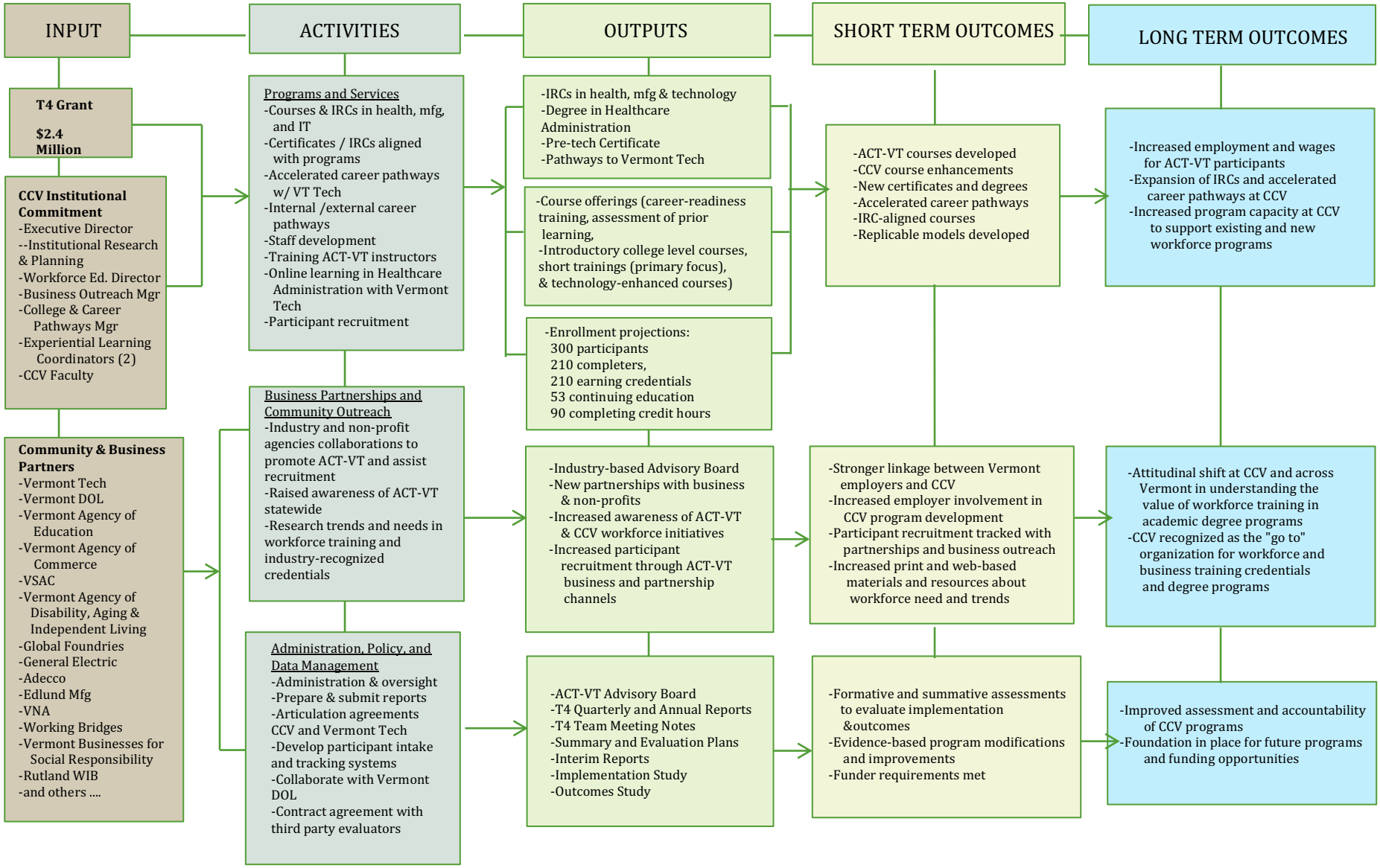
- ACT-VT Advisory Board
- T4 Quarterly and Annual Reports
- T4 Team Meeting Notes
- Summary and Evaluation Plans
- Interim Reports
- Implementation Study
- Outcomes Study

Outcomes Short- and Long-Term outcomes of ACT-VT included:

Short Term Outcomes	Long Term Outcomes
Programs and Services • ACT-VT Courses Developed • CCV Course Enhancements • New certificates and degrees • Accelerated career pathways • IRC-aligned courses • Replicable models developed	Programs and Services • Increased employment and wages for ACT-VT participants • Expansion of IRCs and accelerated career pathways at CCV • Increased program capacity at CCV to support existing and new workforce programs
Business Partnerships & Community Outreach • Stronger linkage between Vermont employers and CCV • Increased employer involvement in CCV program development • Participant recruitment tracked with partnerships and business outreach efforts • Increased print and web-based materials and resources about workforce needs and trends	Business Partnerships & Community Outreach • Attitudinal shift at CCV and across Vermont in understanding the value of workforce training in academic degree programs • CCV recognized as the "go to" organization for workforce and business training credentials and degree programs
Administration, Policy, Data Management • Formative and summative assessments to evaluate implementation and outcomes of ACT-VT • Evidence-based program modifications and improvements • Funder requirements met	Administration, Policy, Data Management • Improved assessment and accountability of CCV programs • Foundation in place for future programs and funding opportunities

Overall, this logic model provided the ACT-VT Leadership Team and the third-party evaluators a clear and mutual articulation of the project's goals and intended outcomes. This model set the stage for creating the Detailed Evaluation Plan (submitted to US/DOL in May 2015) and the data collection methods to be designed and administered.

Figure 1. ACT-VT Logic Model (T4 Grant)



Measures and Data Collection

The Detailed Evaluation Plan envisioned a mixed-methods approach that employed two studies to measure and collect data -- an Implementation Study and an Outcome Study. Each study required collection of both qualitative and quantitative data from a variety of sources.

Qualitative Data Measures

The third-party evaluators collected qualitative data that included written notes from Leadership Team meetings, CCV events, and classroom observations, as well as print and web-based materials, press releases and articles concerning ACT-VT programs. Qualitative data were also gathered from open-ended comments contained in participant intake surveys, program completion surveys, and instructor surveys. In-depth qualitative data were collected through interviews with ACT-VT Leadership Team members, CCV business and stakeholder partners, and ACT-VT case study participants.

Interviews were conducted by the evaluators either in person or by telephone. All interviews were audio-recorded (with permission) and later transcribed and coded by themes or trends. Each third-party evaluator coded qualitative data independently and compared results to ensure validity and reliability of findings. The third-party evaluators were solely responsible for collecting and protecting the confidentiality of all qualitative data sources.

Quantitative Data Measures

An ACT-VT Application Form was created and administered online by CCV. From this form, quantitative information pertinent to the ACT-VT Implementation and Outcome Studies was shared with the third-party evaluators. These participant demographics included information such as first enrollment and course dates, career cluster, gender, age, race, zip code, previous certifications earned, education attainment and/or degrees, employment status, veteran status, etc. No personal identifying information was shared with the evaluators, except for those participants who agreed to be contacted by the evaluators for an interview.

CCV maintained databases of ACT-VT course offerings, enrollment numbers, and program completers and IRC awarded. This information was shared with evaluators on a quarterly basis. Copies of all quarterly and annual reports submitted to US/DOL by CCV were also shared with the third-party evaluators.

The evaluators designed and administered a Participant Intake Survey, a Program Completion Survey, and an Instructor Survey. In most cases, these surveys were administered online, although some paper copies of the Participant Intake Survey were given as well. The responses (both quantitative and qualitative) from these surveys were collected, maintained, and secured by the third-party evaluators. Aggregated findings from these surveys were shared with the CCV Leadership Team via quarterly narrative reports. Copies of these survey protocols may be found in the Appendix of this report.

Employment and Wage Data

The Labor Market Information (LMI) Division of the Vermont Department of Labor provided participant employment and wage data outcomes in an aggregate form. Individual student social security numbers, program start and end dates, program cluster, program completion status, TAA-eligibility, and prior educational attainment information were submitted to Vermont DOL (by CCV) for

analysis. This data included participant information for people who attended ACT-VT courses during the three years of the grant and included the six-month extension (October 2017-March 2018). Vermont DOL provided information on the US/DOL required outcome questions regarding: 1) Total Number of Participants Employed after TAACCCT-funded Program of Study Completion, 2) Total Number of Participants Retained in Employment after TAACCCT-funded Program of Study Completion, and 3) Total Number of Participants Employed at Enrollment who Received a Wage Increase Post-Enrollment.

The Vermont Department of Labor independently conducted an ACT-VT Aggregated Wage Study using the demographic and program completion data collected by CCV. The Vermont Department of Labor shared the results of the ACT-VT Aggregated Wage Study with both the ACT-VT Leadership Team and the third-party evaluators. Median and mean wage data reported by educational attainment (high school diploma and/or Associates Degree or higher) were examined for wage increases and compared against the earnings premium of a professional certification or license relative to no alternative credential (Ewert & Kominski, 2014). In addition, wage data were compared by career cluster (health, manufacturing, and technology) for participant completers and non-completers.

Protection of Human Subjects

The implementation and outcomes data gathering relied on both quantitative and qualitative data from program participants, administrators, instructors, and business employers and other partners. As such, consent was obtained from subjects and protection provided regarding confidentiality. The evaluators followed CCV protocols and the College's policies for research. Sample copies of survey instruments, interview protocols and consent forms were provided to CCV's Institutional Review Board in October 2015 and received approval in November 2015 before any data were collected by the evaluators.

Limitations

Certain limitations were recognized at the outset of this evaluation plan. Due to the small projected number of participants (initially 300) and their unequal distribution across career clusters, a quasi-experimental methodology was not possible, and the outcomes and findings of the study were not generalizable to larger populations. Our ability to compare individual employment and wage records was not possible due to the Vermont Department of Labor's policy to supply wage and earnings data in an aggregate form only. Information collected via evaluator surveys was self-reported by those individuals who consented to participate in our study, providing a small sample that cannot be considered representative of the larger population. The benchmark earnings premium (Ewert & Kominski, 2014) is from a nationally representative sample but may not be applicable in Vermont. The three-year time frame of the study posed challenges for ascertaining the long-term influence of ACT-VT interventions, as we speculate that these types of benefits may not be realized by the completion of grant funding.

This evaluation process introduced many at CCV to a more systematic approach to consider program development, assessment and evaluation. We were disappointed in the internal capacity at CCV to implement evaluation procedures that would have secured higher response rates to our surveys. The Leadership Team and the evaluators tried a variety of methods to improve the response rates to the Participant Intake Survey (total 29% response rate, n=224) and the Program Completion Survey (7.5% response rate, n=59). We had planned to engage CCV instructors teaching the first course in a program of study to administer a Participant Intake Survey to capture the initial reasons participants were

motivated to enroll in a program of study. Then, at the completion of the program, the Workforce Education Team would individually contact program completers and ask them to take a Program Completion Survey to capture thoughts and feelings at the end of their program. The evaluators and the ACT-VT Leadership Team tried several approaches to increase the response rate to these surveys, including the use of paper surveys passed out in class, online survey links included as assignments, and individual reminders from the evaluators to the instructors. None of these efforts yielded the results we had hoped. Even though we strived to make processes and procedures as easy on staff as possible (e.g., sample text for emails to instructors and students, online links for surveys, an online document web site containing all survey documents and procedures), we found ourselves continually reminding staff of the location where these forms and procedures could be found, indicating that these procedures had not become established practice. Because of the low response rates in our surveys, it is difficult to say with assurance that the participant responses we have collected (which in most instances are positive) are representative of the ACT-VT participant population as a whole. Given budget and logistical limitations, we did not survey participants that dropped out of the program and therefore the studies do not examine barriers or challenges that may have caused participants to leave a course of study.

Lessons Learned

A number of lessons were learned from the evaluation of the ACT-VT initiative, as described below:

- **Communication Between Leadership Team and Evaluators is Essential**

Establishing consistent communication between leadership team members and third-party evaluators is an essential strategy to building trust and rapport concerning program evaluation. At the outset of the grant, evaluators and leadership team members met to determine research questions and design a logic model that illustrated major activities, outputs, and outcomes, thereby providing all parties with a clear understanding of the project's scope. Following these initial events, the ACT-VT Leadership Team, the Vermont DOL representatives, and the evaluators scheduled bi-monthly and monthly telephone meetings to discuss implementation activities, share ideas, and gain perspective about the project's challenges and accomplishments. Program evaluators submitted quarterly narrative reports to the Leadership Team to summarize data collection and provide preliminary findings. A mid-point retreat (June 2016) was facilitated by the evaluators and was attended by the CCV Leadership Team and the Vermont DOL representatives to assess current progress and challenges. Email exchanges were frequent between all leadership team members, the Vermont DOL, and the program evaluators. These multi-faceted communication efforts enabled all parties to stay informed and connected.

- **Geography Effects Participant Engagement in Evaluation Activities**

The geographic dispersal of course offerings, staff, instructors, and participants make it difficult to gather data. ACT-VT program offerings were administered at various locations across the State of Vermont, some at CCV centers, some virtually (using CCV's online system), and others on location at employer businesses. Even face-to-face classes such as the MSSC program had online companion portals with course content and other resources. Because of this distribution, all evaluation surveys were made available to participants via an online link. Information and instructions about the evaluation study being conducted (and associated links) were emailed (by CCV staff) electronically to CCV course instructors, enlisting their help in conveying this information to their students and asking them to take the survey as an early assignment in their course. This process, however, did not yield

the results we had hoped, and as a result, survey response rates to our surveys were low, despite a number of efforts to work directly with instructors.

Participation in the program evaluation was voluntary and therefore participants were under no obligation to respond to the surveys. Participants were not offered material incentives to encourage them to participate. We also learned late in the project that many participants did not have access to computers at home and/or were not facile using the Internet and course management software such as Moodle. Distributing paper copies of surveys in class was attempted by working with site staff. However, this method was logistically difficult because providing printed copies to instructors in geographically dispersed locations and relying on local staff to return surveys was hard to implement.

To increase survey response rates in these types of dispersed locations, we would suggest that evaluators hold meetings with instructors, whenever possible, to explain the study being conducted and emphasize the importance of participant involvement. Evaluators could make suggestions to instructors to help them assess the challenges that their students might have taking an online survey and provide laptops in class for students to use or offer paper surveys in class when needed. If the budget allows, evaluators should attend one class to introduce themselves, explain the purpose of the research, and administer surveys directly in class if possible. For online classes, evaluators could create a short video clip about the purpose and importance of the research study and ask instructors to include this video as part of the course content and include the online link to the survey. Some types of material incentives could be offered to increase response rates as well.

- **Evaluation Procedures Place Work Burden on Staff**

Implementing evaluation procedures and protocols require additional work by institution staff members and may become an unwelcomed burden. Creating informational packets, notifying instructors, tracking response rate results, and maintaining new databases all add a layer of complexity to existing workloads. Therefore, adjusting staffers' workloads to accommodate additional responsibilities or funding a temporary position to oversee evaluation protocols and database management are recommended to alleviate pressure and stress on existing personnel.

These lessons, while not uncommon or unique to CCV, are noteworthy because strong communication, strategies to collect data from geographically dispersed locations, and attaining robust response rates would strengthen any program.

Implementation Study

This Implementation Study is based on the Logic Model illustrated in Figure 1 and describes the current status (between October 1, 2014 and March 30, 2018) of CCV's projected activities, outputs and outcomes for the ACT-VT Initiative. In the Activities Section, we describe the major actions that CCV has undertaken and include the time frame during which CCV and third-party evaluator activities occurred. The Outputs section describes in detail the findings for each program component and summarizes total participant counts, IRCs and certificates offered, number of program completers, courses offered, as well as other findings. Findings that answer the required research questions posed by the US DOL Solicitation Agreement and two of CCV's research questions follow these findings. Short- and long-term outcomes related to implementation of the ACT-VT initiative are described fully in the Outcomes Study contained in this report.

Activities

The ACT-VT Leadership Team set three goals to guide its activities concerning the US/DOL TAACCCT grant. These were to:

1. implement training and academic programs in Vermont that aligned with industry-recognized credentials,
2. enhance college and career counseling services as well as college and career pathways within the Vermont State Colleges system, and
3. expand CCV's outreach efforts with Vermont employers, nonprofit organizations, and agencies.

The following subsections describe the activities associated with each of these goals.

Training and Academic Programs Aligned with IRCs

The ACT-VT Leadership Team decided to introduce industry-recognized credentials at CCV in three career clusters (manufacturing, health, and technology).

Manufacturing. In manufacturing, CCV entered discussions with the Manufacturing Skill Standards Council (MSSC)[11] to identify the Community College of Vermont as a MSSC Authorized Assessment Center and to certify CCV instructors to teach its Certified Production Technician (CPT) course modules. CCV began to certify instructors in 2015 and to offer CPT course modules in October, 2015. During the grant, sixteen (n=16) instructors were certified by MSSC[12] to teach the CPT course modules. These modules continue to be offered in 2018 and are being sustained by CCV beyond grant funding. The manufacturing CPT pathway to credentials is illustrated in Figure 2 below:

[11] See: https://www.msscusa.org/ for additional information
[12] See: https://www.msscusa.org/authorized-instructors/

Figure 2. Career Pathway: Manufacturing MSSC/Certified Production Technician Credential

Health. In health, CCV approached the Association of Community Rehabilitation Educators (ACRE)[13] to become a member and authorized trainer for the Basic Employment Services (BES) Certificate. This association with ACRE began in 2015[14] and by February, online courses aligned with ACRE certification were underway. To receive the ACRE Certificate of Achievement, participants had to complete an Employment Foundations course and at least one other module (i.e., Development Disabilities, Transitions, TANF or Mental Health). ACRE courses continue to be offered in 2018. This pathway is illustrated below:

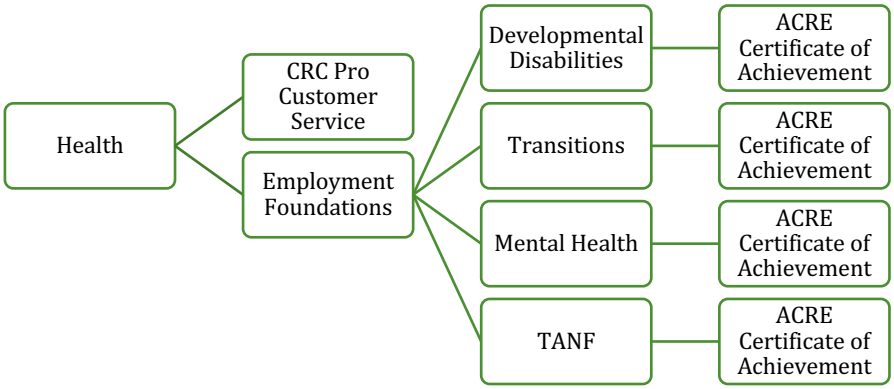


Figure 3. Career Pathway: ACRE Credential

[13] See: http://www.acreducators.org/ for more information.
[14] See: http://www.acreducators.org/training-providers/community-college-vermont

CCV also offered several credit-bearing courses (Medical Terminology, Medical Billing & Coding I and II) in an effort to align these courses with an industry-recognized credential in health. Finding a health-related IRC that would be recognized in the State of Vermont proved difficult, however. Nonetheless, these course offerings were integrated into several academic pathways related to healthcare and/or administration and continue to be offered at CCV and at colleges in the Vermont State Colleges system. Additionally, CCV was also able to align these courses with Brainbench certifications in Health Care Administration and Supporting Services.[15] An illustration of these pathways is shown in Figure 4.

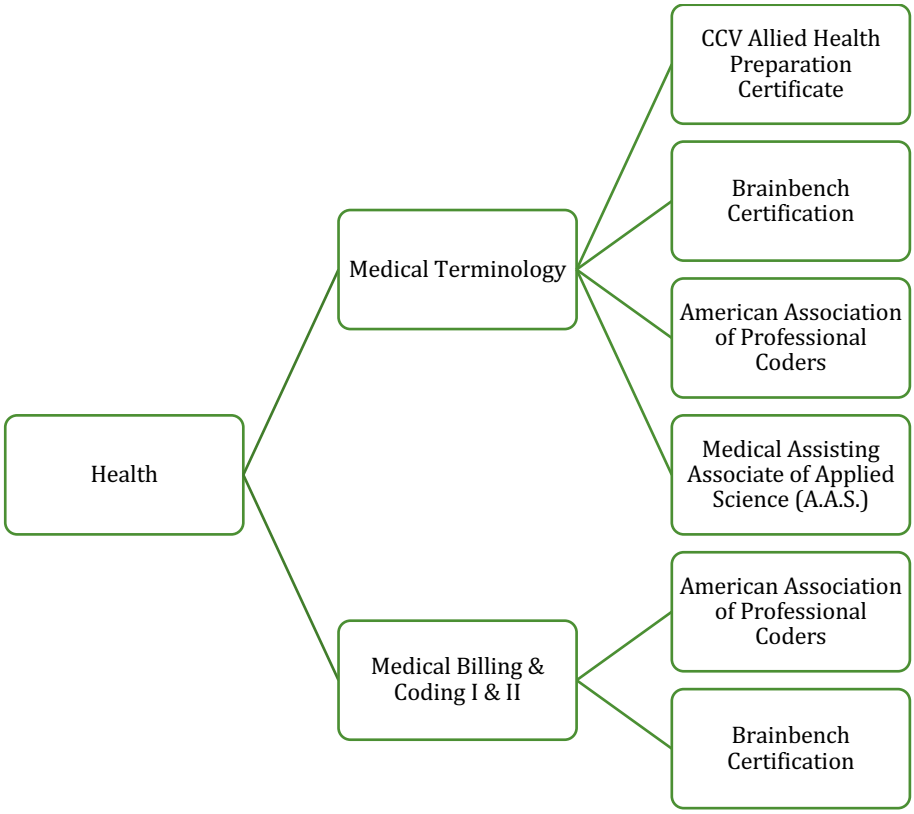


Figure 4. Career Pathway: Health Cluster Credentials

During the grant period, CCV also developed an in-house certification entitled Community Health Worker. This initiative was offered in April 2016 to one cohort of 16 participants but was later transferred outside of CCV in 2017 to the Vermont Nursing Association (VNA).

[15] See: https://www.brainbench.com/

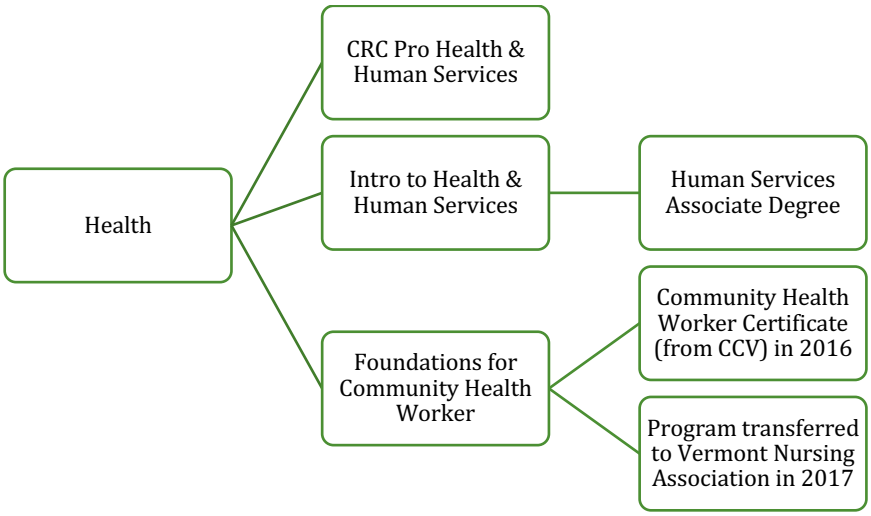


Figure 5. Career Pathway: Community Health Worker

Technology. At the beginning of the grant, information-technology related courses (such as Microsoft Word, Excel, PowerPoint, etc.) were aligned with the Microsoft Office Specialist (MOS) certificate offered by Microsoft Imagine Academy.[16] By the third year of the grant, however, this certificate became unsustainable and did not merit interest by students and/or prospective employers. It was later dropped from CCV's offerings of credentials. As an alternative, CCV investigated certifications also provided by Brainbench[17] examinations in its Computer Software and Financial categories. Toward the end of the grant, current and previous CCV participants were encouraged to take Brainbench testing to acquire certifications aligned to coursework.

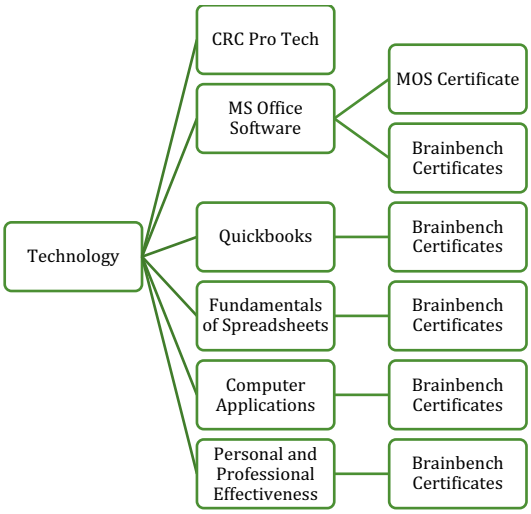


Figure 6. Career Pathway: Technology Credentials

[16] See: https://www.microsoft.com/en-us/education/imagine-academy
[17] See: https://www.brainbench.com/

Assessment of Prior Learning (APL). CCV houses the Office of Prior Learning Assessment, a statewide program administered by the Vermont State Colleges[18]. As part of the ACT-VT initiative, Assessment of Prior Learning (APL) courses[19] were offered to TAACCCT 4 participants. Employing a three-pronged approach using focused portfolios, course challenges, or course examinations, APL courses enabled participants to provide evidence to document their knowledge, job-related skills, and other life experiences. APL courses therefore provided another pathway to academic credit, continued education, and college degrees.

Summary. Overall, CCV was successful in meeting its goal to implement program offerings aligned to industry-recognized credentials and to train and certify instructors in the MSSC and ACRE programs. From this experience, CCV has strengthened its experience with creating new alliances with national organizations and in sustaining partnerships with Vermont businesses (specifically in manufacturing) and non-profit agencies. CCV was successful in recruiting 778 participants to its programs through business and community partnerships and have gained insight into the costs and infrastructure (human and material) required to sustain continuation of IRC-aligned programs.

Program & Services Activities

- ✓ *Courses and IRCs in manufacturing, health, and technology*
- ✓ *Credentials aligned with IRCs*
- ✓ *Staff Development*
- ✓ *Instructor Training*
- ✓ *Participant Recruitment*

In terms of meeting its goal to introduce course offerings aligned with industry-recognized credentials, CCV was most successful in implementing the MSSC/Certified Production Technician program in manufacturing and the ACRE Certificate of Achievement in Employment Services in health. In both these instances, the pathways to an industry-recognized credential were straightforward. In addition, participants in these courses were recruited by business partnerships and provided knowledge and skills needed (in most cases) in the participant's current career. The technology course offerings yielded only a small number of participants and were not directly associated with a specific business partnership. The Microsoft Office Specialist credential became difficult for CCV to sustain due to high examination costs and a lack of interest from participants and prospective employers. CCV therefore sought an alternative industry-recognized credential, eventually choosing Brainbench, for this purpose. This caused the technology aspect of ACT-VT to flounder but may have influenced a new direction in the design of CCV's Bookkeeping Certificate program,[20] discussed later in this report.

College and Career Services and Pathways with Vermont Tech

College and Career Services. To support the goal of expanding CCV's College and Career Services, the position of a College Career Pathways Manager was created. This position was filled by May 2015 and was designed to support college and career services both inside and outside of CCV. The majority of this position (90%) was funded by TAACCCT with ten percent (10%) allocated to overseeing four career service consultants (using non-TAACCCT funds). All ACT-VT participants were eligible to receive the same college and career pathway services as any other CCV student and therefore no

[18] See: http://ccv.edu/explore-ccv-programs/credit-for-what-you-know/
[19] See: http://ccv.edu/explore-ccv-programs/credit-for-what-you-know/portfolio-courses/
[20] See: http://catalog.ccv.edu/preview_program.php?catoid=9&poid=391&returnto=849

college and career services were designed specifically for ACT-VT participants. CCV invested in a new software platform, CareerSpots, which supports all CCV students as well as ACT-VT participants.

Regionally, the work of the Career Pathway Manager was targeted in several regions in Vermont: southeastern (Brattleboro), central and eastern Vermont (Montpelier and White River Junction), and northwestern (Winooski) Vermont. ACT-VT related work focused in the areas of health and human services. This work included the development of the ACRE certification program (which was delivered in an online course format across the State) and the Community Health Worker certificate which was offered one time in Winooski. The Career Pathway Manager was also involved in researching and supporting possible health-related career pathways with non-profit agencies such as the Vermont Agency of Vocational Rehabilitation, the Vermont Nursing Association (VNA), the University of Vermont Medical Center, and the Brattleboro Medical Hospital and Brattleboro Retreat. As noted earlier, identifying an IRC in the health professions of interest to Vermont health organizations was challenging. Nevertheless, several areas related to health were investigated. For example, medical SCRIBE training and aspects of mental health training were explored. While there was local interest in these ideas, the ACRE certification became the only new program offering that aligned directly with an industry-recognized credential.

TAACCCT funding for the position of Career Pathways Manager was discontinued by March 2017, with funding shifting to CCV and other grant resources. Descriptions of CCV career services may be found on the CCV web site and support of the career counselors[21] continues to be sustained.

Pathways with Vermont Tech. CCV undertook a number of activities to expand college and career services as part of the ACT-VT initiative. In the first year of the grant (2015), a committee was established between CCV and Vermont Tech (a four-year college granting bachelor and master degrees)[22] to discuss academic career pathways between the two institutions. A STEM Studies Certificate[23] (developed at CCV) in 2015 enables students to enter Vermont Tech's Engineering and Manufacturing[24] programs in addition to other Vermont Tech programs. The MSSC Certified Production Technician (CPT) program and Vermont Tech's Manufacturing Engineering Technology programs provided a direct association for channeling students completing the MSSC/CPT program into academic pathways that would lead to higher degrees. Vermont Tech is also developing an asynchronous distance learning classroom in Randolph Center and at Stafford Technical Center in Rutland to expand offerings of its Advanced Manufacturing course offerings. Vermont Tech has created a web resource page to list course equivalencies between CCV course offerings and Vermont Tech courses.[25] Vermont Tech admission counselors have visited all CCV centers and have recruited CPT students (2017) to attend two courses: Manufacturing Processes (MEC 1020) and Design Communication I (MEC 1011).

Healthcare Administration Program. In early planning discussions, the ACT-VT Leadership Team expressed interest in establishing an online Healthcare Administration Degree Program that included articulation agreements with Vermont Tech academic degree programs. To our knowledge, this concept did not gain traction as a TAACCCT funded initiative. CCV is offering separately, however, an

[21] See: http://ccv.edu/discover-resources/career-development/career-consultants/
[22] See: https://www.vtc.edu/
[23] See: http://catalog.ccv.edu/preview_program.php?catoid=9&poid=362&returnto=849
[24] See: https://www.vtc.edu/academics/program/manufacturing-engineering-technology
[25] See: https://www.vtc.edu/equivalent-classes

Allied Health Certificate[26] program that serves as a pathway to Vermont Tech and/or other institutions providing degree programs in a variety of health-related fields.

Program & Services Activities

- ✓ *Career Services (Internal & External)*
- ✓ *Accelerated Pathways with Vermont Tech*
- ? ***Online learning Healthcare Administration***

Summary. In summary, CCV was able to implement most of the activities it envisioned in college and career services and in strengthening articulation agreements with Vermont Tech. Alignments were strongest between CCV's MSSC/CPT program and Vermont Tech's Advanced Manufacturing programs. Articulated pathways in health-related workforce programs were less direct and alignment between the two institutions in the technology sector were not actively pursued. External outreach in college and career services focused largely on seeking industry-recognized credentials in the health sector (such as the medical SCRIBE program and the Community Health Worker program) and these ideas were eventually assigned to non-profit agencies to pursue. The College and Career Pathways Manager helped to oversee the establishment of four, part time career consultants, but the bulk of this work was not funded by TAACCCT.

Outreach with Vermont Employers and Non-profit Organizations

Business Partnerships & Community Outreach

- ✓ Industry and non-profit agency collaborations
- ✓ Raised awareness of ACT-VT statewide
- ✓ Researched trends and needs in workforce training and IRCs

To expand its outreach efforts with employers and non-profit organizations and agencies, CCV created the position of Business and Community Outreach Manager within the Workforce Education department. By early spring 2015, work began in earnest to introduce Vermont businesses to the workforce education programs being funded by the TAACCCT grant. During the summer and fall of 2015, a primary goal of the Business and Community Outreach Manager was to promote the upcoming ACT-VT programs to businesses and community agencies in Vermont. Promotion of these TAACCCT funded programs was introduced at CCV sponsored breakfast meetings and other workforce meetings held regionally throughout Vermont.

The offering of the MSSC modules at no cost to employers was well-received by several of Vermont's larger manufacturing companies: Global Foundries and Edlund Manufacturing (in northwestern Vermont) and General Electric Aviation (in Rutland Vermont). General Electric and Adecco (a temporary employment services firm) joined together to create a partnership in which Adecco recruited participants to enroll in CCV's MSSC course modules. Adecco became responsible for recruiting and assessing participants to register for the CPT program. In turn, General Electric agreed to consider the CPT credential as an acceptable alternative to its employment application criteria that require a potential entry-level employee to have at least three years of manufacturing floor experience. Recently, GE has begun to include MSSC credentials to its list of desirable employment qualifications. Initial offerings of the MSSC Certified Production Technician course modules began in Fall 2015 and interest has spread to a number of additional manufacturers, including Hazelett, Manufacturing

[26] See: http://catalog.ccv.edu/preview_program.php?catoid=9&poid=345&returnto=849

Solutions, Ben & Jerry's, Darn Tough Socks, and others. The MSSC/CPT program continues to be sustained by CCV as an academic credit program with an IRC included.

The ACRE certificate program was promoted to the Vermont Agency of Vocational Rehabilitation[27] who in turn advertised the ACRE Basic Employment Services (BES) certificate to its network of human services providers. The first offering of the ACRE certificate program (exclusively online) began in early 2015 and is continuing to be offered (as an academic credit course) by CCV in 2018.

CCV also continues to partner with a number of Vermont agencies, such as the Vermont Department of Labor, Vermont Student Assistance Corporation, and Vermont Nursing Association.

Administration and Evaluation Activities

The Leadership Team undertook administrative activities immediately after the TAACCCT grant award. These activities included securing Scope of Work Approval(s) from the U.S./DOL, establishing and administering budget expenses, hiring new personnel, negotiating contracts with the Vermont Department of Labor, and with third-party evaluators.

Administration, Policy, and Data Management

- ✓ Administration of T4 funds and project activities
- ✓ Quarterly and annual reports
- ✓ Articulation agreements with Vermont Tech
- ✓ Participant intake databases and tracking systems
- ✓ Collaboration with Vermont DOL to attain wage & employment data
- ✓ Contract agreement with third party evaluators

Additional administrative oversight included meetings, public relation articles and promotions, web-based print materials, and articulated agreements with Vermont Tech concerning transfer credits for ACT-VT participants and all CCV students.

CCV created new database tracking systems to align with participant enrollments and certificate completion. They assisted the third-party evaluators with efficient and secure data transfer throughout the project concerning participant enrollment, program completions certificates earned, and all TAACCCT program and course offerings

CCV administrators skillfully executed all administrative tasks associated with this grant award. All quarterly and annual reports were submitted to the U.S. DOL on time, as requested.

Timeline of ACT-VT Activities

Table 1 outlines the major ACT-VT activities that occurred between October 1, 2014 and March 30, 2018. In summary,

- ACT-VT design, development and program offerings begin in Year One (110 participants; 27 program completers).
- ACT-VT course offerings are provided in all three clusters in Year Two (336 participants; 192 program completers).
- ACT-VT course offerings in health and manufacturing are offered statewide in Year Three (268 participants; 177 program completers).

[27] See: https:vocrehab.vermont.gov

- ACT-VT transitions to sustainable models in Year 4 as funding from U.S./DOL shifts to Community College of Vermont during six-month extension period (64 additional participants; 48 program completers).
- Between October 2014 and March 2018, ACT-VT served a total of 778 participants with 444 participants completing a program aligned with an IRC or CCV credential.

Year 1 October 2014-September 2015	Year 2 October 2015-September 2016	Year 3 October 2016-September 2017	Year 4 October 2017-September 2018
ACT-VT Initiative • US/DOL Award Received (Oct 2014) • 3rd Party Evaluator Search (Nov 2014) • CCV Scope of Work Developed (Oct - Dec 2014) • CCV Scope of Work and Budget Approved (April 2015) • Business & Community Outreach Manager Hired (May 2015) • Informational meetings begin with business & community partners • Career Pathway Manager Hired (July 2015) • Agreement with Vermont Department of Labor for Aggregated Wage Study • IRC Agreements with MSSC & ACRE • Instructor Trainings & Certifications • CCV Committee begin to establish academic career pathways with Vermont Tech • T4 Participant Application Process Designed • ACT-VT program offerings begin with CRC-Pro courses, technology and ACRE • **Total 110 participants; 27 program completers**	**ACT-VT Initiative** •Program offerings in health, manufacturing, and technology in full swing (fall, spring, summer semesters) •26 courses offered •CCV Instructors Trained and Certified to teach MSSC courses • Business partnerships expanded in manufacturing sector for MSSC credentials • Community partnership established with Vermont Vocational Rehabilitation for ACRE credentials • Microsoft Office Specialist (MOS) credential established for technology •Community Health Worker Credential established •Career Pathway discussions with Vermont Tech continue •**Total number of ACT-VT participants reaches 446** •**Total IRC credentials awarded to 219 participants**	**ACT-VT Initiative** • Program offerings in health, manufacturing, and technology continue (fall, spring, and summer semesters) •Business partnerships expanded across Vermont for MSSC credentials •Two-credit CPT course offered statewide via Telepresence from Vermont Tech •Community Health Worker Program moved to VNA for future funding •MOS credential discontinued •Brainbench certifications established •Career Pathways Manager moved to new position within CCV •Sustainability planning for current and new programs aligned with IRCs •Expansion of IRCs in degree pathways •CCV Administrative leadership changes in Workforce Education •**Total number of ACT-VT Participants at 714** •**Total Program Completers equals 396**	**ACT-VT Initiative** • Program Extension Approved (Oct 1 - March 30, 2018) • Program offerings shift to fee based, credit-bearing for ongoing sustainability • IRCs continue at CCV • Business and community partnerships continue • Documents and reports published on Creative Commons • **Total ACT-VT Participants equal 778 as of March 2018** • **Total Program Completers equal 444 as of March 2018**
Third Party Evaluation • Evaluators Hired (January 2015) • Logic Model & Research Questions (January 15) • Detailed Evaluation Plan (submitted May 15; US/DOL approval Sept 1 2015) • ACT-VT Evaluation Web Site	**Third Party Evaluation** • CCV / IRB Application (Submitted Oct 19; Approved Nov 12, 2015) • Evaluation Data Dictionary, Participant Applications Protocols & Survey Instruments (Oct -Dec 2015) • Evaluation & Data Collection Begin (Jan 2016) • ACT-VT Leadership Retreat (June 2016) • Case Study and Employer Interviews	**Third Party Evaluation** •Mid-Point Evaluation Report (submitted Nov 8; corrected Dec 1, 2016) • Trial run of VT DOL Wage Data Study •Data collection and interviews continue	**Third Party Evaluation** •Timeline created for final data collection •Vermont DOL Aggregated Wage Study (May - August) •Data collection and analysis (Jan-Aug) •Final Evaluation Report written and submitted (January-September 2018)

Table 1. ACT-VT Time Line of Activities (2014-2018)

Outputs

CCV was successful in meeting and/or exceeding most of the output targets illustrated in Figure 1. To describe these outputs in greater detail, we compare anticipated output described in the Logic Model to actual output achievements using the three major activity components: programs and services, business and community outreach, and administration, policy, and data management.

Programs and Services

IRCs, Certificates, and Career Pathways

Table 2 below compares anticipated outputs to actual outputs of the ACT-VT initiative. As shown, CCV successfully created industry-recognized credentials in the health and manufacturing sectors and developed new career pathways and credentials in several health-related fields. Information technology certification shifted away from Microsoft Office Specialist (MOS) to Brainbench examinations. CCV created a Certified Public Bookkeeper certificate (outside of TAACCCT funding) that combined traditional academic coursework with industry-recognized credentials as a new programmatic model in workforce training programs. CCV and Vermont Tech strengthened career pathways in STEM and manufacturing in large part due to Vermont employers' interest in the MSSC Certified Production Technician (CPT) training program.

Anticipated Output	Actual Output	Detail
IRCs and/or credentials in health, manufacturing and technology	**Health*** • CRC Pro Health & Human Services • CRC Pro Customer Service • ACRE BES Certificate • Community Health Worker Certificate • Brainbench Certificate	* Some offerings in this cluster are required courses to earn advanced degrees: i.e., Allied Health Certificate, American Association of Professional Coders, Medical Assisting Associate of Applied Science
	Manufacturing • CRC Pro Manufacturing • MSSC Safety • MSSC Quality & Measurement • MSSC Process and Procedures • MSSC Maintenance • MSSC Certified Production Technician (CPT)* • MSSC Green Production**	* CPT certificate requires successful completion of all four modules ** Green Production requires CPT certificate and successful completion of Green Production module
	Technology • CRC Pro Technology • Microsoft Office Specialist* • Brainbench Certificate	* MOS discontinued

Degree in Healthcare Administration	Discussions still in process*	*Discussions with Vermont Tech begun and ongoing but currently no bachelor's degree program in place.
Pre-Tech Certificate	This concept was replaced with a Certified Public Bookkeeper credential that includes pathway to continued education or an industry-recognized license.*	* Some courses found in this program were TAACCCT funded but this credential was developed outside of the ACT-VT initiative.
Pathways to continued education at Vermont Tech	STEM Studies Certificate* MSSC /CPT program connection with Vermont Tech's Manufacturing Engineering Technology programs Vermont Tech asynchronous distance learning classroom in Randolph Center and at Stafford Technical Center in Rutland** Vermont Tech course equivalencies between CCV and Vermont Tech courses Vermont Tech recruited CPT students (2017) to attend two courses: Manufacturing Processes (MEC 1020) and Design Communication I (MEC 1011).	* Enables CCV students to enter Vermont Tech's Engineering and Manufacturing[28] programs in addition to other Vermont Tech programs. ** Providing delivery of MSSC/CPT course modules

Table 2. Anticipated and Actual Outputs for IRCs, Credentials, and Career Pathways

Course Offerings

CCV anticipated an increase in course offerings associated with the ACT-VT initiative. These included: career-readiness trainings, assessment of prior learning, introductory college level courses, short trainings related to specific IRCs (primary focus), and increased numbers of technology-enhanced course offerings. Between 2015 and 2018, 27 unique courses were funded by ACT-VT with 160 course offerings scheduled at 11 different locations across Vermont. Table 3 summarizes the actual outputs of the courses offered in support of ACT-VT.

[28] See: https://www.vtc.edu/academics/program/manufacturing-engineering-technology

Table 3. ACT-VT Course Offerings

Course Category	Course Title	Times	CCV Location
APL - Assessment of Prior Learning (1)	Assessment of Prior Learning	2	Winooski, Morrisville
Introductory College Courses (1)	Applied Math Concepts	1	St. Albans
Career Readiness (4)	CRC Pro - Health & Human Services	3	Montpelier, Winooski
	CRC Pro - Customer Services	3	Montpelier, St. Johnsbury, White River
	CRC Pro - Manufacturing	3	St. Albans, Winooski, Morrisville
	CRC Pro - Technology	4	Rutland, Winooski
Health (10)	Employment Services Foundations	9	Online
	Employment Services: Developmental Disability	6	Online
	Employment Services: Mental Health	5	Online
	Employment Services: TANF	3	Online
	Employment Services: Transition	5	Online
	Medical Terminology	7	Rutland, Morrisville, Winooski
	Medical Billing and Coding I	1	Morrisville
	Medical Billing and Coding II	1	Morrisville
	Introduction to Human Services	1	Morrisville
	Community Health Worker Foundations	1	Winooski
Manufacturing (5 courses)	CPT: Safety	31	Rutland, Winooski, St. Albans, St. Johnsbury, Brattleboro, Morrisville, Online
	CPT: Quality	26	Rutland, Winooski, St. Albans, Brattleboro St. Johnsbury, Bennington, Morrisville, Online
	CPT: Processes & Production	20	Rutland, Winooski, St. Albans, Brattleboro, St. Johnsbury, Bennington, Online
	CPT: Maintenance	18	Rutland, Winooski, St. Albans, St. Johnsbury, Bennington, Online
	CPT: Green Production	2	Online
Technology (6 courses)	Entrepreneurship	1	Rutland
	QuickBooks Workshop	2	Rutland
	Computer Applications	1	Morrisville
	Word Processing	2	Morrisville, Newport
	Fundamentals of Spreadsheets	3	Morrisville, Newport
	Personal & Prof Effectiveness	1	Morrisville

Participant Enrollments

The Leadership Team projected participant enrollments of at least 300 people, with 210 successfully completing at least one program aligned with a credential or IRC. As the following table will show, actual participant enrollments and program completers far exceeded these initial estimates.

		Career Cluster			Total
		Health	Manufacturing	Technology	
	Y1 Q2	13	0	0	13
	Y1 Q3	36	1	22	59
	Y1 Q4	38	0	0	38
	Y2 Q1	15	67	0	82
	Y2 Q2	76	87	18	181
	Y2 Q4	16	57	0	73
	Y3 Q1	0	28	7	35
	Y3 Q2	60	35	0	95
	Y3 Q3	8	24	0	32
	Y3 Q4	15	78	13	106
	Y4 Q1	0	23	22	45
	Y4 Q2	0	0	19	19
Total		277	400	101	778

Table 4. ACT-VT Participant Enrollments (October 2014 – March 2018)

As can be seen, the manufacturing cluster enrolled the largest number of students (n=400), followed by enrollment in health-related courses (n=277). More detailed information about ACT-VT participants is provided in the Outcomes Study section of this report.

Program Completers

Of the above 778 participants, 444 (57%) successfully earned a credential or an IRC. Table 5 provides an overview of those earning a credential or IRC.

		Cluster			Total
		Health	Manufacturing	Technology	
Program Completer	No	172	95	67	334
	Yes	105	305	34	444
Total		277	400	101	778

Table 5. Program Completers by Career Cluster

More information and analysis of ACT-VT Program Completers are contained in the Outcomes Study section of this report.

Business Partnerships and Community Outreach

During the initial planning of ACT-VT, the Leadership Team envisioned the following outputs to occur:

- Industry-based Advisory Board
- New partnerships with business and non-profit organizations
- Increased awareness of ACT-VT and workforce training initiatives
- Increased participant recruitment through ACT-VT business and partnership channels

With the exception of the creation of an industry-based advisory board, CCV developed new or stronger partnerships with over 26 companies or agencies. To our knowledge, an industry-based Advisory Board was never established. In its place, CCV continued or expanded outreach efforts by utilizing CCV-sponsored breakfast meetings (held regionally throughout Vermont), local and regional trade shows and conferences, and individual meetings or phone conference with prospective partners as interest in CCV workforce education programs increased. A detailed description of our findings concerning CCV's outreach efforts may be found in response to both SGA (see SGA_4) and CCV (see CCV_2) research questions. Table 6 (found later in the report) lists CCV partner organizations and identifies their contributions in support of this ACT-VT initiative.

Administration, Policy, and Data Management

Administration, policy development, and data management outputs included in the following items:

- ACT-VT Advisory Board
- T4 Quarterly and Annual Reports
- T4 Team Meeting Notes
- Summary and Evaluation Plans
- Interim Reports
- Implementation Study
- Outcomes Study

The responsibility for these outputs were shared between the CCV Leadership Team and the third-party evaluators. The CCV Leadership Team envisioned establishing an ACT-VT Steering Committee, comprised of CCV administrators, faculty, academic coordinators, and other staff. An initial meeting was held in April 2015, with the group planning to meet quarterly to review ACT-VT implementation strategies and progress. To our knowledge, however, this Steering Committee did not continue after its first meeting. On all other items, however, CCV Leadership Team skillfully administered the project, created data systems to manage participant demographics, courses and enrollments, program completions and certifications awarded. The team kept in contact with third party evaluators throughout the grant and agreed to hold bi-monthly conference calls to keep everyone up to date on activities and developments. CCV is to be commended for the timeliness with which it has submitted all required quarterly and annual reports requested by the U.S. Department of Labor.

The third-party evaluators fulfilled all its obligations regarding the program evaluation requirements. These outputs include the submission of the Evaluation Plan (May 2015), the application and approval for CCV's institutional review (October-November, 2015), all quarterly narrative reports to the Leadership Team (2015-2018), the Mid Point Evaluation Report (November, 2017) , and this Final Evaluation Report (September, 2018).

Research Questions

This section reports our findings related to specific research questions associated with ACT-VT. These questions come from two sources: 1) the required research questions posed by the U.S. Department of Labor in its Solicitation for Grant Application (SGA)[29] and the ACT-VT Research Questions developed by the CCV Leadership Team.

Solicitation for Grant Application (SGA) Questions

SGA_1. How was the particular curriculum or activity selected, used, or created?

In the design of ACT-VT, CCV sought to provide industry-recognized credentials (IRCS) that were needed by Vermont employers. This included IRCs in manufacturing, health, and technology sectors. The intent was to provide IRCs that could be earned in a short time period and have instant recognition with employers. This strategy was adopted because it held the potential to aid students in gaining employment or in increasing their current wages. Additionally, the idea of using IRCs would provide a solid foundation upon which the student could build other courses and continue on to earn an academic certificate or degree. The College conducted an environmental scan to determine which national IRCs would fill the needs for Vermont employers and decided on the following IRCs and approaches:

Manufacturing

Based on a national scan of available IRCs and the needs of Vermont manufacturers, CCV decided to offer the well-known Certified Production Technician (CPT) IRC offered by the Manufacturing Skill Standards Council (MSSC)[30]. This program is comprised of the following individual components:

- Safety
- Quality Practices and Measurement
- Processes and Procedures
- Maintenance Awareness
- Green Production

Each of the above course modules leads to an individual IRC. To achieve the Certified Production Technician credential, however, the first four modules must be successfully completed. The Green Production module is not required to achieve the CPT credential. Each credential is earned by attending courses and passing a certifying exam at the conclusion of each course.

Health

Again, with input from employers, CCV decided to offer several IRCs in the health sector. These are described below.

- ACRE Employment Services Certificate of Achievement

CCV became an approved trainer of the Association of Community Rehabilitation Educators[31] (ACRE) and has developed and delivered curriculum in Basic Employment Services. The ACRE certificate meets the needs of Vermont's health related industries, particularly those who work in any one of a number of non-profit organizations that are under contract to the Vermont Agency of Vocational Rehabilitation. A Basic

[29] See: http://www.doleta.gov/grants/pdf/SGA-DFA-PY-13-10.pdf
[30] Manufacturing Skill Standards Council, http://msscusa.org
[31] ACRE website, http://www.acreducators.org/

Employment Services Certificate of Achievement is awarded to a participant who completes a foundations course in employment services, followed by one additional disability specific course.[32]

- Community Health Worker

CCV held discussions with University of Vermont Medical Center, Vermont Nursing Association, and Support and Service at Home (SASH)[33] to develop a community of healthcare workers or personal care attendants (PCAs) in Vermont. Recruitment for this program focused on people who were new residents in America, English language learners, and who wanted to work in the healthcare field. Finding industry-recognized credentials that align with this type of program is difficult in Vermont, however, because the State of Vermont does not recognize community healthcare worker credentials. Additional information about the development of this program is included in subsequent sections.

- Medical Terminology/Coding

CCV used TAACCCT funding to offer courses in both medical terminology and medical billing/coding. These courses are part of certificates in Allied Health Preparation and Medical Billing/Coding and an AAS degree in Medical Assisting. Brainbench was put into use for those who wished to become certified in Medical Terminology or Medical Billing and Coding.

Technology

- Microsoft Office Specialist (MOS)

For CCV's ACT-VT project, technology was defined as office technology (particularly the use of Microsoft products). CCV's original plan was to offer students the Microsoft Office Specialist (MOS) certification as a technology IRC. After completing coursework, or just through experiential knowledge of Microsoft products, students were able to complete an online assessment offered by Microsoft.

The MOS credential is awarded by Microsoft Corporation[34] and is also associated with Microsoft's Imagine Academy. Imagine Academy online training was available to CCV registered students at no cost. To earn the Microsoft's Office Specialist credential, a student needed to pass the MOS exam, for which CCV had purchased licenses. However, it was clear in 2016 that this approach to the technology IRC was not successful. MOS was not meeting the needs of students and was not moving forward at CCV as an IRC. After extensive consideration, CCV replaced this credential with Brainbench examination options. CCV found Brainbench through the Department of Labor's CareerOneStop.[35] Brainbench provides certification in several thousand areas and provides several for Microsoft products. Brainbench was put into use for ACT-VT participants in 2017.

Professional Credentials

As a pathway to prepare students for ACT-VT workforce programs, CCV developed a series of CRC Pro (Career Readiness Certificate Professional) courses for the manufacturing, health, and technology career clusters.[36] These courses have been offered since Spring semester 2015 and continued throughout the program. These

[32] See description at: http://www.acreducators.org/training-providers/community-college-vermont
[33] See description at: http://sashvt.org/learn/
[34] See description at: http://ccv.edu/explore-ccv-programs/credentials-training/microsoft-training/
[35] See https://www.careeronestop.org/
[36] See description: http://ccv.edu/explore-ccv-programs/credentials-training/career-readiness-training/

courses include CRC Pro-Manufacturing, CRC Pro-Health and Human Services, CRC-Pro Customer Service, and CRC-Pro Technology.

SGA_2. How were programs/program designs improved or expanded using grant funds? What delivery methods were offered? What was the program administrative structure? What support or other services were offered?

Program funds were used to establish IRC granting programs that are part of the ACT-VT. This included the following actions:

Manufacturing

- Hiring, training and certifying instructors in the CPT courses:
    - Safety
    - Quality
    - Processes
    - Maintenance
    - Green Production

- Initial offerings of these courses were delivered in classrooms at CCV Academic Centers and/or business sites, although each course also had a complete online Moodle website designed for instruction, supplemental materials, and practice testing.
- As the program matured, CPT courses were offered via distance learning using the Telepresence system provided by Vermont Tech. This enabled students throughout the State to enroll in CPT courses.

Health

- Instructors were hired and trained to teach courses in Basic Employment Services and grant funds enabled this offering to be approved and certified by the ACRE program. Employment Services course offering supported by ACT-VT included:
- Foundations of Employment Services
- Developmental Disabilities
- Temporary Assistance for Needy Families (TANF)
- Mental Health
- Transitions
- Grant funds were used for offering Medical Terminology courses as well as Medical Billing & Coding, Level 1 and 2.
- ACT-VT also helped CCV partner with other agencies in the development of the Community Health Worker program, although after one course offering this program was moved to Vermont Nursing Association (VNA). This program was offered in person.
- All ACRE related courses were offered completely online using Moodle, allowing individuals from anywhere in Vermont to enroll in the program.
- Medical Terminology courses were offered both in traditional classroom and online formats.

Technology

As mentioned earlier in this report, both Microsoft Office Certification and Brainbench were used as certifications in the Technology subject area. In particular grant funds were used to support and expand the following course offerings:

- Computer Applications
- Word Processing
- QuickBooks Workshop
- Personal and Professional Presentations (PowerPoint)
- Fundamentals of Spreadsheets

Grant funds also helped support the offering of Microsoft Office Certification and the subsequent Brainbench assessment and certifications. Grant funds were also used to conduct outreach to students who would qualify for the certifications and encouraging them to enroll in the testing process.

Career Readiness Certificates

Grant funding was also instrumental in helping to expand Career Readiness Certificates Professional (CRC Pro) as a foundational step in a number of career pathways that led to IRCs. This included:

- CRC Pro Manufacturing
- CRC Pro Health and Human Services
- CRC Pro Customer Service
- CRC Pro Technology

For some students, enrollment in a CRC Pro course, a short offering held over two weeks, was the first step in their new career path. The grant supported curriculum and instructor development. Sections of CRC Pro were held at CCV Academic Centers throughout Vermont.

Administrative Structure

As mentioned earlier in this report, the ACT-VT program was primarily administered and directed by members of the CCV Workforce Education Department. This included the following members:

- Executive Director of Workforce Education
- Director of Workforce Education
- Director of Institutional Research and Planning
- Business and Community Outreach Manager
- Career Pathways Manager (July 2015 - October 2017)
- Program Assistant

Together, the members of the workforce team developed the programs, oversaw the budget, conducted external outreach to participants and organizations, proctored certifying exams, and managed relationships with external partners. They also developed systems inside the college to collect and track data.

Different members of the team took on oversight for various programs in terms of business outreach and curriculum. The Executive Director and Business Outreach Manger were aligned with the CPT program, whereas the Career Pathways Manager oversaw the ACRE courses in terms of outreach and attainment of certification from the ACRE organization.

Other members of the College also participated in supporting the program including:

- Career Services Specialist
- Local personnel located at academic centers including:
  - Career Consultants
  - Coordinators of Academic Services

Even though workforce team members were primarily responsible for developing and operating the programs, CCV local coordinators played important roles. They often served as the front line contacts with instructors, employers and participants. Local coordinators also served as the contact with local offices for statewide partners including the Vermont Department of Labor and Vermont Student Assistance Corporation (VSAC).

Supports and Services

Students in the ACT-VT program had access to the same supports and services as any other CCV student. This included academic accommodations as needed, support with computer usage, tutoring and use of drop-in academic learning centers, career counseling (including resume writing and job search strategies), and use of CareerSpots software[37] for employment and internships.

SGA_3. Are in-depth assessment of participant abilities, skills, and interests conducted to select or enroll individuals into the program being evaluated? What assessment tools and process were used? Who conducted the assessments? How were the assessment results used? Were the assessment results useful in determining the appropriate program and course sequence for participants? Was career guidance provided? If so, through what methods?

Assessment

For most participants, in-depth assessments were not conducted before enrollment in ACT-VT programs. Many of the participants in the CPT courses were referred by their employers as were all of the participants in the ACRE program. Some participants in CPT, located in the Rutland area of the State, were assessed by a partner placement agency (Adecco) before enrollment in CPT. Adecco put all potential participants through their light industrial evaluation process. This included math, safety, quality and attitude evaluation questions. Adecco prescreening also included a background check and drug screening. Accuplacer[38] was used for these assessments, primarily in math, reading level and general knowledge. These assessments were used to determine either enrollment in the program or remediation prior to program enrollment.

In some instances, a member of the CCV Workforce Team would meet with prospective participants who might have questions or concerns about their potential success in the program. This team member would conduct an informal assessment using Accuplacer and use the results to make a recommendation to the prospective participant.

[37] For a description of CareerSpots at CCV, please visit https://ccv.edu/discover-resources/career-development/career-services-tools/
[38] See https://accuplacer.collegeboard.org/

CCV personnel felt that for those in CPT who had no formal assessments prior to entering a CPT course, the course itself served as the assessment. If the participants were unable to pass the initial Safety assessment offered by MSSC, then they needed to backtrack and seek remediation if they wished to pass the Safety IRC exam and continue in the program. CRC Pro was also used as a first step for participants who needed skill building. For some classes, assessments were also used to help guide instructors. CCV was also able to enlist Vermont Adult Learning[39] to support participants with literacy issues.

There was no evidence of assessments used with participants in ACRE, other health courses or technology programs. No assessments were required for participants seeking certification in the technology area, either with the Microsoft Imagine Academy or through Brainbench.

Career Guidance

All students had access to CCV Career Consultants located at regional learning centers. As mentioned earlier, CareerSpots was also available to participants. This is software that CCV uses for employment and career counseling. Participants were also invited to attend career workshops held by Vermont Student Assistance Corporation (VSAC) and to use the career services offered by Department of Labor. There is scant evidence that ACT-VT participants accessed these services. This may be due to the fact that many were already employed in their field of study and were seeking skills and an IRC rather than a new job or career. Although the career consultants kept track of students served, the students were not differentiated by the type of program (academic or training) in which they were enrolled.

SGA_4. *What contributions did each of the partners and other key stakeholders make towards: program design, curriculum development, recruitment, training, placement, program management, leveraging of resources, and commitment to program sustainability? What factors affected partner involvement or lack of involvement? Which contributions from partners were most critical to the success of the grant program? Which contributions from partners had less of an impact?*

Overall, the greatest impact from partners was the referral or recruitment of participants to the ACT-VT programs. Partners helped with program outreach by encouraging their employees (notable among employers) or the clients and individuals they served to enroll in an ACT-VT course of study. This was a contributing factor to the success of the CPT program in terms of exceeding projected enrollments. The other key contribution was input to the program and curriculum. This was important in determining skills needed in the workplace.

Other important contributions included:

- Encouraging enrollment and participation
- For some employers, offering jobs at the end of CPT training
- For some employers, offering pay increases to their incumbent workers
- Donation of tools and materials for use in class
- Donation of instructional space
- Use of business computers by participants
- Tours of facilities/businesses
- Case studies from employers

[39] See http://www.vtadultlearning.org/

As noted earlier, two partners, Adecco and GE Aviation, made critical contributions to the CPT program in the Rutland area. These included recruitment and assessment (Adecco) and employment of CPT completers (GE).

Vermont Technical College worked with academic staff at CCV to provide a clear pathway for CPT participants to move from earning the IRC to eventually a Bachelor's degree in Manufacturing Engineering Technology. This partnership was key to establishing and building out a career and educational pathway in the manufacturing sector.

Vermont Vocational Rehabilitation was a critical partner in the establishment of the ACRE program. They were the champions for the ACRE program and encouraged other employers to join.

In some cases, contributions from some of the community partner organizations were less critical to the program. Although many of these organizations were a source of participant referrals, often these participants had several barriers to employment that ultimately made program completion or employment unattainable.

Partner involvement seemed to be dependent on the level of impact on the partner from the training program. The most enthusiastic and involved partners saw a benefit for their current or future employees or some other direct impact on their organization. For example, some saw turnover rates for new employees decrease, and this in turn reinforced their involvement in the program.

A list of partners along with their contributions is found in Table 6. This list was compiled from a review of CCV's quarterly reports, as well as interviews with Workforce Team members.

Table 6. ACT-VT Partner Organization Contribution

Partner Organization	Program Design	Curriculum Development	Recruitment	Training	Placement/Career Assistance	Program Management	Leverage Resources	Sustainability
Employers								
Adecco	X		X		X		X	
GE Aviation	X		X	X	X		X	
Global Foundries	X		X				X	
Edlund Co.	X		X				X	
GS Precision	X		X				X	
Vocational Rehabilitation	X	X	X	X			X	X
Ben & Jerry's			X					
Efficiency Vermont							X	
MSI								
Hazelett Strip Casting			X				X	X
Visiting Nurses Assoc.	X	X	X	X	X		X	
University of Vermont		X					X	
Twincraft Skincare			X					

Partner Organization	Program Design	Curriculum Development	Recruitment	Training	Placement/Career Assistance	Program Management	Leverage Resources	Sustainability
Community Organizations								
VT Department of Labor			X		X			
Vermont Student Assistance Corp.			X		X			
Vermont Technical College		X						X
Vermont Association of Business Industry and Rehabilitation				X			X	X
Vermont Adult Learning							X	
Vermont Works for Women			X					
Working Bridges of United Way	X		X				X	
Step It Up			X				X	
Brattleboro Development Credit Corporation								
Hartford Chamber of Commerce			X					
Bellows Falls Chamber of Commerce			X					

CCV Research Questions

CCV_1. How has CCV increased institutional capacity with the integration of industry-recognized credentials and academic course offerings, career counseling services, and improved competency-based routes to credit?

CCV has significantly increased its institutional capacity regarding the integration of industry-recognized credentials and academic course offerings as a result of developing and delivering the ACT-VT program. Notably the following changes are evidence of increased organizational capacity regarding integration of workforce and academic areas of the college.

- Workforce personnel and activity are now under the purview of the Academic Dean of the College allowing for close alignment of all types of education.
- Competency based routes to credit through portfolio review (Assessment of Prior Learning) are also now under the direction of the Academic Dean.
- The CPT certification and courses have been reviewed and moved into a credit model; completion of all four CPT certifications is now equivalent to the completion of two, 3-credit courses (MEC 1310 Principles of Manufacturing and MEC 1320 Manufacturing Technology).
- These courses are part of the academic STEM Studies Certificate, STEM Studies A.S. Degree and can lead to the Manufacturing Engineering B.S. degree at Vermont Technical College.
- The addition of a second Associate Dean for Workforce Education results in two individuals in this position, doubling the geographic and subject matter expertise.

> *"Before TAACCCT we didn't have a STEM Studies Program or Certificate or even things like Certified Bookkeeping*
>
> *…TAACCCT has helped us venture and be much broader but also more specific about what we can offer. We think about how industry credentials can help us move in a new direction for CCV. I would like every degree and certificate program to have this nesting of credentials.*
>
> *IRCs can be a lovely leverage forward for students to complete more education if needed, go into the field and work, and be able to come back in for further education.*
>
> *CCV wasn't at a place to see how this could happen without TAACCCT."*
>
> *-CCV Administrator*

- CCV Academic Center staff have started to become engaged in workforce and IRC activities and have begun to recognize the value of IRCs and short-term workforce and academic education. Interviews with personnel indicate that IRCs are now thought of as the first step in educational attainment and have become the foundational block for building a career and educational path. This was often mentioned as "nesting" a short-term credential inside an academic degree.
- The recently released 2018-2028 Strategic Plan[40] is evidence of the attitudinal shift inside the college. Workforce and related activities are noted in every pillar of the new plan.
- The College has also enhanced career counseling opportunities for students with the employment of five part-time career consultants and a Career Pathways Manager. (The Career Pathways Manager was funded by ACT-VT from 2015 – 2017). Although the Manager and Consultants are funded by different

[40] See http://ccv.edu/learn-about-ccv/ccv-strategic-plan-2018-2028/

outside sources, ACT-VT helped establish the Manager position and formalize a structure for offering career guidance opportunities for all CCV students.

- The inclusion of IRC attainment (particularly for CPT) was a major leap forward for the College in terms of recognizing that short-term, training-based courses could also carry college credit when outside certified credentials are successfully completed.

- There is also evidence that the short-term nature of IRC instruction has been adopted by the College in other offerings. For example, the Certified Public Bookkeeper Certificate was developed by CCV to offer 8 credits and four IRCs in bookkeeping over the course of 15 weeks. This program, while not a part of ACT-VT, is an example of how the College has adopted the IRC model into a sustainable career pathway in the business sector.

CCV_2. What new relationships, linkages, and sustainable partnerships have been established between CCV and employers in Vermont?

ACT-VT has significantly increased the type and number relationships between the College and State employers. Employers in the manufacturing sector have seen the greatest growth in relationships (please see Table 6 for a list of employer names and contributions). However, several distinctive partnerships emerged between CCV and employers in both the Manufacturing and Health sectors.

Manufacturing. The partnership with Adecco Staffing is particularly unique. Adecco is a temporary staffing agency that serves employers worldwide including General Electric Aviation (GE) site in Rutland, VT. A substantial and unique three-way linkage developed between the entities (GE, Adecco, CCV) regarding the recruitment and assessment of students into CPT offerings (Adecco), instruction and support of students in CPT courses (CCV), and eventual placement and employment in manufacturing (GE). These linkages were so successful that Adecco produced a recruitment video[41] featuring a CPT student who successfully earned CPT credentials and subsequently became a permanent GE employee.

This positive relationship evolved to the point that Adecco eventually referred some clients directly into CPT offerings even without a manufacturing employer partner in the picture. The company highly valued the CPT credential and saw this as a valuable learning experience for anyone seeking a manufacturing job. This sustainable partnership also extended to other employer clients of Adecco in Vermont such as GS Precision.

> *"This program has definitely had an impact on the State of Vermont.*
>
> *It has brought people into the college system and the biggest benefit has been the impact on their lives. The program has met expectations.*
>
> *CCV is very progressive and this has had an impact on the economy of Vermont."*
>
> *-Employer Partner*

Health. In the health sector, the primary relationship was with Vocational Rehabilitation, a division in the Vermont State Department of Disabilities, Aging and Independent Living. This state entity is responsible for

[41] See: https://youtu.be/t2S1jtcyYYQ

connecting with employers throughout Vermont and supports individuals with disabilities as they return to employment. Vocational Rehabilitation (Voc Rehab), as an employer, was interested in partnering with CCV to deliver training to their employment specialists to serve a dual purpose of enhancing services to employers and strengthening retention in their own ranks. TAACCCT provided the perfect funding vehicle for development of an online delivery of the ACRE courses. This enabled Voc Rehab to enhance their employee knowledge base with an industry-recognized credential and to do so using an asynchronous online delivery platform.

> "*I don't know what community colleges look like in the rest of the country but we have a really strong one here. The President gets it; she understands the role of workforce development. I can't say enough about how CCV has been as a partner. …. They see themselves as a workforce development provider and they are providing that service. They are very interested in building out their capacity for industry credentials and for many Vermonters that's the bridge to better wages and better jobs."*
>
> *-Employer Partner*

In just the short term of this program, retention improved at the Vermont Association of Business Industry Rehabilitation (VABIR). VABIR is the non-profit that is the actual employer of individuals who serve as the employee consultants working with both potential employees and industry employers. Feedback from the employee consultants earning the ACRE certification indicated that they now had a good underpinning of the knowledge needed to be successful in their jobs. The success of this partnership has led to discussions of additional course development for other IRCs including NCCER (National Center for Construction Education and Research) certification for employment specialists working with the construction industry.

Interviews with representatives from some of these organizations indicate that CCV's responsiveness to workforce needs has enhanced the relationship. In some cases, such as the development of the Community Health Worker program, CCV was successful in running a pilot program that brought partners together and then stepped out of the relationship as that partnership matured.

Additional Employer Relationship Development

Vermont employers involved in the ACT-VT program have recognized that CCV has embraced IRCs as a key aspect of their work. As one employer partner mentioned:

> "*… historically community colleges were really looking at the Associate's Degree when we know that where the rubber meets the road is in industry credentialing and certification.*
>
> *… And CCV has really been at the forefront at looking at that and thinking in terms of their customer base and how they can be offering more options."*
>
> *-Employer Partner*

This comment is reflective of many statements heard from Vermont industry representatives.

Summary, Lessons Learned, Implications for Policy

CCV has been very successful in its implementation of the ACT-VT initiative. It has established five industry-recognized credentials in the manufacturing sector (the MSSC/CPT certification), one health credential (ACRE Basic Employment Services certification), and implemented additional certifications in technology and health through Brainbench examination. It has strengthened a number of career pathways with Vermont Tech, most specifically between MSSC/CPT at CCV and Advanced Manufacturing and Engineering degrees at Vermont Tech. As a result of its efforts to bring industry-recognized credentials to its Workforce Education Program, CCV has expanded its outreach to Vermont businesses and non-profit agencies which assist under-employed or unemployed people. In support of this DOL-funded program, CCV was able to create 27 unique course offerings and enroll 778 people. Of these participants, approximately 57% (n=444) have completed a program of study and earned an industry-recognized credential.

Within the institution, the ACT-VT initiative has influenced the institutional culture at Community College of Vermont. Workforce education is now more fully represented in CCV's administrative structure, with a recent reclassification creating two Academic Deans. Workforce education is a recognized component in CCV's 2018 Strategic Plan. IRCs are now considered a first step in educational attainment and have become the foundational block for building a career and educational path. This "nesting" of a short-term credential inside an academic degree is becoming a replicable programming strategy to develop career pathways within and beyond CCV.

New credentials and their role within a traditional academic institution have implications for educational and institutional policy. Given the shortened duration of workforce education programs, college administration must be willing to upgrade or modify existing scheduling and registration software to enable short-term courses to co-exist with traditional semester course options. Often, workforce education programs begin and end at unconventional times and meet at a variety of locations, making it difficult to keep staff, counselors and advisors aware of new programs and offerings. To sustain workforce education programs, participants must be able to secure financial aid for non-traditional forms of education, so that all students have opportunity to participate. Alternative assessments challenge the traditional notion of academic credit and invoke new measures to define proficiency and mastery. Employers and the public at large must understand the value of workforce education programs, technology-enhanced delivery systems, and the intellectual merit associated with successful achievement of industry-recognized credentials. Each of these implications also represent challenges to existing beliefs and long-established practices.

The ACT-VT initiative has demonstrated that workforce education programs aligned with industry-recognized credentials are attractive to employers and to people who want to learn new skills and improve their lives. Within the academic culture, administrators and academic coordinators are coming to see IRCs as complimentary to traditional credit-bearing courses and degree programs. Introducing these types of credentials sparks new conversations about the changing nature of work and the workforce in America. These changes are not always welcome in the culture of academia, but recognition is beginning to emerge that workforce education programs offer innovative pathways to continued education.

From the ACT-VT experience, CCV seems poised to meet the challenge of developing organizational policies that will support and sustain workforce education programs like MSSC and ACRE. In its newly published Strategic Plan, CCV states: "CCV is deeply rooted in Vermont communities, providing students opportunities for academic and professional growth through flexible, innovative programs and exemplary support services. CCV will cultivate a rich network of partners through collaboration and workforce development to create vibrant and economically thriving Vermont communities" (CCV Strategic Plan, 2018). It is noteworthy that workforce development is explicitly cited in the College's vision for the decade ahead.

Outcomes Study

In this section, we present data concerning the ACT-VT initiative between April 2014 and March 2018. In addition to descriptive statistics that describe participant demographics, program completions, program offerings, and aggregated wage information, this Outcomes Study includes qualitative findings obtained from the participants in ACT-VT courses, the instructors involved in teaching ACT-VT courses, the Workforce Leadership Team at CCV, and business and community partners who contributed to participant recruitment and program development. With this data, we gain perspective about ACT-VT outcomes and are able to finalize responses to the research questions posed by the U.S. Department of Labor and Community College of Vermont.

Participant Demographics

Demographic information was gathered from the CCV Workforce Application. At the end of March 2018, CCV reported a total of 778 participants in the program. Of this number, 400 participants were enrolled in the Manufacturing cluster (approximately 51%), 277 in the Health cluster (36%), with 101 (13%) in the Technology cluster.

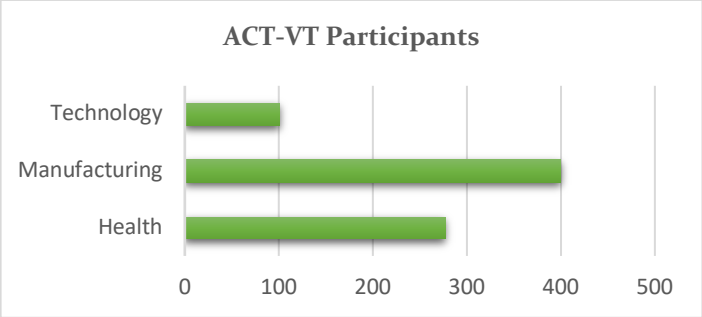


Figure 7. ACT-VT Participants by Cluster

This data indicate that—

- 53% of participants identified as female and 47% male.

Gender	Frequency	Percent
Male	364	46.8
Female	413	53.2
Missing	1	
Total	778	100.0

Table 7. Participants by Gender

Women represented the majority of participants in both the Technology (77%) and Health (82%) clusters, while men represented 73% of participants in the manufacturing career cluster. See Figure 8 below.

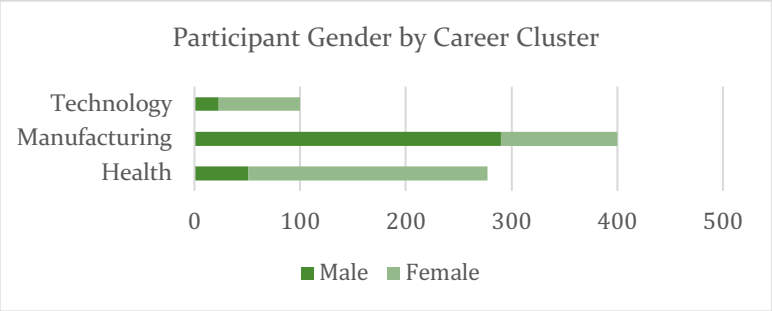


Figure 8. Participant Gender by Career Cluster

- The age of T4 participants ranged from under 20 to over 70, with the mean age being 37 years. Within these age ranges, approximately 32% of participants were under the age of 30, 48% of participants were between 30 and 49 years of age, and approximately 20% were 50 or greater. This age distribution is listed in the table which follows:

Age Group	Frequency	Percent
Less than 20	19	2.4
20-29	233	29.9
30-39	208	26.7
40-49	164	21.1
50-59	110	14.1
60-69	41	5.3
70-79	4	0.4
Total	778	100.0

Table 8. Participant Age Distribution

- Most participants (approximately 84%) identified their race as white.

	Frequency	Percent
Native American	8	1.0
Asian	19	2.4
Black	28	3.6
White	656	84.3
Two or more	31	4.0
Total	742	95.4
Missing	36	4.6
Total	778	100.0

Table 9. ACT-VT Participants by Race

- The majority of ACT-VT participants were non-Hispanic (93%).

	Frequency	Percent
Hispanic	25	3.2
Non Hispanic	724	93.1
Total	749	96.3
Missing	29	3.7
Total	778	100.0

Table 10. Participant Ethnicity

- In the participant group, thirty (n=30) individuals indicated veteran status.
- About 73% of participants were first-generation college students.
- Of the 770 participants who responded to a question concerning attainment of an Associate Degree or higher, approximately 27% (n=207) indicated they had already earned an Associate or higher degree. This data revealed that participants in the Health or Technology clusters were more likely to have previously earned an Associate degree than those in Manufacturing, as described below.

		Associate or higher			
		No	Yes	Total	Percent with Associate or higher degree
Career Cluster	Health	157	114	271	42.0%
	Manufacturing	337	62	399	15.7%
	Technology	69	31	100	31.0%
Total		563	207	770	26.9%

Table 11. Participants with Associate Degree or Higher

- Most participants, 66%, were employed full-time, while the remaining who responded to this question were divided between unemployed and part-time employment. Please note that 10% (n=79) of respondents did not answer this question.

Employed?		Frequency	Percent
	No	122	15.7
	Yes, full time	510	65.6
	Yes, part time	67	8.6
	Missing	79	10.2
Total		778	100.0

Table 12. Employment Status of ACT-VT Participants (Self-Reported)

In summary, ACT-VT participants were predominantly white, currently employed, and almost evenly divided between males and females. The majority of participants were over the age of 30 and predominantly first-generation college students. Slightly under one-third of participants (primarily in the health sector) had earned an Associate degree or higher.

Participant Intake Survey

The Participant Intake Survey was offered to ACT-VT participants at the beginning of their program. This survey posed a series of questions related to the participants' reasons for undertaking new training, prior attainment of other industry-recognized credentials, motivation as it pertained to a current or different field of work, and current employment and educational attainment. In addition, the survey asked how participants became aware of ACT-VT training opportunities and if they had interest in additional CCV services.

Survey Respondents

The Participant Intake Survey was administered as an online survey, although paper copies of the survey were also administered. In total, 224 participants (29% of ACT-VT participants) completed the Participant Intake survey. The respondents represented the following career clusters as follows:

Career Cluster	Frequency	Percent
Health	101	45.1
Manufacturing	104	46.4
Technology	19	8.5
Total	224	100.0

Table 13. Intake Survey: Respondents by Career Cluster

The majority of survey respondents (86%) indicated that they were currently employed full time. Prior educational attainment varied by career cluster, although the majority (approximately 60%) indicated earning a high school degree or GED (n=64) or had taken some college courses (n=68).

Education Attainment	Frequency	Valid Percent
Some high school	2	0.9
Diploma or GED	64	29.0
Some college	68	30.8
Associate's Degree	28	12.7
Bachelor's Degree	39	17.6
Master's Degree or higher	16	7.2
Other	4	1.8
Total	224	100.0

Table 14. Intake Survey: Education Attainment

Examining educational attainment by career cluster revealed that respondents with higher educational levels were found primarily in the health cluster, whereas those with lower attainment were enrolled predominantly in manufacturing sector programs.

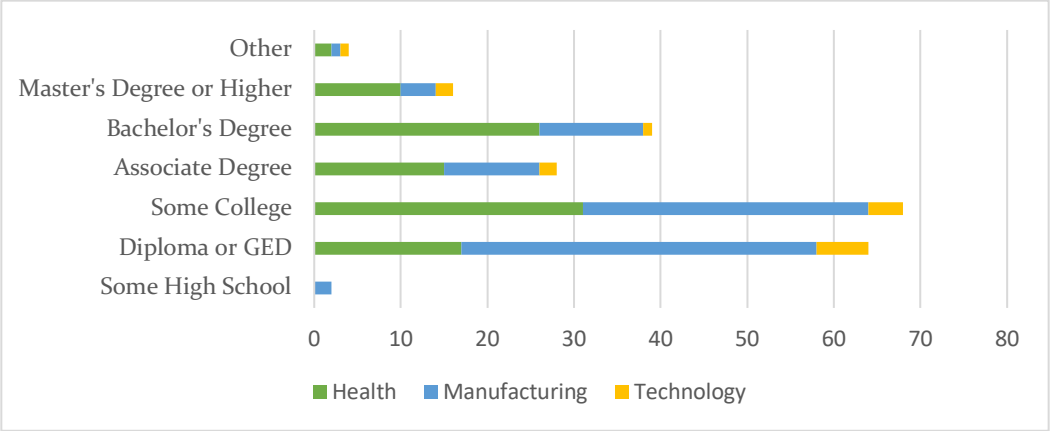


Figure 9. Intake Survey: Educational Attainment by Career Cluster

About thirty-eight percent (38%, n=84) of the respondents indicated that they had earned a certificate or credential before. Participants in the Manufacturing and Health clusters represented the majority of these credential holders, as shown in the following illustration:

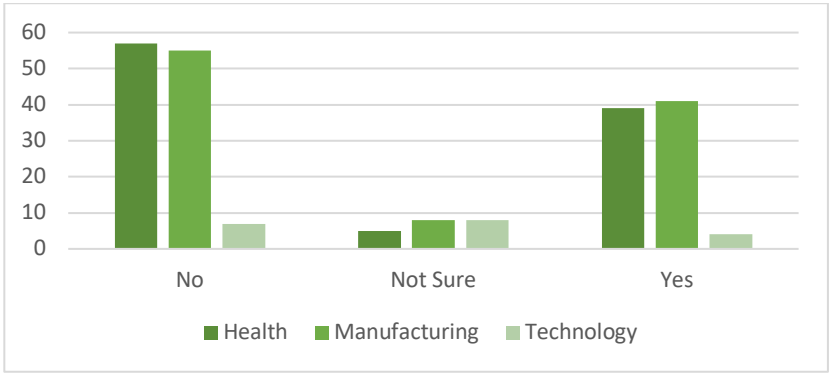


Figure 10. Intake Survey: Have you ever earned a credential?

Reasons for Enrolling

In each career cluster, learning a new skill or knowledge (n=201) and acquiring a credential (n=147) were rated as the top two "very important" reasons why the participant decided to enroll in a program. Secondarily, getting a raise or promotion (n=86), getting a new job in one's current field (n=70), and maintaining a credential (n=65) were related reasons for enrolling. The majority of respondents in all career clusters (79%) indicated that the instruction they were taking pertained to a field in which they currently worked rather than to a different or new field.

Awareness of ACT-VT Programs

The Intake Survey asked respondents to identify how they became aware of these workforce programs. Except for those people who engaged in the Technology sector courses, the majority of participants learned about these opportunities via a current employer. This result is not surprising because of CCV's intentional strategy to use business and community partnerships to recruit participants to the program. The following table outlines the results of this tabulation:

	Frequency	Percent
Current CCV Student	7	3.00%
Former CCV Student	4	1.70%
Social Media	1	0.40%
CCV Web Site	8	3.40%
CCV Advisor	13	5.60%
Employer	146	62.70%
Vermont DOL	19	8.20%
Information Session	2	0.90%
Publication	3	1.30%
Other	30	12.90%
Total	233	100.00%

Table 15. Intake Survey: Awareness of ACT-VT Courses and Programs

Participant Interest in Additional CCV Services

Respondents to the Intake Survey were also asked to identify their interest in other CCV student services that could be available to them. Approximately 66% (n=107) of the respondents indicated interest in additional services. Overall, respondents indicated interest in all choices that were presented, as shown below:

	Health	Manufacturing	Technology	
Interest: Assessment of Prior Learning	43	50	8	101
Interest: Advising	27	27	9	63
Interest: Internship	24	23	12	59
Interest: Other	2	3	0	5
Total	96	103	29	228

Table 16. Intake Survey: Respondent Interest in CCV Services

Clearly, there is an interest within those who have taken the Intake Survey to continue to explore CCV's college and career services. Forty-four percent (44%) of respondents indicated an interest in learning more about CCV's Assessment of Prior Learning options, thus providing CCV with a strong indicator of follow-up opportunities.

Summary

The results we have obtained from the Participant Intake Survey indicate that ACT-VT participants were primarily experienced working adults who were most interested in learning a new skill and/or earning an industry-recognized credential within their current field. They were not necessarily interested in changing fields. Whereas getting a raise or promotion was important to these participants, it was not the primary reason they pursued coursework aligned to an IRC. As a group, the majority of respondents held at least a high school diploma or GED. Respondents in the health sector had a higher percentage of people who had earned an Associate Degree or higher. Most people learned about these workforce education programs

through a current employer, and many were interested in learning more about CCV college and career services that would help them gain additional skill or knowledge in their current fields.

Program Completers and IRC Recipients

For the purposes of this study, a participant was counted as a "program completer" if he/she successfully completed at least one course of study that earned either a CCV certificate or an industry-recognized credential (IRC). Four categories were devised to summarize program completion:

- ACRE Basic Employment Services (required completion of two ACRE course modules)
- Community Health Worker (required completion of one CCV sponsored course module)
- MSSC Certification (Required completion of at least one of the five modules (Safety, Quality, Processes, Maintenance, and Green Production. For example, a person passing the Safety module in the MSSC Certified Production Technician program, was counted as a "program completer," even though that same individual could continue to earn additional IRCs in the MSSC program). A person who successfully completed the first four modules also received the Certified Production Technician (CPT) certificate.
- Brainbench – Students successfully passing examinations offered through Brainbench could earn a certification in a subject area (e.g., medical terminology, medical billing and coding, and information technology software programs).

Using the definition above, approximately 57% (n=444) of the 778 ACT-VT participants completed a course of study that aligned with an IRC or a CCV credential. A breakdown of all ACT-VT credentials awarded by CCV is detailed in the following table:

IRC or Credential	Frequency	Percent
ACRE	73	16.4
CHCW	12	2.7
MSSC	305	68.7
Brainbench	54	12.2
Total	444	100.0

Table 17. ACT-VT Program Completers

Within these larger categories, subdivisions in course completion can be described.

ACRE Certifications

The ACRE certificate could be accomplished by successfully completing the Employment Services Foundations course, followed by at least one of four course modules (Developmental Disability, Mental Health, Transitions, or TANF). From the table below, we can see that the 73 participants who received an ACRE certification were fairly evenly divided between interests in development disability (n=22), mental health (n=26) , and transitions (n=20).

ACRE Course Module	Completers	Percentage
Foundations	73	51.0
Developmental Disability	22	15.4
Mental Health	26	18.2
Transitions	20	14.0
TANF	2	1.4
Total	143	100.0

Table 18. ACRE Certifications by Participant Interest

Community Health Worker (CHCW)

CCV created the Community Health Worker Certificate in response to demand from health care agencies in Vermont for people skilled in community healthcare. This credential was awarded to 12 participants who successfully completed a Community Health Worker Foundations course. This course was offered one time in Spring 2016 and then transferred to the Vermont Nursing Association to sustain.

MSSC / CPT Certifications

In manufacturing, 305 participants were counted as program completers because they earned the MSSC Safety credential, the first module in the program series. However, many of these participants continued on to earn additional MSSC credentials, as follows:

MSSC/CPT Credentials	Number	Percent	Percent of Cases
Safety	305	34.3%	100.0%
Quality	226	25.4%	74.1%
Processes	184	20.7%	60.3%
Maintenance	153	17.2%	50.2%
Green Production	21	2.4%	6.9%
Total	891	100.0%	291.5%

Table 19. MSSC / CPT Credential Analysis

From this table, we can see that 74% (n=226) of MSSC program completers received two certifications: Safety and Quality. By the third module (Processes), the percentage of participants earning three certifications was reduced to 60% (n=184). At the end of the fourth module (Maintenance), 50% (n=153) of this group had successfully earned all four certificates and additionally were awarded the Certified Production Technician (CPT) certificate. Almost 7% (n=21) of CPT certificate earners completed the optional Green Production certificate.

Brainbench Certifications

Participants who successfully passed one or more Brainbench examinations received certifications in subject matter areas. As shown below, the majority of Brainbench certifications (approximately 74%, n=41) were related to technology, with approximately 25% (n=16) earning a credential in a health-related cluster.

Brainbench Credential	Number	Percent	Percent of Cases
BB Med. Terminology	16	25.0%	29.6%
BB General Science	1	1.6%	1.9%
BB MS Excel	25	39.1%	46.3%
BB MS Word	16	25.0%	29.6%
BB Other	6	9.4%	11.1%
Total	64	100.0%	118.5%

Table 20. Brainbench Credential Analysis

Summary

Over half (57%) of participants who enrolled in ACT-VT workforce education programs were successful in attaining an industry-recognized credential or a CCV credential. MSSC/ CPT credentials were issued to 68% of program completers. In contrast, ACRE certifications represented 16.4% of ACT-VT program completers.

The CCV Community Health Worker certificate represented 2.7% of program completers, with Brainbench certifications (in both health and technology clusters) representing the final 14.4%.

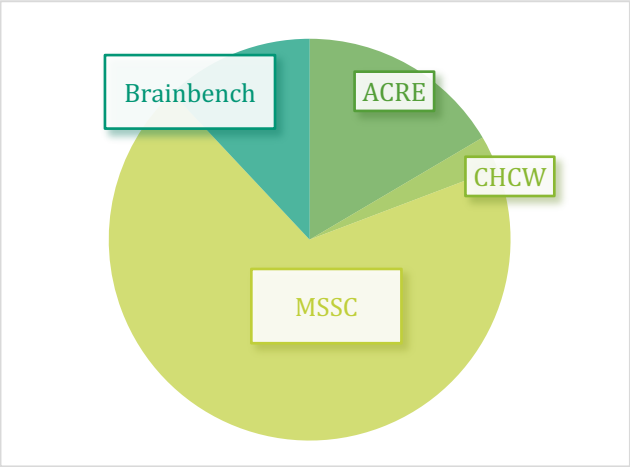


Figure 11. Program Completers Credentials

Participant Completion Survey

When a participant completed a course of study resulting in a certificate, he/she was asked by CCV to complete a Participant Completion Survey, an online survey questionnaire. Unfortunately, participant response to this request remained low despite efforts made by CCV in June and October 2016 to contact all program completers and request that they complete the survey. In sum, 59 people responded to this survey. Of these 59 people, 54 had earned at least one certificate in the MSSC/CPT program (an 18% response rate of the 305 MSSC program completers). The remaining five respondents (n=5) had earned an ACRE/BES certificate (a 7% response rate of the 73 ACRE program completers). Given the small response rate from ACRE certificate recipients, we have chosen to report only the responses received from MSSC participants.

The majority of the MSSC survey respondents completed the first two modules, with nine (n=9) people completing all four modules, as shown below:

IRC Earned	Number	Percent	Percent of Cases
Safety	54	41.2%	100.0%
Quality	48	36.6%	88.9%
Processes	20	15.3%	37.0%
Maintenance	9	6.9%	16.7%

Table 21. Participant Completion Survey: Credentials Earned

Similar to responses found in the Participant Intake Survey, these respondents indicated that they undertook this course of study to learn a new skill or knowledge (34%) and to acquire a new credential (29%). Gaining a promotion or a raise was ranked (19%) as a third reason to enroll in these programs.

Overall, respondents rated the program experience highly, with 74% rating the experience as Excellent or Very Good, as shown in the following table:

Rate Your Overall Experience	Number	Percent
Did not meet my needs	1	1.9
Somewhat satisfactory	3	5.6
Satisfactory	10	18.5
Very Good	26	48.1
Excellent	14	25.9
Total	54	100.0

Table 22. Participant Completion Survey: Program Ranking

Of these respondents:

- 82% (n=44) felt that the program had met their expectations
- 59% (n=32) were overall satisfied with the course contents, with 41% (n=22) somewhat satisfied
- 83% (n=45) felt they had the background knowledge necessary to be successful in the program
- 85% (n=46) agreed that the pacing in the courses was good for them
- 80% (n=43) felt their instructors were knowledgeable
- 89% (n=48) felt their instructors were engaging

These respondents commented that the highlights of the program were being able to learn the course content and gain new skills and insights. Most respondents said they would definitely recommend this program to a friend. The challenges to participants centered primarily with online portions of the materials that made it harder to learn and a few respondents indicated they had difficulty with accessing the materials online. Also, participants noted that for some of the module exams, they were tested on material that had not been included in the online modules that were offered as a "fast track" option.

In response to a question asking if the participant felt the program would be helpful to a future career, 81% (n=48) answered "yes." When asked if they felt the program had helped them move into a new job, 86 % (n=51) responded "no." Similarly, when asked if the program had resulted in an increase in wages, 88% (n=52) also responded "no." Thus, even though participants had not yet experienced an increase in wages or job growth, they felt positively that earning these credentials would eventually be helpful to their careers in the future.

Participants were asked to list CCV student services they had experienced during their program. These responses indicate that CCV was able to provide helpful services to most respondents, with referring participants to job leads (n=18) and academic advising (n=11) being the most frequent. The table below lists all participant responses.

CCV Student Services	Number	Percent	Percent of Cases
Career Counseling	7	13.0%	28.0%
Interview Preparation	4	7.4%	16.0%
Resume Writing	1	1.9%	4.0%
Job Internships	2	3.7%	8.0%
Job Leads	18	33.3%	72.0%
Academic Advising	11	2.04%	44.0%
Tutoring	3	5.6%	12.0%
Assessment Prior Learning	5	9.3%	20.0%
Supports outside CCV	3	5.6%	12.0%
Total	54	100.0%	216.0%

Table 23. Participant Completion Survey: CCV Student Services Used

The results from the Participant Completion Survey align well with the Participant Intake Survey in that most participants were interested in this workforce opportunity because they wanted to learn a new skill and acquire a credential that held potential for the future. The overall satisfaction rating of the MSSC program was high and met expectations, with students recognizing their instructors as engaging and highly knowledge in their subject areas. It is unfortunate that more participants earning credentials with the MSSC program did not participate in this survey.

Instructor Survey Data

During the grant period, the evaluators attempted several times via email to contact the 43 CCV instructors who had taught a TAACCCT funded course. Each instructor was asked to complete an Instructor Survey that was accessible online. Of the 43 instructors contacted, 63% (n=27) instructors responded to this request and completed the survey. The findings from this survey are listed below, as follows:

- The majority of instructors (n=17) indicated that the course they offered was a new course for them, with ten (n=10) instructors responding that they had taught the course previously.
- 95% of the instructors (n=25) indicated that their overall experience with offering the course had been good or very good.
- 16 instructors had been required to undergo training before teaching their course. Of these respondents 81% (n=13) felt that the training they had received adequately prepared them to teach the course.

Instructors described a variety of delivery methods used in their courses, ranging from lecture to online course work, with online support found through Moodle resources and some hands-on opportunities. Ninety-three percent (93%) of the instructors felt that their students had adequate skills to be successful with their course work. However, in a separate question, almost half of the instructors noted that students lacked some basic skills. These lacking skills included: basic reading skills and comprehension, computer skills beyond social media, and technological literacy. As one instructor wrote: *Most problematic were a few students who did not have adequate reading skills to succeed. Too many had no computer experience beyond social media.*

When asked if instructors had received feedback from their students concerning student experience with the course, 85% (n=23) indicated that they had received feedback. In describing this feedback, the majority of instructors received informal positive feedback about the course content from their students and several indicated that students had expressed more confidence in themselves as a result of their course experiences.

Instructors were also asked to provide suggestions for improvements to their courses. The following responses were selected as representative:

- *Additional computer literacy coaching, loaner laptops for students.*
- *Allowing other training materials and not requiring students to take the certification test at the end.*
- *Better screening and prep for reading level and basic computer comfort before enrolling.*
- *Course is geared too much towards macro manufacturing like machining. It would be nice to have other manufacturing fields as well - things like injection molding, semiconductors, food, electronics, medical, etc.*

- *Funding provided only for those individuals that are seeking education by their own motivation. That one simple constraint would put our funding in the education of those who will subsequently be successful in our economy. That in turn feeds a healthy economy.*
- *2-3 more sessions per module. This is a lot of information for students to digest. A few practice quizzes scattered throughout would take some of the anxiety out of the "exams."*
- *Offer another class that focuses on essential computer use.*
- *Pre-class screening by knowledgeable staff, greater support from other CCV staff.*
- *Students first take basic CRC course and basic computer/writing skills.*

When asked if instructors would be willing to teach the same course again, 89% (n=24) answered "yes." Overall, instructors were very positive about the program, enjoyed working with TAACCCT students, and look forward to continued offerings of these courses.

Case Studies

The purpose of the case study interviews was to provide a human face to individuals who enrolled in a program to understand motivations for success, challenges and hopes for the future. Beyond any anticipated employment and wage changes, the case studies were planned to answer how earning an IRC may have impacted the participants, their families and communities in other ways. Combined with survey and demographic data, the case studies were intended to provide a "thick description" of aspects of the ACT-VT program. Case study interviews were used to determine common themes and to develop illustrative case studies.

Methodology

Following the case study methodology as outlined in the Detailed Evaluation Plan, a question was included on the Participant Intake Survey that asked students about their willingness to speak with an evaluator about their experiences in an ACT-VT program. If students answered "yes" to this question, CCV sent their name and contact information to the evaluators. One hundred forty-two (n=142) students indicated a willingness to speak with an evaluator about their experiences in the program. Contact was attempted with all of these volunteers and eventually evaluators conducted phone interviews with 38 individuals. The case study interviews followed a semi-structured format and spanned 30 to 60 minutes. If consent was given, the interviews were audio recorded so transcriptions could be checked and corrected. Although all 38 participants were also contacted for follow-up interviews, only 9 participants responded to requests for follow-up interviews.

Our Case Study interview findings include 12 participants in the Health sector (including ACRE or medical coding/terminology), 21 in Manufacturing (all MSSC/CPT) and 5 participants in either combination of Assessment of Prior Learning or Technology.

Thematic Analysis

The transcripts were reviewed and coded by the evaluators looking for themes that would emerge concerning motivations for enrollment, experiences in the program, challenges, hopes for the future, outcomes including wage growth or other changes, as describe below.

Motivation

Participants had various reasons for enrolling in an ACT-VT program depending on their circumstances. Those who were already employed in a related career field saw an IRC completion as either advancing their skills or positioning them for career advancement. They viewed the IRC as helping them compete better and perhaps earn more. Because these employed individuals were all referred by their employers, they regarded their participation as a *"no brainer – the price was right!"* In some cases, the employers required their employees to attend trainings and used them as professional development. The fact that these offerings were "free" was an attraction to employers and employees alike. Others were attracted to the opportunity to go back to school and to perhaps earn college credit. For people who were not employed or were employed in another field, they often found their way into courses from CCV advisors or case workers in other organizations, and their reasons were more related to entry level job skills. In other instances, there was yet another group of individuals who already held post-secondary credentials, but were seeking a career change. In all cases, participants were interested in attaining a credential that held possibilities for the future.

"It's 100% about having that credential just in case I ever want to move beyond my current area of employment."

-ACRE Participant

"It's a little bit of extra education, so that helps me feel better about myself.

And it looks good on my resume."

-- CPT Participant

Program Experience

The vast majority of participants interviewed had positive experiences in the program. Many students in all programs, mentioned supportive and knowledgeable instructors who contributed to a positive experience. Technology, especially the online nature of the ACRE offerings, the online companion pieces for all CPT including the final assessments, were often mentioned by participants. The ACRE participants were enthusiastic about the online format of the courses. However, some of the CPT participants struggled a bit more with the online or technology based aspects of their trainings. Overall, experiences were positive and enabled people to gain confidence, new terminology, and shared understandings with co-workers and peers.

Challenges

When asked about challenges or barriers they might have faced as students in an ACT-VT program, the evaluators did not hear anything about academic issues. Rather, time, that most precious of resources, was in short supply for many students. Finding time to attend and complete their course work was mentioned most often. For some, family issues were also a challenge for IRC attainment. Because nearly all participants were adult students, the issues of work, family and classroom balance came into play. As with most adult learners, balancing work and family obligations with educational demands often presents challenges and barriers to success.

Outcomes and Hopes for the Future

Participants interviewed were asked if they either earned a wage increase (if they had received an IRC) or job advancement due to their IRC completion. The evaluators also explored the any other impacts on their career or lives after IRC completion as well as their hopes or plans for the future.

Nearly all of those interviewed said "no" to a wage increase since their IRC completion. However, there were some people who indirectly attributed an advancement in their career to the IRC or work towards the IRC. Most participants felt that the IRC would definitely help them in the future either with higher wages, more

opportunities, or to reach other goals. When asked about outcomes beyond wages, participants shared the impact on their lives, work groups and careers in a more holistic manner.

In Their Own Words

The words of the participants themselves often carry the best message. In Figure 12, we've selected a series of quotations to summarize participant thoughts organized by the themes found in our Case Study analysis.

Figure 12. Case Study Participants – In Their Own Words

Illustrative Case Studies

In order to further explore the lived experience of students in ACT-VT, the interviews were used to develop illustrative case studies. What follows are stories from the case studies without any personal identifying information. Each represents a real participant in ACT-VT. However, some basic information has been changed to preserve participant confidentiality. Each tells a story of how they came to be participants, their experience in the program, and impact on their lives.

Doreen

Doreen was unemployed when she was referred to the ACT-VT program after an office visit with the Vermont Department of Labor. As a single mother with a special need's child, she was seeking skills for employment at a job with pay beyond minimum wage. Doreen enrolled in the CPT program and even without any prior preparation or assessments, was successful and earned the CPT Safety IRC. The online format for homework was particularly helpful to her since it allowed her to do her work without making a special trip into a CCV center. The instructor was available and very supportive and she was pleased when she passed her first test and received her CPT Safety IRC. Doreen was in the program for about six months and earned three MSSC/CPT IRCs. When she was ready to look for employment, CCV referred her to Vocational Rehabilitation and they helped her with a job search. Doreen was hired at a local manufacturer and worked for about six weeks when her child became ill. Unfortunately, this led to a prolonged period of absence for Doreen and she was dismissed from her job. However, she looks forward to returning to the workforce once her home life is more stable. Doreen feels the ACT-VT program gave her a new sense of confidence and skills. Even with her short time on the job she was able to share some of her new knowledge with her coworkers. She feels that she'll be a productive employee in the future especially after she completes her MSSC certifications.

Betty

Betty had been doing seasonal work but was tired with the routine of being laid off after every summer. She was working part-time when she saw something online about the CPT program and how it could lead to work for a local manufacturer. Betty had some college education, but she felt she didn't have the credentials to land a better paying job. As the mother of two high school students, she wanted to set an example and improve her own education and situation. Betty visited the local Vermont Department of Labor and found out more about the CPT program. While she was still employed part-time, Betty enrolled in the CPT Safety course and was pleased to earn her first IRC. Although the learning was a challenge at times, Betty continued and eventually earned all four CPT credentials. Betty was hired at a large, local manufacturer, but unfortunately, a business downturn caused her to be laid off after a few months at work. However, she was able to use her experience and IRCs to secure a position with a manufacturer in another town and has been working there in a permanent position for nearly two years. Although Betty would still like to work closer to home, she is pleased that she now has a recognized credential and is making more money than she was previously.

Randy

Randy enrolled in the CPT program after seeing a flyer posted at his workplace. Although he had worked in manufacturing for over a decade, he knew that his business was encouraging employees to upgrade their skills and he wanted to move up the wage scale. Randy felt a bit nervous and

challenged in his first course since he hadn't been in a classroom for over 20 years, but he was successful and progressed to earn all four CPT credentials over about a six-month period. Randy found that the CPT courses helped him understand some of the underlying processes at work. Although he did not receive a wage increase after completing his IRCs, he planned to take his completion certificate to his supervisor and provide this as evidence that could help with forward movement in his company. Randy thought that this would eventually lead to a promotion at work. Additionally, he was thinking of talking with a CCV advisor to find out more about how to use the CPT courses for college credit in a degree or certificate. He now felt more confident to pursue post-secondary education based on his success in the CPT courses.

Pat

Pat had six months experience in his job with a social service agency when his supervisor suggested he enroll in the ACRE Foundations course. Although Pat had tried college courses before, they never went well for him. He was a bit hesitant about his first course because online learning was new to him, and it had been many years since he had taken a post-secondary course. However, he found that with the help of his instructor and a bit of time off from work, he was able to not just complete but do well in the course. Time for coursework was an issue for Pat, seeing that he had several young children and a full time job. However, he went on to enroll and also complete another course in Mental Health and subsequently earned his ACRE certification. This successful experience boosted Pat's confidence and inspired him to enroll in a bachelor's degree program, offered partly online, by another institution. His success in the ACRE courses showed him that he could be successful in college level work and fit coursework into his already busy schedule. He now felt confident that he could return to college. Pat attributed his success to the support of his instructors, colleagues and employer. Although Pat did not see an increase in wages from earning his ACRE certification, he felt that the knowledge contributed to improved performance on the job, positive recognition from his employer, and would help set him up for future advancement in his organization.

Annie

Annie had a long work history in education and human services when she first enrolled in the ACRE Foundations course. Made aware of the program through her employer, Annie was motivated to enroll because she loved learning, was looking for more professional development, and knew that others in the course were a great group of colleagues. She first took the Foundations course and then moved on to complete several of the specialty courses. This took longer than expected since she was working full time and trying to balance work, home and courses. Although she doesn't need the certification, she found that the courses were so useful and "fantastic" that she looked forward to each one. Annie loved being with colleagues in this online setting because she felt she came to know each person in her course more in-depth through the online interface. For Annie, the ACRE certification resulted in some tangible outcomes. After completion of her certification, she met with her supervisor and discussed the value added by these courses. This resulted in a wage increase along with a new title. But beyond that, Annie felt one of the greatest benefits of the ACRE certification were the resources made available through the courses. She now uses and refers to these resources often as do those who work closely with her. Even a year after earning her IRC, Annie still referred to the skills and resources she learned in her program as tools in a toolbox that help her be more effective in her job.

Burt

Working in human services was a career change for Burt, and when he heard about the ACRE program from his employer he jumped at the chance to take the ACRE Foundations course. Although Burt was a seasoned professional, he wanted to earn the IRC so that he would have a credential in the human services field. This, he felt, would give him some authenticity in this second career and be a resume booster should he need to someday look for another position. Although working full time and taking the course made for a juggling act, Burt was successful and subsequently enrolled in an ACRE specialty course so he could earn his ACRE credential. Once he had earned the ACRE certification, Burt intended to continue onto the other ACRE courses since the learning was so applicable and useful to his work. He found the resources and material particularly valuable and used some of it for informal trainings with colleagues. Burt was a bit sorry to think about the ACRE courses no longer being offered tuition free. Working for a small non-profit, he knew that professional development and training budgets were slim and felt few people would be able to enroll in the ACRE offerings if tuition was charged. He was particularly thinking about people new to his organization: the ACRE program had been very valuable in getting new hires up to speed. This had overall improved his workgroup and services provided to clients. Nonetheless, Burt was positive about his experience and felt that his ACRE learning had helped develop him into a more capable employee in the human services field.

Claude

As a new American, Claude was employed in manufacturing but looking for more education so he could move up the economic ladder. A CCV staff member suggested he enroll in the Technology Career Readiness Certificate (CRC) as the first step in the process of earning a credential in the Technology sector. Claude's initial goal was to learn about job search skills such as how to write a resume and prepare for an interview. He was in the CRC course for three weeks when unfortunately, he needed to return to his home country due to a family issue. This caused him to drop out of the course. However, he felt his time in the CRC course was very useful and he was successful in learning about resumes and knew this would help him in the future. When Claude returned to the U.S., he needed to find new employment, and did so at another manufacturer. He saw a rise in his wages in his new position, but he did not necessarily attribute this to his CRC course. While at CCV, Claude did receive some general career counseling from a career consultant and knew that more supports would be available should he need them. His goal now is to learn more about office technology, perhaps earn some of those credentials and eventually become a supervisor.

As can be seen, learning new skills and knowledge has an effect that reaches beyond financial gain. Continued learning builds confidence and self-esteem and enables people to take steps forward. These illustrative case stories add context to the numbers behind the ACT-VT initiative and help us visualize the influence that professional workforce education can have on real lives.

Vermont DOL Wage Study

An analysis of wage and employment outcomes with data provided by the Vermont Department of Labor (VT/DOL) was a key component of the outcome study of ACT-VT. CCV, evaluators and colleagues at VT/DOL worked closely to plan for data transmission and receipt and operated under the constraint of aggregate wage and employment data reporting only. No personal identifying information was received or shared with

the evaluators. Tables generated by the Vermont DOL Aggregated Wage Report may be found in the Appendix of this report.

As required by the SGA for this project, nine key outcome measures were reported, as summarized in Table 24 below.

Outcome Measure	Goal	Actual	Percentage of Goal Achieved
Total Unique Participants Enrolled	300	778	259%
Total Number of Participants Completing a TAACCCT-Funded Program of Study	210	444	211%
Total Number of Participants Still Retained in Their Program of Study or Other TAACCT Funded Program	52.5	16	30%
Total Number of Participants Earning Credit Hours	90	51	57%
Total Number of Participants Earning Credentials	210	444	211%
Total Number of Participants Enrolled in Further Education	53	16	30%
Total Number of Participants Employed After TAACCCT-Funded Program of Study Completion	28	20	71%
Total Number of Participants Retained in Employment After Program of Study Completion	22	14	64%
Total Number of Participants Employed at Enrollment who Received a Wage Increase Post-Enrollment	123	542	440%

Table 24. SGA Outcome Measures

It is clear that the ACT-VT program clearly exceeded the goals in terms of:

- Number of participants
- Number of participants completing at TAACCCT program of study
- Number of participants earning a credential
- Number of participants employed at enrollment who received a wage increase post-enrollment

The number of incumbent workers who received a wage increase post-enrollment, is especially impressive with over four times the number receiving wage increases as expected.

As reported from Vermont DOL, a total of 643 of the 777 participants were incumbent workers. This was not surprising based on the close relationship CCV developed with employers in the State and with the number of referrals into ACT-VT program by those employers.

For all participant groups, wage data was reported for averages as well as medians. For incumbent workers (those employed at the time they entered ACT-VT), wages were reported during the quarter of program entrance, the quarter after program exit and one year after program exit. (Due to the timing of program completions, one year post exit wage was only available to report for 305 incumbent workers.)

Analysis of this data shows some important wage increases:

- Incumbent workers who completed IRCs realized an average one year post program exit (quarterly) wage increase of $1220 or 13% compared with their entry level wage
- Incumbents who did not complete a program and did not earn an IRC also received a one year post program exit (quarterly) wage increase. However, this increase was a more modest $124.
- In the manufacturing program, incumbent workers who earned the maximum credential possible (all MSSC certifications) saw the highest levels of wage growth, with some earning a 1 year post exit wage increase of nearly 20%.

These outcome measures indicate increase in the average earnings of participants who completed an IRC. However, there are too many unknown variables (such as possible increases in hours worked, bonuses or cost of living increases, and other factors unrelated to IRC completion) to explain correlation between these average wage gains and attainment of these industry-recognized credentials. Therefore, more research needs to be conducted to examine an individual's wage earnings and control for multiple factors that influence earnings. This type of investigation was not possible given Vermont's DOL current policy.

Wage Premium Analysis Based on Prior Education

As noted in the Detailed Evaluation Plan (May 2015) due to various constraints of the program, a comparison group was not included in the wage and employment study. However, based on work by Ewert & Kominski (Ewert & Kominski, 2014), wage outcomes were analyzed by prior educational levels of participants.

Ewert & Kominski conducted a detailed study in 2014 that analyzed data from the Survey of Income and Program Participation (SIPP) which, for the first time, included questions related to alternative educational credentials. This study provided estimates of the number and characteristics of people in the U.S. population who hold alternative educational credentials such as certifications (awarded by examination), licenses or academic certificates. The report analyzed the association between alternative educational credentials and outcomes in the labor market including employment and earnings.

Ewert & Kominski concluded through their analysis that the ratio of earnings of those with a professional certification or license to earnings of those without any alternative credential was greater for people with lower levels of educational attainment (less than high school completion to some college but no degree). In their analysis, people with less than high school completion or a high school diploma saw an increased median wage differential ratio of 1.26 to 1.22 respectively, when they earned an alternative credential. Accordingly, VT/DOL provided wage data based on two educational attainment levels of participants: 1) less than an Associate Degree, and 2)Associate Degree or higher. Whereas slightly over 60% of ACT-VT participants had less than an Associate Degree, this analysis carries additional interest.

When comparing the median income in the year post program exit, the participants in the Health program could be compared by wage premium ratio base on IRC attainment and level of education. However, in Manufacturing, only the earning premium ratio for the participants in one education category could be analyzed due to small numbers of non-completing participants.

Education Level	One Year Post Exit Median Wage- IRC completer	One Year Post Exit Median Wage- IRC non-completer	Earnings Ratio
Health			
Less than AD	$8,171	$7.313	1.12
AD +	$9,023	$8,385	1.08
Manufacturing			
Less than AD	$11,011	$7,204	1.53

Table 25. Wage Premium Study: Median Earnings Ratio by Education Level

In the Health program, those participants in the first educational level did see a higher earning premium of 1.12 compared to the premium of college degree holders of 1.08. While this does show some bonus to those without a college degree, the ratio is short of the 1.26 to 1.22 ratio expected.

In Manufacturing the earnings premium ratio of 1.53, for those without a college degree, surpasses the 1.26 to 1.22 expected ratio.

It seems that the wage premium posited by Ewert & Kominski may hold true for the manufacturing IRC.

Summary

Overall, the wage outcomes from ACT-VT participants are encouraging. When coupled with the case study interviews, the general trend of increased wages due to short-term credentials demonstrates the power of earning a certification in health or the manufacturing sector, but does not show an increase in the technology cluster. Figure 15 below depicts the percent of participants in each program who earned a wage increase.

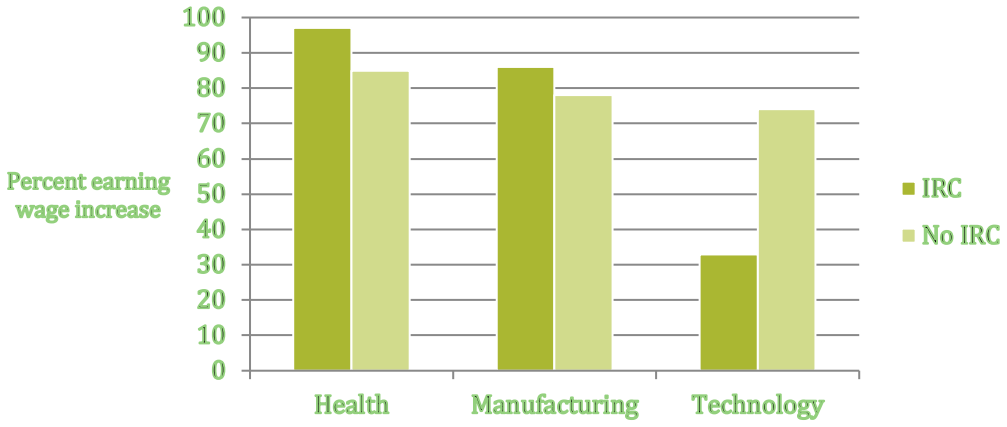


Figure 13. Aggregate Wage Study: Participants Earning Wage Increases by IRC Status

While the nature of the aggregate data does not allow for statistical testing, analysis of the resulting data does suggest improvement in labor market outcomes for the majority of participants and IRC earners in the ACT-VT program.

CCV Research Questions

To summarize the Outcome Findings, we revisit the third CCV Research Questions.

CCV Question_3. *To what extent has the strategy of offering new programs aligned with industry-recognized credentials been effective for students and for CCV?*

In considering data gathered in the Outcome Study, we find that the strategy of offering new programs aligned with industry-recognized credentials has been effective for students and for CCV. For students, a majority (57%, n=444) were successful in completing a program of study and earning an industry-recognized credential (ACRE, MSSC, Brainbench) or a CCV credential (Community Health Worker). Students who participated in the Outcomes Study (via surveys or case study interviews) described an overall positive experience due to well-qualified instructors and relevant and practical content materials. The majority expressed their appreciation to CCV for the opportunity to learn new skills and earn a credential. Students indicated increased confidence and most felt that earning an IRC would eventually improve their employment opportunities, even though immediate wage increases or job advancement were not assured.

For CCV, the strategy of offering new programs aligned with IRCs has been an effective one. This strategy expanded CCV's outreach efforts with business partners around Vermont and enhanced its reputation as a competent and reliable organization to meet the professional development needs of local employers. CCV has shown that IRC attainment does helps Vermont businesses and non-profit agencies meet their needs for educating a qualified workforce. Within the institution, workforce education has gained recognition as an essential component in its plans to move forward in the decade ahead. CCV instructors are acquiring qualifications that enable them to offer IRC aligned programs. Instructors were positive about the courses they were asked to teach and in general wanted to continue teaching in these areas.

CCV Question _3A. *What are the employment and wage outcomes for students who have participated in ACT-VT?*

The Vermont DOL Aggregated Wage Study leads us to believe that ACT-VT participants who have earned an earned an IRC or credential are more likely to receive a wage increase than those who have not completed an IRC. However, whether or not this increase in wages is due directly to the ACT-VT intervention is not possible to ascertain given the limitations of our study and the inability of our study to control for external variables which could also result in higher wages. We also found it interesting that ACT-VT manufacturing program completers holding less than an Associate Degree received an earning premium ratio of 1.53 as predicted by the Ewert & Kominski study. More research is needed to study individuals over time who have earned an IRC as compared to those who have not completed the same course of study to test for a causal effect of IRC attainment on employment and wage outcomes.

CCV Question_3B. *To what extent have IRC courses served as an on-ramp to continuing education?*

In the case study interviews, a few participants noted that the ACT-VT experience had caused them to consider going back to college and continue their education. It is too soon to determine, however, the extent to which IRC attainment serves as an "on-ramp" to continued education. As CCV continues to design programming that includes "nesting" an IRC as part of an academic career path, the College will have opportunity to study this phenomenon over a longer period of time and understand this possible effect on continued education for adult learners.

Lessons Learned and Implications for Policy

The ACT-VT initiative has been instrumental in strengthening CCV's institutional capacity to design workforce education programs that align with industry-recognized credentials. It has expanded CCV's outreach in the business community, especially in the manufacturing sector, and forged new partnerships that will be sustained beyond grant funding. CCV has learned that IRCs are desired by employers seeking professional development for members of its current workforce and by employees eager to gain new skills and knowledge within their current field. Through this experience, CCV has learned that IRCs must match a specific need within an industry and also be valued by both the industry and the participant. CCV's strategy to communicate directly with industry employers and encourage them to offer IRC aligned courses to their current workforce was very successful. Participants interviewed in the case study appreciated being able to acquire this in-house training, in part because it created a shared experience with their co-workers that provided them with a common language, understanding, and expectation about the work they do every day.

CCV recently published a ten-year vision (CCV Strategic Plan, 2018-2028) and lists nine priorities that will drive policy in the years ahead. The first priority is to "offer academic programs with clear, stream-lined pathways that are aligned with requirements for future education and employment." The second priority is to "increase occupational credentials with learning outcomes that are aligned with Vermont employer and industry sector needs." Strategies to meet this second priority include creating stackable credentials as well as occupational certificates and degree programs that respond to Vermont Labor Market data and trends. These priorities and strategies reflect many of the activities and outcomes found in the ACT-VT initiative and back up CCV's commitment to increased integration of academic programs aligned with industry needs.

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Appendix

IRB Surveys and Protocols

Participant Intake Survey

1) Please enter your CCV user name:

2) Please enter the name of the course you are currently taking:

Reason for Participation

3) In your decision to enroll in this course or training, please rate how important were each of the following reasons:

To learn new skill or knowledge

1-Not important 2-Somewhat important 3-Very Important

To acquire a credential

1-Not important 2-Somewhat important 3-Very Important

To maintain a credential

1-Not important 2-Somewhat important 3-Very Important

To get a raise or promotion

1-Not important 2-Somewhat important 3-Very Important

To get a new job in my current field

1-Not important 2-Somewhat important 3-Very Important

To change careers

1-Not important 2-Somewhat important 3-Very Important

To start a business

1-Not important 2-Somewhat important 3-Very Important

Other

1-Not important 2-Somewhat important 3-Very Important

Please specify the other reason:

Employment Information

4) Please indicate your current employment status

0-Not employed 1-Part time 2-Full time

5) Are you self-employed? 0-No 1-Yes

6) Are you TAA-eligible?

(Must have been laid off from an employer where adversely affected workers have been certified by the federal government due to the shift of production to other countries or increased imports.)

0-Not sure 1-No 2-Yes

Education

7) Does the instruction in this training or course pertain to: (choose the best response)

1- Field in which I currently work, or most recently worked

2- A different field of work

3- Other

If other (please specify):

8) Please indicate your highest level of education

1-Some high school

2-Diploma or GED

3-Some college

4-Associate's Degree (2 years)

5-Bachelor's Degree (4 years)

6-Master's Degree or higher

7-Other

If you selected "other," please specify other education:

9) Have you ever earned a credential?

0-No 1-Yes

If yes to above, please indicate the length of time it took to achieve the credential?

1-less than 6 months

2-between 6 months and 2 years

10) What is the name of the credential you earned?

11) Please type the name of the certifying organization, if known.

12) Are you interested in taking other CCV courses when this course ends?

0-No 1-Not sure 2-Yes

13) If you answered "yes" or "not sure," what courses (or areas/credentials) are you interested in taking?

Training Awareness

14) How did you become aware of this training (check all that apply)

___ Employer	___ CCV Web site	___ Current CCV student
___ Former CCV student	___ Social media	___ Advisor or counselor
___ Information session	___ Publication	___ Newspaper
___ VSAC	___ VT Dept. of Labor	___ Other

If other, please specify:

Additional Grant Resources/Opportunities

15) Would you be interested in learning more about grant-funded supports? (check all that apply)

___Assessment of prior learning

___Career advising/coaching

___Internship

16) Would you be willing to talk with evaluators to share insights and feedback?

____ No ____Not sure ____Yes

17) If yes, please indicate preferred method of contact

___ Email only ___Phone only ____Email or phone

18) Please provide any additional thoughts about this offering and/or future offerings provided by CCV.

Instructor Survey

What is your first name?

What is your last name?

Please type the name of the course you have taught as part of CCV's Training and Credentials program:

Is this the first time you have taught this course?

0-No

1-Yes

If no, how many times have you previously taught this course?

Overall, how would you rate your experience as instructor of this course/training?

1-Poor

2-Fair

3-Good

4-Very Good

Were you required to undertake specific training before you were able to teach this course?

0-No

1-Yes

If yes, please describe the training you received:

If yes, was the training you received adequate to prepare you to teach this course?

0-No

1-Yes

If no, please describe how the training could be improved.

Please describe the course delivery methods that were used with students in this course/training? (For example, lecture, hands-on, on-site job training, online, technology enhanced?)

Did you and students have the necessary materials, technology or equipment needed for the course?

0-No

1-Yes

If no, what materials, technology, or equipment were lacking?

In your opinion, how well prepared for success (in terms of skill and knowledge) were the majority of students enrolled in this course?

1-Not prepared

2-Lacked some, but not all, skills and knowledge

3-Had adequate skills and knowledge to succeed in class

4-Extremely well prepared

If you answered "not prepared" or "lacked some skills and knowledge" to the above questions, please explain what skills or background knowledge students were lacking?

In your opinion, were students who needed academic help provided with CCV academic and counseling supports outside of class?

0-No

1-Not sure

2-Yes

Did you receive feedback from students concerning their experience in this course?

0-No

1-Yes

If yes, please summarize this feedback and describe how you have been able to use this student feedback.

Have you had opportunity to provide feedback to CCV about ways in which the course or training could be improved?

0-No

1-Yes

What improvements would you recommend to improve this course?

Have improvements been made to this course using TAACCCT grant funds?

0-No

1-Yes

If yes, please describe the improvements and their impact.

Would you be willing to teach this course again?

0-No

1-Yes

If no, please explain.

Please provide any additional comments or feedback about your experiences as the course instructor.

Participant Program Completion Survey

Please enter your CCV Username:

Please indicate the program you have just completed.

1-CPT/Safety Program

2-CPT/Quality and Measurement Program

3-CPT/Processes and Production Program

4-CPT/Maintenance Awareness Program

5-CPT/Green Production Program

6-BES/Developmental Disabilities

7-BES/Transitions

8-BES/TANF

9-BES/Mental Health

10-Medical Billing and Coding

11-Community Health Worker

12-Microsoft Office Specialist Program

13-Other (please specify)

Please describe how you became aware of this program?

When did you start this program?

When did you complete it?

What credential have you received?

Please check the reasons you had for initially entering this program (please check all that apply)

____To learn new skill or knowledge

____To acquire a credential

____To maintain a credential

____To get a raise or promotion

____To get a new job in my current field

____To change careers

____To start a business

____Other

Please specify the other reason:

Do you feel this program has enabled you to meet these expectations?

0_No

1_Not Sure

2_Yes

Please provide details for your answer.

Overall, how would you rate your experience in this program?

1-Did not meet my needs

2-Somewhat satisfactory

3-Satisfactory

4-Very Good

5-Excellent

Overall, how would you rate your satisfaction with the content contained in this program?

1- Not satisfied

2 - Somewhat satisfied

3 - Satisfied

Do you feel you had the necessary background and skills to do well in this program?

0-No

1-Not sure

2-Yes

Do you agree with the following statement: The pacing of the course materials was a good fit for me?

1-Disagree

2-Neither disagree or agree

3-Agree

Please indicate any academic supports and/or career guidance you received while participating in CCV's Training and Credentials program. Please check all that apply.

Career Guidance

___ Career counseling

___ Interview preparation

___ Resume writing

___ Job internships

___ Job leads

___ Other (please specify _____)

Academic Support

__Academic advising

__Tutoring

__Assessment of Prior Learning

Did you have any supports outside of CCV that also enabled you to complete this program? If yes, please describe.

Did your instructor(s) have the knowledge you needed to prepare for the IRC related to this field?

1-No

2-Not Sure

3-Yes

4-Other (please specify)

Did your instructor(s) make the course content interesting and engaging?

1-No

2-Not Sure

3-Yes

4-Other (please specify)

Did this program introduce you to any technologies that are or will be relevant to your job or future career?

1-No

2-Not Sure

3-Yes

4-Other (please specify)

If yes, please describe:

Please describe the highlights of this program.

Please describe any challenges you experienced during this program.

What might you say to a friend about the Training and Credentials program at CCV?

Do you agree with the following statement: The skills and knowledge I learned in this course will help me in my current or future job?

1-Disagree

2-Neither disagree or agree

3-Agree

Please describe any changes in your employment or wage earnings that you think are a result of completing this training and attaining this industry recognized credential.

Do you plan to continue taking additional courses offered by CCV or the Vermont State College System? If yes, please describe your plans for continued education.

Please provide any additional thoughts you have about CCV's Training and Credentials program.

Case Study Interview Protocol

The following scripts provide examples of the dialogue and questions that will occur in this semi-structured interview protocol.

Interview #1

Protocol Script to be read:

Hello: My name is _____ and I am one of the evaluators working on a research study about CCV's Training and Credential program. This program receives funding from the U.S. Department of Labor and therefore the U.S. Department of Labor is interested in learning about the effectiveness of these programs, especially in terms of improving your employment opportunities or wage earnings.

We want to learn about your experiences with this CCV Workforce Development program by asking you a few questions. This conversation should take about 30 minutes of your time. We want you to know that we appreciate your willingness to participate in this study, but want to be sure that you know that you are under no obligation to do so.

Your participation in this study is completely voluntary and if at any time you would like to withdraw from this study, you may do so. You should also be assured that any information you provide to me will be strictly confidential. No personal identifiable information about you will ever be reported or published in a public manner. If you have questions about your rights as a research subject or wish to withdraw from this study, please consult CCV's Research By or About CCV Students, Faculty or Staff Policy.

Do you have any questions about this study before we begin?

Do I have your consent to be a participant in this study?

Before we begin, do you have any objections to me audio recording this conversation? This helps me be able to transcribe our conversation more accurately after the call ends, and this recording will be destroyed when this study concludes.

Interview Questions:

What cluster of courses are you taking or what are you studying at CCV?

1-CPT/Safety Program

2-CPT/Quality and Measurement Program

3-CPT/Processes and Production Program

4-CPT/Maintenance Awareness Program

5-CPT/Green Production Program

6-BES/Developmental Disabilities

7-BES/Transitions

8-BES/TANF

9-BES/Mental Health

10-Medical Billing and Coding

11-Community Health Worker

12-Microsoft Office Specialist Program

13-Other (please specify)

Please describe how you became aware of or found out about these courses and training opportunities?

What are your reasons for participating in this program?

How long have you participated in these courses?

Which industry-recognized credential are you interested in obtaining?

Are you currently employed? Tell me about the work you are doing now.

Are the courses you are taking in a new career field or current career field for you?

Did you have to take any assessments or tests before you could participate in a training? If yes, please describe.

How is it going for you so far?

What do you like best about the courses you've taken to date? Probe as to why?

How well-prepared did you feel to take these courses?

What supports or services have your received from CCV that have helped you to succeed in this program?

What additional supports might be helpful to you?

What are the biggest challenges or barriers you face in completing this program?

Please describe any career counseling or guidance you have received?

Tell me about any job placement assistance you have received?

Have you received any increase in wages or job advancement due to your participation in this program?

Please describe any changes you have experienced. ANTICIPATED INCREASE?

Anything else you'd like to mention that we haven't talked about?

Thank you so much for taking the time to talk with me. I'd like to check in with you again in a few months or after you've finished the program and earned your…… Is that ok? Is this the best number at which I can reach you?

Case Study Interview #2

Same informed consent language as #1

Thanks so much for agreeing to speak with me again. I wanted to check in and see how the program is going for you?

What's been the latest course (activity, or credential) you've taken or earned?

Depending on answer – either positive (that's great) and seek what has made success

Or supportive if not succeeding (sorry to hear that) and probe for what the issues are.

Positive – tell me what has helped you succeed? Probe for employer, family, CCV instructors, staff, career services, technology…anything else?

Not Succeeding – tell me what's happening? What could be done about that? Sorry – will we see you back in the future?

For both – what are your next steps/plans for the future? Are your plans similar or in line with your goals when you started the program?

Are you currently working? If so where? Doing what?

Anything else you'd like to tell me about the program or your experience that we haven't talked about?

Case Study Interview #3

Similar to interview #2

Now that it's been XX months since you've finished the program, I'm curious as to how it went for you.

Your goal was to XX, did you achieve that?

Are you employed (promoted, changed fields)?

If you don't mind sharing, did you receive a pay increase? About how much (either dollars or a percentage)

Probes on what lead to outcomes– program, CCV personnel, family, employer, others?

What might have been done differently in the program for you?

What might this have changed?

Tell me about your overall satisfaction with the program or with the IRC you earned?

How might your outcomes impact others that you know (spouse, children, parents, friends, colleagues)?

What might you say to a friend about the Training and Credentials program at CCV?

Anything else you'd like to mention that we haven't talked about?

I want to thank you so much for being part of these three interviews. Your input and patience are greatly appreciated.

Interview Protocol - CCV Leadership Team Members

ARCS evaluators will contact CCV Leadership Team Members to set up a face-to-face interview taking approximately one hour. These interviews will be scheduled annually.

Protocol Script to be read:

As you know, I am one of the evaluators working on a research study about CCV's Accelerated Training Program (or ACT-VT). ACT-VT receives funding from the U.S. Department of Labor and therefore the U.S. Department of Labor is interested in learning about the effectiveness of these programs, especially in terms of improving your employment opportunities or wage earnings.

We want to learn about your experiences with ACT-VT by asking you a few questions. This conversation should take about 45 to 60 minutes of your time. We want you to know that we appreciate your willingness to participate in this study, but want to be sure that you know that you are under no obligation to do so.

Your participation in this study is completely voluntary and if at any time you would like to withdraw from this study, you may do so. You should also be assured that any information you provide to me will be held in strict confidentiality. No personal identifiable information about you will ever be reported or published in a public manner. Your name or position will not be used in any conversations or reports. If you have questions about your rights as a research subject or wish to withdraw from this study, please consult CCV's Research By or About CCV Students, Faculty or Staff Policy.

Do you have any questions about this study before we begin?

Do I have your consent to be participant in this study?

Before we begin, do you have any objections to me audio recording this conversation? This helps me be able to transcribe our conversation more accurately after the call ends and this recording will be destroyed when this study concludes.

Questions:

We know that Vermont was a designated state, but we are interested in knowing how the ACT-VT direction (IRCs, related curriculum) came to be selected. Could you describe how this all came about?

How do you feel about ACT-VT and its goals? Is it progressing as expected? What might need to be revised/changed/improved?

What have been the successes and challenges with the ACT-VT implementation so far?

Program Design (Required questions posed by the U.S. DOL):

Please describe how programs/program designs were improved or expanded using grant funds?

Please describe the delivery methods that were used to provide instruction in T4 offerings.

Please describe the program's administrative structure?

What CCV supports or services were made available to T4 participants

How were participants selected or chosen to enroll into each program?

What assessment tools and process were used?

Who conducted the assessments?

How were the assessment results used?

Were the assessment results useful in determining the appropriate program and course sequence for participants?

Was career guidance provided? If so, through what methods?

Business and Community Outreach (required U.S.DOL questions included here)

A primary goal of ACT-VT is to expand CCV's outreach to the Vermont businesses and community partners. The following questions address this goal:

What new relationships, linkages and partnerships have been established between CCV and employers in Vermont?

What contributions did each of the partners and other key stakeholders make towards:

- program design
- curriculum development
- recruitment, training
- placement
- program management
- leveraging of resources
- commitment to program sustainability?

What factors affected partner involvement or lack of involvement?

Which contributions from partners were most critical to the success of the grant program?

Which contributions from partners had less of an impact?

Institutional Capacity:

Please describe how you think that ACT-VT may be contributing to CCV's growth and future capacity?

How has CCV enhanced connections to employers?

How has CCV embedded career counseling?

How has CCV enhanced competency-based routes to credit?

How has CCV increased institutional capacity with regard to the integration of industry-recognized credentials with academic course offerings, career-counseling services, and improved competency-based routes to credit?

Anything else you'd like to mention that we haven't touched on?

Interview Protocols - Employer/Nonprofit and Agency Stakeholders

ARCS evaluators will contact a sample of business partner representatives and nonprofit and agency representatives who are active in ACT-VT programs to conduct a 30-minute telephone interview.

Protocol Script to be read:

Hello: My name is _____ and I am one of the evaluators working on a research study about CCV's Training and Credentials program. This program receives funding from the U.S. Department of Labor TAACCCT program and therefore the U.S. Department of Labor is interested in learning about the effectiveness of these programs, especially in terms of improving opportunities or wage earnings for your employees (or constituents).

We want to learn about your experiences with CCV by asking you a few questions . This conversation should take no more than 30 minutes of your time. We want you to know that we appreciate your willingness to participate in this study, but want to be sure that you know that you are under no obligation to do so.

Your participation in this study is completely voluntary and if at any time you would like to withdraw from this study, you may do so. You should also be assured that any information you provide to me will be strictly confidential. No personally identifiable information about you will ever be reported or published in a public manner. Your name or quotations with your name will not appear in any reports to CCV.

Do you have any questions about this study before we begin?

Do I have your consent to be participant in this study?

Before we begin, do you have any objections to me audio recording this conversation? This helps me be able to transcribe our conversation more accurately after the call ends and this recording will be destroyed when this study concludes.

====

I just want to be sure I understand your position and organization. What is your title/what is your role at XXX?

Tell me how you first came to be part of (or on the advisory board for) the program?

Can you tell me more about how you have worked with the TAACCCT program? This might include (probe for)

- Referred employees to the program
- Provided space or equipment for instruction
- Provided or been an instructor
- Participated in curriculum development
- Participated in program design

- Provided internships
- Have hired participants

What do you think is working well in the program?

What might need some fine tuning?

What do you hope/see as the ultimate outcome for this program?

When you think about training or professional development for your employees, what resources or organizations do you consider?

In what ways might CCV be useful in meeting your training and professional development needs?

For those who have hired participants – how satisfied are you with the participants that you've hired? What might be improved, added or deleted in their experience?

Anything else you'd like to mention that we haven't talked about?

Thank you so much for your time. May I call you again next year?

Vermont DOL Aggregated Wage Study

Vermont DOL Aggregated Wage Study with Percentage Calculations Added by CCV
Vermont DOL Report Submitted July 30, 2018

CCV/ T4 Participants
Program of Study = 1 (Health), 2(Manufacturing), and 3 (Technology)

B7 must be identified by comparing start date of further education after program of study completion (provided by CCV) and start date of employment (determined by VDOL). Nonincumbent post-program completion employment and pursuing further education are mutually exclusive categories.

Total Number of Incumbent workers who did not complete a Program of Study	253
Total Number of NonIncumbent Worker Participants who did not complete a Program of Study	81
# TAA eligible (APR C.9)	6

Total Number of Program of Study Completers who are Incumbent workers	390	643
Total Number of NonIncumbent Worker Participants who completed a Program of Study	54	135
Total Participant Count		778

Calculation Area:

	INCUMBENT WORKER PARTICIP: Total Number of Pursuing Further Education After Program of Study Completion	NON INCUMBENT WORKER PARTICIP: Total Number of Pursuing Further Education After Program of Study Completion
Total Number of Pursuing Further Education After Program of Study Completion (B.7)		
16	15	1

Incumbent Worker Particips.

INCUMBENT WORKER PARTICIP: Total Number of Pursuing Further Education After Program of Study Completion (subset APR B.7)	# Incumbent worker participants (both program completers non completers) (APR C.4)	Total Employed at Enrollment Who Received a Wage Increase Post-Enrollment (APR B.10)
15	643	542

NonIncumbent Worker Particips.

NON-INCUMBENTS: Total Number Pursuing Further Education After Program of Study Completion (subset APR B.7)	Total Number of NonIncumbent worker participants (NOT WORKING AT ENROLLMENT) who completed a Program of Study	Total Number Employed After Program of Study Completion (APR B.8)	Total number Retained in Employment after Program of Study Completion (APR B.9)
1	54	20	14
	Unemployed at start		

All T4 Participants

	Average pre-enrollment ENTRY	Average. EXIT	Median pre-ENTRY	Median post-EXIT	Average one 1 YR AFTER	Median one 1 YR AFTER
Incumbent worker - program completer	$ 9,328.15	$ 9,883.55	$ 8,887.96	$ 9,703.79	$ 10,547.97	$ 10,214.83
Incumbent worker - program non completer	$ 7,755.83	$ 8,429.67	$ 7,447.20	$ 8,062.67	$ 7,879.81	$ 7,647.79
Incumbent - completer & non completer	$ 8,709.49	$ 9,231.91	$ 8,376.16	$ 8,990.44	$ 9,227.01	$ 9,022.79
Non incumbent worker		$ 4,195.99		$ 3,429.26	$ 4,846.25	$ 4,318.20
Total Participants (all categories)	$ 8,709.49	$ 8,784.07	$ 8,376.16	$ 8,734.19	$ 8,620.64	$ 8,697.54

Sequence: Average Wage

1. Entry to	2. Exit to 1 year after	3. Entry to 1
6%	7%	13%
9%	-7%	2%
6%	0%	6%
na	15%	na
na	-2%	na

Sequence: Median Wage

4. Entry to Exit	5. Exit to 1 year	6. Entry to 1
9%	5%	15%
8%	-5%	3%
7%	0%	8%
na	26%	na
na	0%	na

Vermont DOL Wage Study with Percentage Calculations Added by CCV
Vermont DOL Report Submitted July 30, 2018

Program **1 Health Cluster**

		INCUMBENT WORKERS								NON INCUMBENT WORKERS		
Ed Level	number of participants	Number of Incumbent Program Completers	Avg. pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment	Number NonIncumbent Workers Program Completers	Total Number Employed After Completion	Total Number Retained in Employment
0	30	28	$ 8,846.27	$ 10,055.96	$ 7,857.67	$ 9,703.79	$ 7,332.67	$ 8,171.28	28	2	1	1
1	75	69	$ 8,336.64	$ 9,225.45	$ 8,076.95	$ 8,735.23	$ 9,767.12	$ 9,022.79	67	6	3	2

Ed Level	number of participants	Number of Incumbent NON Program Completers	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment	Number NonIncumbent Workers NON Program Completers	Total Number Employed After Completion	Total Number Retained in Employment
0	114	96	$ 7,120.78	$ 7,888.87	$ 7,301.19	$ 7,918.58	$ 7,145.70	$ 7,313.31	83	18	5	4
1	58	50	$ 8,066.70	$ 8,561.80	$ 8,081.85	$ 9,042.94	$ 8,020.52	$ 8,384.62	42	8	1	1

Ed Level	number of participants	Number of Incumbent Program Completers and NON Completers	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment	Number of Non Incumbent Program Completers and NON Completers	Total Number Employed After Completion	Total Number Retained in Employment
0	144	124	$ 7,510.41	$ 8,326.09	$ 7,475.18	$ 8,245.38	$ 7,173.49	$ 7,630.88	111	20	6	5
1	133	119	$ 8,223.22	$ 8,943.54	$ 8,079.89	$ 8,750.00	$ 8,879.96	$ 8,841.18	109	14	4	3

Program 1 Participants

	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Median pre-enrollment wage level	Median post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level
Incumbent - program completer	$ 8,483.75	$ 9,442.51	$ 7,938.76	$ 8,973.70	$ 9,129.53	$ 8,880.24
Incumbent-program non completer	$ 7,444.73	$ 8,121.25	$ 7,475.18	$ 8,160.00	$ 7,440.37	$ 7,647.79
Incumbent- completer & non completer	$ 7,859.48	$ 8,633.46	$ 7,681.98	$ 8,436.58	$ 7,958.22	$ 8,233.55
Non incumbent worker		$ 5,335.12		$ 4,460.84	$ 3,245.83	$ 3,063.72
Total Participants (all categories)	$ 7,859.48	$ 8,494.28	$ 7,681.98	$ 8,404.24	$ 7,578.69	$ 7,954.81

Sequence: Average Wage			**Sequence: Median Wage**		
1. % Incr/Dec Entry to Exit **Average** Wage level	2. % Incr/Dec Exit to one year post exit **Average** Wage level	3. % Incr/Dec Entry to one year post exit **Average** Wage level	4. % Incr/Dec Entry to Exit **Median** Wage level	5. % Incr/Dec Post program to One year post exit **Median** Wage level	6. % Incr/Dec Pre-program to One year post exit **Median** Wage level
Entry to Exit	Exit to 1 year after exit	Entry to 1 year after exit	Entry to Exit	Exit to 1 year after exit	Entry to 1 year after exit
11%	-3%	8%	13%	-1%	12%
9%	-8%	0%	9%	-6%	2%
10%	-8%	1%	10%	-2%	7%
na	-39%	na	na	-31%	na
na	-11%	na	na	-5%	na

Vermont DOL Aggregated Wage Study with Percentage Calculations Added by CCV
Vermont DOL Report Submitted July 30, 2018

Program **2 Manufacturing Cluster**

INCUMBENT WORKERS

Ed Level	number of participants	Number of Incumbent Program Completers	Avg. pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment
0	251	224	$ 9,325.83	$ 10,197.85	$ 8,928.20	$ 9,996.86	$ 11,109.01	$ 11,011.11	198
1	54	48	$ 11,052.23	$ 10,020.12	$ 10,441.09	$ 10,284.75	$ 10,945.91	$ 10,242.61	36

NON INCUMBENT WORKERS

Number NonIncumbent Workers Program Completers	Total Number Employed After Com-pletion	Total Number Retained in Employ-ment
27	12	10
6	2	1

MAX IRC

INCUMBENT WORKERS

Number of Incumbent Program Completers	Avg. pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment
109	$ 10,253.35	$ 11,062.80	$ 9,895.58	$ 10,749.85	$ 12,284.96	$ 12,115.51	96
30	$ 11,460.40	$ 9,873.23	$ 10,312.82	$ 9,681.35	$ 11,029.64	$ 10,242.61	22

NON INCUMBENT WORKERS

Number NonIncumbent Workers Program Completers	Total Number Employed After Com-pletion	Total Number Retained in Employ-ment
12	2	2
2	1	1

INCUMBENT WORKERS

Ed Level	number participants	Number of Incumbent NON Program Completers	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment
0	87	60	$ 6,676.21	$ 7,102.04	$ 6,291.83	$ 6,627.59	$ 6,471.87	$ 7,213.50	46
1	8	8	confidential	confidential	confidential	confidential	confidential	confidential	7

NON INCUMBENT WORKERS

Number NonIncumbent Workers NON Program Completers	Total Number Employed After Com-pletion	Total Number Retained in Employ-ment
27	13	7
0	0	0

INCUMBENT WORKERS

Number of Incumbent NON Program Completers	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

NON INCUMBENT WORKERS

Number NonIncumbent Workers NON Program Completers	Total Number Employed After Com-pletion	Total Number Retained in Employ-ment
-	-	-
-	-	-

Ed Level	number of participants	Number of Incumbent Program Completers and NON Completers	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment
0	338	284	$ 8,766.05	$ 9,397.47	$ 8,606.95	$ 9,608.54	$ 9,884.81	$ 10,332.33	244
1	62	56	$ 10,621.71	$ 9,821.08	$ 10,312.82	$ 9,681.35	$ 10,896.05	$ 10,242.61	43

Number of Non Incumbent Program Completers and NON Completers	Total Number Employed After Com-pletion	Total Number Retained in Employ-ment
54	25	17
6	2	1

INCUMBENT WORKERS

Number of Incumbent Program Completers and NON Completers	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment
109	$ 10,253.35	$ 11,062.80	$ 9,895.58	$ 10,749.85	$ 12,284.96	$ 12,115.51	96
30	$ 11,460.40	$ 9,873.23	$ 10,312.82	$ 9,681.35	$ 11,029.64	$ 10,242.61	22

NON INCUMBENT WORKERS

Number of Non Incumbent Program Completers and NON Completers	Total Number Employed After Com-pletion	Total Number Retained in Employ-ment
12	2	2
2	1	1

Program 1 Participants

	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Median pre-enrollment wage level	Median post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level
Incumbent worker - program completer	$ 9,630.49	$ 10,171.04	$ 9,354.08	$ 10,044.00	$ 11,079.89	$ 10,855.59
Incumbent worker - program non completer	$ 6,836.49	$ 7,370.53	$ 6,348.06	$ 6,778.04	$ 6,696.19	$ 7,213.50
Incumbent worker - program completer and non completer	$ 9,071.69	$ 9,459.25	$ 8,873.23	$ 9,614.27	$ 10,036.15	$ 10,332.33
Non incumbent worker		$ 4,245.02		$ 3,328.70	$ 5,615.41	$ 4,831.67
Total Participants (all categories)	$ 9,071.69	$ 8,931.96	$ 8,873.23	$ 9,263.03	$ 9,328.83	$ 9,697.41

Sequence: Average Wage

1. % Incr/Dec Entry to Exit **Average** Wage level	2. % Incr/Dec Exit to one year post exit **Average** Wage level	3. % Incr/Dec Entry to one year post exit **Average** Wage level
Entry to Exit	Exit to 1 year after exit	Entry to 1 year after exit
6%	-9%	15%
8%	-9%	-2%
4%	6%	11%
na	32%	na
na	4%	na

Sequence: Median Wage

4. % Incr/Dec Entry to Exit **Median** Wage level	5. % Incr/Dec Post program to One year post exit **Median** Wage level	6. % Incr/Dec Pre-program to One year post exit **Median** Wage level
Entry to Exit	Exit to 1 year after exit	Entry to 1 year after exit
7%	8%	16%
7%	6%	14%
8%	7%	16%
na	45%	na
na	5%	na

Vermont DOL Wage Study with Percentage Calculations Added by CCV
Vermont DOL Report Submitted July 30, 2018

Program **3 Technology Cluster**

		INCUMBENT WORKERS								NON INCUMBENT WORKERS		
Ed Level	number of participants	Number of Incumbent Program Completers	Avg. pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment	Number NonIncumbent Workers Program Completers	Total Number Employed After Completion	Total Number Retained in Employment
0	24	14	$ 8,746.49	$ 9,082.51	$ 8,724.57	$ 9,250.23	$ -	$ -	4	10	2	0
1	10	7	confidential	confidential	confidential	confidential	$ -	$ -	3	3	0	0

Ed Level	number of participants	Number of Incumbent NON Program Completers	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment	Number NonIncumbent Workers NON Program Completers	Total Number Employed After Completion	Total Number Retained in Employment
0	46	23	$ 6,682.22	$ 8,585.20	$ 7,101.75	$ 8,184.63	$ 8,739.49	$9,821.01	16	23	9	7
1	21	16	$ 16,045.13	$18,002.55	$ 13,808.25	$16,359.39	$ 15,975.09	$9,308.75	12	5	1	1

Ed Level	number of participants	Number of Incumbent Program Completers and NON Completers	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Med. pre-enrollment wage level	Med. post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level	Total Number Employed at Enrollment Who Received a Wage Increase Post-Enrollment	Number of Non Incumbent Program Completers and NON Completers	Total Number Employed After Completion	Total Number Retained in Employment
0	70	37	$ 7,463.29	$ 8,734.39	$ 8,474.05	$ 8,184.63	$ 8,739.49	$9,821.01	20	33	11	7
1	31	23	$ 14,340.51	$15,314.55	$ 10,636.75	$11,400.68	$ 15,975.09	$9,308.75	15	8	1	1

Program 1 Participants

	Avg pre-enrollment wage level	Avg. post-enrollment wage level	Median pre-enrollment wage level	Median post-enrollment wage level	Avg. one year post exit wage level	Med. one year post exit wage level
Incumbent - program completer	$ 9,312.40	$ 8,618.51	$ 8,892.68	$ 9,462.21	$ -	$ -
Incumbent- program non completer	$ 10,523.41	$ 12,728.84	$ 8,845.56	$ 9,483.05	$11,840.46	$ 9,308.75
cumbent - completer & non completer	$ 10,099.56	$ 11,554.46	$ 8,869.12	$ 9,483.05	$11,840.46	$ 9,308.75
Non incumbent worker		$ 3,136.42		$ 2,883.05	$ 4,587.21	$ 5,691.13
Total Participants (all categories)	$ 10,099.56	$ 9,405.17	$ 8,869.12	$ 7,539.99	$ 9,664.49	$ 6,592.06

Sequence: Average Wage

1. % Incr/Dec Entry to Exit **Average** Wage level	2. % Incr /Dec Exit to one year post exit **Average** Wage level	3. % Incr/Dec Entry to one year post exit **Average** Wage level
Entry to Exit	Exit to 1 year after exit	Entry to 1 year after exit
-7%		
21%	-7%	13%
14%	2%	17%
na	46%	na
na	3%	na

Sequence: Median Wage

4. % Incr/Dec Entry to Exit **Median** Wage level	5. % Incr/Dec Post program to One year post exit **Median** Wage level	6. % Incr/Dec Pre-program to One year post exit **Median** Wage level
Entry to Exit	Exit to 1 year after exit	Entry to 1 year after exit
6%		
7%	-2%	5%
7%	-2%	5%
na	97%	na
na	-13%	na