



Mississippi River Transportation,
Distribution & Logistics Consortium

TRADE ADJUSTMENT ASSISTANCE COMMUNITY COLLEGE CAREER TRAINING GRANT

Final Report

September 30th, 2017

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Executive Summary

TAACCCT Program/Intervention Description and Activities

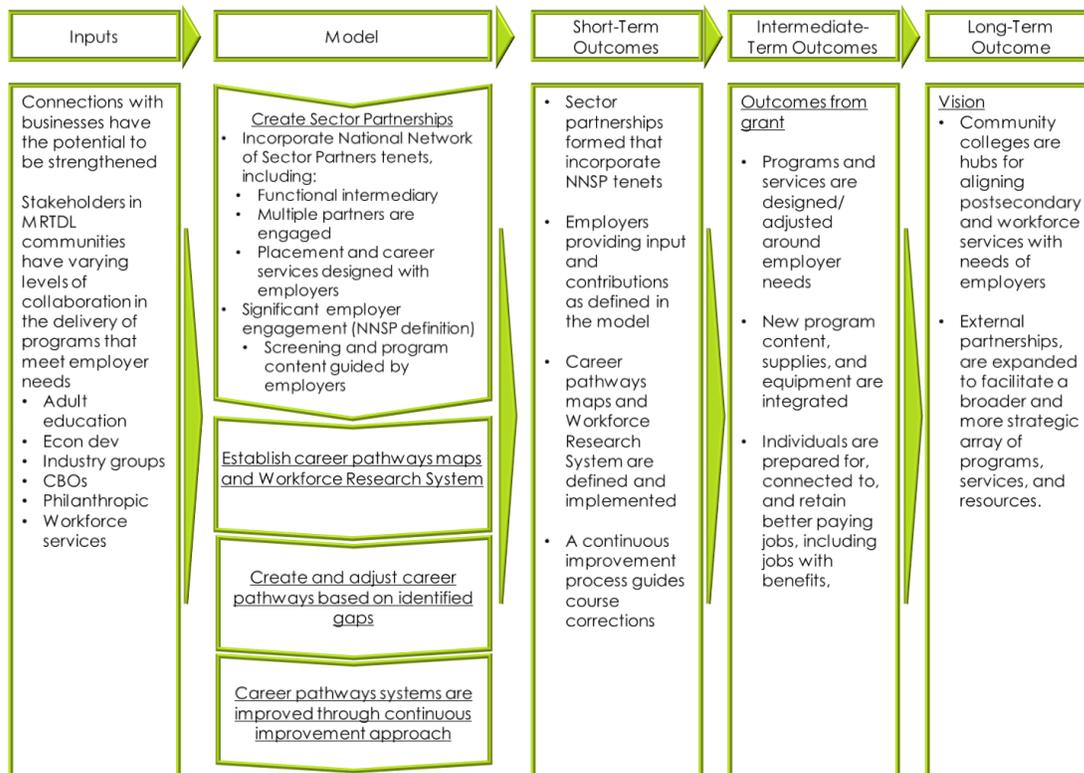
This report describes the activities that occurred during the implementation of the Mississippi River Transportation Distribution and Logistics consortium (MRTDL) Round 3 TAACCCT grant funded by the United States Department of Labor (USDOL). The project endeavored to establish or strengthen sector training partnerships in the TDL sector. Additionally, the project sought to establish a model for consortium sustainability beyond the grant.

The project was awarded \$23.9 million in the fall of 2013 to train 4,276 workers for jobs in Transportation, Distribution, and Logistics (TDL) from November 15, 2014 to March 31, 2017.

The nine colleges in the MRTDL consortium are: Lewis and Clark Community College (L&C), in Godfrey, IL, Delgado Community College (Delgado) in New Orleans, LA, Hinds Community College (Hinds) in Jackson, MS, John Wood Community College (JWCC) in Quincy, IL, Arkansas State University Mid-South (Mid-South) in West Memphis, AR, Minnesota State College – Southeast Technical (Southeast Technical) in Red Wing, MN, St. Louis Community College (STLCC) in St. Louis, MO, Southwest Tennessee Community College in Memphis, TN, and West Kentucky Community and Technical College (WKCTC) in Paducah, KY. The grant involved four strategies, logic models for each strategy are included:

Strategy 1. Establish and enhance sector partnerships among community colleges, employers, workforce agencies, economic development agencies, and community partners.

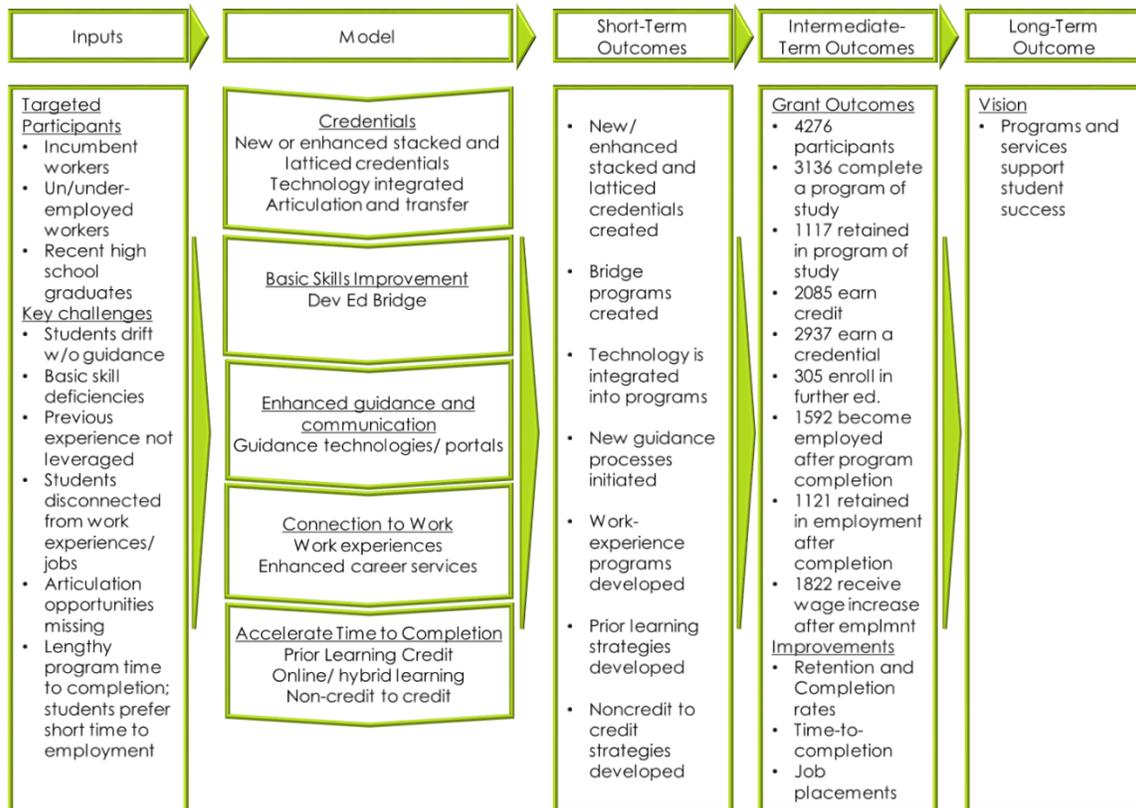
Strategies 1 and 2



Strategy 2. Recalibrate programs to align content and capacity with the needs of employers in each MRTDL community. This strategy operates within the sector partnership framework established in Strategy 1.

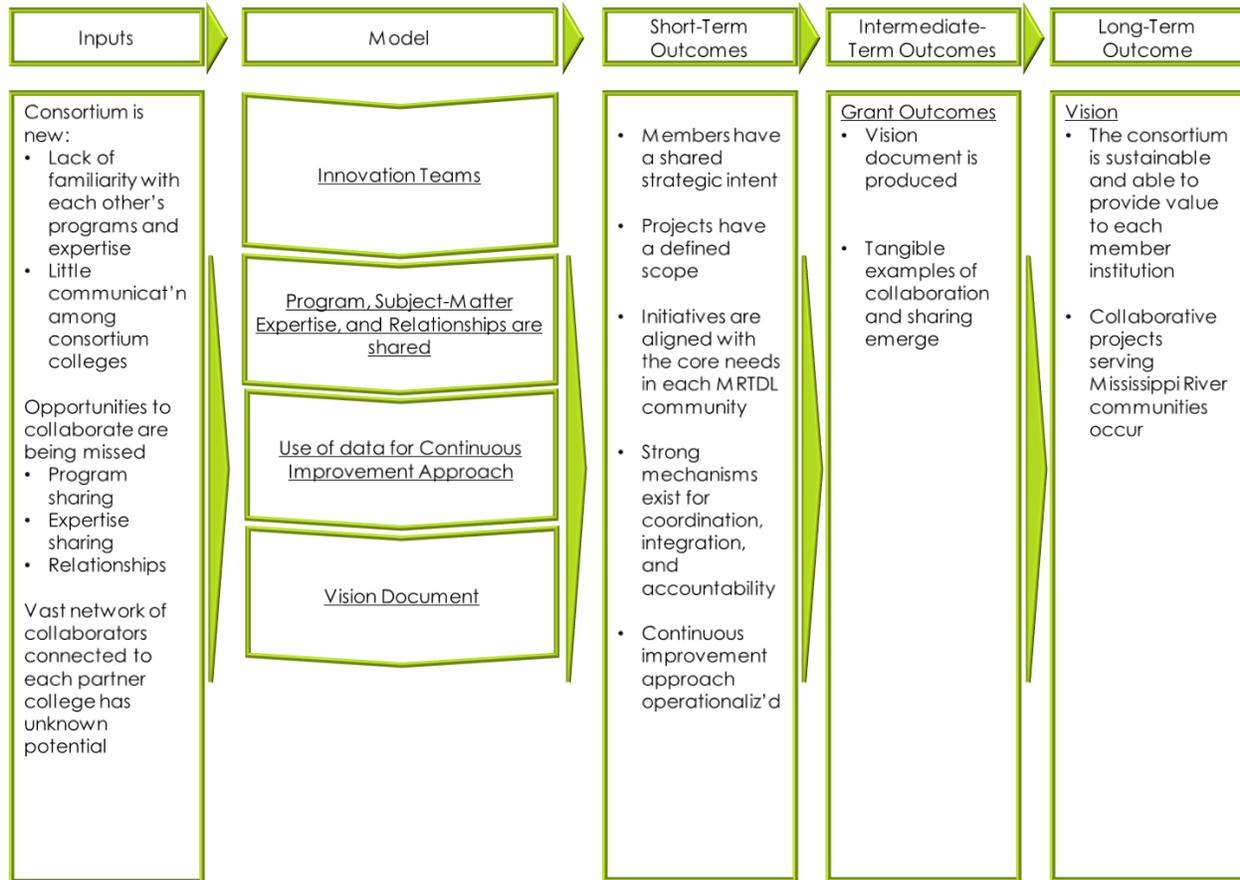
Strategy 3. Build systems of stacked and latticed credentials that integrate evidence-based strategies for serving the needs of TAA-eligible workers: prior learning assessment, basic skills enhancement, acceleration, online and technology-enabled learning, transfer and articulation, and work-based experiences.

Strategy 3



Strategy 4. Fully realize the benefits of working in a consortium to: (1) collaborate in implementing and sharing innovations, (2) benefit from the capacities and expertise possessed at each institution, and (3) implement efficiency enhancing measures.

Strategy 4



Evaluation Design Summary

Goals of the Evaluation

The evaluation seeks to answer questions posed at the outset of the project and to inform efforts to sustain the project beyond the grant period.

Implementation Study Design

The implementation evaluation was designed to assess fidelity to the intent; document models, strategies, and processes at each college that may inform observed impacts; and provide responses to questions required by the TAACCT program.

1. Implementation Research Questions. Evaluation questions were formulated to accommodate a wide variety of approaches taken by colleges as they advanced their sector training partnership strategies. And, to assess whether the consortium was establishing a model for sustainability. Key questions include:
 - What is being implemented, and how is it operating improve student outcomes?
 - How is the consortium working to establish a model for sustainability?
 - A variety of other questions were drawn from USDOL requirements related to selection of programs, approaches and design choices, administrative structures, and partnerships.

2. Conceptual framework of implementation study. The implementation evaluation is organized around the conceptual framework depicted in the logic models above.
3. Conceptual framework informs the analysis. Inquiries were organized to investigate key topics depicted in the logic models. These include program design models, employer engagement, and consortium benefits and sustainability. Additionally, the conceptual framework informed evaluation design in two ways: (1) There was no expectation that colleges would pursue similar design or implementation approaches. Local activities varied in the programs selected, students targeted for participation, models for delivery, employer engagement approaches, budget expenditure decisions, and partnership decisions. As a result flexible methodologies were needed to capture a variety of implementation approaches; (2) Colleges sought to gain benefits from participating in the consortium including professional development, peer-to-peer learning, access to external or non-consortium partners, and additional opportunities for funding. Inquiries were incorporated to assess the effectiveness of the consortium itself and its potential for sustainability.
4. Implementation data and methods. Evaluation activities involved communicating with local project staff and instructors, consortium leadership, students, and/or employers and included: (1) interviews, (2) focus groups, (3) surveys, and (4) on-site visits. Assessment of progress measures or benchmarks required in the original grant proposal or established by MRTDL leadership are embedded in the activities.
5. Measurement of capacity. Capacity was defined in terms of new capabilities at colleges to educate or train students or meet the needs of employers. Additionally, capacity considered new or deepened relationships developed resulting from sector partnership or consortium activities.

Impact Study Design

The primary goals of the Impact Evaluation are to determine the impacts of grant activities on participant employment-related outcomes, including participant earnings, job attainment and retention, employment intensity, wages, and likelihood of working in a job that offers benefits (e.g., health insurance), and program-related outcomes, including program retention, completion, and time-to-completion. However, given issues with fidelity in program implementation, the potential to disentangle the impacts of individual grant elements is not doable.

The impact evaluation will consider each program within each school. For each program, we identify at least one comparable comparison program. Then, within each comparison program, the comparability of individuals to program individuals is established.

Impact Analysis Research Questions

The impact research questions incorporate the DOL reporting requirements for the annual performance report. For each question listed, we are comparing grant participants in the grant-affected programs of study to comparison group participants:

1. How many unique participants/comparisons have been served?
2. How many individuals have completed a grant/comparison program of study?
 - a. Of those, how many are incumbent workers?
3. How many individuals are still retained in their program of study (or other grant-funded program)?
4. How many individuals are retained in other education programs?

5. How many credit hours have been completed?
 - a. How many students have completed credit hours?
6. How many credentials have been earned by participants/ comparisons?
 - a. How many students have earned certificates (<1 year)?
 - b. How many students have earned certificates (>1 year)?
 - c. How many students have earned degrees?
7. How many students are pursuing further education after program of study completion?
8. How many participants/comparisons are employed after program of study completion?
9. How many participants/ comparisons are retained in employment for three quarters after program of study completion?
10. What are the earnings of participants/ comparisons relative to before enrollment?
 - a. How many of those employed at enrollment received a wage increase post-enrollment?
11. Are they employed in the industry and occupation of their program of study?
 - a. What is their intensity of employment (hours worked per week)?
 - b. What is their hourly wage?
 - c. Do they have healthcare, paid time off, and/or retirement benefits?
12. What is the time-to-completion of participants/ comparisons?

Design Methodology

A random-assignment research design is impractical for the grant-affected programs. MRTDL is comprised of open-access community colleges with limited resources to serve students in targeted programs. Randomly assigning those students to different systems of programs and services is resource-intensive and would hinder the success of the programs. Therefore, a quasi-experimental evaluation has been chosen for this evaluation.

A quasi-experimental evaluation was constructed by collecting and analyzing data for each grant-affected program of the colleges within the consortium. In addition, each grant-affected program was compared to a similar comparison program, which ran in parallel to the grant-affected program during the grant period. Comparability of the comparison program to the grant program is based on similarities in program structure (such as department, credit/non-credit status, and program size and duration) and student demographics (such as race, gender, and age). In addition, to account for remaining dissimilarity between participants and comparison individuals, propensity score methodology is used to refine the estimates of the treatment effects.

Data Used and Its Reliability

Data comes from different sources:

- College Student Information System:
 - On an ongoing basis, college submits data on their students, including information such as completions
 - Once per student, college submits data on their students that does not change over time, such as gender, race, and date of birth
- State wage agency: at the end of the grant period, the state wage agencies are contacted to obtain wage data on students, starting with the quarter of enrollment

Data was collected from each source as it became available on a rolling basis. Colleges collected data on participant and comparison individuals two times per year – once in the fall reflecting the previous summer and spring terms, once in the spring reflecting the previous fall term. State wage data was collected as needed and encompass the quarters that are available from the state agency at the time of the data pull. The data included in this report has been collected based on research questions referenced

above. We consider the data to be reliable. College data is part of the ongoing business of an institution of higher learning, and given the relatively simple nature of the college data required, we believe this data is also reliable. Lastly, we have no reason to believe there are systematic inaccuracies in state wage data.

Implementation Findings

Colleges overcame staffing and resource challenges to successfully deliver on MRTDL outcomes. Ultimately, the consortium delivered on all grant deliverables, but not without implementation challenges along the way. Colleges varied considerably in terms of the amount of budgeted resources received under the grant. Relatedly, there was variance in the depth of staffing assigned to the project. Key challenges that impacted colleges in varying ways included difficulties in hiring staff or instructors, staff and leadership turnover, purchasing equipment or completing renovations in a timely way, curriculum approval processes, and low enrollments or completions. Overall, the consortium adapted to ensure it met required grant deliverables.

What is being implemented, and how is it operating to improve student outcomes? On the whole, the colleges adhered to the intent of the grant and delivered what they said they would deliver according to the logic model.

- How was the particular curriculum selected, used, or created? Each college was invited to select programs and curricula for inclusion in the grant based on local need. There was no prescribed method for how colleges were to do this. As such, colleges used criteria for selecting programs including review of labor market demand via labor market data and direct employer outreach, enrollment demand among students, and internal staff capacity and expertise to execute a program improvement scope of work.
- How programs and program design were improved or expanded using grant funds? What delivery methods were offered? What was the program administrative structure? What support services and other services were offered? Based on local need, the colleges invested in new program equipment and supplies, renovated space, and instructional and student services staff. Additionally, the colleges used a variety of approaches for improving program design. They were not required to follow a prescribed model for program improvements. Approaches included strategies for acceleration, contextualization, building stackable credentials, development of online content, incorporation of learn/earn opportunities, development of bridge programs, credit for prior learning, and articulation of noncredit to credit. Each college appointed a grant administrator and data specialist to support grant activities. Additionally, colleges used grant funds to support instructional and student services staff based on local need. All colleges were required to develop career pathways maps for use in guidance and career coaching. On the whole, colleges leveraged existing college services for assessment and placement, developmental education, tutoring, advisement and career guidance.
- Did the grantees conduct an in-depth assessment of participant's abilities, skills and interests to select participants into the grant program? Describe. Colleges incorporated pre-existing assessment, placement, and enrollment processes to determine grant participation. Once students enrolled in a grant-affected program or course via each college's standard processes, they became grant participants.
- What contributions did each of the partners (employers, workforce system, other training providers and educators, philanthropic organizations, and others as applicable) make in terms of:

1) program design, 2) curriculum development, 3) recruitment, 4) training, 5) placement, 6) program management, 7) leveraging of resources, and 8) commitment to program sustainability? What factors contributed to partners' involvement or lack of involvement in the program? Which contributions from partners were most critical to the success of the grant program? Which contributions from partners had less of an impact? Colleges were encouraged to expand and deepen relationships with partnering organizations via a sector strategy approach with some colleges having more success than others. Many new and deepened partnerships occurred in the scope of the grant with employers, workforce agencies, education and training partners, philanthropic organizations, and community-based nonprofit organizations. It is important to note that, even with this heightened importance, few college devoted resources directly to the task of business engagement with the very large majority of budget resources being spent on equipment, renovations, and staff for instruction, grant administration, or student services. The consortium provided professional development opportunities supporting employer engagement. The end result was that some colleges developed new and deepened relationships with employers and other partners, including several practices that are quite noteworthy, whereas other struggled to accomplish this objective.

How is the consortium working to establish a model for sustainability? Working together as a consortium was challenging but led to important benefits with potential for sustainability. Over the course of the grant performance period, the colleges worked to formulate a vision and establish an operating infrastructure that could be sustained. Establishing a vision for the consortium required proactive leadership by the lead college, and extensive communication among project members and college executives. In the end, the consortium articulated a vision and ongoing structure with potential for sustainability. Even with a strong intent to collaborate, colleges reported that working as a consortium was challenging at times. In circumstances, consortium members negotiated business models, not always successfully, for co-enrolled students or shared resources such as designed curricula. Even with these challenges, the consortium succeeded in providing valuable benefits to colleges including extensive professional development and peer-to-peer learning opportunities for members. By the end of the project, the consortium had established a written vision and memorandum of understanding that was signed by all members. In addition, each college committed funds totaling \$75,000 that were placed in a bank account managed by the lead college to support sustainability efforts beyond the end of the grant.

Participant Impacts and Outcomes

The impact research questions are based on the DOL reporting requirements for the annual performance report. Given the limitations in data availability some questions were answerable to a greater or lesser extent. Here are direct answers to the questions posed in the evaluation plan. Further analysis is included in the Impact Evaluation section later in the report.

Here are direct answers, at the consortium-level, to the questions posed in the evaluation plan. Of note, due to gaps in data, especially employment data, many of the outcome numbers are lower than might be expected.

1. How many unique participants/comparisons have been served?

In total, 7465 individuals were served by the grant.

2. How many individuals have completed a grant/comparison program of study?
 - a. Of those, how many are incumbent workers?

Over the course of the grant, 4804 participants completed a grant-affected program of study (3418 of whom were incumbent workers). The completion rate for participants was generally similar to, or greater than, the completion rate for comparison individuals on a program-by-program basis.

3. How many individuals are still retained in their program of study (or other grant-funded program)?

489 participants were still continuing with their grant-affected program of study at the completion of the grant.

4. How many individuals are retained in other education programs?

283 participants were retained in other education programs.

5. How many credit hours have been completed?

a. How many students have completed credit hours?

In total, 79,000 credit hours were completed by study participants. Other participants engaged in non-credit programs.

6. How many credentials have been earned by participants/ comparisons?

a. How many students have earned certificates (<1 year)?

b. How many students have earned certificates (>1 year)?

c. How many students have earned degrees?

Participants earned 8,059 certificates or degrees over the course of the grant. 4,507 students earned short-term certificates, 231 earned long-term certificates, and 176 earned degrees.

7. How many students are pursuing further education after program of study completion?

Of those who completed a grant-affected program of study, 87 continued on to further education after completion. This number may change by the submission of the final Annual Performance Report.

8. How many participants/comparisons are employed after program of study completion?

Of those who were non-incumbent workers at the time of entering, 337 participants who completed a grant-affected program gained employment in the semester after completion. This number may increase by the submission of the final Annual Performance Report.

9. How many participants/ comparisons are retained in employment for three quarters after program of study completion?

Of those 337 employed, 235 were retained in employment through quarters two and three after completion. This number may increase by the submission of the final Annual Performance Report.

10. What are the earnings of participants/ comparisons relative to before enrollment?

a. How many of those employed at enrollment received a wage increase post-enrollment?

Of those who were employed at study intake, 1039 earned a wage increase in their employment. This number may change by the submission of the final Annual Performance Report.

Evaluation Challenges

The primary challenges in this evaluation were: 1. Nonstandard approaches across colleges. Each college was able to choose different approaches and models for implementation. 2. Data availability. MRTDL is a diverse collection of community colleges spread over across a wide swath of the country, including 8 separate states. This represents a substantial challenge to collecting, especially, state wage data.

There are limitations to the data obtained through state wage data systems that tend to artificially depress the numbers:

- A data lag of about two quarters (with most state wage systems).
- Data may not exist for persons who are self-employed, or who work at a job that does not report Unemployment Insurance.
- Data may be required to be aggregated for some states, adding a level of complexity to the data analysis.
- Students who do not provide social security numbers will not appear in the state wage data.

Conclusions

The colleges delivered the grant scope of work as described in the original grant proposal. A variety of decisions and design choices resulted in very little fidelity among the colleges in the approaches; however, this was by design. The colleges built or improved capacity by adding new equipment, renovating space, augmenting instructional and student services staff, and improving partnerships with employers and other organizations.

The colleges served 7,465 participants, well in excess of the 4,276 planned for. In addition, the completion rates for the participants in grant-affected programs at the colleges were generally higher than the completion rates for individuals in the comparison programs. This remained true after propensity score adjustments to estimates of the effect.

The colleges intended to develop a model for consortium sustainability beyond the end of the grant. To that end, a formal vision and memorandum of understanding was developed and signed, and a budget of \$75,000 was contributed by the members to support ongoing consortium operations.

Introduction to TAACCCT

On March 30, 2010, President Barack Obama signed the Health Care and Education Reconciliation Act, which included funding for the Trade Adjustment Assistance Community College Career Training (TAACCCT) program, allocating \$2 billion over four years.

Through this funding, the United States Department of Labor (USDOL), in partnership with the Department of Education, is assisting the nation's institutions of higher education in helping adults succeed by acquiring the skills, degrees, and credentials needed for high-wage, high-skill employment while also meeting the demands of employers for skilled workers. TAACCCT provides eligible institutions of higher education with multi-year grants to expand and improve their ability to deliver education and career training programs that can be completed in two years or less, are suited for workers who are eligible for training under the TAA for Workers program, and prepare program participants for employment in high-wage, high-skill occupations.

Project Description

This report describes the activities that occurred during the implementation of the Mississippi River Transportation Distribution and Logistics consortium (MRTDL) Round 3 TAACCCT grant funded by the United States Department of Labor (USDOL). This report is intended to document the activities of the college relative to the content of the scope of work, and to offer reflections on the success of the grant in achieving its goals.

The project was awarded \$23.9 million in the fall of 2013 to train 4,276 workers for jobs in Transportation, Distribution, and Logistics (TDL) from November 15 of 2014 to March 31 of 2016. The following pages describe the project as envisioned, its implementation, and outcomes. The document contains a background section, project overview, record of planning, an implementation report, and an impact evaluation report that may help interpret outcomes of the grant.

The nine colleges in the MRTDL consortium are: Lewis and Clark Community College (L&C), in Godfrey, IL, Delgado Community College (Delgado) in New Orleans, LA, Hinds Community College in Jackson (Hinds), MS, John Wood Community College (JWCC) in Quincy, IL, Arkansas State University Mid-South (Mid-South) in West Memphis, AR, Minnesota State College – Southeast Technical (Southeast Technical) in Red Wing, MN, St. Louis Community College (STLCC) in St. Louis, MO, Southwest Tennessee Community College in Memphis, TN, and West Kentucky Community and Technical College (WKCTC) in Paducah, KY. Prior to submitting the TAACCCT grant application to USDOL, several colleges partnered in an American Association of Community College grant focused on economic development along the Mississippi River. The MRTDL project intends to continue this work by specifically addressing the following gaps:

- Gap 1: There are limited sector partnerships in the Transportation, Distribution, and Logistics (TDL) industries in MRTDL communities; as a result, postsecondary programs are misaligned with industry needs.
- Gap 2: The colleges are missing opportunities to benefit from working in a consortium; they are missing opportunities to share TDL programs, leverage unique strengths, and utilize expertise possessed at each institution.
- Gap 3: Evidence-based practices in postsecondary program design and implementation have not been applied significantly to TDL programs.

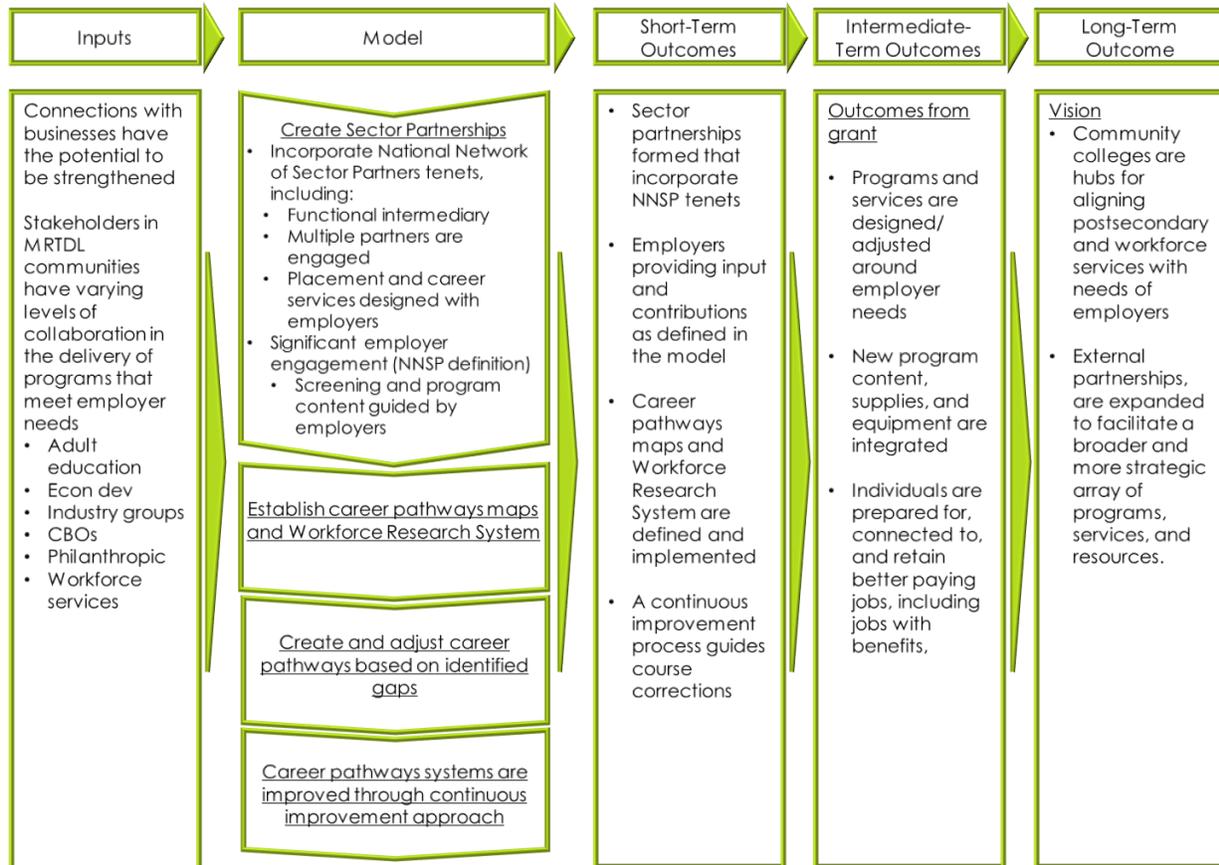
In response to these gaps, three strategies were proposed. The strategies are outlined below as they were

described in the original grant proposal. Evolution in the strategies has occurred since the grant was originally developed, which is described in later sections.

Strategy 1: Establish and enhance sector partnerships among community colleges, employers, workforce agencies, economic development agencies, and community partners.

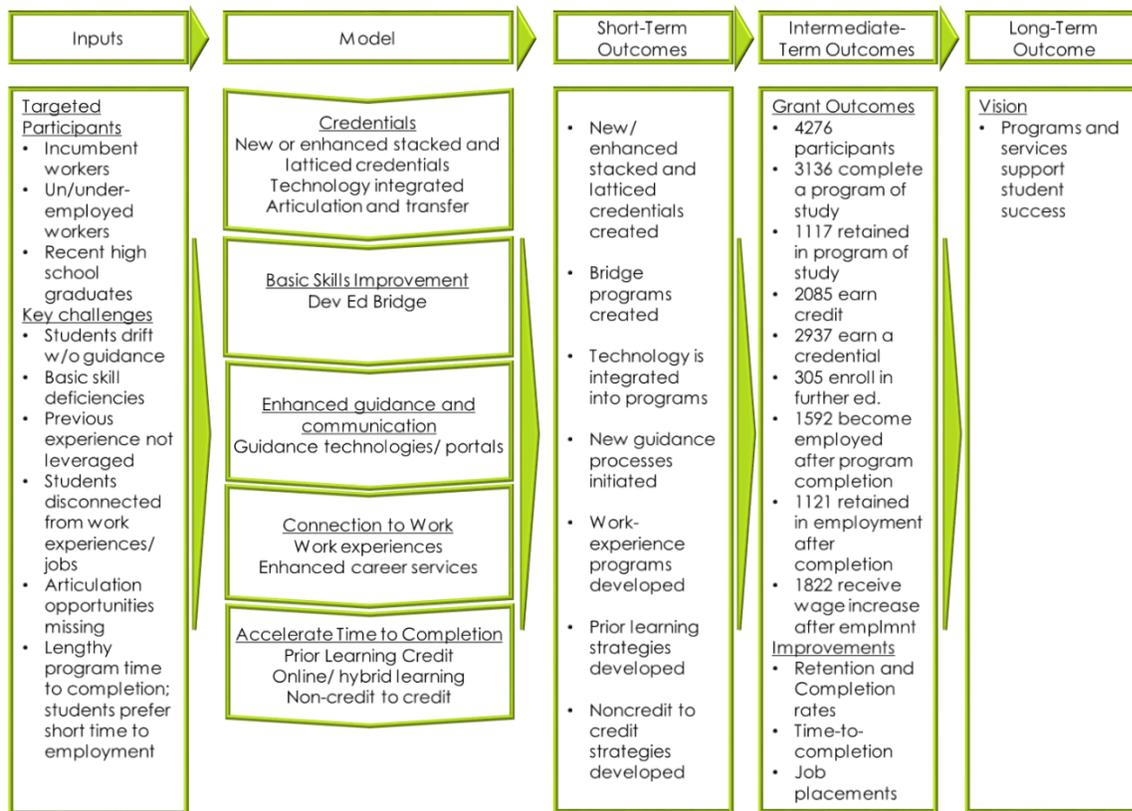
Strategy 2: Recalibrate programs to align content and capacity with the needs of employers in each MRTDL community.

Figure 1: Strategies 1 and 2 Logic Model



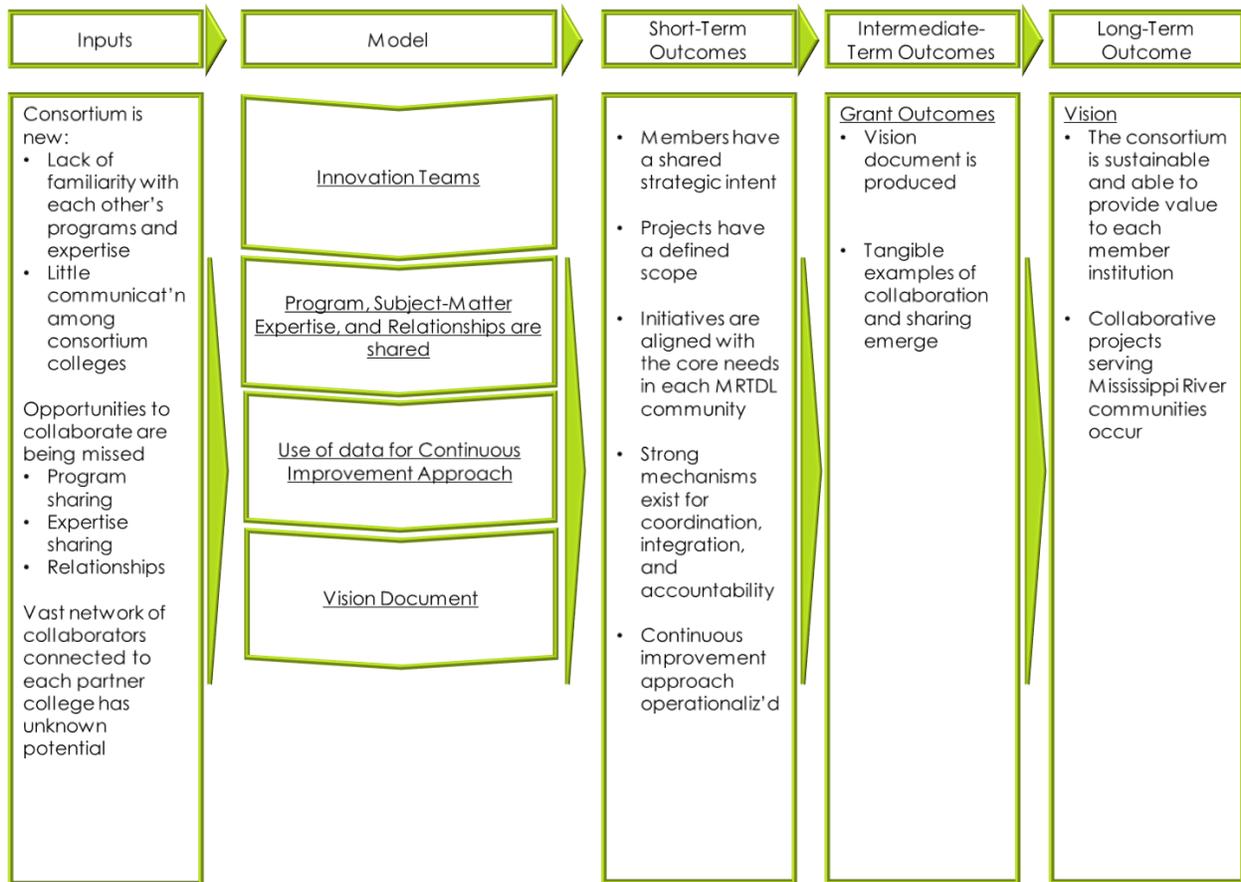
Strategy 3: Build systems of stacked and latticed credentials that integrate evidence-based strategies for serving the needs of TAA-eligible workers: prior learning assessment, basic skills enhancement, acceleration, online and technology-enabled learning, transfer and articulation, and work-based experiences.

Figure 2: Strategy 3 Logic Model



Strategy 4: Fully realize the benefits of working in a consortium to: (1) collaborate in implementing and sharing innovations, (2) benefit from the capacities and expertise possessed at each institution, and (3) implement efficiency enhancing measures.

Figure 3: Strategy 3 Logic Model



The project developed new or improving upon existing degree pathways, listed below:

College	New under MRTDL	Improved under MRTDL
Delgado Community College	<ul style="list-style-type: none"> Shipyard Certifications Forklift Operator for Shipyard/Dock Personnel 	<ul style="list-style-type: none"> Steersman Apprentice Mate Licensed Mariner/Wheelman
Hinds Community College	<ul style="list-style-type: none"> Shipyard Certifications 	<ul style="list-style-type: none"> Truck Driving
John Wood Community College	<ul style="list-style-type: none"> Logistics & Supply Chain Management Computer Systems 	<ul style="list-style-type: none"> Manufacturing Technology Welding
Lewis & Clark Community College	<ul style="list-style-type: none"> Truck Driving Logistics Technician 	<ul style="list-style-type: none"> Automotive Technology Process Operations Welding Technology
Arkansas State University Mid-South		<ul style="list-style-type: none"> Aviation Maintenance Technician Diesel Maintenance Technology
Minnesota State College - Southeast Technical	<ul style="list-style-type: none"> Diesel Transportation Maintenance 	

Southwest Tennessee Technical College	<ul style="list-style-type: none">• Advanced Industrial Logistics Technology	<ul style="list-style-type: none">• Industrial Technology
St. Louis Community College	<ul style="list-style-type: none">• Truck Driving• Logistics• Avionics	<ul style="list-style-type: none">• Aviation Maintenance
West Kentucky Community and Technical College		<ul style="list-style-type: none">• Marine Yard Certifications• Marine Technology• Logistics & Operations Management• Welding

Evaluation Research Design and Methodologies

There are two parts to the evaluation: (1) an implementation evaluation that captures the details of project implementation and the extent to which the colleges implemented according to the original blueprint of the project; and (2) an impact evaluation that captures the impacts of grant activities on participant earnings, job attainment, employment intensity, wages, and likelihood of working in a job that offers benefits (e.g., health insurance) along with program retention and completion using a comparison approach. There are constraints in the feasibility of doing comparison-based analyses for prior learning assessment, basic skills bridges, and credit-bearing work experience participants. Thus, the impacts of many individual elements of the grant are not disentangled in the Impact Evaluation.

Implementation Analysis Design

The implementation evaluation has two goals: (1) to assess fidelity to the intent, and (2) to identify factors affecting outcomes. Implementation evaluation activities involve communicating with local project staff and instructors, consortium leadership, students, and/or employers and include: (1) interviews, (2) focus groups, (3) surveys, and (4) on-site visits. Assessment of progress measures or benchmarks required in the original grant proposal or established by MRTDL leadership are embedded in the activities.

Implementation Analysis Research Questions

Broadly, the implementation evaluation seeks to capture the following:

- What is being implemented, and how is it theorized to drive impacts?
- Has implementation occurred on time and as intended?
- Is there fidelity among MRTDL colleges? When variation exists, is it effective and consistent with project outcomes?
- What contributions did each of the partners (employers, workforce system, other training providers and educators, philanthropic organizations, and others) make in terms of: 1) program design, 2) curriculum development, 3) recruitment, 4) training, 5) placement, 6) program management, 7) leveraging of resources, and 8) commitment to program sustainability. What factors contributed to partners' involvement or lack of involvement in the program? Which contributions from partners were most critical to the success of the grant program? Which contributions from partners had less of an impact?

Specific questions pertaining to each grant strategy are posed, as follows:

Strategy 1:

- Were colleges able to establish sector partnerships enabling employers to convey their workforce needs and colleges to implement programs to meet those needs?
- What factors enabled or hindered the following: participant earnings, employment attainment, employment intensity, wages, and likelihood of working in a job that offered benefits (e.g., health insurance)?

Strategy 2:

- How effectively was work-based learning integrated with the system of stacked and latticed credentials?
- How effectively were systems implemented to allow for granting credit for prior learning and/or for transferring non-credit to credit? Did they have an effect on completions?
- How effectively were bridge modules developed and integrated into onsite workforce training to effectively enhance basic skills? Did they have an effect on completions?

- What factors enabled or hindered this strategy?

Strategy 3:

- How effectively were student advising and career counseling improved and how was partnering with employers incorporated? Did they have an effect on completions or employment?
- What factors enabled or hindered this strategy?

Impact Evaluation Design

The primary goals of the Impact Evaluation are to determine the impacts of grant activities on participant employment-related outcomes, including participant earnings, job attainment and retention, employment intensity, wages, and likelihood of working in a job that offers benefits (e.g., health insurance), and program-related outcomes, including program retention, completion, and time-to-completion. However, given issues with fidelity in program implementation, the potential to disentangle the impacts of individual grant elements is not doable.

The impact evaluation will consider each program within each school. For each program, we identify at least one comparable comparison program. Then, within each comparison program, the comparability of individuals to program individuals is established.

Outcomes/Impact Analysis Research Questions

The impact research questions incorporate the DOL reporting requirements for the annual performance report. For each question listed, we are comparing grant participants in the grant-affected programs of study to comparison group participants:

13. How many unique participants/comparisons have been served?
14. How many individuals have completed a grant/comparison program of study?
 - a. Of those, how many are incumbent workers?
15. How many individuals are still retained in their program of study (or other grant-funded program)?
16. How many individuals are retained in other education programs?
17. How many credit hours have been completed?
 - a. How many students have completed credit hours?
18. How many credentials have been earned by participants/ comparisons?
 - a. How many students have earned certificates (<1 year)?
 - b. How many students have earned certificates (>1 year)?
 - c. How many students have earned degrees?
19. How many students are pursuing further education after program of study completion?
20. How many participants/comparisons are employed after program of study completion?
21. How many participants/ comparisons are retained in employment for three quarters after program of study completion?
22. What are the earnings of participants/ comparisons relative to before enrollment?
 - a. How many of those employed at enrollment received a wage increase post-enrollment?
23. Are they employed in the industry and occupation of their program of study?
 - a. What is their intensity of employment (hours worked per week)?
 - b. What is their hourly wage?
 - c. Do they have healthcare, paid time off, and/or retirement benefits?
24. What is the time-to-completion of participants/ comparisons?

Outcomes Analysis

The questions drive the following analyses. For each question, an outcome is defined that is used to answer the question. The definitions given are from the point of view of the grant-affected programs (the “treatment group”). Corresponding definitions will be used for the comparison programs (the “comparison group”) and are not repeated here for brevity. For the outcomes that correspond to one of the 9 DOL outcomes, that DOL outcome number is noted.

1. Participants = individuals who officially declare for a targeted program of study or enroll in a defined core course in a targeted program of study (DOL#1)
2. Completion rate = number of students who complete / participants (DOL#2)
 - a. Incumbent completion rate = number of students who complete / participants (numerator and denominator restricted to incumbents)
3. Retention rate = number of students who are retained in their program of study (or other grant program) / participants (DOL#3)
4. Other retention rate = number of students who are retained in another program of study (non-grant) / participants
5. Credit hour completion amount = number of credit hours earned per student
 - a. Credit hour completion rate = number of students who complete a credit hour / participants (DOL#4)
6. Credential amount = number of credentials earned per student (a + b + c)
 - a. Short-term credential rate = number of students who earn a credential (<1y) / participants
 - b. Long-term credential rate = number of students who earn a credential (>1y) / participants
 - c. Degree rate = number of students who earn a degree / participants (DOL#5 = ‘a’ or ‘b’ or ‘c’)
7. Further education rate = number of students entering further education program after completion / completers (DOL#6)
8. Employment rate = number of students employed / completers (numerator and denominator restricted to non-incumbents) (DOL#7)
9. Retain employment rate = number of students retained in employment for 2nd and 3rd quarters after completion / completers (numerator and denominator restricted to non-incumbents) (DOL#8)
10. Earnings increase amount = quarterly earnings increase for each quarter after program completion – average quarterly earnings in four quarters prior to program entry
 - a. Earnings increase rate = number of students who received quarterly earnings increase after enrollment relative to the average of four quarters prior to program entry / participants (numerator and denominator restricted to incumbents) (DOL#9)
11. Industry employment rate = number of students employed in the industry/occupation of their program of study / completers
 - a. Employment intensity amount = hours worked per week per student
 - b. Hourly wage amount = hourly wage per student
 - c. Benefits rate = number of students who receive healthcare, paid time off, or retirement benefits / completers (numerator and denominator restricted to non-incumbents)
12. Time-to-completion = the calendar time elapsed from enrollment until program completion

The outcomes are measured continuously as the data becomes available. For example, for data coming from the schools, data is collected twice a year – once in the fall reflecting the previous summer and spring terms and once in the spring reflecting the previous fall term.

Analysis: For each outcome, the rate (or average) in the treatment group is compared to the rate (or average) in the control group.

Non-Experimental Design

Each program is included in an impact analysis comparing it to at least one comparison group. Every grant program is matched to one comparison program that is different but comparable to the grant program and housed at the same school and followed in parallel during the grant period. Comparability of the comparison program to the grant program is based on a) same department, b) same credit/non-credit status of program, c) similar duration of program, and d) similar demographics of individuals entering program. It is not expected that a comparison program will be identifiable that matches perfectly on all 4 qualities, but rather the best match overall will be used. In addition, if the grant program is an established program prior to the grant (for at least 3 years) then the grant program itself can serve as its own comparison program (historical comparison) if the primary comparison group is problematic.

Implementation Evaluation

This section of the report details findings in the implementation evaluation.

The implementation evaluation report presents the findings of the implementation evaluation in five sections:

- (1) Implementation inquiries,
- (2) Emerging themes in the implementation evaluation,
- (3) Grant strategies implementation, fidelity to model, and factors affecting outcomes
- (4) Student pipeline analysis
- (5) Implementation evaluation limitations and topics of future inquiry.

Implementation Inquiries

The implementation evaluation sought to assess fidelity to the intent of the grant, and identify factors affecting the grant outcomes. The findings detailed in this section are based on themed implementation evaluation inquiries each semester, which included five rounds of interviews with Project Coordinators and grant staff at each college, several conversations with consortium leadership, on-site visits with each of the nine colleges, a Consortium Climate Study, and a survey. Details of implementation evaluation inquiries conducted are below:

Spring 2014	- Consortium Climate Study
Fall 2014	- Planning stage reflection and project description. Interviews with Project Coordinators and grant staff at each college
Spring 2015	- External partnerships, Interviews with Project Coordinators and grant staff at each college - Consortium Climate Study
Fall 2015	- Business engagement processes and outcomes. Interviews with Project Coordinators and grant staff at each college - Site Visits - Consortium Climate Study
Spring 2016	- Interviews with Project Coordinators and grant staff at each college: important innovations under the MRTDL grant, sustainability of MRTDL programs, and the future of the consortium* - Survey of Project Coordinators and/or business engagement staff at each college on Employer Engagement - Survey of Project Coordinators, consortium leadership, and college administrators on next steps for the consortium - Site visits
Fall 2016	- Sustainability: Interviews with Project Coordinators and grant staff at each college - Site visits - Consortium Climate Study

Themes in the Implementation Evaluation

Several themes emerged in the implementation evaluation.

Working together as a consortium was challenging but led to important benefits for the colleges.

Working together as a consortium was challenging but led to important benefits with potential for sustainability. Over the course of the grant performance period, the colleges worked to formulate a vision and establish an operating infrastructure that could be sustained. Establishing a vision for the consortium required proactive leadership by the lead college, and extensive communication among project members and college executives. In the end, the consortium articulated a vision and ongoing structure with potential for sustainability. Even with a strong intent to collaborate, colleges reported that working as a consortium was challenging at times. In circumstances, consortium members negotiated business models, not always successfully, for co-enrolled students or shared resources such as designed curricula.

Even with these challenges, the consortium succeeded in providing valuable benefits to colleges including extensive professional development and peer-to-peer learning opportunities for members. By the end of the project, the consortium had established a written vision and memorandum of understanding that was signed by all members. In addition, each college committed funds totaling \$75,000 that were placed in a bank account managed by the lead college to support sustainability efforts beyond the end of the grant.

One advantage that the MRTDL consortium had was that several colleges collaborated prior to the TAACCCT grant on a Kellogg Foundation grant focused on workforce and economic development along the Mississippi River. Several colleges have commented on the value of the relationships they had built with fellow consortium members prior to the grant, which made this project easier.

Leadership was crucial to a successful consortium. The MRTDL consortium benefited from capable operational leadership, and eventually articulated a vision looking forward beyond the implementation period of the grant – one of the stated goals of the consortium. All colleges expressed satisfaction with consortium leadership during regular implementation evaluation interviews. There was a general sentiment that leadership clearly communicated requirements, assignments, and deadlines and provided adequate reminders. One challenge, however that many colleges noted in the interviews was a disconnection with the project at the college executive level. A President's Council was established and met once per year to review grant progress and strategy; approximately half of the presidents attended regularly. While the project staff was in general agreement that the consortium had strong operational leadership, there was concern that the executives were not engaged with the project, which may ultimately impact sustainability.

There were four "innovation teams" consisting of staff from colleges which were intended to work collaboratively on the following topics: (1) Employer and stakeholder engagement, (2) Continuous Improvement, (3) Stacked and latticed credentials, (4) Curriculum/ programs design and use of enabling technologies. While these innovation teams were created to enhance collaboration in the consortium, several coordinators noted that the innovation teams were less active than they had anticipated. In fact, towards the end of the grant, they stopped convening due to lack of interest.

Members indicated that the consortium provided several important benefits. These included contracted technical assistance providers, opportunities to network and share best practices, and project administration assistance. Several benefits noted in the implementation evaluation interviews are listed below:

- The consortium has engaged the National Network of Sector Partners (NNSP) as a technical service provider to bring subject matter expertise in sector partnership development, and encouraging colleges to share best practices.
- Six colleges indicated that participation in the consortium has been beneficial in supporting the curriculum development process because it has created opportunities to communicate and learn from program designers at other colleges. The sharing of curricula was particularly noteworthy: Hinds and

MN SE Tech used WKY's online barge training program to support tankerman and deckhand instruction.

- Colleges were introduced to external organizations including the US Army Corps of Engineers, the US Fish and Wildlife Service, and Swarvski Water School.
- Colleges worked across district lines. For example, one college was able to visit the facility of a manufacturing business located in the district of another MRTDL college for professional development purposes. Two other colleges collaborated to organize a joint industry meeting.
- Program exploration has continued even beyond the grant. As the grant wrapped up, one college was hoping to develop a truck driving program and was looking to other colleges in the consortium for assistance.

Sustainability of the consortium: The colleges in the consortium expressed an interest in continuing the work and sustaining the relationships with other colleges that have benefitted them during this grant. As a demonstration of commitment, all colleges signed a memorandum of understanding articulating a vision for collaboration, and the colleges contributed \$75,000 to a central pot for supporting consortium operations beyond the grant. Various colleges suggested next steps for the consortium, listed below

- One college mentioned the possibility of applying for National Science Foundation (NSF) grants to continue the work the consortium has done. The college expressed concern that it is too small to write a large grant without a group of schools, so the consortium offers a valuable connection for them.
- One college expressed concern that it could be difficult to continue the consortium without the grant, even though they are interested in continuing working with the other schools. It is difficult to secure funds to meet with the entire consortium. The college was exploring future opportunities related to agriculture and sustainability and would be interested in pursuing these options with other colleges. The college expressed that the leadership and coordination from Lewis and Clark has been superior to other experiences they have had in consortiums.
- One college cited the consortium's knowledge and linkages as benefits that they would like to continue as part of the consortium. Possible future topics the college would be interested in pursuing would be opportunities related to agriculture, such as food distribution.

Colleges overcame staffing and resource challenges to successfully deliver on MRTDL outcomes.

Ultimately, the consortium delivered on all grant deliverables, but not without implementation challenges along the way. Colleges varied considerably in terms of the amount of budgeted resources received under the grant. Relatedly, there was variance in the depth of staffing assigned to the project. Key challenges that impacted colleges in varying ways included difficulties in hiring staff or instructors, staff and leadership turnover, purchasing equipment or completing renovations in a timely way, curriculum approval processes, and low enrollments or completions. Overall, the consortium adapted to ensure it met required grant deliverables.

There was variance in the depth of staffing assigned to the project. In one case, the Project Coordinator was a dean who had other projects competing for attention and time. In another case, two Project Coordinators were assigned. In several schools, Project Coordinators were part time. This proved challenging for colleges who did not anticipate the level of effort required to meet the reporting requirements of the grant. In addition to challenges related to staffing levels, colleges reported challenges finding qualified faculty to teach technical courses. This was cited as a challenge by almost every college with many indicating they could only afford to pay salaries below positions in industry.

Intensive reporting requirements have demanded more staff time than expected. Several colleges expressed frustrations with time-consuming and repetitive reporting requirements saying they take away time which could be spent implementing the project. This was especially true of colleges that had not received a USDOL grant before MRTDL as Department of Education and NSF grants—two common funding sources for MRTDL colleges—were described as less reporting-intensive.

In addition to the regular reporting, most colleges decided to modify their budgets after grant award. The process for approval for budget modifications took anywhere between as much as two to six months and was difficult to predict. This delayed project implementation at several colleges as key staff and equipment could not be purchased. This in turn shortened the implementation period of the project for some programs which could not be implemented without budget approvals, effectively shortening the window for counting grant participants for several programs.

The grant allowed colleges in the consortium to hire new staff members in a variety of positions:

- One college added a career navigator for students. This has enabled the college to give students increased support when finding internships and job placements.
- One college hired several retention coordinators that make direct contact with students that are interning to ensure that they are doing well.
- Several colleges hired program coordinators and instructors.

Colleges used funds to develop or enhance programs and integrate new models in a variety of ways:

- Seven colleges developed several new stackable programs, credentials, and courses that did not exist at the college previously.
- Six college updated existing curricula with new content and courses working in partnership with local employers.
- One college updated program content and put a portion of it online. New equipment added entirely new capacity to deliver hands on instruction in a lab setting. And, an internship was added to the program.

The colleges made large investments in new equipment and space.

- Four colleges renovated buildings or spaces.
- Several colleges purchased large-scale equipment including simulators, robots, mechanical and aviation training equipment for diesel maintenance and aviation training, welding equipment, tractor-trailers and space for driving practice, and airplanes for aviation maintenance.

Theme 3: Engaging Employers takes significant time and resources.

Engaging employers was integral to the success of strategies one and two of the grant proposal and the broader vision of the project. Colleges were encouraged to expand and deepen relationships with partnering organizations via a sector strategy approach with some colleges having more success than others. Many new and deepened partnerships occurred in the scope of the grant with employers, workforce agencies, education and training partners, philanthropic organizations, and community-based nonprofit organizations. It is important to note that, even with this heightened importance, few college devoted resources directly to the task of business engagement with the very large majority of budget resources being spent on equipment, renovations, and staff for instruction, grant administration, or student services. The consortium provided professional development opportunities supporting employer engagement. The end result was that some colleges developed new and deepened relationships with employers and other partners, including several practices that are quite noteworthy, whereas other struggled to accomplish this objective.

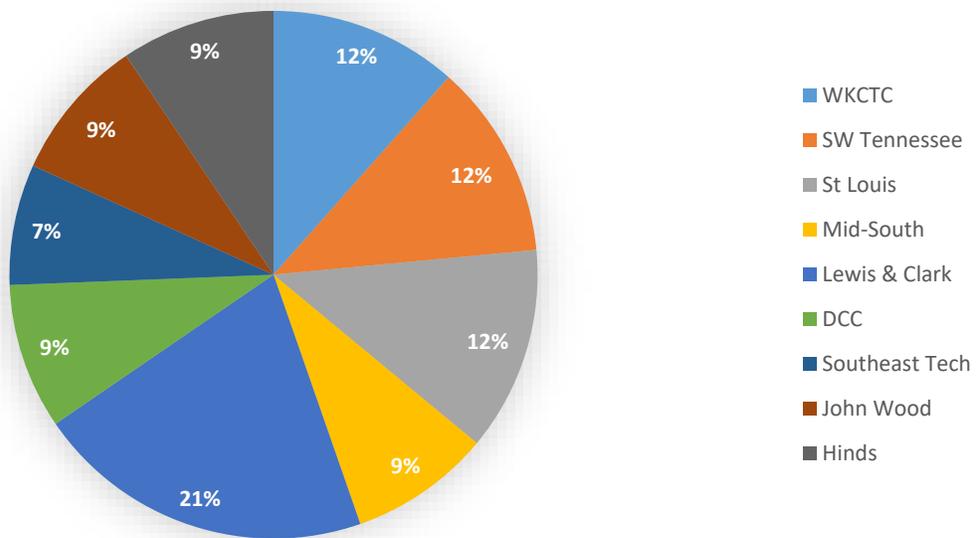
Implementation of grant strategies and fidelity to model

This section discusses how resource allocation differed at each college as well as the implementation and fidelity to model of each grant strategy.

Colleges vary within the range of resources received under the grant. Budget allocations range from approximately \$1.75 million to approximately \$3 million. In general, colleges spent the greatest proportion of their budgets on personnel and equipment. The charts below show the funds allocated by college, the budgeted and actual spending by grant category as of 03/31/2016, and a breakdown of budget allocation by college.

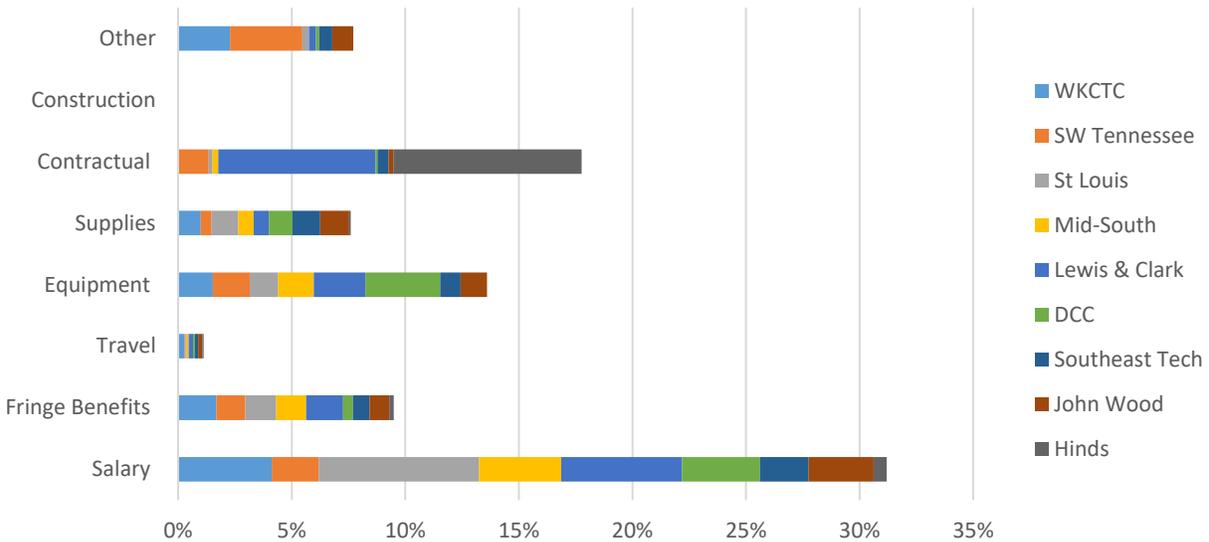
Allocated grant funds by college: the figure below illustrates each college’s share of the total consortium budget.

Budgeted Grant Funds by College



Allocated Grant funds by Category and College: the figure below illustrates the allocation of grant funds into each of the SF-424 budget categories per the USDOL. Each budget category is also broken down by college to illustrate the differences in allocation by budget category on a college level. As seen below, each college has allocated their grant funds differently.

Budgeted Grant Funds by Category and College



Early in the grant’s period of performance (Spring 2015), college’s were interviewed on their interpretation of grant proposal’s vision, their local priorities, and connection to local implementation. Interviewees were asked to reflect on the connection between the overall objectives for the project as presented in the grant proposal and local college priorities. Colleges effectively indicated an understanding of the vision articulated in the grant proposal. When asked about their institution’s primary goal or objective, every response reflected improving programs to serve students and businesses. Project goals and priorities did not change during the grant; no models were added or removed from the strategies described in the grant proposal.

Budgets plans shifted during the project. Many colleges submitted budget modification requests to DOL to reflect changes in local implementation plans or updated estimates of costs. In general, personnel and equipment were the largest budget categories. Hinds was the exception to this, with a significant portion of their funding being applied towards a contractual training provider for their deckhand training.

- Important equipment updates were made with grant funds. Notable equipment purchases, and the programs which they effect are described below:
 - Delgado purchased trailers and simulators, and instructional software for their truck driving program.
 - Hinds made significant staffing investments in its truck driving training partnership with KLLM to support driver retention.
 - JWCC will be updating their standard welding equipment instead of purchasing a robotic welder and arc welder after receiving feedback from employer partners that most jobs were not in such specialized welding fields.

- L&C bought a hybrid car for their automotive program, updated their welding equipment, contributed towards the cost of a simulator for their p-tech program, and bought a truck and trailer for their CDL program.
 - Mid-South bought 4 planes, engines, transmissions, and equipment for diesel technology (equipment list changed completely after input and donations from diesel advisory committee), and simulators for the aviation program
 - SLCC trucks, trailers, vinyl wraps, simulator
 - West KY outfitted their new Inland Logistics Marine Institute with new equipment and supplies.
- In some cases, significant outside resources were leveraged in combination with grant funds to further project development including major equipment donations such as barge engines, tractor trailers, and training simulators.

Business Engagement Processes

Project staff were interviewed on their college's business engagement resources and processes for developing and maintaining business relationships in the Fall semester of 2015. Interviews were conducted with Project Coordinators and key business-engagement staff. Topics covered include: availability and structure of business engagement resources, phases and approaches to relationship building, and the integration of businesses engagement into programs. While all colleges view themselves as a hiring source for businesses, some colleges and programs work more strategically with business partners to improve worker on-the-job effectiveness, advancement opportunities for employees, and/ or retention and succession planning. Highlights from the discussions are included below.

Project staff were interviewed on how their college approaches finding, developing, and maintaining business partnerships. At the outset of each conversation, interviewees were asked to broadly describe their college's approach to business engagement and what makes their college unique relative to competing service providers. Colleges were asked to describe their school's history of business engagement, the services available to businesses, staffing of business engagement processes, and relationships with other organizations in their community involved in mitigating the workforce challenges of businesses:

- When asked about their colleges' history of business partnerships, none of the interviewees reported that developing business partnerships was traditionally challenging for their school. One college noted that while they did not struggle to find hiring destinations, finding a "true partnership" where businesses are contributing equally, is more difficult.
- John Wood, WKY, and MN ST emphasized the importance of reaching business through community involvement. They viewed community involvement as a vehicle for business engagement that is especially important in their rural service areas; most MRDTL colleges are situated in smaller towns and rural areas.
- Each college structures business engagement resources and staffing differently. In addition, noncredit programs within each college often have different approaches to engaging businesses than their for-credit counterparts. Every college within MRTDL has either a Workforce Development or Corporate or Customized Training office. These offices serve as a primary point of contact for many of the business partners, and work with noncredit or customized training programs of their school. Staff in the Workforce Development or Corporate or Customized Training offices often have human resource, entrepreneur, or industry-specific experience. The staff serve as a point of contact for the business and at some schools maintain databases and

records on the schools' business relationships. For credit programs, Deans and instructors often share employer engagement responsibilities. In some cases, credit programs utilize the Workforce Development or Corporate or Customized Training office at their school to conduct outreach or needs assessment. In most cases, business engagement for credit programs is conducted separately.

- Interviewees cited one or more of the following as their college's strength(s) at engaging employers: a full-time business and industry coordinator, regular (often monthly) meetings with an advisory council, connectivity to their community, strong connections between instructors and industry, and the investments already made in existing business relationships.
- Some interviewees cited one or more the following as their college's most prominent challenge(s) at engaging employers: insufficient staff time to engage employers, staff turnover.

Lead Generation

Interviewees were asked to describe how their college identified and made initial connections with new business partners. Colleges discussed methods of outreach, targeting of potential new partners, and the development of new business partnerships under MRTDL.

- The most common way colleges reported finding new partnerships was through personal connections in the community. Colleges discussed how some leads were found through church relationships, grocery store run-ins, and carpooling with kids. While colleges are also involved in local economic and workforce development organizations, connections often develop informally. For example, Mid-South's partnership with FedEx was strengthened because one of their employees was in a bicycle riding club with a VP at FedEx—the partnership has existed for eight years.
- Mid-South, MSCST, and L&C report utilizing labor market data such as Bureau of Labor Statistics data, Burning Glass, or EMSI to check for job openings and to determine what other programs exist in their region. This data allows these colleges to approach a potential or existing partner with information about the hiring needs in the region and what types of training are needed to fill the skills gap.
- L&C also uses their job posting board strategically to increase employer involvement. When an employer reaches out to post a job, L&C gives a plug to their internship program, advisory committees, and any other way the employer who reached out could be engaged.
- Several schools noted that they target employers with whom they would like to engage. Delgado prioritizes which employer relationships to invest time and resources in based on how they treat their employees. Factors such as turnover, bonuses, and professional development training, and employee recognition are important in their assessment. Similarly, all schools with truck driving programs report having such a demand for their truck driving students that they have more choice on employers with which they would like to engage. STLCC has looked at Better Business Bureau in the past when deciding with whom to engage.
- None of the colleges cited social media as a prominent source for finding new business partners. Though, STLCC frequently mines LinkedIn for useful connections.
- Several colleges reported finding new business partners through the MRTDL consortium or reaching out to other community colleges in their region. Hinds has referred several businesses in the barge industry to KCTCS and L&C helped STLCC identify employers for their new logistics program. STLCC and L&C worked through a DACUM together for their logistics programs, in part during a co-conducted logistics industry group meeting. STLCC also noted that they reached out to other community colleges in their region outside of MRTDL for help in identifying potential employer partners.
- Delgado noted that the location of industry meetings is important. They report that industry partners for their maritime transportation programs do not like to attend meetings on Delgado's main campus

because it feels to “academic” and is a lengthier drive from the port district (Delgado’s short-term certificates in maritime transportation are hands-on, conducted on separate campus, and attract a different demographic than the students in the bulk of programs on their main campus.) Delgado’s MRTDL staff currently meet employers at their place of business until their new office facilities are finished in their Marine Training Institute.

- Mid-South, STLCC, and JWCC noticed a significant impact on employer engagement in their MRTDL programs after hiring a staff person to assist with lead generation; for STLCC this was a well-networked logistics instructor, and for Mid-South and JWCC this was a new staff person in the business and industry office.
- MRTDL colleges have had success with a variety of promotional and marketing approaches in their outreach to potential business partners, including: outreach to business journals and news outlets, local television and radio ads, billboard advertising, truck wraps, (to advertise truck driving programs), and trade publication advertising. KCTCS and L&C both cited their strong marketing departments as an important part of their lead generation strategy.
- L&C uses the Incentive of Illinois Co-Op grant as a carrot for businesses to become involved with their programs as an intern or co-op placement site for L&C students. Under the program, the college is able to offer an employer a 50% reimbursement of intern or co-op wages. The goal of the program is to keep graduates in Illinois.
- The colleges that take part in business site selection processes in tandem with government officials, chambers of commerce, and economic development boards report that the site selection process is an important way to meet new business partners, and that they are valuable partners to: “they recognize that the number-one thing that companies moving into an area are looking for is a good supply of competent workers. You can have everything else in the world, that there’re all kinds of incentives around. But if they can’t be sure they’re going to have workers to fill the jobs, they’re not interested in importing workers from someplace else.” (KCTCS)

Discovery

Discovery is the process of engaging with businesses to understand their workforce challenges and causes of those challenges. Interviewees were asked to describe how they work with businesses to surface and assess needs. Colleges discussed whom they included in the process, relevant tools, and keys to surfacing root causes of workforce problems.

Generally, colleges did not have formal tools or scripts to guide the discovery process with businesses. All of the schools emphasized the importance of active listening. A few anecdotes are listed below:

- Attendees and agendas for first meetings vary by school and program. For schools with non-credit programs, a representative from the Workforce division and an instructor usually attend the first discovery meeting with business partners. For colleges with for-credit programs, a Dean and an instructor often attend a first meeting. The agenda of the meeting depends on the particular business’ needs.
- All MRTDL colleges who discussed their hiring process for business engagement staff look for similar traits when reviewing candidates: good communication skills, work history and network in the industry they will be working with, and sales experience are all cited by colleges as priority skillsets for this role.
- While most colleges do not report having formal tools or protocols to guide the discovery process with a business partner, KCTCS puts staff through a professional sales training to help them

identify company needs. This program was developed for all of the colleges across Kentucky. All colleges emphasized the importance of active listening and asking good questions.

- All colleges report that businesses are generally helpful and open during the discovery process. Businesses readily engage in a variety of discussions around skills gaps, hiring forecasts, and opportunities to collaborate on internships or co-ops. However, some colleges report that certain sensitive data is shared less readily. For example, details on turnover rates, productivity, and accidents are all less readily shared. Colleges are careful not to discuss information in front of their business partners' competition, and report businesses more readily sharing sensitive information with them the longer and deeper their relationship history with a particular partner is. No colleges reported the lack of access to data to be a hindrance in assessing employer needs.
- Southwest has a unique relationship with their local Workforce Development Board (WDB), which enables them to access turnover rates and access employer surveys with information on hard to fill positions, wages, and information on company culture for companies which complete the WDB's employer surveys.
- When preparing to start a program, STLCC organizes what they call a TechScan, which is a business advisory committee process that validates the information from Burning Glass and other LMI research. The first meeting held during the TechScan consists of high-level executives. These executives then identify experts within the company to provide details about the positions for which the company is hiring or training. The TechScan progress is culminated in a DACUM process, held by the college, with the identified experts and a trained facilitator. Typically, this is a full-day session in which the participants discuss topics including occupational skills, workplace technologies, general knowledge, and other abilities needed to succeed in the identified positions.

Solution Development

Solution development is the process for developing customized solutions for the business needs identified during the discovery process. Interviewees were asked to describe the types of solutions available at their institution. These include a variety of existing or customized training programs, serving as a hiring source for qualified candidates, and coaching or consulting by expert community college staff. While training is the most common solution that colleges provide to business problems, several other creative solutions were discussed. In addition, colleges discussed best practices for the process of solution development used at their institution. Anecdotes on solution development are below:

- Colleges emphasized the importance of developing quality solutions quickly, avoiding slow bureaucratic processes. This means moving at the speed of business and keeping in mind the business partners' end goals when developing a solution. Delgado noted that they consider themselves a 24/7 operation and prioritizes quick responses and flexible solutions, crafted at the pace of business.
- MSCST leverages their workforce board, the Department of Employment and Economic Development (DEED), which is co-located with MSCST's Winona campus, in their service to businesses. DEED provides a wide array of business services, including licensing, financing, hiring, export and trade assistance and training, and it works closely with MSCST to involve the college whenever possible. This enables the college to focus on their strengths in business engagement (delivering high-quality training). DEED acts as an intermediary, often taking on responsibilities that a business engagement professional at another college may spend time doing.
- Each college has a unique array of solutions that are available to businesses. For example:

- STLCC has an expansive array of business services. In addition to contract training, the school offers: strategic consulting, leadership development, lean and six-sigma training, and a huge variety of seminars for business leaders covering everything from emotional intelligence to talent retention to project management. This diverse array of solutions provides the college more ways of connecting to business partners and deepens relationships with businesses.
- Hinds has an exceptional relationship with KLLM in which the college provides on-site registration, screening, training, and support services to KLLM trucking employees. Students receive credit hours for participation, and KLLM provides a \$4,000 scholarship to each student to cover the cost of training. For experienced drivers, Hinds is offering an owner-operator course. This program effectively solves for KLLM pain points in sourcing, internal worker effectiveness, internal advancement, and succession planning. Dedicated retention specialists provide case management assistance to drivers while they are on the road and have helped to cut turnover rates in half.

Performance Management

Performance management is the process by which colleges manage their ongoing relationships with business partners. Interviewees were asked to reflect on how they maintain and grow partnerships over time. Colleges discussed follow-up procedures with businesses and former students after a program ends and strategies for continued business engagement. Notes from conversations on performance management are distilled below:

- Generally, colleges assess their own performance in work with business partners by continued engagement with and contributions from those partners. Colleges assume that businesses that continue to participate in advisory committee meetings, engage in internship or co-op programs, and contribute donations of time or materials are happy with the service they are providing.
- When asked how to keep employer advisory councils engaged, colleges emphasized the importance of valuing employers' time. STLCC specified several specific ways it recognizes the value of its employers' time, including: always providing food at meetings, keeping meetings short, focused, and on-point, and recognizing their employer partners on their website, in the blog, and in e-mail blasts.
- Most colleges conduct some sort of program evaluation for customized training programs. Typically, colleges solicit employer feedback for for-credit programs informally or at advisory council meetings.

Contributions of Businesses

All MRTDL colleges indicate that they prioritize employer input in the design and implementation of their programs. However, visions for the form and function of partnerships vary by college and program. Colleges indicate that several factors are important in determining the nature of employer partnerships.

- The maturity of the relationship is related to the depth of employer contributions. Interviewees indicate that employers that derive the most value from engaging with the college tend to engage more deeply and for longer duration. Several programs were principally developed under the grant and had to build partnerships from the ground up. Other programs pre-dated the grant and had established industry relationships, mostly in the form of advisory councils. Within the set of pre-existing programs, partnership engagement has varying forms and functions.

- The geographic location of schools in relation to industry affects the nature of employer engagement. Specifically, deeper engagement tends to occur with businesses that are located close to the college. Colleges in more rural areas have less of a choice of employer with which to engage.
- The background of MRTDL project staff guides certain aspects of employer partnerships. Project Coordinators with experience in industry or employer outreach are better equipped to connect with business leaders, set meaningful agendas, and structure sustainable relationships. Likewise, instructors familiar with local industry more prepared to engage with employer partners, and be responsive to their needs. Informed equipment purchases, curricula in-tune with industry demand, and job referrals for students typically occur more frequently when instructors have experience working for (or with) local industry.

National Network of Sector Partners (NNSP), an initiative of the Insight Center of Community Economic Development, was brought on as a technical service provider to assist MRTDL colleges in developing sector partnerships. NNSP delivered training on sector strategies to MRTDL colleges and provided assistance in developing action plans to guide implementation of their sector strategies. In guiding colleges in the MRTDL Consortium to develop their individual sector strategies, NNSP focused on helping them build three core capacities essential to the sector approach. Figure 1 below contains an excerpt from NNSP's 2014 year-end report describing the three core capacities:

NNSP's Core Capacities Essential to Sector Partnerships

- Strong employer involvement, including:
 - As customers
 - In planning, governance, and oversight
 - In service delivery
 - In systems change
 - In supporting the sector initiative
- Effective partnerships, whose purposes include:
 - Providing accurate industry, worker, and job-seeker assessments, and other information
 - Providing high-quality services that respond to sector employers' and workers' needs, and adapting them in response to changes in sector initiative strategy
 - Bringing about change in institutions, policy and industry practice; implementing practices to make systems changes that support sector initiative strategies o Seeking and contributing resources (funding; in-kind, staff)
 - Helping analyze progress and celebrating success
 - Collaborating on data-driven learning and decisions
- Intermediary roles, including:
 - Maintaining strong relationships with employers
 - Maintaining deep understanding of participants
 - Ensuring data-driven decision-making

Description and Roles of Employer Partners

Colleges were asked to describe the evolution of employer relationships under MRTDL. Many MRTDL colleges have organized employer partnerships based on industry clusters. These relationships are often formalized in advisory councils for academic programs.

The structures of employer partnerships or advisory committees vary by college and program. While not all programs have a formal advisory council, each program has at least one employer partner. (For the purposes of the evaluation, an advisory council is defined as a group of at least three industry representatives with regularly scheduled meetings, who convene to improve the content or structure of a program or programs).

Typically, the responsibilities for cultivating employer relationships are shared between project coordinators, instructors, and deans. It should be noted that the range of staff time dedicated to MRTDL varies dramatically by college. For example, Hinds has only one MRTDL-funded employee while Southwest has four. A few anecdotes on staff roles and the structures are included below:

- STLC hired a Business Engagement Manager to focus on employer partnership development. Mid-South has undergone a budget modification to bring on a Business Engagement Manager, but had not yet hired that individual at the time of the interview.
- JWCC collects and stores information about employer needs in their database.
- Hinds limits their formal meetings for their marine transportation employer partners to once or twice a year, but has frequent one-off contact to keep in-tune with their needs.
- Southwest MRTDL staff was hired 8 to 14 months after grant award. Due to their late start, they have focused their efforts on staffing and launching MRTDL programs and have had less time to focus on external partner engagement.

Roles of Employer Partners

Employer roles in grant programs fell into two categories: advising or program delivery support. Themes are summarized below.

Advising

Employer roles during the grant's planning stage differed based on each college's scope of work and the extent to which the college had a pre-existing history with the employer. For MRTDL programs undergoing renovations and/or purchasing equipment, many employer partners were consulted to ensure that equipment and renovations specifications were in-keeping with industry standards. Colleges also engaged employer partners on writing and updating program curricula. The level of engagement in curriculum development varies by partner and program, and depends largely on program history. For programs existing prior to the grant, employers reviewed and revised existing curricula. In the case of new program development, employers collaborated to write a new curriculum. A few illustrative points pulled from conversations with interviewees are listed below:

- At most colleges, employer advisory councils meet regularly and have the opportunity to review any tweaks or changes to curricula. In the case of new curricula, colleges received feedback from employer partners.
- JWCC partner DOT Foods encouraged JWCC's 2 + 2 articulation agreement with Western Illinois University. The agreement enables students to complete a Bachelor's degree in two years after the completion of their Associates.

- Hinds worked closely with employer partners and training contractors to tailor a standard curriculum training program to fit employer needs for both its CDL and Deckhand training programs.
- Employer partners in WKY's marine transportation program pay tuition for the students. Employers also cover tuition for Hinds' Trucking program for those students who drive six months or more with the company after receiving their license.
- Delgado conducts company needs assessments to help set needs assessments to help set training schedules.
- JWCC met with employer partners before even deciding to apply for MRTDL grant funds to discuss employer needs and which grants JWCC would apply for.

Program Delivery Support

Many employers were involved in supporting the delivery of programs. Roles have included the referral of incumbent workers for training, ongoing curriculum review, student site visits, internships, and the provision of instructors, equipment, or space for training. A few noted examples of employer contributions to program delivery are listed below:

- Delgado delivers on-site incumbent worker training to marine transportation employer partners.
- JWCC has planned an internship program in partnership with their Supply Chain/ Logistics employer partners. The internships are not running yet but are expected to run within the next year. L&C has also incorporated internships into their PTech, Welding, and Automotive programs. Southwest has an internship program for their Industrial Technology program.
- MSCST received six diesel engines and several alternators as a donation from their Automotive program employer partners. KCTCS received a marine diesel engine donation from an employer partner worth \$40k.
- JWCC employer partners set up industry tours and sent industry speakers for their Aviation/Avionics and Logistics programs.
- No schools reported difficulties finding jobs for program graduates.

In general, programs that know where they fit as a solution provider in a business' or sector's workforce strategy noted stronger business engagement. Also, programs that offered more than just a source of candidates tended to have stronger business engagement.

Workforce Investment Board and Other Partnerships

In addition to employers, MRTDL colleges had other required or optional partners under TAACCCT. Colleges were required as a condition of the grant to partner with Workforce Investment Boards. It was the intent of the grant that local Workforce Investment Boards assist colleges by: enhancing recruitment of TAA eligible workers; ensuring that the design of programs and services meet the needs of TAA workers, and contributing TAA and Worker and WIA program services. Colleges report different levels of engagement from WIBs, often depending on geographic location, and relationship history.

The grant was flexible in allowing colleges to select additional partners that add value to the initiative. A few anecdotes on WIB and other partnerships from colleges are included below:

- Five of nine colleges reported having strong WIB relationships including participant referral, and sharing of support services or funding.

- Delgado had trouble engaging their local WIB due to the restrictions maritime employers place on hiring; interviewees noted that age restrictions, clean criminal history requirements, and drug screenings eliminate referral options for many WIB clients.
- JWCC developed a bridge class into their logistics program which served WIB clients. JWCC estimated that 25% of welding and machining students receive tuition assistance from the WIB.
- L&C employees used real-time labor market information (LMI) to present job information to attendees at WIB orientations. L&C also had a unique data sharing system with their WIB which enabled them to track WIB participants through L&C program completion.
- MSCTC and Mid-South were physically co-located with their WIB. MSCTC mentioned that their WIB helped pre-screen students to determine goodness of fit for programs.
- STLCC was working to be recognized as the key workforce development partner in an emerging TDL sector initiative brought together by the chamber.

Implementation of New Models to Support Students

New Growth interviewed MRTDL project staff on their progress implementing new models included in the proposal. Many colleges cited evidence-based approaches included in strategy 3. Relevant anecdotes are included below:

- Prior Learning Assessment: The consortium contracted with technical assistance provider CAEL to assist in implementing a robust and systemic approach to awarding credit for prior learning. CAEL hosted several webinars focused on best practices in PLA and provided one-on-one coaching to several consortium colleges. Project Coordinators had positive reviews of their interactions with CAEL, but varying responses to the utility of the webinars depending on their prior experience with PLA best practices, and the local grant priorities at their institutions. PLA was also a focus of Innovation Team 3 (INT3). To assist INT3 in their work, CAEL provided a report on Methods of Assessing Prior Learning in the TDL sector. Methods discussed include Military Experience to Credit, Corporate Training for Credit, and Industry Certifications for Credit, as well as inclusion of Certifications or Licenses as Credit as a component of “stackable credentials” along a career pathway. Several, but not all, schools worked to improve PLA policies through the grant. Noted below are highlights from interviews on PLA utilization under MRTDL.
 - L&C focused on working with veterans via a PLA portfolio approach.
 - Mid-South leveraged a PLA system developed under their TAACCCT 2 grant to cover their MRTDL programs.
 - West KY integrated their existing PLA system into their MRTDL career pathways and added assessments within logistics and marine programs to award certifications which can be translated into credit.
- Developmental Education Bridge: A Developmental Education Bridge was not being implemented at every college (Delgado, Hinds, and SWTN did not participate in this approach). Each developmental education bridge model was unique. Three schools (Mid-South, West KY, JWCC) had done previous work on bridge programs on an Accelerating Opportunity grant offered by Jobs for the Future. L&C incorporated a pre-existing program called ICAPS into MRTDL programs. SLCC leveraged its existing Adult Learning Academy model, and created contextualized TDL programs for MRTDL students.
- Advisement or counseling strategies: The MRTDL proposal did not cite specific models of new advisement or counseling strategies, but rather emphasized collaboration and sharing and leveraging of best practices developed by consortium members. While several schools leveraged counseling strategies developed under other grants, cross-pollination of best practices did not occur under the grant. Two colleges mentioned incorporated a more acute focus on career coaching under MRTDL. For example, JWCC hired a career navigator to work with students on career planning. In addition:

- Hinds deployed several employees housed at a large business partner's location to provide job retention services to program participants. This is a noteworthy practice that significantly helped bring the company's turnover rate down.
- SWTN incorporated Kuder, an online career planning assessment, into their advising process, and worked to create an individualized career plan for each participant.
- Technology-enabled learning: The most common usages of grant funds for technology-enabled learning were for the purchase of new technical equipment and the incorporation of online coursework.
 - JWCC, L&C, Mid-South, and West KY developed or improved online coursework for MRTDL programs.
 - L&C incorporated Apple TV into their Automotive program.
 - Mid-South, L&C, SLCC, and Hinds purchased truck driving simulators to include in CDL curriculum.
 - SLCC integrated Blackboard into their non-credit MRTDL programs.
 - West KY expanded Learn on Demand (a modularized online coursework platform) for use in MRTDL programs, and incorporated animation and 3D programming into technical courses.
- Work-based learning: The expansion and development of new work-based learning opportunities was a consortium-wide priority. Internships, co-ops, and job shadowing opportunities were highlighted as possible work-based learning strategies in the proposal. All colleges pursued efforts to establish and strengthen partnerships with local businesses around new internships and project-based learning opportunities, several strategies are specified below:
 - Hinds, JWCC, and L&C incorporated new internships into their MRTDL programs
 - SLCC implemented field trips into both aviation maintenance programs
 - Mid-South coordinated plant tours for participants with a freight liner employer partner
- Articulation and transfer agreements: Two articulation agreements emerged under the grant. JWCC developed an articulation agreement with Western Illinois University for their Logistics program which is "all but signed." West KY put a new articulation agreement in place with Murray State University for their Logistics program, and are in discussion with SIU-Carbondale for an articulation of credit for their Marine and Logistics programs. West KY has also created a model of credit articulation which allows students from other institutions to take basic courses at home institutions, and then transfer to West KY's online courses in marine programs to complete degree requirements and graduate from West KY.
- Innovation teams: Innovation teams were cross-college work teams intended to create a venue for collaboration on key topics within the project. Four teams were created in the grant proposal (1) Employer and stakeholder engagement, (2) Continuous Improvement, (3) Stacked and latticed credentials, (4) Curriculum/ programs design and use of enabling technologies. Those interviewed indicated a favorable opinion of the idea of Innovation Teams, but wished for greater clarity regarding the goals for each team. Innovation team members were not compensated for participation, which may have contributed to a perceived shortage of focused participation. There was general consensus among those interviewed that teams were "hit and miss," and "lacking direction."

Consortium Climate

The MRTDL Consortium continually monitored for effectiveness and ways in which the Consortium can be strengthened and improved using an ongoing tool called a Climate Survey. The University of Illinois (a sub-contracted partner in the third-party evaluation) conducted a climate survey once each semester, usually prior to the bi-annual consortium meeting. Survey respondents were points of contact and key project

personnel at each college involved in the MRTDL. Survey questions focused on understanding consortium member's vision and experience in the consortium. Survey questions were developed to address operational efficiency and effectiveness and to identify ways to strengthen and improve the Consortium. The Baseline Consortium Climate Study Survey was conducted in March 2014 with repeat measure surveys twice per year until the end of the performance period.

Survey results were shared with the Consortium members, program, and project personnel regularly at bi-annual meetings and with the Executive Oversight Committee (EOC) at an annual meeting.

The consortium consistently improved functionality and operated at a high level with an overall mean score of 4.18 out of 5.00 in a summary measure of consortium effectiveness. Overall, Consortium members saw the benefits of Consortium involvement and continued to gain a clearer picture of individual college's roles and responsibilities within the Consortium as the grant went on. Individual members of the Consortium exhibited a high level of dedication to project success and agreed that other members of the Consortium wanted the project to succeed. By working together, Consortium members stated they identified resources and programs to train a skilled workforce, stimulate economic development and increase the quality of life projects along the Mississippi River. Expectations for future work include advancing the interests of transportation, distribution and logistics individually and collectively for member colleges and communities; taking advantage of opportunities for networking, collaboration and funding; and development of collaborative projects.

Is the MRTDL Consortium Operating Effectively?

Survey respondents agreed that the Consortium had established reasonable goals and that Consortium members were aligned in understanding of project objectives. Respondents reported positive perceptions of the MRTDL Consortium and recognize the uniqueness of what is being undertaken. A distinctive measure of success was that the Consortium was seeking sustainability and continues to discuss measures for improvement.

Areas where the Consortium can continue to improve focus on sustainability and include challenges such as, the need for grant writers for future grant opportunities, how Consortium membership will be managed, what new types of joint grants can be sought, and how to sustain the Consortium vision for long-term success.

Recommendations from members for improvement include:

- *Make vision explicit by discussing ideas such as what is the vision for Consortium, how is vision implemented, and who is the "keeper of the vision" beyond MRTDL? How is the Consortium managed? Organized? Who within the College is the person who manages relationship with Consortium?*
- *Utilize unique aspect of the Mississippi River Corridor (similar to an Interstate Highway) to further Consortium connections. The Mississippi Delta Region is considered an untapped resource. Leadership work to expand network to include highways, AACC, DOT, Army Corps of Engineers, etc...*
- *Colleges are keen for program sustainability and want opportunities to discuss what is next for the programs established under MRTDL.*

- *Need to facilitate conversation about next steps, examine new potential for partnering and connecting among Colleges with Consortium. Need to identify continuing threads of connection between Colleges in Consortium. Consider additional Colleges for involvement.*
- *Need greater understanding of long-term benefits of Consortium membership, Consortium management and organizational structure, and business model for Consortium.*
- *Personnel changes at executive and program level have created knowledge and communication gaps. It would be useful to have explicit roles and responsibilities for each level. Managing turnover, preserving institutional knowledge, and processes for bringing new people into the collaboration should be considered.*
- *Chancellors and presidents have variable knowledge and may know very little about the actual MRTDL project. To bridge this gap, a mid-level management oversight committee would be useful to figure out next steps for funding and continuation of the Consortium.*

Review of Participant Pipeline

This section describes how grant participants were recruited and screened before entering their programs of study, provided academic supports, and transitioned into and retained in employment. On the whole, colleges in the consortium were relying on standard programs and services that were already offered to assist students throughout their education. There was little emphasis on enhancing college services outside of curriculum development or improvement including equipment and renovations. The elements described below were not grant deliverables as described in the Statement of Work. This inquiry was intended to capture how colleges were tapping into existing programs and services to support the grant, and if any factors in the student pipeline affected the outcomes measures.

- **Recruitment:** Recruiting efforts and strategies varied among colleges and include media exposure, leveraging partner networks, targeted outreach, and information sessions. Employer and WIB partners were instrumental to recruitment efforts at many colleges. Delgado and Hinds employer partners hired participants before enrollment making their participants newly incumbent workers at the time of grant participation. JWCC made efforts to have a media presence including TV/Radio, and held informational sessions. L&C sent faculty members to high schools for outreach and collaborated with their local WIB on targeted WIA and veteran recruitment. SLCC partnered with several local organizations on recruitment including a contractual relationship with Family Work Centers of America. SWTN partnered with WIN (their local WIB), launched a social media campaign, and reached out to local churches, nonprofits, and businesses to add breadth to recruitment efforts. WKCTC recruited nationally for its online programs via advertising in industry publications, attending tradeshows. They also received many incumbent workers from employer partners.
- **Screening:** Several colleges with non-credit programs require a screen prior to program enrollment to ensure hire-ability of participants upon completion. Screens vary by college.
 - Delgado and Hinds employer partners screen those participants that are conditionally hired upon completion prior to enrollment.
 - L&C truck driving participants must get a physical, pass a drug test, and be 18 prior to program enrollment.
 - SLCC required background checks for Aviation and background checks, moving vehicle reports, physicals, and drug tests for Truck Driving.

- Student support services: Nearly all colleges did not indicate any new student support services being implemented or planned. One exception was JWCC, which hired a career navigator. Grant participants were eligible to receive student services offered by colleges, and were often referred to services by a grant-funded counselor or advisor (where applicable).
- Transition to work: All colleges indicated they worked with employer partners to enhance curricula that will deliver high-demand skills. The belief was that developing skill sets that align with business needs would enable participants to obtain jobs or increase earnings. JWCC brought employers in for class visits, and took students on tours of factories. SWTN required participants to develop an individual employment plan with counselors early in their programs. In addition, hiring recommendations from faculty to employer partners helped connect students to jobs.
- Job retention: There were few job retention services implemented in the consortium, nor were they offered at any of the colleges in the standard array of services available to students. The prevailing belief was that preparing individuals trained with the employer-demanded skills will drive job retention. The notable exception is Hinds, which hired retention coordinators that were stationed at a major employer partner's location to focus on helping to reduce job turnover on truck drivers.

Implementation Evaluation Limitations and Topics of Future Inquiry

The findings presented in this implementation evaluation report are based on interviews and surveys of college staff and document review. While all interviews were conducted in good faith and information was cross referenced to documentation or consortium leadership, interviews and surveys are nonetheless given by individuals with differing opinions and depths of knowledge.

Site visits were conducted to all sites and included staff interviews, student focus groups, and tours of grant-affected facilities. In addition to these site visits, New Growth conducted a final interview with Project Coordinators at each college on innovations arising from the MRTDL project, sustainability of the programs, and the consortium.

Impact Evaluation

Impact Evaluation Summary

The primary goal of the Impact Analysis portion of the evaluation is to determine the overall effect of the TAACCCT Round 3 grant on students who are involved in grant-affected activities at each institution. This goal is achieved by collecting and analyzing data for each grant-affected program of the colleges within the consortium. In addition, each grant-affected program is compared to a similar comparison program, which runs in parallel to the grant-affected program during the grant period. Comparability of the comparison program to the grant program is based on similarities in program structure (such as department, credit/non-credit status, and program size and duration) and student demographics (such as race, gender, and age). From this data, a quasi-experimental evaluation has been constructed. The data included in this report has been collected based on research questions referenced in the methodologies portion of this report. The research questions were based on a combination of previously established Department of Labor outcomes, as well as strategies identified by the consortium in the MRTDL Statement of Work (SOW).

Impact Analysis Limitations

It is important to understand the caveats and limitations for the evaluation, such as evaluation design, sample size concerns, and data gap possibilities. Below is a list of caveats that should be acknowledged:

- A random-assignment research design is impractical for the grant-affected programs. MRTDL is comprised of open-access community colleges with limited resources to serve students in targeted programs. Randomly assigning those students to different systems of programs and services is resource-intensive and would hinder the success of the programs. Therefore, a quasi-experimental evaluation has been chosen for this evaluation.
- Small sample sizes may result for a select few programs, especially when evaluating more restrictive grant outcomes, such as post-completion grant outcomes #7 and #8, which only relate to non-incumbent program completers.
- Gaps in the data due to missing elements from college databases, incomplete Participant Intake Forms, or mismatched data between data templates are probable throughout the evaluation. Efforts have been made to fill the gaps through using more than one data source for information, where possible.

Consortium Outcomes Goals

At the start of the grant, the DOL required the consortium to project outcomes for the duration of the grant. These projections are referenced during the yearly APR submission. Comparing projections to actual outcomes may aid in understanding and adjusting current practices (such as recruitment or retention procedures).

Table 1 is a year-by-year breakdown of the MRTDL outcomes measures projections.

Table 1: MRTDL Outcomes Measures Projections

Outcome Measure		Targets for All Participants	
1	Total Unique Participants Served	Year 1: 984	Total: 4276
		Year 2: 1574	
		Year 3: 1718	
2	Total Number of Participants Completing a TAACCCT-Funded Program of Study	Year 1: 683	Total: 3136
		Year 2: 1167	

		Year 3: 1286	
3	Total Number of Participants Still Retained in Their Program of Study or other TAACCCT-Funded Program	Year 1: 198	Total: 1117
		Year 2: 447	
		Year 3: 472	
4	Total Number of Participants Completing Credit Hours	Year 1: 371	Total: 2082
		Year 2: 764	
		Year 3: 947	
5	Total Number of Participants Earning Credentials	Year 1: 679	Total: 2937
		Year 2: 1050	
		Year 3: 1208	
6	Total Number of Participants Enrolled in Further Education After TAACCCT-Funded Program of Study Completion	Year 1: 49	Total: 305
		Year 2: 94	
		Year 3: 162	
7	Total Number of Participants Employed After TAACCCT-Funded Program of Study Completion	Year 1: 267	Total: 1592
		Year 2: 465	
		Year 3: 561	
		Year 4: 299	
8	Total Number of Participants Retained in Employment After Program of Study Completion	Year 1: 188	Total: 1121
		Year 2: 319	
		Year 3: 383	
		Year 4: 231	
9	Total Number of Those Participants Employed at Enrollment Who Received a Wage Increase Post-Enrollment	Year 1: 447	Total: 1822
		Year 2: 593	
		Year 3: 647	
		Year 4: 135	

Impact Evaluation Data Collection Procedure

The majority of data is captured through existing systems. First, each MRTDL college's database includes student demographic, enrollment, course, and program data in the form of One-Time (OT) and On-Going (OG) data forms. The OT form collects information that does not change over time, such as name, race, and gender. As the name implies, the OT form is only collected once per student. The OG form collects information that changes from semester to semester, and is submitted for each student every semester they are enrolled. Second, quarterly earnings data is collected for each participant through each state's employment data system. Two primary data sources are also being used in the evaluation as a mechanism to capture any missing data elements. Participant Intake forms (PIF) are given to each participant, which capture any key baseline data elements that are not found in a college's database. In addition, post-completion surveys are distributed to each participant who completes a grant-affected program. Specific data elements that are not expected to be available from other sources, which are gathered from the survey are: occupation of employment, intensity of employment, hourly wage, and presence of benefits. The survey also allows for additional visibility/confirmation of data elements gathered from institutional sources.

Data was collected from each source as it became available on a rolling basis. Colleges collected data on participant and comparison individuals two times per year – once in the fall reflecting the previous

summer and spring terms, once in the spring reflecting the previous fall term. State wage data was collected as needed and encompass the quarters that are available from the state agency at the time of the data pull.

Impact Evaluation Data Analysis

The following portion of the report describes the data for each college for the duration of the grant. Each college has a table that includes descriptive statistics, as well as a chart which breaks down the credential information of the participant and comparison group by credential type. Furthermore, consortium-wide data is provided below.

Consortium Summary

The starting point of the impact evaluation in the impact research questions, which are based on the DOL reporting requirements for the annual performance report. Given the limitations in data availability, some questions were answerable to a greater or lesser extent. Given that implementation strategies, programs, and details were so varied from college to college, there is no attempt to present an overall consortium comparison of participants and comparisons. However, comparison analyses are don't for each college and program.

Overall, many colleges were able to accomplish gains in enrollment numbers over the course of the grant period. Several colleges accomplished increases in diversity in terms of gender, race, incumbent workers, or Pell-eligible students. Generally, completion rates were similar or out-performed comparison group completion rates. Employment outcomes were not subject to comparison analyses due to availability of employment data for comparison group members.

Here are direct answers, at the consortium-level, to the questions posed in the evaluation plan. Of note, due to gaps in data, especially employment data, many of the outcome numbers are lower than might be expected.

1. How many unique participants/comparisons have been served?
In total, 7465 individuals were served by the grant.
2. How many individuals have completed a grant/comparison program of study?
 - a. Of those, how many are incumbent workers?
Over the course of the grant, 4804 participants completed a grant-affected program of study (3418 of whom were incumbent workers). The completion rate for participants was generally similar to, or greater than, the completion rate for comparison individuals on a program-by-program basis.
3. How many individuals are still retained in their program of study (or other grant-funded program)?
489 participants were still continuing with their grant-affected program of study at the completion of the grant.
4. How many individuals are retained in other education programs?
283 participants were retained in other education programs.
5. How many credit hours have been completed?
 - a. How many students have completed credit hours?
In total, 79,000 credit hours were completed by study participants. Other participants engaged in non-credit programs.
6. How many credentials have been earned by participants/ comparisons?
 - a. How many students have earned certificates (<1 year)?
 - b. How many students have earned certificates (>1 year)?
 - c. How many students have earned degrees?

Participants earned 8,059 certificates or degrees over the course of the grant. 4,507 students earned short-term certificates, 231 earned long-term certificates, and 176 earned degrees.

7. How many students are pursuing further education after program of study completion?
Of those who completed a grant-affected program of study, 87 continued on to further education after completion. This number may change by the submission of the final Annual Performance Report.
8. How many participants/comparisons are employed after program of study completion?
Of those who were non-incumbent workers at the time of entering, 337 participants who completed a grant-affected program gained employment in the semester after completion. This number may change by the submission of the final Annual Performance Report.
9. How many participants/ comparisons are retained in employment for three quarters after program of study completion?
Of those 337 employed, 235 were retained in employment through quarters two and three after completion. This number may change by the submission of the final Annual Performance Report.
10. What are the earnings of participants/ comparisons relative to before enrollment?
 - a. How many of those employed at enrollment received a wage increase post-enrollment?
Of those who were employed at study intake, 1039 earned a wage increase in their employment. This number may change by the submission of the final Annual Performance Report.

Additional wage and further education information will continue to be collected until the November 2017 Annual Performance Report is due. There are limitations to the data obtained through state wage data systems that tend to artificially depress the numbers.:

- A data lag of about two quarters (with most state wage systems).
- Data may not exist for persons who are self-employed, or who work at a job that does not report Unemployment Insurance.
- Data may be required to be aggregated for some states, adding a level of complexity to the data analysis.
- Students who do not provide social security numbers will not appear in the state wage data.

College-by-college results

The following analyses give college-by-college and program-by-program data for all demographics and outcomes that are available. Because the most data is available for answering the research question about completion rates, that is the question where the analysis goes the deepest. In addition to raw data, a statistical analysis of completion rates and an estimate of the program effect on completion rate is calculated.

Detailed descriptions of each outcome can be found in the Outcomes/Impact Study Design portion of this report.

Arkansas State University Mid-South

The participant group for ASU-Mid-South includes Aviation Maintenance Technician Certificates leading to an AAS in General Technology, as well as Diesel Maintenance Technology – Marine Diesel Certificates leading to an AAS in General Technology. The comparison group includes Mechatronics Certificates leading to an AAS in General Technology.

The tables below provide details on the total number of individuals included in the analysis along with demographic characteristics. This information is provided for the college overall, and for each of its grant-affected programs, if appropriate. Additionally, data on outcomes is listed including program completions, credentials earned, credit hours completed, employed after program completion (if available), job retention three quarters after completion, incumbent worker completion, and incumbent worker wage increases (if available). Data is presented in terms of counts and rates where it makes sense.

Table 2: Arkansas State University Mid-South Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	215	215	29	29
Demographics				
Age	25 ± 7	215	28 ± 23	29
Female	8 (4%)	215	8 (28%)	29
White	119 (55%)	215	15 (52%)	29
Black	72 (33%)	215	13 (45%)	29
Other/More than One Race	24 (11%)	215	1 (3%)	29
Hispanic/Latino	11 (5%)	215	0 (0%)	29
Full-Time	143 (67%)	215	NA	NA
Part-Time	72 (33%)	215	NA	NA
Incumbent Worker	106 (49%)	215	14 (48%)	29
Eligible Veteran	66 (31%)	215	1 (3%)	29
Disabled	2 (1%)	215	0 (0%)	29
Pell Eligible	138 (64%)	215	20 (69%)	29
TAA Eligible	0 (0%)	215	0 (0%)	29
Outcomes				
Program Completers	39 (18%)	215	2 (7%)	29
Credentials Earned	190	215	2	29
Students Earning Certificates (<=1 year)	85 (40%)	215	0 (0%)	29
Students Earning Certificates (>1 year)	34 (16%)	215	0 (0%)	29
Students Earning Degrees	14 (7%)	215	2 (7%)	29
Time-to-Completion	125 ± 58	190	100 ± 0	2
Certificates (<=1 year)	123 ± 67	125	NA	NA
Certificates (>1 year)	133 ± 37	48	NA	NA
Degrees	122 ± 21	17	100 ± 0	2
Credit Hours Completed	4663 (87%)	215	426 (79%)	185
Employed After Program of Study Completion	5 (24%)	21	0 (0%)	2
Retained in Employment 3 Quarters After Completion	5 (100%)	5	NA	0
Incumbent Worker Completer	18 (46%)	39	2 (100%)	2
Wage Increase Post-Enrollment	43 (41%)	106	5 (36%)	14
Further Education after Program of Study Completion	NA	NA	NA	NA
Retained in Program of Study	24 (14%)	176	0 (0%)	27
Retained in Other Education Program	0 (0%)	176	0 (0%)	27

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 3: ASU-MS Completion Rates by Demographics

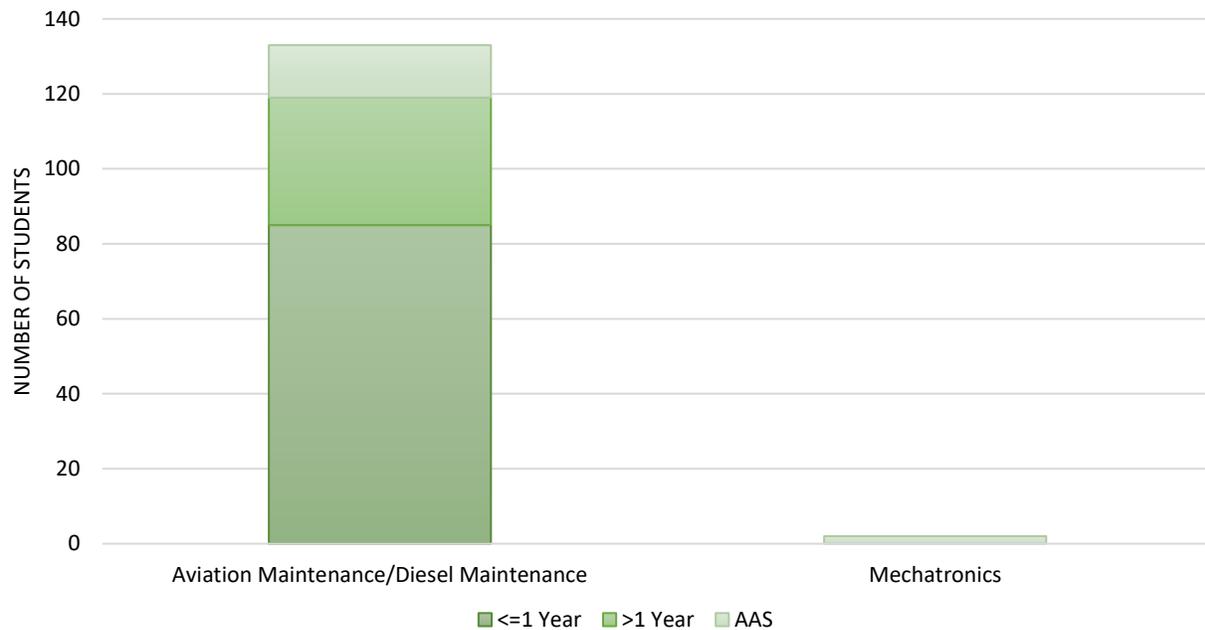
Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	14%	18%
Gender = Male	14%	19%
Gender = Female	12%	0%
Age < 24	ID	21%
Age >= 24		16%
Non-White	14%	18%
White	13%	18%
Less than high school education	ID	16%
At least high school education		20%
Full time	ID	15%
Part time		25%
Non-incumbent worker	0%	19%
Incumbent worker	29%	17%
Non-veteran	14%	26%
Veteran	0%	2%
Non-disabled	14%	18%
Disabled	ID	0%
Non-Pell grant eligible	11%	24%
Pell grant eligible	15%	15%
Non-TAA eligible	14%	18%
TAA eligible	ID	ID

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for ASU-MS

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 1.4 ($p=0.56$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, race, incumbency, veteran status, and Pell grant eligibility. The propensity score adjusted odds ratio is 2.9 ($p=0.08$).

Figure 1:Arkansas State University Mid-South Number of Students Earning Certificates by Program Group



A summary of findings is found in the table below:

The MRTDL project theorizes the grant intervention will promote improved program accessibility, completion, and post-completion employment. These outcomes are summarized below.		
<p>Accessibility:</p> <ul style="list-style-type: none"> • There is higher total enrollment for the participant group (215) vs. comparison group (29). • The participant group was slightly younger (25 vs. 28 years) and higher percent male (94% vs. 72%) than the comparison group. There was less Pell eligibility among participants (34%) than comparisons (61%). 	<p>Program Completion:</p> <ul style="list-style-type: none"> • 18 percent of participants completed a program by the end of the grant. • 190 credentials were earned over the course of the grant. 40% of credentials earned were short-term (1 year or less). 	<p>Post-completion Employment/Wage Increase:</p> <ul style="list-style-type: none"> • 41% of incumbent worker participants had an increase of earnings since enrollments compared to only 36% of comparison persons who are incumbent workers. • 5 program completers (24%) found employment, and all 5 retained employment for 3 quarters.

Delgado Community College

The participant group for DCC includes numerous short-term, non-credit Maritime certificates, including Deckhand, Tankerman, Apprentice Mate, Licensed Mariner, and Forklift Operator for Shipyard/Dock Personnel. The comparison group for DCC includes numerous short-term, non-credit certificates, ranging from Accredited Customer Service Representatives to NCCER Certifications.

The tables below provide details on the total number of individuals included in the analysis along with demographic characteristics. This information is provided for the college overall, and for each of its grant-affected programs, if appropriate. Additionally, data on outcomes is listed including program completions, credentials earned, credit hours completed, employed after program completion (if available), job retention three quarters after completion, incumbent worker completion, and incumbent worker wage increases (if available). Data is presented in terms of counts and rates where it makes sense.

Table 5: Delgado Community College Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	768	768	206	206
Demographics				
Age	30 ± 11	490	31 ± 11	152
Female	4 (1%)	768	18 (9%)	206
White	616 (82%)	751	38 (21%)	177
Black	97 (13%)	751	125 (71%)	177
Other/More than One Race	38 (5%)	751	14 (8%)	177
Hispanic/Latino	42 (5%)	767	24 (12%)	205
Full-Time	4 (1%)	768	NA	NA
Part-Time	629 (82%)	768	NA	NA
Incumbent Worker	685 (89%)	766	22 (11%)	206
Eligible Veteran	30 (4%)	766	NA	NA
Disabled	1 (0%)	767	NA	NA
Pell Eligible	3 (0%)	765	NA	NA
TAA Eligible	2 (0%)	768	NA	NA
Outcomes				
Program Completers	747 (97%)	768	168 (82%)	206
Credentials Earned	825	768	276	206
Students Earning Certificates (<=1 year)	747 (97%)	768	157 (76%)	206
Students Earning Certificates (>1 year)	NA	NA	NA	NA
Students Earning Degrees	NA	NA	NA	NA
Time-to-Completion	100 ± 0	748	100 ± 0	168
Certificates (<=1 year)	100 ± 0	748	100 ± 0	168
Certificates (>1 year)	NA	NA	NA	NA
Degrees	NA	NA	NA	NA
Credit Hours Completed	0 (0%)	768	0 (0%)	206
Employed After Program of Study Completion	0 (0%)	89	NA	NA
Retained in Employment 3 Quarters After Completion	NA	0	NA	NA
Incumbent Worker Completer	659 (88%)	747	0 (0%)	168
Wage Increase Post-Enrollment	310 (45%)	685	NA	NA
Further Education after Program of Study Completion	17 (19%)	89	NA	NA
Retained in Other Education Program	0 (0%)	20	0 (0%)	38

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 6: Delgado Completion Rates by Demographics

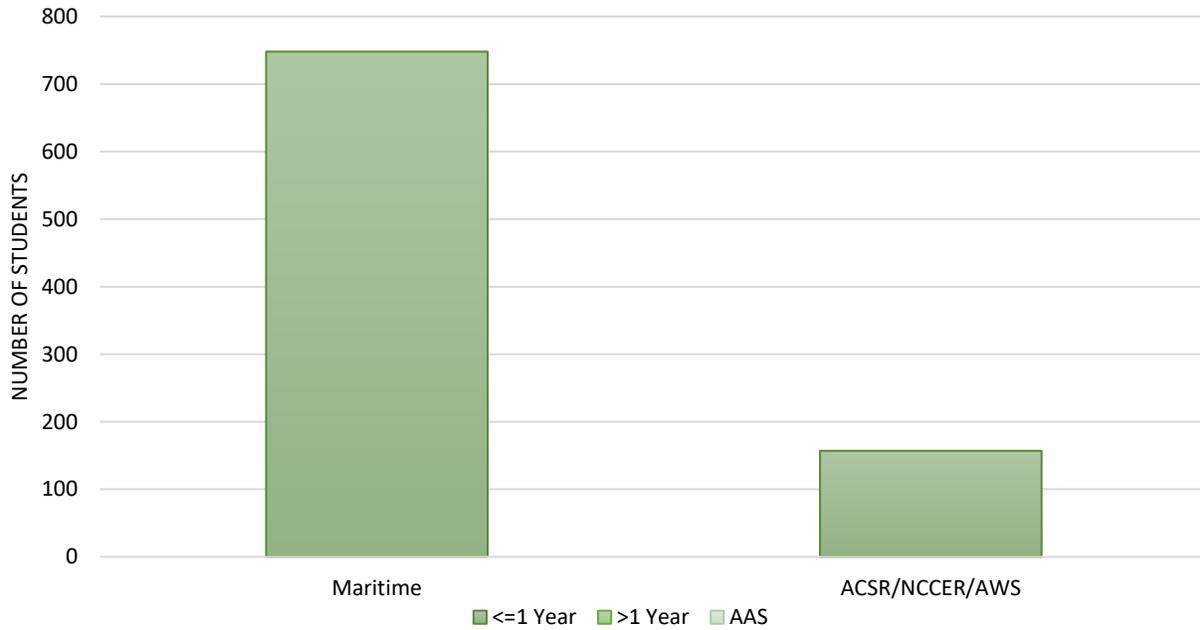
Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	79%	91%
Gender = Male	78%	91%
Gender = Female	83%	100%
Age < 27	82%	90%
Age >= 27	85%	93%
Non-White	75%	93%
White	95%	91%
Less than high school education	ID	ID
At least high school education		
Full time	ID	ID
Part time		
Non-incumbent worker	ID	100%
Incumbent worker	100%	90%
Non-veteran	ID	92%
Veteran		77%
Non-disabled	ID	91%
Disabled		0%
Non-Pell grant eligible	ID	91%
Pell grant eligible		67%
Non-TAA eligible	ID	91%
TAA eligible		100%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Delgado

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 2.8 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, and race. The propensity score adjusted odds ratio is 2.6 ($p < 0.01$).

Figure 7: Delgado Community College Number of Students Earning Certificates by Program Group



A summary of findings is found in the table below:

<p>The MRTDL project theorizes the grant intervention will promote improved program accessibility, completion, and post-completion employment. These outcomes are summarized below.</p>		
<p>Accessibility:</p> <ul style="list-style-type: none"> • There is higher total enrollment for the participant group (768) vs. comparison group (206). • The participant group is majority white (82%), while the comparison group is majority black (71%). 	<p>Program Completion:</p> <ul style="list-style-type: none"> • 97 percent of participants completed a program by the end of the grant. 88% of program completers were incumbent workers. • 825 credentials were earned over the course of the grant. 	<p>Post-completion Employment/Wage Increase:</p> <ul style="list-style-type: none"> • 45% of incumbent worker participants had an increase of earnings since enrollments. • 19% of non-incumbent completers went on to further education after program completion.

Hinds Community College

The participant group includes numerous short-term, non-credit programs in the Maritime field (such as Deckhand and Tankerman) and a short-term Certified Driver's License (CDL) career certificate. The comparison group includes a short-term Phlebotomy certificate of completion and a short-term Emergency Medical Technician (EMT) certification.

The tables below provide details on the total number of individuals included in the analysis along with demographic characteristics. This information is provided for the college overall, and for each of its grant-affected programs, if appropriate. Additionally, data on outcomes is listed including program completions, credentials earned, credit hours completed, employed after program completion (if available), job retention three quarters after completion, incumbent worker completion, and incumbent worker wage increases (if available). Data is presented in terms of counts and rates where it makes sense.

The table below details the demographics and grant outcomes for the participant and comparison groups for Hinds Community College.

Table 8: Hinds Community College Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	2644	2644	522	522
Demographics				
Age	31 ± 10	2638	29 ± 9	522
Female	295 (11%)	2617	351 (67%)	521
White	656 (26%)	2533	31 (6%)	520
Black	1323 (52%)	2533	69 (13%)	520
Other/More than One Race	554 (22%)	2533	420 (81%)	520
Hispanic/Latino	26 (1%)	2468	5 (1%)	510
Full-Time	NA	NA	NA	NA
Part-Time	NA	NA	NA	NA
Incumbent Worker	2644 (100%)	2644	0 (0%)	121
Eligible Veteran	5 (0%)	2644	0 (0%)	522
Disabled	11 (0%)	2644	9 (2%)	522
Pell Eligible	417 (81%)	518	100 (19%)	522
TAA Eligible	NA	NA	NA	NA
Outcomes				
Program Completers	1877 (71%)	2644	217 (42%)	522
Credentials Earned	3471	2644	254	522
Students Earning Certificates (<=1 year)	1924 (73%)	2644	148 (28%)	522
Students Earning Certificates (>1 year)	0 (0%)	2644	0 (0%)	522
Students Earning Degrees	0 (0%)	2644	0 (0%)	522
Time-to-Completion	104 ± 21	3471	106 ± 25	254
Certificates (<=1 year)	104 ± 21	254	106 ± 25	254
Certificates (>1 year)	NA	0	NA	0
Degrees	NA	0	NA	0
Credit Hours Completed	18378 (88%)	2644	1889 (80%)	522
Employed After Program of Study Completion	NA	0	NA	NA
Retained in Employment 3 Quarters After Completion	NA	NA	NA	NA
Incumbent Worker Completer	1876 (100%)	1877	0 (0%)	217
Wage Increase Post-Enrollment	841 (32%)	2644	NA	NA
Further Education after Program of Study Completion	0 (0%)	1877	NA	NA
Retained in Other Education Program	0 (0%)	767	268 (88%)	305

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 9: Hinds Completion Rates by Demographics

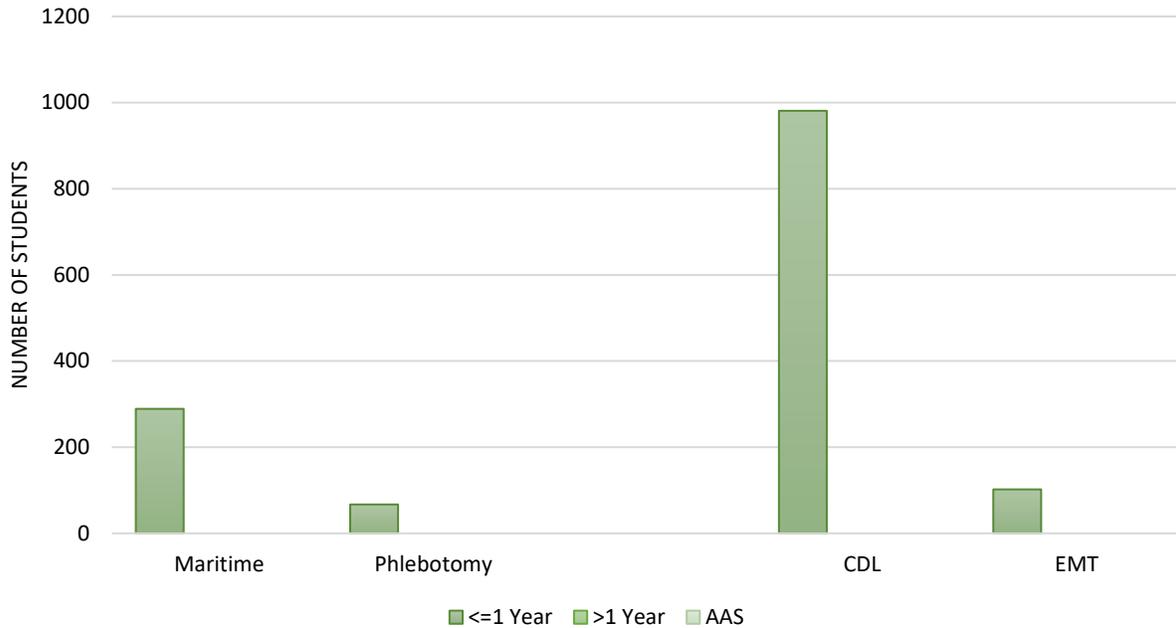
Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	47%	71%
Gender = Male	54%	72%
Gender = Female	43%	59%
Age < 28	49%	72%
Age >= 28	45%	70%
Non-White	38%	63%
White	60%	87%
Less than high school education	ID	ID
At least high school education		
Full time	ID	ID
Part time		
Non-incumbent worker	62%	ID
Incumbent worker	ID	71%
Non-veteran	ID	ID
Veteran		40%
Non-disabled	ID	ID
Disabled	44%	55%
Non-Pell grant eligible	60%	43%
Pell grant eligible	44%	66%
Non-TAA eligible	ID	ID
TAA eligible		

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Hinds

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 2.7 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, Pell grant eligibility, and incumbency. The propensity score adjusted odds ratio is 3.4 ($p < 0.01$).

Figure 10: Hinds Community College Number of Students Earning Certificates by Program Group



A summary of findings is found in the table below:

The MRTDL project theorizes the grant intervention will promote improved program accessibility, completion, and post-completion employment. These outcomes are summarized below.		
<p>Accessibility:</p> <ul style="list-style-type: none"> • There is higher total enrollment for the participant group (2644) vs. comparison group (522). • All participants in the grant-affected programs are incumbent workers. 	<p>Program Completion:</p> <ul style="list-style-type: none"> • 71 percent of participants completed a program by the end of the grant. • 3471 credentials were earned over the course of the grant. • None of the participants were retained at the end of the grant. 	<p>Post-completion Employment/Wage Increase:</p> <ul style="list-style-type: none"> • 32% of incumbent worker participants had an increase of earnings since enrollments. • Since there were not any completers that were not incumbent workers, employment and retention in employment is zero.

Hinds Community College Maritime

The table below details the demographics and grant outcomes for the participant and comparison groups for Hinds Community College (HCC). The participant group includes numerous short-term, non-credit programs in the Maritime field (such as Deckhand and Tankerman). The comparison group includes a short-term Phlebotomy certificate of completion.

Table 11: Hinds Community College – Maritime vs. Phlebotomy Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	396	396	242	242
Demographics				
Age	24 ± 4	393	32 ± 9	242
Female	0 (0%)	369	236 (98%)	241
White	284 (83%)	342	38 (16%)	237
Black	51 (15%)	342	190 (80%)	237
Other/More than One Race	7 (2%)	342	9 (4%)	237
Hispanic/Latino	9 (3%)	325	2 (1%)	237
Full-Time	NA	NA	NA	NA
Part-Time	NA	NA	NA	NA
Incumbent Worker	396 (100%)	396	0 (0%)	50
Eligible Veteran	NA	NA	NA	NA
Disabled	1 (0%)	396	6 (2%)	242
Pell Eligible	3 (1%)	396	34 (14%)	242
TAA Eligible	NA	NA	NA	NA
Outcomes				
Program Completers	395 (100%)	396	105 (43%)	242
Credentials Earned	414	396	105	242
Students Earning Certificates (<=1 year)	395 (100%)	396	105 (43%)	242
Students Earning Certificates (>1 year)	0 (0%)	396	0 (0%)	242
Students Earning Degrees	0 (0%)	396	0 (0%)	242
Time-to-Completion	100 ± 5	414	104 ± 19	105
Certificates (<=1 year)	100 ± 5	414	104 ± 19	105
Certificates (>1 year)	NA	0	NA	0
Degrees	NA	0	NA	0
Credit Hours Completed	19 (73%)	396	329 (83%)	242
Incumbent Worker Completer	392 (100%)	395	0 (0%)	105

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 12: Hinds Completion Rates by Demographics for Maritime

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	43%	99%
Gender = Male	40%	99%
Gender = Female	42%	ID
Age < 24	38%	99%
Age >= 24	44%	99%
Non-White	40%	98%
White	53%	99%
Less than high school education	ID	ID
At least high school education		
Full time	ID	ID
Part time		
Non-incumbent worker	60%	ID
Incumbent worker	ID	99%
Non-veteran	ID	ID
Veteran		
Non-disabled	ID	ID
Disabled	50%	100%

Non-Pell grant eligible	65%	ID
Pell grant eligible	39%	100%
Non-TAA eligible	ID	ID
TAA eligible		

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Hinds for Maritime

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 176.8 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, and race. The propensity score adjusted odds ratio is 228.4 ($p < 0.01$).

Hinds Community College CDL

The table below details the demographics and grant outcomes for the participant and comparison groups for Hinds Community College (HCC). The participant group includes a short-term Certified Driver's License (CDL) career certificate. The comparison group includes a short-term Emergency Medical Technician (EMT) certification.

Table 13: Hinds Community College – CDL vs. EMT Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	2250	2250	284	284
Demographics				
Age	32 ± 10	2247	27 ± 8	284
Female	295 (13%)	2250	119 (42%)	284
White	483 (22%)	2181	160 (57%)	279
Black	1656 (76%)	2181	109 (39%)	279
Other/More than One Race	42 (2%)	2181	10 (4%)	279
Hispanic/Latino	17 (1%)	2145	3 (1%)	277
Full-Time	NA	NA	NA	NA
Part-Time	NA	NA	NA	NA
Incumbent Worker	2250 (100%)	2250	0 (0%)	284
Eligible Veteran	5 (0%)	2250	0 (0%)	284
Disabled	10 (0%)	2250	3 (1%)	284
Pell Eligible	414 (80%)	515	67 (24%)	284
TAA Eligible	NA	NA	NA	NA
Outcomes				
Program Completers	1485 (66%)	2250	120 (42%)	284
Credentials Earned	3057	2250	149	284
Students Earning Certificates (<=1 year)	1529 (68%)	2250	148 (52%)	284
Students Earning Certificates (>1 year)	0 (0%)	2250	0 (0%)	284
Students Earning Degrees	0 (0%)	2250	0 (0%)	284
Time-to-Completion	106 ± 24	3057	107 ± 29	149
Certificates (<=1 year)	106 ± 24	3057	107 ± 29	149
Certificates (>1 year)	NA	0	NA	0
Degrees	NA	0	NA	0
Credit Hours Completed	18359 (88%)	2250	1560 (79%)	284
Incumbent Worker Completer	1485 (100%)	1485	0 (0%)	120

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 14: Hinds Completion Rates by Demographics for Truck and Bus Driving

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	51%	66%
Gender = Male	55%	67%
Gender = Female	46%	59%
Age < 29	52%	62%
Age >= 29	49%	69%
Non-White	37%	62%
White	61%	80%
Less than high school education	ID	ID
At least high school education		
Full time	ID	ID
Part time		
Non-incumbent worker	64%	ID
Incumbent worker	ID	66%
Non-veteran	ID	ID
Veteran		40%
Non-disabled	ID	ID
Disabled	33%	50%
Non-Pell grant eligible	ID	43%
Pell grant eligible	58%	65%
Non-TAA eligible	ID	ID
TAA eligible		

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Hinds for Truck and Bus Driving

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 1.8 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, and Pell grant eligibility. The propensity score adjusted odds ratio is 2.1 ($p < 0.01$).

John Wood Community College

The participant group includes three separate programs: Logistics and Supply Chain Management short-term certificate and AAS; Manufacturing Technologies AAS; and Welding certificate. This is compared to three distinct comparison tracks, as well: Business Management short-term certificate and AAS; CAD, Construction Technology, and Electrical Technology AAS Degrees; and Electrician certificate.

The tables below provide details on the total number of individuals included in the analysis along with demographic characteristics. This information is provided for the college overall, and for each of its grant-affected programs, if appropriate. Additionally, data on outcomes is listed including program completions, credentials earned, credit hours completed, employed after program completion (if available), job retention three quarters after completion, incumbent worker completion, and incumbent worker wage increases (if available). Data is presented in terms of counts and rates where it makes sense.

Table 15: John Wood Community College Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	149	149	292	292
Demographics				
Age	28 ± 11	149	29 ± 11	292
Female	15 (10%)	149	83 (28%)	292
White	129 (87%)	148	261 (92%)	283
Black	12 (8%)	148	18 (6%)	283
Other/More than One Race	7 (5%)	148	4 (1%)	283
Hispanic/Latino	4 (3%)	124	3 (1%)	292
Full-Time	102 (73%)	149	NA	NA
Part-Time	37 (27%)	149	NA	NA
Incumbent Worker	78 (52%)	149	0 (0%)	57
Eligible Veteran	15 (11%)	137	15 (5%)	282
Disabled	7 (5%)	136	3 (1%)	282
Pell Eligible	73 (53%)	138	170 (58%)	291
TAA Eligible	10 (7%)	149	0 (0%)	292
Outcomes				
Program Completers	29 (19%)	149	86 (30%)	291
Credentials Earned	113	149	109	291
Students Earning Certificates (<=1 year)	62 (42%)	149	66 (23%)	291
Students Earning Certificates (>1 year)	0 (0%)	149	0 (0%)	291
Students Earning Degrees	4 (3%)	149	26 (9%)	291
Time-to-Completion	121 ± 42	113	131 ± 77	109
Certificates (<=1 year)	122 ± 43	109	139 ± 86	83
Certificates (>1 year)	NA	0	NA	0
Degrees	100 ± 0	4	105 ± 12	26
Credit Hours Completed	1679 (90%)	149	5105 (87%)	291
Incumbent Worker Completer	11 (38%)	29	0 (0%)	86
Retained in Program of Study	63 (53%)	120	62 (30%)	206
Retained in Other Education Program	0 (0%)	120	0 (0%)	206

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 16: John Wood Completion Rates by Demographics

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
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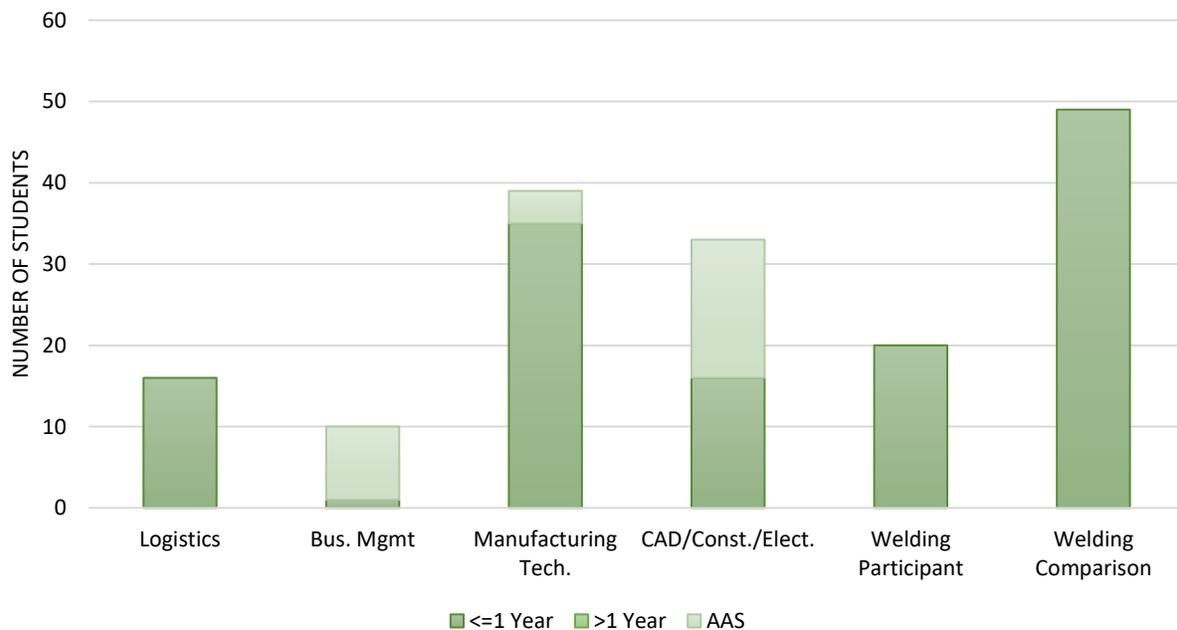
Overall	33%	18%
Gender = Male	36%	18%
Gender = Female	25%	11%
Age < 24	30%	21%
Age >= 24	36%	14%
Non-White	29%	18%
White	33%	12%
Less than high school education	ID	ID
At least high school education		
Full time	ID	15%
Part time		23%
Non-incumbent worker	7%	18%
Incumbent worker	ID	20%
Non-veteran	33%	18%
Veteran	53%	15%
Non-disabled	34%	18%
Disabled	67%	14%
Non-Pell grant eligible	28%	14%
Pell grant eligible	38%	21%
Non-TAA eligible	33%	50%
TAA eligible	NA	0%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for John Wood

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 0.4 (p<0.01). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, veteran, disabled, and Pell grant eligibility. The propensity score adjusted odds ratio is 0.4 (p=0.02).

Figure 17: John Wood Community College Number of Students Earning Certificates by Program Group



A summary of findings is found in the table below:

The MRTDL project theorizes the grant intervention will promote improved program accessibility, completion, and post-completion employment. These outcomes are summarized below.		
Accessibility: <ul style="list-style-type: none"> • There are slightly more females in the comparison groups (28%) than the participant groups (10%). • Over half (52%) of the participants in the grant-affected programs are incumbent workers. 	Program Completion: <ul style="list-style-type: none"> • Only 19% of participants completed a program by the end of the grant, compared to 30% of comparison persons. However, time-to-completion was lower for participants than comparison persons. 	Post-completion Employment/Wage Increase: <ul style="list-style-type: none"> • Program completions first occurred in the final year of implementation, causing delays in state wage data gathering. Updated wage and further education data will be incorporated into the final Annual Performance Report.

John Wood Community College Logistics and Supply Chain Management

The table below details the demographics and grant outcomes for the participant and comparison groups for John Wood Community College. The first participant group includes a short-term certificate leading to an AAS in Logistics and Supply Chain Management. The first comparison group includes a short-term certificate leading to an AAS in Business Management.

Table 18: John Wood Community College Logistics and Supply Chain Management vs. Business Management Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	28	28	88	88
Demographics				
Age	36 ± 13	28	30 ± 12	88
Female	4 (14%)	28	51 (58%)	88
White	26 (96%)	27	78 (92%)	85
Black	0 (0%)	27	7 (8%)	85
Other/More than One Race	1 (4%)	27	0 (0%)	85
Hispanic/Latino	0 (0%)	23	1 (1%)	88
Full-Time	13 (54%)	28	NA	NA
Part-Time	11 (46%)	28	NA	NA
Incumbent Worker	15 (54%)	28	0 (0%)	22
Eligible Veteran	7 (25%)	28	6 (7%)	84
Disabled	3 (11%)	27	1 (1%)	84
Pell Eligible	11 (39%)	28	53 (61%)	87
TAA Eligible	5 (18%)	28	0 (0%)	88
Outcomes				
Program Completers	2 (7%)	28	9 (10%)	88
Credentials Earned	33	28	10	88
Students Earning Certificates (<=1 year)	16 (57%)	28	1 (1%)	88
Students Earning Certificates (>1 year)	0 (0%)	28	0 (0%)	88
Students Earning Degrees	0 (0%)	28	9 (10%)	88
Time-to-Completion	100 ± 0	33	103 ± 8	10

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Certificates (<=1 year)	100 ± 0	33	100 ± 0	1
Certificates (>1 year)	NA	0	NA	0
Degrees	NA	0	103 ± 8	9
Credit Hours Completed	323 (95%)	28	1617 (83%)	88
Incumbent Worker Completer	1 (50%)	2	0 (0%)	9
Retained in Other Education Program	0 (0%)	28	0 (0%)	88

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 19: John Wood Completion Rates by Demographics for Supply Chain Management

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	23%	0%
Gender = Male	14%	0%
Gender = Female	29%	0%
Age < 28	19%	0%
Age >= 28	27%	0%
Non-White	10%	0%
White	24%	0%
Less than high school education	ID	ID
At least high school education		
Full time	ID	0%
Part time		0%
Non-incumbent worker	9%	0%
Incumbent worker	ID	ID
Non-veteran	22%	0%
Veteran	50%	0%
Non-disabled	23%	0%
Disabled	100%	0%
Non-Pell grant eligible	24%	0%
Pell grant eligible	23%	0%
Non-TAA eligible	23%	0%
TAA eligible	NA	0%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for John Wood for Supply Chain Management

A relative treatment effect (as in an odds ratio) is not calculable given the lack of completions in the participant group. Similarly, no propensity score adjustment is possible.

John Wood Community College Manufacturing Technologies

The table below details the demographics and grant outcomes for the participant and comparison groups for John Wood Community College. The second participant group includes a short-term certificate leading to an AAS in Manufacturing Technologies. The first comparison group includes short-term certificates leading to AAS degrees in CAD, Construction Technology, or Electrical Technology.

Table 20: John Wood Community College Manufacturing Technologies vs. CAD/Construction/Electrical Technology Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	48	48	123	123
Demographics				

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Age	27 ± 9	48	28 ± 10	123
Female	2 (4%)	48	22 (18%)	123
White	43 (90%)	48	111 (94%)	118
Black	3 (6%)	48	4 (3%)	118
Other/More than One Race	2 (4%)	48	3 (3%)	118
Hispanic/Latino	1 (2%)	41	1 (1%)	123
Full-Time	36 (78%)	48	NA	NA
Part-Time	10 (22%)	48	NA	NA
Incumbent Worker	24 (50%)	48	0 (0%)	26
Eligible Veteran	7 (15%)	48	8 (7%)	117
Disabled	2 (4%)	48	1 (1%)	117
Pell Eligible	23 (48%)	48	57 (46%)	123
TAA Eligible	2 (4%)	48	0 (0%)	123
Outcomes				
Program Completers	7 (15%)	48	31 (25%)	123
Credentials Earned	60	48	50	123
Students Earning Certificates (<=1 year)	35 (73%)	48	16 (13%)	123
Students Earning Certificates (>1 year)	0 (0%)	48	0 (0%)	123
Students Earning Degrees	4 (8%)	48	17 (14%)	123
Time-to-Completion	120 ± 43	60	159 ± 103	50
Certificates (<=1 year)	121 ± 44	56	185 ± 118	33
Certificates (>1 year)	NA	0	NA	0
Degrees	100 ± 0	4	106 ± 14	17
Credit Hours Completed	730 (96%)	48	2390 (88%)	123
Incumbent Worker Completer	4 (57%)	7	0 (0%)	31
Retained in Other Education Program	0 (0%)	48	0 (0%)	123

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 21: John Wood Completion Rates by Demographics for Manufacturing Technologies

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	24%	6%
Gender = Male	27%	7%
Gender = Female	9%	0%
Age < 24	22%	12%
Age >= 24	25%	0%
Non-White	8%	5%
White	25%	ID
Less than high school education	ID	ID
At least high school education		
Full time	ID	3%
Part time		20%
Non-incumbent worker	8%	5%
Incumbent worker	ID	0%
Non-veteran	22%	5%
Veteran	62%	14%
Non-disabled	25%	7%
Disabled	0%	0%
Non-Pell grant eligible	24%	4%
Pell grant eligible	23%	9%
Non-TAA eligible	24%	ID

TAA eligible	NA	0%
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ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for John Wood for Manufacturing Technologies

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 0.2 ($p=0.02$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, veteran, and Pell grant eligibility. The propensity score adjusted odds ratio is 0.2 ($p<0.01$).

John Wood Community College Welding

The table below details the demographics and grant outcomes for the participant and comparison groups for John Wood Community College. The third participant group includes a short-term certificate in Welding. The third comparison group is the historical comparison of the Welding program.

Table 22: John Wood Community College Welding vs. Welding Historical Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	57	57	83	83
Demographics				
Age	25 ± 8	57	28 ± 11	83
Female	5 (9%)	57	11 (13%)	83
White	47 (82%)	57	74 (90%)	82
Black	7 (12%)	57	7 (9%)	82
Other/More than One Race	3 (5%)	57	1 (1%)	82
Hispanic/Latino	3 (7%)	45	1 (1%)	83
Full-Time	43 (83%)	57	NA	NA
Part-Time	9 (17%)	57	NA	NA
Incumbent Worker	29 (51%)	57	0 (0%)	9
Eligible Veteran	2 (4%)	56	1 (1%)	83
Disabled	2 (4%)	56	1 (1%)	83
Pell Eligible	33 (58%)	57	61 (73%)	83
TAA Eligible	3 (5%)	57	0 (0%)	83
Outcomes				
Program Completers	20 (35%)	57	49 (59%)	83
Credentials Earned	20 (35%)	57	49 (59%)	83
Students Earning Certificates (<=1 year)	20	57	49	83
Students Earning Certificates (>1 year)	0 (0%)	57	0 (0%)	83
Students Earning Degrees	0 (0%)	57	0 (0%)	83
Time-to-Completion	160 ± 49	20	108 ± 27	49
Certificates (<=1 year)	160 ± 49	20	108 ± 27	49
Certificates (>1 year)	NA	0	NA	0
Degrees	NA	0	NA	0
Credit Hours Completed	626 (81%)	57	1098 (93%)	83
Incumbent Worker Completer	6 (30%)	20	0 (0%)	49
Retained in Other Education Program	0 (0%)	57	0 (0%)	83

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 23: John Wood Completion Rates by Demographics for Welding

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	58%	35%

Gender = Male	61%	37%
Gender = Female	36%	20%
Age < 22	53%	32%
Age >= 22	61%	38%
Non-White	78%	37%
White	56%	ID
Less than high school education	ID	ID
At least high school education		
Full time	ID	30%
Part time		56%
Non-incumbent worker	0%	37%
Incumbent worker	ID	33%
Non-veteran	59%	35%
Veteran	0%	50%
Non-disabled	57%	35%
Disabled	100%	50%
Non-Pell grant eligible	33%	33%
Pell grant eligible	67%	36%
Non-TAA eligible	58%	100%
TAA eligible	NA	33%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for John Wood for Welding

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 0.4 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, veteran, disabled, and Pell grant eligibility. The propensity score adjusted odds ratio is 0.2 ($p = 0.02$).

Lewis & Clark Community College

Lewis & Clark Community College has identified five grant-affected program group stacks to be evaluated. Each program group has a unique comparison group of which the program group is to be compared to. These five program and comparison groups are presented with separate tables for each program group.

The tables below provide details on the total number of individuals included in the analysis along with demographic characteristics. This information is provided for the college overall, and for each of its grant-affected programs, if appropriate. Additionally, data on outcomes is listed including program completions, credentials earned, credit hours completed, employed after program completion (if available), job retention three quarters after completion, incumbent worker completion, and incumbent worker wage increases (if available). Data is presented in terms of counts and rates where it makes sense.

Table 24: Lewis & Clark Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	677	677	1088	1088
Demographics				
Age	29 ± 11	677	29 ± 11	1087
Female	32 (5%)	607	524 (48%)	1087
White	528 (88%)	600	976 (90%)	1087
Black	53 (9%)	600	92 (8%)	1087
Other/More than One Race	19 (3%)	600	19 (2%)	1087
Hispanic/Latino	15 (3%)	536	13 (1%)	1087
Full-Time	385 (66%)	677	NA	NA
Part-Time	178 (31%)	677	NA	NA
Incumbent Worker	213 (41%)	517	0 (0%)	1087
Eligible Veteran	58 (10%)	584	60 (6%)	1087
Disabled	11 (2%)	556	0 (0%)	1087
Pell Eligible	158 (27%)	591	0 (0%)	1087
TAA Eligible	21 (4%)	553	0 (0%)	1087
Outcomes				
Program Completers	283 (42%)	677	156 (14%)	1088
Credentials Earned	744	677	178	1088
Students Earning Certificates (<=1 year)	205 (30%)	677	138 (13%)	1088
Students Earning Certificates (>1 year)	102 (15%)	677	5 (0%)	1088
Students Earning Degrees	83 (12%)	677	16 (1%)	1088
Time-to-Completion	152 ± 84	744	130 ± 46	178
Certificates (<=1 year)	164 ± 92	552	134 ± 47	157
Certificates (>1 year)	128 ± 43	106	100 ± 0	5
Degrees	103 ± 12	86	100 ± 0	16
Credit Hours Completed	19292	677	12558	1088
Incumbent Worker Completer	98 (35%)	283	0 (0%)	156
Retained in Program of Study	283 (72%)	394	459 (49%)	932
Retained in Other Education Program	1 (0%)	394	3 (0%)	932

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 25: Lewis & Clark Completion Rates by Demographics

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	14%	42%

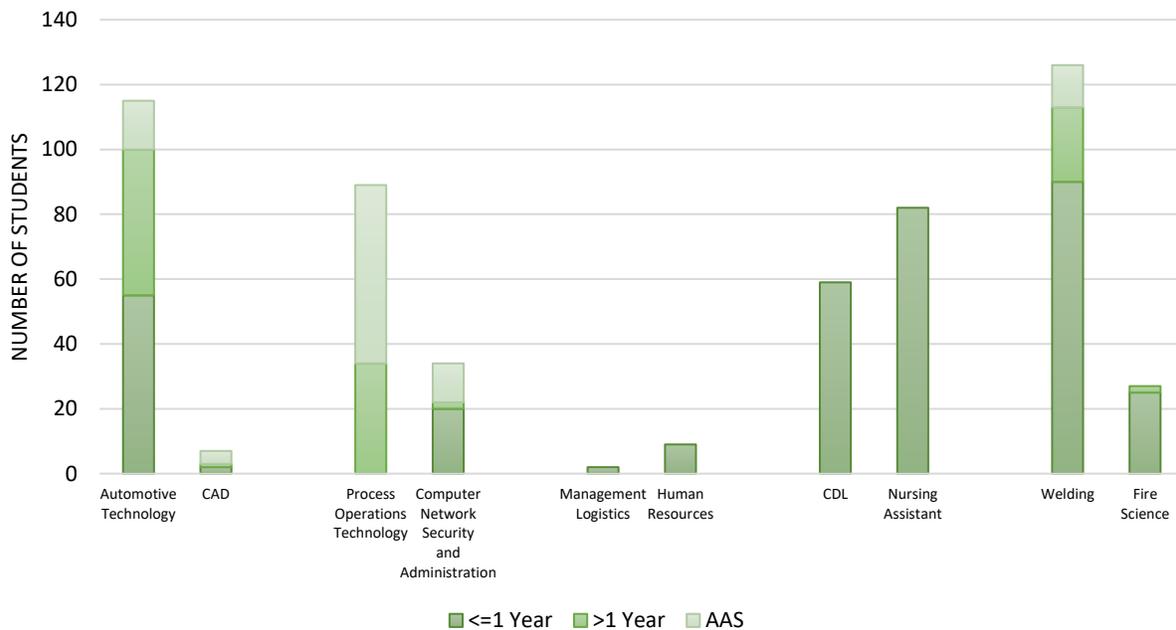
Gender = Male	11%	42%
Gender = Female	18%	47%
Age < 25	18%	38%
Age >= 25	11%	46%
Non-White	19%	43%
White	14%	42%
Less than high school education	ID	ID
At least high school education		
Full time	ID	44%
Part time		36%
Non-incumbent worker	14%	47%
Incumbent worker	ID	46%
Non-veteran	14%	42%
Veteran	15%	47%
Non-disabled	14%	44%
Disabled	ID	45%
Non-Pell grant eligible	14%	44%
Pell grant eligible	ID	39%
Non-TAA eligible	14%	44%
TAA eligible	ID	52%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Lewis & Clark

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 4.3 (p<0.01). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, and veteran status. The propensity score adjusted odds ratio is 4.1 (p<0.01).

Figure 26: Lewis & Clark Number of Students Earning Certificates by Program Group



A summary of findings is found in the table below:

The MRTDL project theorizes the grant intervention will promote improved program accessibility, completion, and post-completion employment. These outcomes are summarized below.		
Accessibility: <ul style="list-style-type: none"> • There are more females in the comparison groups (48%) than the participant groups (5%). • 41% of the participants in the grant-affected programs are incumbent workers. 	Program Completion: <ul style="list-style-type: none"> • The completion rate of participants is much higher (42%) than comparison persons (14%). In addition, participants earned many more credentials (744) than the comparison groups (178). 	Post-completion Employment/Wage Increase: <ul style="list-style-type: none"> • Updated wage and further education data will be incorporated into the final Annual Performance Report.

Lewis & Clark Community College Automotive Technology

The table below details the demographics and grant outcomes for the participant and comparison groups for Lewis & Clark Community College (LCCC). The first participant group for LCCC includes several certificates leading to an AAS in Automotive Technology. The first comparison group includes several certificates leading to an AAS in CAD.

Table 27: Lewis & Clark Automotive Technology vs. CAD Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	169	169	123	123
Demographics				
Age	24 ± 7	169	26 ± 11	123
Female	5 (3%)	158	28 (23%)	123
White	136 (87%)	156	110 (89%)	123
Black	13 (8%)	156	10 (8%)	123
Other/More than One Race	7 (4%)	156	3 (2%)	123
Hispanic/Latino	6 (4%)	139	3 (2%)	123
Full-Time	111 (73%)	169	NA	NA
Part-Time	41 (27%)	169	NA	NA
Incumbent Worker	64 (43%)	148	0 (0%)	123
Eligible Veteran	17 (11%)	155	5 (4%)	123
Disabled	3 (2%)	152	0 (0%)	123
Pell Eligible	59 (38%)	156	0 (0%)	123
TAA Eligible	0 (0%)	152	0 (0%)	123
Outcomes				
Program Completers	69 (41%)	169	6 (5%)	123
Credentials Earned	119	169	7	123
Students Earning Certificates (<=1 year)	55 (33%)	169	2 (2%)	123
Students Earning Certificates (>1 year)	45 (27%)	169	1 (1%)	123
Students Earning Degrees	15 (9%)	169	4 (3%)	123

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Time-to-Completion	159 ± 87	119	129 ± 49	7
Certificates (<=1 year)	200 ± 107	55	200 ± 0	2
Certificates (>1 year)	130 ± 46	49	100 ± 0	1
Degrees	103 ± 9	15	100 ± 0	4
Credit Hours Completed	4865	169	1745	123
Incumbent Worker Completer	32 (46%)	69	0 (0%)	6

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 28: Lewis & Clark Completion Rates by Demographics for Automotive Technology

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	5%	41%
Gender = Male	3%	42%
Gender = Female	11%	20%
Age < 21	4%	47%
Age >= 21	5%	36%
Non-White	8%	43%
White	5%	41%
Less than high school education	ID	ID
At least high school education		
Full time	ID	46%
Part time		29%
Non-incumbent worker	5%	37%
Incumbent worker	ID	50%
Non-veteran	5%	38%
Veteran	0%	59%
Non-disabled	5%	42%
Disabled	ID	0%
Non-Pell grant eligible	5%	40%
Pell grant eligible	ID	42%
Non-TAA eligible	5%	41%
TAA eligible	ID	ID

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Lewis & Clark for Automotive Technology

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 13.5 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, and veteran status. The propensity score adjusted odds ratio is 10.3 ($p < 0.01$).

Lewis & Clark Community College Management - Logistics

The table below details the demographics and grant outcomes for the participant and comparison groups for Lewis & Clark Community College (LCCC). The second participant group for LCCC includes a short-term certificate in Management – Logistics. This program is being compared to a short-term certificate in Human Resources.

Table 29: Lewis & Clark – Management – Logistics vs. Human Resources Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	8	8	310	310
Demographics				
Age	29 ± 11	8	28 ± 9	309
Female	1 (12%)	8	227 (73%)	309
White	8 (100%)	8	286 (93%)	309
Black	0 (0%)	8	17 (6%)	309
Other/More than One Race	0 (0%)	8	6 (2%)	309
Hispanic/Latino	0 (0%)	7	1 (0%)	309
Full-Time	4 (57%)	8	NA	NA
Part-Time	3 (43%)	8	NA	NA
Incumbent Worker	2 (33%)	6	0 (0%)	309
Eligible Veteran	2 (29%)	7	16 (5%)	309
Disabled	0 (0%)	7	0 (0%)	309
Pell Eligible	1 (14%)	7	0 (0%)	309
TAA Eligible	0 (0%)	7	0 (0%)	309
Outcomes				
Program Completers	2 (25%)	8	9 (3%)	310
Credentials Earned	2	8	9	310
Students Earning Certificates (<=1 year)	2 (25%)	8	9 (3%)	310
Students Earning Certificates (>1 year)	0 (0%)	8	0 (0%)	310
Students Earning Degrees	0 (0%)	8	0 (0%)	310
Time-to-Completion	150 ± 71	2	178 ± 44	9
Certificates (<=1 year)	150 ± 71	2	178 ± 44	9
Certificates (>1 year)	NA	0	NA	0
Degrees	NA	0	NA	0
Credit Hours Completed	133	8	3979	310
Incumbent Worker Completer	0 (0%)	2	0 (0%)	9

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 30: Lewis & Clark Completion Rates by Demographics for Management – Logistics

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	3%	29%
Gender = Male	2%	33%
Gender = Female	3%	0%
Age < 25	2%	50%
Age >= 25	4%	20%
Non-White	9%	ID
White	2%	29%
Less than high school education	ID	ID
At least high school education		
Full time	ID	33%
Part time		33%
Non-incumbent worker	3%	33%
Incumbent worker	ID	0%
Non-veteran	3%	25%
Veteran	0%	50%
Non-disabled	3%	33%
Disabled	ID	ID

Non-Pell grant eligible	3%	40%
Pell grant eligible	ID	0%
Non-TAA eligible	3%	33%
TAA eligible	ID	ID

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Lewis & Clark for Management – Logistics

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 13.4 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, and veteran status. The propensity score adjusted odds ratio is 27.7 ($p < 0.01$).

Lewis & Clark Community College Process Operations Technology

The table below details the demographics and grant outcomes for the participant and comparison groups for Lewis & Clark Community College (LCCC). The third participant group for LCCC includes a short-term certificate leading to an AAS in Process Operations Technology. This program is being compared to short-term certificates leading up to an AAS in Computer Network Security and Administration.

Table 31: Lewis & Clark – Process Operations Technology vs. Computer Network Security and Administration Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	228	228	193	193
Demographics				
Age	29 ± 10	228	28 ± 11	193
Female	10 (5%)	204	28 (15%)	193
White	177 (88%)	201	178 (92%)	193
Black	18 (9%)	201	12 (6%)	193
Other/More than One Race	6 (3%)	201	3 (2%)	193
Hispanic/Latino	6 (3%)	184	4 (2%)	193
Full-Time	138 (70%)	228	NA	NA
Part-Time	59 (30%)	228	NA	NA
Incumbent Worker	89 (51%)	175	0 (0%)	193
Eligible Veteran	22 (11%)	195	23 (12%)	193
Disabled	6 (3%)	183	0 (0%)	193
Pell Eligible	41 (21%)	197	0 (0%)	193
TAA Eligible	10 (5%)	183	NA (NA%)	193
Outcomes				
Program Completers	60 (26%)	228	34 (18%)	193
Credentials Earned	92	228	46	193
Students Earning Certificates (<=1 year)	0 (0%)	228	20 (10%)	193
Students Earning Certificates (>1 year)	34 (15%)	228	2 (1%)	193
Students Earning Degrees	55 (24%)	228	12 (6%)	193
Time-to-Completion	107 ± 17	92	163 ± 49	46
Certificates (<=1 year)	NA	0	191 ± 30	32
Certificates (>1 year)	116 ± 25	34	100 ± 0	2
Degrees	101 ± 6	58	100 ± 0	12
Credit Hours Completed	7121	228	4195	193
Incumbent Worker Completer	30 (50%)	60	0 (0%)	34

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 32: Lewis & Clark Completion Rates by Demographics for Process Operations Technology

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	18%	26%
Gender = Male	16%	25%
Gender = Female	25%	40%
Age < 25	17%	19%
Age >= 25	18%	32%
Non-White	13%	23%
White	18%	26%
Less than high school education	ID	ID
At least high school education		
Full time	ID	26%
Part time		25%
Non-incumbent worker	18%	24%
Incumbent worker	ID	34%
Non-veteran	18%	26%
Veteran	13%	27%
Non-disabled	18%	27%
Disabled	ID	67%
Non-Pell grant eligible	18%	31%
Pell grant eligible	ID	10%
Non-TAA eligible	18%	29%
TAA eligible	ID	10%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Lewis & Clark for Process Operations Technology

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 1.7 ($p=0.03$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, and veteran status. The propensity score adjusted odds ratio is 1.3 ($p=0.41$).

Lewis & Clark Community College CDL

The table below details the demographics and grant outcomes for the participant and comparison groups for Lewis & Clark Community College (LCCC). The fourth participant group for LCCC includes a short-term Certified Driver's License (CDL) certificate. This is compared to a short-term Nursing Assistant certification.

Table 33: Lewis & Clark – CDL vs. Nursing Assistant Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	73	73	250	250
Demographics				
Age	43 ± 13	73	25 ± 9	250
Female	8 (11%)	73	222 (89%)	250
White	61 (86%)	71	200 (80%)	250
Black	10 (14%)	71	45 (18%)	250
Other/More than One Race	0 (0%)	71	5 (2%)	250
Hispanic/Latino	1 (2%)	65	2 (1%)	250
Full-Time	51 (73%)	73	NA	NA
Part-Time	15 (21%)	73	NA	NA
Incumbent Worker	8 (12%)	65	0 (0%)	250
Eligible Veteran	7 (10%)	72	2 (1%)	250
Disabled	0 (0%)	73	0 (0%)	250
Pell Eligible	9 (12%)	73	0 (0%)	250

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
TAA Eligible	7 (10%)	71	0 (0%)	250
Outcomes				
Program Completers	59 (81%)	73	82 (33%)	250
Credentials Earned	72	73	82	250
Students Earning Certificates (<=1 year)	59 (81%)	73	82 (33%)	250
Students Earning Certificates (>1 year)	0 (0%)	73	0 (0%)	250
Students Earning Degrees	0 (0%)	73	0 (0%)	250
Time-to-Completion	103 ± 17	72	100 ± 0	82
Certificates (<=1 year)	103 ± 17	72	100 ± 0	82
Certificates (>1 year)	NA	0	NA	0
Degrees	NA	0	NA	0
Credit Hours Completed	1243	73	1650	250
Incumbent Worker Completer	6 (10%)	59	0 (0%)	82

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 34: Lewis & Clark Completion Rates by Demographics for CDL

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	33%	81%
Gender = Male	21%	83%
Gender = Female	34%	62%
Age < 23	32%	83%
Age >= 23	34%	81%
Non-White	32%	75%
White	33%	85%
Less than high school education	ID	ID
At least high school education		
Full time	ID	76%
Part time		100%
Non-incumbent worker	33%	86%
Incumbent worker	ID	75%
Non-veteran	32%	80%
Veteran	100%	86%
Non-disabled	33%	81%
Disabled	ID	ID
Non-Pell grant eligible	33%	81%
Pell grant eligible	ID	78%
Non-TAA eligible	33%	81%
TAA eligible	ID	86%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Lewis & Clark for CDL

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 8.6 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, and veteran status. The propensity score adjusted odds ratio is 9.7 ($p < 0.01$).

Lewis & Clark Community College Welding

The table below details the demographics and grant outcomes for the participant and comparison groups for Lewis & Clark Community College (LCCC). The fifth participant group includes numerous certifications

leading to an AAS in Welding Technology. This is being compared to numerous certifications leading to an AAS in Fire Science.

Table 35: Lewis & Clark – Welding vs. Fire Science Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	209	209	218	218
Demographics				
Age	27 ± 11	209	38 ± 11	218
Female	8 (5%)	173	20 (9%)	218
White	152 (88%)	173	208 (95%)	218
Black	13 (8%)	173	8 (4%)	218
Other/More than One Race	8 (5%)	173	2 (1%)	218
Hispanic/Latino	3 (2%)	149	3 (1%)	218
Full-Time	87 (54%)	209	NA	NA
Part-Time	62 (39%)	209	NA	NA
Incumbent Worker	51 (39%)	132	0 (0%)	218
Eligible Veteran	13 (8%)	164	14 (6%)	218
Disabled	3 (2%)	150	0 (0%)	218
Pell Eligible	52 (31%)	167	0 (0%)	218
TAA Eligible	4 (3%)	149	0 (0%)	218
Outcomes				
Program Completers	94 (45%)	209	25 (11%)	218
Credentials Earned	459	209	34	218
Students Earning Certificates (<=1 year)	90 (43%)	209	25 (11%)	218
Students Earning Certificates (>1 year)	23 (11%)	209	2 (1%)	218
Students Earning Degrees	13 (6%)	209	0 (0%)	218
Time-to-Completion	166 ± 91	459	144 ± 50	34
Certificates (<=1 year)	169 ± 93	423	147 ± 51	32
Certificates (>1 year)	145 ± 52	23	100 ± 0	2
Degrees	108 ± 28	13	NA	0
Credit Hours Completed	5930	209	991	218
Incumbent Worker Completer	30 (32%)	94	0 (0%)	25

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 36: Lewis & Clark Completion Rates by Demographics for Welding Technology

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	11%	45%
Gender = Male	12%	44%
Gender = Female	5%	62%
Age < 21	34%	46%
Age >= 21	3%	43%
Non-White	0%	45%
White	12%	44%
Less than high school education	ID	ID
At least high school education		
Full time	ID	48%
Part time		35%
Non-incumbent worker	11%	52%
Incumbent worker	ID	59%
Non-veteran	10%	47%

Veteran	29%	31%
Non-disabled	11%	48%
Disabled	ID	33%
Non-Pell grant eligible	11%	42%
Pell grant eligible	ID	52%
Non-TAA eligible	11%	47%
TAA eligible	ID	100%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Lewis & Clark for Welding Technology

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 6.3 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, and veteran status. The propensity score adjusted odds ratio is 4.8 ($p < 0.01$).

Minnesota State College – Southeast Technical

The participant group for MSC-ST includes a short-term certificate leading to a long-term certificate in Diesel Maintenance. The comparison group includes a short-term certificate leading to an AAS in Industrial Technology.

The tables below provide details on the total number of individuals included in the analysis along with demographic characteristics. This information is provided for the college overall, and for each of its grant-affected programs, if appropriate. Additionally, data on outcomes is listed including program completions, credentials earned, credit hours completed, employed after program completion (if available), job retention three quarters after completion, incumbent worker completion, and incumbent worker wage increases (if available). Data is presented in terms of counts and rates where it makes sense.

Table 37: Minnesota State College – Southeast Technical Diesel Maintenance vs. Automotive/Industrial Technology Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	31	31	117	117
Demographics				
Age	25 ± 9	31	26 ± 10	116
Female	0 (0%)	31	6 (5%)	117
White	26 (87%)	30	104 (89%)	117
Black	2 (7%)	30	4 (3%)	117
Other/More than One Race	2 (7%)	30	9 (8%)	117
Hispanic/Latino	0 (0%)	29	4 (3%)	117
Full-Time	25 (81%)	31	NA	NA
Part-Time	6 (19%)	31	NA	NA
Incumbent Worker	20 (65%)	31	0 (0%)	117
Eligible Veteran	6 (19%)	31	13 (11%)	117
Disabled	0 (0%)	31	2 (2%)	117
Pell Eligible	9 (29%)	31	65 (56%)	117
TAA Eligible	0 (0%)	31	0 (0%)	117
Outcomes				
Program Completers	10 (32%)	31	29 (25%)	117
Credentials Earned	10	31	29	117
Students Earning Certificates (<=1 year)	1 (3%)	31	2 (2%)	117
Students Earning Certificates (>1 year)	9 (29%)	31	27 (23%)	117
Students Earning Degrees	0 (0%)	31	0 (0%)	117
Time-to-Completion	103 ± 10	10	104 ± 19	29
Certificates (<=1 year)	100 ± 0	1	150 ± 71	2
Certificates (>1 year)	104 ± 11	9	101 ± 5	27
Degrees	NA	0	NA	0
Credit Hours Completed	992	31	3561	117
Employed After Program of Study Completion	2 (50%)	4	10 (34%)	29
Retained in Employment 3 Quarters After Completion	2 (100%)	2	10 (100%)	10
Incumbent Worker Completer	6 (60%)	10	0 (0%)	29
Wage Increase Post-Enrollment	9 (45%)	20	NA	0
Further Education after Program of Study Completion	0 (0%)	10	0 (0%)	29
Retained in Other Education Program	0 (0%)	31	0 (0%)	117

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 38: Minnesota State Completion Rates by Demographics

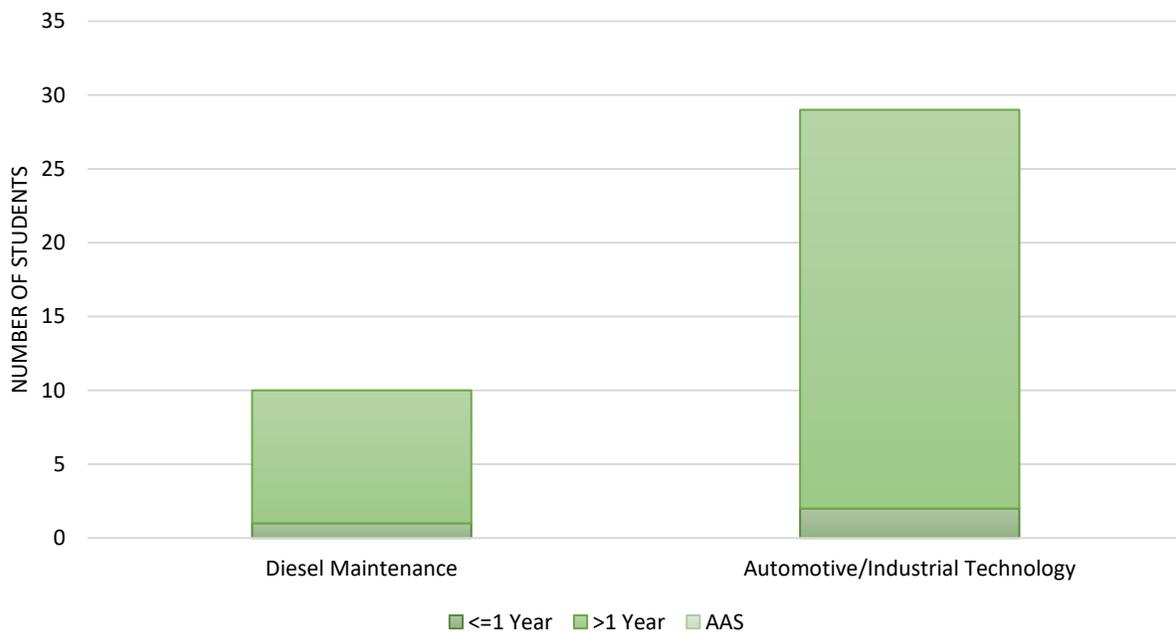
Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	25%	32%
Gender = Male	23%	32%
Gender = Female	50%	ID
Age < 21	34%	43%
Age >= 21	18%	24%
Non-White	23%	20%
White	25%	35%
Less than high school education	ID	0%
At least high school education		37%
Full time	ID	36%
Part time		17%
Non-incumbent worker	ID	36%
Incumbent worker		30%
Non-veteran	28%	32%
Veteran	0%	33%
Non-disabled	25%	32%
Disabled	0%	ID
Non-Pell grant eligible	27%	27%
Pell grant eligible	23%	44%
Non-TAA eligible	ID	32%
TAA eligible		ID

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Minnesota State

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 1.4 (p=0.40). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, veteran status, disability, and Pell grant eligibility. The propensity score adjusted odds ratio is 1.5 (p=0.33).

Figure 39: Minnesota State College – Southeast Technical Number of Students Earning Certificates by Program Group



A summary of findings is found in the table below:

The MRTDL project theorizes the grant intervention will promote improved program accessibility, completion, and post-completion employment. These outcomes are summarized below.		
<p>Accessibility:</p> <ul style="list-style-type: none"> • Age, race, and gender are all very similar between participants and comparison groups. • 65% of the participants in the grant-affected programs are incumbent workers. 	<p>Program Completion:</p> <ul style="list-style-type: none"> • The completion rate of participants is slightly higher (32%) than comparison persons (29%). 	<p>Post-completion Employment/Wage Increase:</p> <ul style="list-style-type: none"> • 45% of incumbent workers received a wage increase post-enrollment. • 2 of the 4 non-incumbent program completers found employment in the quarter after program completion. Both retained employment for 3 quarters.

St. Louis Community College

The participant group includes short-term and long-term certifications in Aviation Maintenance, Avionics, or Logistics, Warehouse, and Distribution and a short-term certification in Truck Driving (CDL-A). The comparison group includes a short-term Certified Production Technician, paired with an AAS in Electrical/Electronic Engineering Technology and a short-term certification in Line Worker Training. Both participant and comparison programs are non-credit.

The tables below provide details on the total number of individuals included in the analysis along with demographic characteristics. This information is provided for the college overall, and for each of its grant-affected programs, if appropriate. Additionally, data on outcomes is listed including program completions, credentials earned, credit hours completed, employed after program completion (if available), job retention three quarters after completion, incumbent worker completion, and incumbent worker wage increases (if available). Data is presented in terms of counts and rates where it makes sense.

Table 40: St. Louis Community College Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	447	447	262	262
Demographics				
Age	38 ± 13	446	31 ± 12	261
Female	78 (17%)	446	30 (11%)	262
White	209 (47%)	446	99 (39%)	251
Black	185 (41%)	446	123 (49%)	251
Other/More than One Race	52 (12%)	446	29 (12%)	251
Hispanic/Latino	16 (4%)	446	13 (6%)	232
Full-Time	446 (100%)	446	NA	NA
Part-Time	0 (0%)	446	NA	NA

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Incumbent Worker	136 (30%)	446	40 (37%)	108
Eligible Veteran	42 (9%)	446	29 (11%)	262
Disabled	NA	NA	NA	NA
Pell Eligible	21 (5%)	446	81 (36%)	224
TAA Eligible	1 (0%)	446	1 (1%)	108
Outcomes				
Program Completers	376 (84%)	447	57 (22%)	262
Credentials Earned	590	447	162	262
Students Earning Certificates (<=1 year)	344 (77%)	447	56 (21%)	262
Students Earning Certificates (>1 year)	4 (1%)	447	0 (0%)	262
Students Earning Degrees	0 (0%)	447	15 (6%)	262
Time-to-Completion	103 ± 26	590	101 ± 5	162
Certificates (<=1 year)	103 ± 26	577	100 ± 0	147
Certificates (>1 year)	108 ± 14	13	NA	0
Degrees	NA	0	107 ± 15	15
Credit Hours Completed	821	447	2705	262
Incumbent Worker Completer	118 (31%)	376	0 (0%)	57
Retained in Other Education Program	0 (0%)	447	0 (0%)	262

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 41: St. Louis Completion Rates by Demographics

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	23%	69%
Gender = Male	25%	69%
Gender = Female	10%	68%
Age < 33	17%	71%
Age >= 33	32%	67%
Non-White	14%	69%
White	39%	68%
Less than high school education	ID	ID
At least high school education		
Full time	ID	69%
Part time		ID
Non-incumbent worker	35%	66%
Incumbent worker	55%	74%
Non-veteran	23%	70%
Veteran	28%	55%
Non-disabled	ID	ID
Disabled		
Non-Pell grant eligible	29%	69%
Pell grant eligible	6%	67%
Non-TAA eligible	42%	69%
TAA eligible	100%	100%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for St. Louis

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 7.2 (p<0.01). A propensity score model (estimating the probability of being a

member of the participant group) is fit using gender, age, race, incumbency, veteran status, Pell grant eligibility, and TAA eligibility. The propensity score adjusted odds ratio is 7.2 ($p < 0.01$).

St. Louis Community College Aviation/Avionics/Logistics

The table below details the demographics and grant outcomes for the participant and comparison groups for St. Louis Community College (STLCC). The first participant group includes short-term and long-term certifications in Aviation Maintenance, Avionics, or Logistics, Warehouse, and Distribution. The first comparison group includes a short-term Certified Production Technician, paired with an AAS in Electrical/Electronic Engineering Technology.

Table 42: St. Louis Community College – Aviation/Avionics/Logistics vs. EET/CPT Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	165	165	232	232
Demographics				
Age	38 ± 14	165	31 ± 13	232
Female	41 (25%)	165	29 (12%)	232
White	65 (39%)	165	81 (37%)	221
Black	74 (45%)	165	113 (51%)	221
Other/More than One Race	26 (16%)	165	27 (12%)	221
Hispanic/Latino	9 (5%)	165	10 (5%)	210
Full-Time	165 (100%)	165	NA	NA
Part-Time	0 (0%)	165	NA	NA
Incumbent Worker	26 (16%)	165	18 (23%)	78
Eligible Veteran	21 (13%)	165	27 (12%)	232
Disabled	NA	NA	NA	NA
Pell Eligible	12 (7%)	165	79 (41%)	194
TAA Eligible	1 (1%)	165	0 (0%)	78
Outcomes				
Program Completers	131 (79%)	165	34 (15%)	232
Credentials Earned	137	165	162	232
Students Earning Certificates (<=1 year)	100 (61%)	165	56 (24%)	232
Students Earning Certificates (>1 year)	4 (2%)	165	0 (0%)	232
Students Earning Degrees	0 (0%)	165	15 (6%)	232
Time-to-Completion	111 ± 52	137	101 ± 5	162
Certificates (<=1 year)	111 ± 54	124	100 ± 0	147
Certificates (>1 year)	108 ± 14	13	NA	0
Degrees	NA	0	107 ± 15	15
Credit Hours Completed	821	165	2705	232
Incumbent Worker Completer	15 (11%)	131	0 (0%)	34
Retained in Other Education Program	0 (0%)	165	0 (0%)	232

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 43: St. Louis Completion Rates by Demographics for Aviation/Avionics/Logistics

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	16%	56%
Gender = Male	17%	53%
Gender = Female	10%	63%
Age < 32	8%	48%
Age >= 32	27%	60%
Non-White	8%	62%
White	31%	46%
Less than high school education	ID	ID

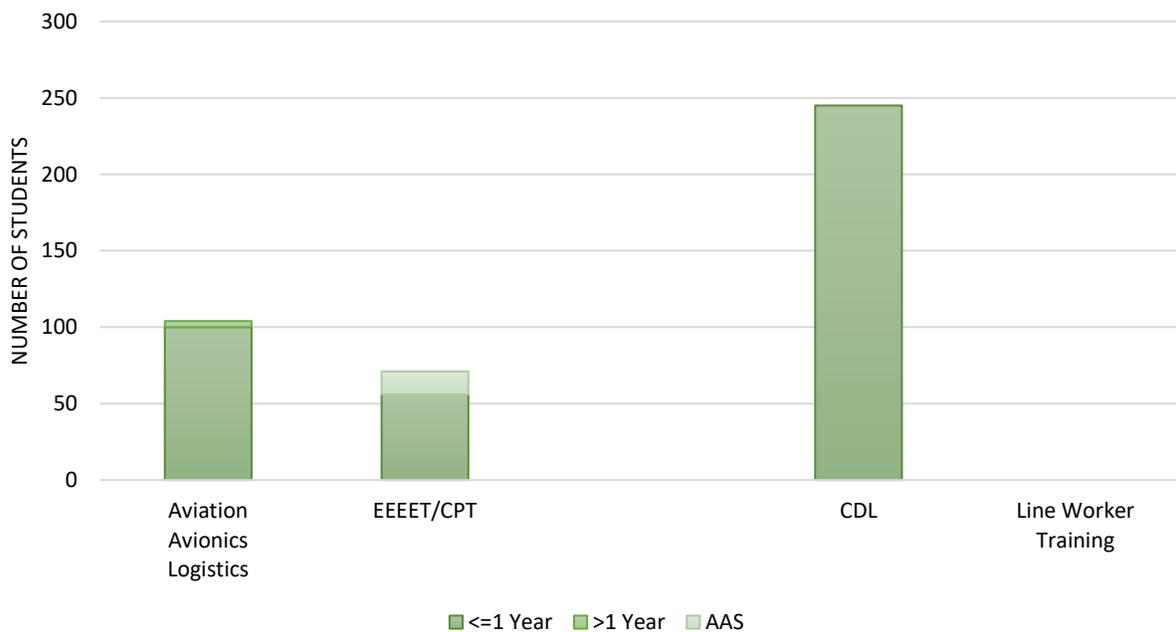
At least high school education		
Full time	ID	56%
Part time		ID
Non-incumbent worker	28%	58%
Incumbent worker	33%	42%
Non-veteran	15%	58%
Veteran	26%	43%
Non-disabled	ID	ID
Disabled		
Non-Pell grant eligible	17%	55%
Pell grant eligible	5%	67%
Non-TAA eligible	29%	55%
TAA eligible	ID	100%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for St. Louis Completion for Aviation/Avionics/Logistics

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 6.4 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, veteran status, Pell grant eligibility, and TAA eligibility. The propensity score adjusted odds ratio is 5.5 ($p < 0.01$).

Figure 44: St. Louis Community College Number of Students Earning Certificates by Program Group



A summary of findings is found in the table below:

The MRTDL project theorizes the grant intervention will promote improved program accessibility, completion, and post-completion employment. These outcomes are summarized below.		
Accessibility: <ul style="list-style-type: none"> • Average age of participants (38) is higher than comparison persons (31). • There is a higher share of females enrolled in the grant-affected programs (25%) than females in comparison programs (12%). 	Program Completion: <ul style="list-style-type: none"> • The completion rate of participants is higher (79%) than comparison persons (15%). • The majority of credentials earned were short-term, with only a handful of long-term certificates attained. 	Post-completion Employment/Wage Increase: <ul style="list-style-type: none"> • Updated wage and further education data will be incorporated into the final Annual Performance Report.

St. Louis Community College CDL

The table below details the demographics and grant outcomes for the participant and comparison groups for St. Louis Community College (STLCC). The second participant group includes a short-term certification in Truck Driving (CDL-A). The second comparison group includes a short-term certification in Line Worker Training. Both participant and comparison programs are non-credit.

Table 45: St. Louis Community College - CDL vs. Line Worker Training Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	286	286	30	30
Demographics				
Age	38 ± 12	285	32 ± 6	30
Female	37 (13%)	285	1 (3%)	30
White	145 (51%)	285	18 (60%)	30
Black	113 (40%)	285	10 (33%)	30
Other/More than One Race	27 (9%)	285	2 (7%)	30
Hispanic/Latino	7 (2%)	285	3 (14%)	22
Full-Time	285 (100%)	286	NA	NA
Part-Time	0 (0%)	286	NA	NA
Incumbent Worker	110 (39%)	285	22 (73%)	30
Eligible Veteran	21 (7%)	285	2 (7%)	30
Disabled	NA	NA	NA	NA
Pell Eligible	9 (3%)	285	2 (7%)	30
TAA Eligible	0 (0%)	285	1 (3%)	30
Outcomes				
Program Completers	246 (86%)	286	22 (73%)	30
Credentials Earned	453	286	0	30
Students Earning Certificates (<=1 year)	245 (86%)	286	0 (0%)	30
Students Earning Certificates (>1 year)	0 (0%)	286	0 (0%)	30
Students Earning Degrees	0 (0%)	286	0 (0%)	30

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Time-to-Completion	100 ± 5	453	NA	NA
Certificates (<=1 year)	100 ± 5	453	NA	NA
Certificates (>1 year)	NA	0	NA	NA
Degrees	NA	0	NA	NA
Credit Hours Completed	0	286	0	30
Incumbent Worker Completer	103 (42%)	246	0 (0%)	22
Retained in Other Education Program	0 (0%)	286	0 (0%)	30

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 46: St. Louis Completion Rates by Demographics for CDL

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	77%	75%
Gender = Male	79%	75%
Gender = Female	0%	73%
Age < 35	82%	83%
Age >= 35	57%	68%
Non-White	75%	72%
White	78%	78%
Less than high school education	ID	ID
At least high school education		
Full time	ID	75%
Part time		ID
Non-incumbent worker	88%	71%
Incumbent worker	73%	82%
Non-veteran	79%	76%
Veteran	50%	67%
Non-disabled	ID	ID
Disabled		
Non-Pell grant eligible	79%	75%
Pell grant eligible	50%	67%
Non-TAA eligible	76%	75%
TAA eligible	100%	100%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for St. Louis for CDL

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 0.9 (p=0.86). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, veteran status, Pell grant eligibility, and TAA eligibility. The propensity score adjusted odds ratio is 1.4 (p=0.43).

Southwest Tennessee Community College

The participant group for SWTCC includes a short-term Industrial Readiness Training and an AAS in Advanced Integrated Industrial Technology. The comparison group for SWTCC includes a short-term certificate leading to an AAS in Mechanical Engineering Technology.

The tables below provide details on the total number of individuals included in the analysis along with demographic characteristics. This information is provided for the college overall, and for each of its grant-affected programs, if appropriate. Additionally, data on outcomes is listed including program completions, credentials earned, credit hours completed, employed after program completion (if available), job retention three quarters after completion, incumbent worker completion, and incumbent worker wage increases (if available). Data is presented in terms of counts and rates where it makes sense.

The table below details the demographics and grant outcomes for the participant and comparison groups for Southwest Tennessee Community College (SWTCC).

Table 47: Southwest Tennessee Community College Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	497	497	111	111
Demographics				
Age	35 ± 12	302	31 ± 11	111
Female	178 (40%)	448	21 (19%)	111
White	61 (15%)	413	43 (43%)	99
Black	333 (81%)	413	51 (52%)	99
Other/More than One Race	19 (5%)	413	5 (5%)	99
Hispanic/Latino	12 (6%)	212	9 (8%)	110
Full-Time	39 (12%)	497	NA	NA
Part-Time	106 (33%)	497	NA	NA
Incumbent Worker	186 (47%)	393	NA	NA
Eligible Veteran	11 (6%)	170	NA	NA
Disabled	2 (1%)	173	NA	NA
Pell Eligible	35 (23%)	152	NA	NA
TAA Eligible	2 (1%)	166	NA	NA
Outcomes				
Program Completers	139 (28%)	497	10 (9%)	111
Credentials Earned	139	497	12	111
Students Earning Certificates (<=1 year)	139 (28%)	497	8 (7%)	111
Students Earning Certificates (>1 year)	0 (0%)	497	0 (0%)	111
Students Earning Degrees	0 (0%)	497	4 (4%)	111
Time-to-Completion	100 ± 0	139	100 ± 0	12
Certificates (<=1 year)	100 ± 0	139	100 ± 0	8
Certificates (>1 year)	NA	NA	NA	NA
Degrees	NA	NA	100 ± 0	4
Credit Hours Completed	1914	497	1292	111
Incumbent Worker Completer	53 (38%)	139	0 (0%)	111
Retained in Other Education Program	0 (0%)	497	0 (0%)	111

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 48: Southwest Tennessee Completion Rates by Demographics

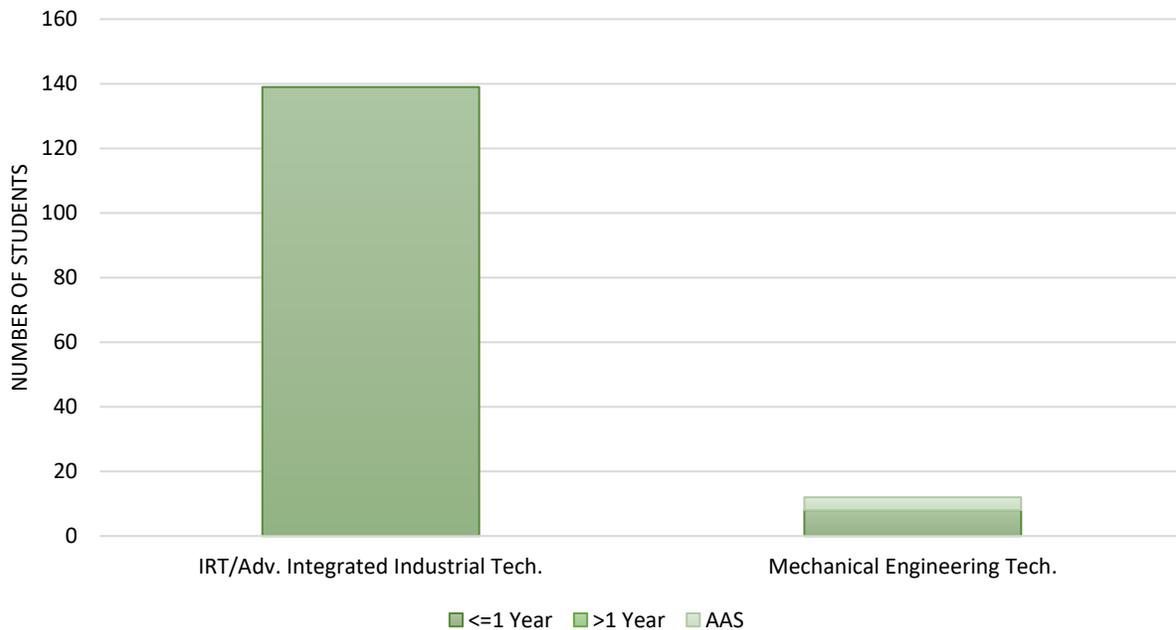
Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	8%	37%
Gender = Male	8%	35%
Gender = Female	10%	60%
Age < 31	8%	52%
Age >= 31	8%	40%
Non-White	ID	53%
White	16%	18%
Less than high school education	ID	ID
At least high school education		
Full time	ID	6%
Part time		14%
Non-incumbent worker	ID	46%
Incumbent worker		60%
Non-veteran	ID	69%
Veteran		55%
Non-disabled	ID	68%
Disabled		67%
Non-Pell grant eligible	ID	55%
Pell grant eligible		70%
Non-TAA eligible	ID	68%
TAA eligible		50%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for Southwest Tennessee

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 6.7 (p<0.01). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, and race. The propensity score adjusted odds ratio is 3.9 (p<0.01).

Figure 49: Southwest Tennessee Community College Number of Students Earning Certificates by Program Group



A summary of findings is found in the table below:

<p>The MRTDL project theorizes the grant intervention will promote improved program accessibility, completion, and post-completion employment. These outcomes are summarized below.</p>		
<p>Accessibility:</p> <ul style="list-style-type: none"> • Average age of participants (35) is higher than comparison persons (31). • There is a higher share of females enrolled in the grant-affected programs (40%) than females in comparison programs (19%). 	<p>Program Completion:</p> <ul style="list-style-type: none"> • The completion rate of participants is higher (28%) than comparison persons (9%). • All credentials earned were short-term for the participant group. 	<p>Post-completion Employment/Wage Increase:</p> <ul style="list-style-type: none"> • Updated wage and further education data will be incorporated into the final Annual Performance Report.

West Kentucky Community and Technical College

The participant group includes numerous short-term Maritime certificates leading up to an AAS in Marine Technology; numerous short- and long-term certifications in Welding; and numerous certificates leading to an AAS in Logistics and Operations Management. The comparison group includes numerous short-term programs (such as Commercially Sewn Apparel, Safety and First Aid, and Criminal Justice) leading up to an AAS in Criminal Justice; numerous short- and long-term certifications in Diesel Technology; and numerous certificates leading to an AAS in Business Administration.

West Kentucky Community and Technical College has identified three grant-affected program group stacks to be evaluated. Each program group has a unique comparison group of which the program group is to be compared to. These three program and comparison groups are presented with separate tables for each program group.

The tables below provide details on the total number of individuals included in the analysis along with demographic characteristics. This information is provided for the college overall, and for each of its grant-affected programs, if appropriate. Additionally, data on outcomes is listed including program completions, credentials earned, credit hours completed, employed after program completion (if available), job retention three quarters after completion, incumbent worker completion, and incumbent worker wage increases (if available). Data is presented in terms of counts and rates where it makes sense.

Table 50: West Kentucky Community and Technical College Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	2037	2037	4621	4621
Demographics				
Age	38 ± 13	2036	35 ± 10	4623
Female	436 (21%)	2035	2461 (53%)	4621
White	1152 (87%)	1321	3674 (88%)	4178
Black	136 (10%)	1321	349 (8%)	4178
Other/More than One Race	33 (2%)	1321	155 (4%)	4178
Hispanic/Latino	24 (1%)	2037	147 (3%)	4623
Full-Time	NA	NA	NA	NA
Part-Time	NA	NA	NA	NA
Incumbent Worker	684 (37%)	1843	108 (5%)	2015
Eligible Veteran	77 (4%)	2037	74 (2%)	3944
Disabled	28 (1%)	2037	72 (2%)	4623
Pell Eligible	434 (22%)	1981	2537 (55%)	4579
TAA Eligible	35 (2%)	1790	0 (0%)	2586
Outcomes				
Program Completers	1303 (64%)	2035	936 (22%)	4191
Credentials Earned	1977	2035	4743	4191
Students Earning Certificates (<=1 year)	999 (49%)	2035	1855 (44%)	4191
Students Earning Certificates (>1 year)	82 (4%)	2035	311 (7%)	4191
Students Earning Degrees	75 (4%)	2035	285 (7%)	4191
Credit Hours Completed	31261	2035	94451	4191
Incumbent Worker Completer	580 (45%)	1303	0 (0%)	936

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 51: West Kentucky Completion Rates by Demographics

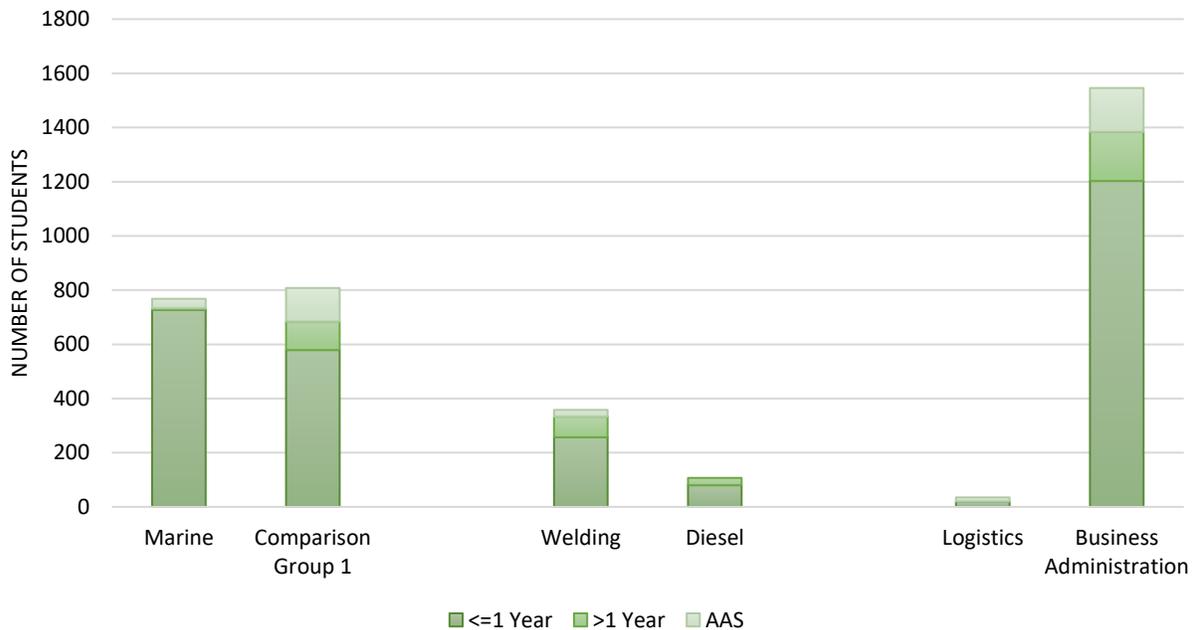
Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	4%	57%
Gender = Male	6%	57%
Gender = Female	3%	56%
Age < 28	1%	41%
Age >= 28	8%	63%
Non-White	16%	77%
White	2%	42%
Less than high school education	ID	ID
At least high school education		
Full time	ID	ID
Part time		
Non-incumbent worker	0%	47%
Incumbent worker	10%	80%
Non-veteran	4%	58%
Veteran	1%	34%
Non-disabled	4%	57%
Disabled	0%	36%
Non-Pell grant eligible	9%	67%
Pell grant eligible	1%	27%
Non-TAA eligible	0%	59%
TAA eligible	ID	14%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for West Kentucky

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 30.3 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, veteran status, disabled status, Pell grant eligibility, and TAA eligibility. The propensity score adjusted odds ratio is 15.4 ($p < 0.01$).

Figure 52: West Kentucky Community and Technical College Number of Students Earning Certificates by Program Group



A summary of findings is found in the table below:

The MRTDL project theorizes the grant intervention will promote improved program accessibility, completion, and post-completion employment. These outcomes are summarized below.		
Accessibility: <ul style="list-style-type: none"> • Average age of participants (38) is slightly higher than comparison persons (35). • There is a higher share of females enrolled in the comparison programs (53%) than grant-affected programs (21%). 	Program Completion: <ul style="list-style-type: none"> • The completion rate of participants is higher (64%) than comparison persons (22%). • The majority of credentials earned were short-term in both participant and comparison groups. 	Post-completion Employment/Wage Increase: <ul style="list-style-type: none"> • 45% of non-incumbent program completers found employment in the first quarter after exiting the program. 87% of those participants retained employment for 3 quarters. • 60% of incumbent workers achieved a wage increase after program enrollment.

West Kentucky Community and Technical College Marine

The table below details the demographics and grant outcomes for the participant and comparison groups for West Kentucky Community and Technical College (WKCTC). The first participant group includes numerous short-term Maritime certificates leading up to an AAS in Marine Technology. The first comparison group includes numerous short-term programs (such as Commercially Sewn Apparel, Safety and First Aid, and Criminal Justice) leading up to an AAS in Criminal Justice.

Table 53: West Kentucky Community and Technical College – Marine vs. Comparison Group 1 Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	1387	1387	1788	1788
Demographics				
Age	41 ± 13	1386	32 ± 13	1788
Female	346 (25%)	1386	762 (43%)	1787
White	634 (89%)	716	1406 (88%)	1590
Black	62 (9%)	716	125 (8%)	1590
Other/More than One Race	20 (3%)	716	59 (4%)	1590
Hispanic/Latino	11 (1%)	1387	70 (4%)	1788
Full-Time	NA	NA	NA	NA
Part-Time	NA	NA	NA	NA
Incumbent Worker	554 (45%)	1244	95 (10%)	932
Eligible Veteran	34 (2%)	1387	31 (2%)	1569
Disabled	5 (0%)	1387	32 (2%)	1788
Pell Eligible	154 (11%)	1363	945 (53%)	1784
TAA Eligible	1 (0%)	1205	0 (0%)	1137
Outcomes				
Program Completers	1065 (77%)	1385	213 (15%)	1434
Credentials Earned	872	1385	1208	1434
Students Earning Certificates (<=1 year)	727 (52%)	1385	579 (40%)	1434
Students Earning Certificates (>1 year)	6 (0%)	1385	105 (7%)	1434

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Students Earning Degrees	35 (3%)	1385	124 (9%)	1434
Credit Hours Completed	8421	1385	33636	1434
Incumbent Worker Completer	515 (48%)	1065	0 (0%)	213

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 54: West Kentucky Completion Rates by Demographics for Marine

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	1%	72%
Gender = Male	0%	74%
Gender = Female	1%	67%
Age < 30	0%	57%
Age >= 30	1%	77%
Non-White	1%	87%
White	1%	55%
Less than high school education	ID	ID
At least high school education		
Full time	ID	ID
Part time		
Non-incumbent worker	1%	63%
Incumbent worker	0%	91%
Non-veteran	1%	73%
Veteran	0%	35%
Non-disabled	1%	73%
Disabled	0%	0%
Non-Pell grant eligible	1%	81%
Pell grant eligible	0%	17%
Non-TAA eligible	1%	74%
TAA eligible	ID	0%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for West Kentucky for Marine

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 468.8 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, veteran status, and Pell grant eligibility. The propensity score adjusted odds ratio is 148.5 ($p < 0.01$).

West Kentucky Community and Technical College Welding

The table below details the demographics and grant outcomes for the participant and comparison groups for West Kentucky Community and Technical College (WKCTC). The second participant group includes numerous short- and long-term certifications in Welding. The second comparison group includes numerous short- and long-term certifications in Diesel Technology.

Table 55: West Kentucky Community and Technical College – Welding vs. Diesel Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	503	503	213	213
Demographics				
Age	30 ± 12	1386	28 ± 11	213

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Female	38 (8%)	502	25 (12%)	213
White	388 (84%)	460	183 (91%)	202
Black	62 (13%)	460	14 (7%)	202
Other/More than One Race	10 (2%)	460	5 (2%)	202
Hispanic/Latino	10 (2%)	503	6 (3%)	213
Full-Time	NA	NA	NA	NA
Part-Time	NA	NA	NA	NA
Incumbent Worker	97 (21%)	472	12 (9%)	129
Eligible Veteran	33 (7%)	503	2 (1%)	177
Disabled	20 (4%)	503	7 (3%)	213
Pell Eligible	216 (45%)	484	126 (59%)	213
TAA Eligible	12 (3%)	457	0 (0%)	142
Outcomes				
Program Completers	223 (44%)	503	66 (51%)	129
Credentials Earned	1049	503	485	129
Students Earning Certificates (<=1 year)	257 (51%)	503	80 (62%)	129
Students Earning Certificates (>1 year)	76 (15%)	503	27 (21%)	129
Students Earning Degrees	25 (5%)	503	0 (0%)	129
Credit Hours Completed	19226	503	4454	129
Incumbent Worker Completer	64 (29%)	223	0 (0%)	66

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 56: West Kentucky Completion Rates by Demographics for Welding

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	3%	30%
Gender = Male	4%	30%
Gender = Female	0%	32%
Age < 25	5%	33%
Age >= 25	0%	28%
Non-White	0%	17%
White	3%	34%
Less than high school education	ID	ID
At least high school education		
Full time	ID	ID
Part time		
Non-incumbent worker	2%	27%
Incumbent worker	0%	46%
Non-veteran	1%	30%
Veteran	0%	36%
Non-disabled	3%	29%
Disabled	0%	50%
Non-Pell grant eligible	5%	22%
Pell grant eligible	1%	40%
Non-TAA eligible	2%	30%
TAA eligible	ID	25%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for West Kentucky for Welding

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 13.4 ($p < 0.01$). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, veteran status, and Pell grant eligibility. The propensity score adjusted odds ratio is 13.2 ($p < 0.01$).

West Kentucky Community and Technical College Logistics

The table below details the demographics and grant outcomes for the participant and comparison groups for West Kentucky Community and Technical College (WKCTC). The third participant group includes numerous certificates leading to an AAS in Logistics and Operations Management. The third comparison group includes numerous certificates leading to an AAS in Business Administration.

Table 57: West Kentucky Community and Technical College – Logistics vs. Business Administration Outcomes Table

Variable	Participant Group	Participant Group N	Comparison Group	Comparison Group N
Total Number of Individuals	221	221	2717	2717
Demographics				
Age	38 ± 12	221	32 ± 10	2717
Female	65 (29%)	221	1704 (63%)	2715
White	172 (90%)	191	2145 (87%)	2452
Black	15 (8%)	191	215 (9%)	2452
Other/More than One Race	4 (2%)	191	92 (4%)	2452
Hispanic/Latino	3 (1%)	221	71 (3%)	2717
Full-Time	NA	NA	NA	NA
Part-Time	NA	NA	NA	NA
Incumbent Worker	38 (20%)	193	6 (1%)	997
Eligible Veteran	14 (6%)	221	43 (2%)	2292
Disabled	3 (1%)	221	37 (1%)	2717
Pell Eligible	82 (40%)	205	1506 (56%)	2677
TAA Eligible	24 (12%)	195	0 (0%)	1354
Outcomes				
Program Completers	26 (12%)	221	575 (22%)	2659
Credentials Earned	56	221	3050	2659
Students Earning Certificates (<=1 year)	20 (9%)	221	1203 (45%)	2659
Students Earning Certificates (>1 year)	0 (0%)	221	181 (7%)	2659
Students Earning Degrees	15 (7%)	221	162 (6%)	2659
Credit Hours Completed	3614	221	56361	2659
Incumbent Worker Completer	2 (8%)	26	0 (0%)	575

The table below offers details on the key outcome of program completion rates. Completion rates were calculated for individuals pursuing programs of similar duration over similar lengths of time.

Table 58: West Kentucky Completion Rates by Demographics for Logistics

Variable	Completion Rate in Comparison Group	Completion Rate in Participant Group
Overall	6%	11%
Gender = Male	11%	13%
Gender = Female	4%	6%
Age < 27	2%	9%
Age >= 27	11%	11%
Non-White	22%	6%
White	3%	11%
Less than high school education	ID	ID
At least high school education		

Full time	ID	ID
Part time		
Non-incumbent worker	0%	15%
Incumbent worker	25%	6%
Non-veteran	6%	10%
Veteran	2%	21%
Non-disabled	7%	11%
Disabled	0%	0%
Non-Pell grant eligible	13%	9%
Pell grant eligible	1%	14%
Non-TAA eligible	0%	13%
TAA eligible	ID	8%

ID: Insufficient Data to give a reliable completion rate due to missing demographic values

Estimation of Completion Rate Treatment Effect for West Kentucky for Logistics

The crude, unadjusted odds ratio (the odds of completion in the participant group relative to the odds in the comparison group) is 1.8 (p=0.03). A propensity score model (estimating the probability of being a member of the participant group) is fit using gender, age, race, incumbency, veteran status, disabled status, Pell grant eligibility, and TAA eligibility. The propensity score adjusted odds ratio is 1.3 (p=0.02).

West Kentucky Post-Completion/Incumbent Worker Outcomes

Post-completion and incumbent worker outcomes were collected from Kentucky's state wage data system, the Kentucky Center for Education and Workforce Statistics. The state only allows for aggregate data reporting. Aggregate data for participant and comparison groups is presented in the tables below.

Table 59: West Kentucky Community and Technical College Post-Completion and Incumbent Worker Outcomes

Program	Number of Eligible Completers Enrolling in College	Percent of Eligible Completers Enrolling in College
West Kentucky Community & Technical College - Participant Total	70	11.3%
Marine Technology	30	6.1%
Welding	37	30.1%
Logistics	3	27.3%

Program	Number of Students Employed in 1st Quarter After Study Completion	Percent of Students Employed in 1st Quarter After Study Completion
West Kentucky Community & Technical College - Participant Total	330	44.8%
Participant - Marine Technology	211	37.5%
Participant - Welding	111	68.1%
Participant - Logistics	13	76.5%
West Kentucky Community & Technical College - Comparison Total	842	59.0%
Comparison - Business	532	58.4%
Comparison - Comparison Group 1	290	60.8%
Comparison - Diesel	20	50.0%

Program	Number of These Students Employed in 2nd and 3rd Quarter After Study Completion	Percent of These Students Employed in 2nd and 3rd Quarter After Study Completion
West Kentucky Community & Technical College - Participant Total	228	87.4%
Participant - Marine Technology	149	86.1%
Participant - Welding	74	88.1%

Participant - Logistics	<10	100.0%
West Kentucky Community & Technical College - Comparison Total	607	86.6%
Comparison - Business	375	86.4%
Comparison - Comparison Group 1	220	87.3%
Comparison - Diesel	12	80.0%

Program	Number of Incumbent Workers with an Increase in Earnings After Program Enrollment	Percent of Incumbent Workers with an Increase in Earnings After Program Enrollment
West Kentucky Community & Technical College - Participant Total	241	60.1%
Participant - Marine Technology	148	53.8%
Participant - Welding	84	73.7%
Participant - Logistics	13	86.7%
West Kentucky Community & Technical College - Comparison Total	623	73.6%
Comparison - Business	406	73.6%
Comparison - Comparison Group 1	206	74.1%
Comparison - Diesel	11	68.8%