University of the District of Columbia Community College

Trade Adjustment Assistance Community College and Career Training II Grant Program (TAACCCT II)

Summative Evaluation of the University of District of Columbia, Community College's Transportation Academy

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Summary

The purpose of the Department of Labor's Trade Adjustment Assistance Community College and Career Training (TAACCCT) II Grant Program was to enhance training programs for community colleges across the United States and place individuals into jobs once they were trained. Each state received TAACCCT funds and UDC-CC was awarded funds in which it created and implemented the Transportation Academy, a three year program that trained unemployed and underemployed Washington, D.C. residents to work in transportation related fields.

The Transportation Academy was a brand new program which was closely tied to the Workforce Development and Lifelong Learning (WDLL) division. When the Transportation Academy was being developed there were already TAACCCT related programs in place at UDC-CC, such programs include the Construction Academy, healthcare programs, hospitality, as well as information technology.

One of the requirements of the TAACCCT II grant was inclusion of the third-party evaluator to provide formative feedback and a summative evaluation of the program. The Assessment, Evaluation, and Institutional Research (AEIR) unit from the American Society for Engineering Education (ASEE) was chosen to be the third-party evaluator. In addition to the AEIR unit, another evaluation team is reviewing the Transportation Academy deliverables.

At the outset of the Transportation Academy, UDC staff and AEIR collaborated as part of the evaluation process. AEIR designed a logic model and created a diagram of program implementation for the project. Throughout the evaluation process a combination of surveys, focus groups and interviews were conducted to document program implementation and to provide feedback to Transportation Academy staff during the program on what parts of the program are working well, what parts are not working well, based on key evaluation questions.

Quarterly reports were also a means used to provide updates from AEIR to the UDC Transportation Academy staff on key program outcomes. Reports coincided with the mapped outcomes as outlined by the Department of Labor. The Department of Labor had nine outcome evaluation criteria:

1) Total Unique Participants Served,
2) Total Number of Participants Completing a TAACCCT – Funded Program of Study,
3) Total Number of Participants Still Retained in Their Program of Study or Other TAACCCT-Funded Program,
4) Total Number of Participants Completing Credit Hours,
5) Total Number of Participants Earning Credentials,
6) Total Number Pursuing Further Education After Program of Study Completion,
7) Total Number Employed After Program of Study Completion,
8) Total Number Retained in Employment After Program of Study Completion,
9) Total Number of Those Participants Employed at Enrollment (incumbent workers) Who Receive a Wage Increase Post-Enrollment

Part of these criteria were addressed in the reports given to the Transportation Academy team.

The second part of the nine Department of Labor mapped outcome criteria were evaluated at the end of the program using secondary data sources on enrollment and wages. The first data source focused on students continued enrollment after participating in the Transportation Academy. The second data source, Jacob France Institute, was used to provide wages and promotions information after participating in the Transportation Academy.

Implementation of the Transportation Academy was documented through interviews with instructors, focus groups with students, and discussions with key Transportation Academy staff about implementation during quarterly meetings. In addition, a series of seven interviews with key Transportation Academy staff were conducted at the end of the program. The newness of UDC-CC as an institution and staff churn created challenges for the implementation of the Transportation Academy. A strength of implementation was the evidence based design, and a weakness was the link to jobs for students who completed Transportation Academy courses.

A final piece of the evaluation included comparing the Transportation Academy students to a group of students participating in a similar program. The program chosen for comparison purposes was the Construction Academy, a program within the WDLL division at UDC-CC. Students in the Transportation Academy and Construction Academy were compared on four Department of Labor mapped outcomes. These included the outcomes using data focusing on enrollment as well as employment wages and job promotions. The technique used to compare the groups was propensity score matching followed by chi-square analysis.

Results did not indicate a difference between the two groups, which is a good outcome for a new program. In other words, the students who went through the Transportation Academy, a newly developed program, did no worse on the evaluation measures than students who went through the Construction Academy, a more established program. Regarding enrollment, there were the same number of unique students who continued to enroll in classes in the Transportation Academy as the Construction Academy. Recommendations for the Transportation Academy include continuing to develop partnerships to enhance resource availability for new training programs in DC.

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Program Evaluation

The American Society for Engineering Education (ASEE) worked closely with UDC-CC Transportation Academy staff to carry out the program's evaluation plan. ASEE met with Transportation Academy staff to report on the periodic outcomes of the program to meet the data collection and evaluation requirements from the Department of Labor. The evaluation plan used mixed methods involving both quantitative and qualitative data collection. During the creation of an evaluation plan, ASEE developed a program logic model (see Appendix II), and a program diagram (Appendix I) which shows how Transportation Academy staff view how the program would be implemented. The program diagram helped to assure that ASEE staff and Transportation Academy staff had the same understanding of how the project would be implemented, and also helped with identifying key points in the project implementation for additional data collection to provide useful formative evaluation feedback to Transportation Academy staff. The first section describes meetings ASEE held with Transportation Academy staff at UDC-CC. A second section summarizes some of the formative feedback provided to the Transportation Academy staff through surveys, focus groups and interviews. A third section describes implementation of the Transportation Academy. A final section provides final performance measures followed by program outcomes in which Transportation Academy student outcomes are compared with Construction Academy student outcomes.

Meetings at UDC-CC

ASEE evaluation staff met with Transportation Academy staff about every three months to provide feedback on program outcomes. Data collection on project outcomes were discussed during these meetings as well as updates on changes in project implementation and formative feedback from additional surveys, focus groups and interviews were discussed. ASEE received outcome data from a 3rd party contractor, Keith Watson, and his AspirePath system. Also, for purposes of creating a comparison group for project evaluation, ASEE received NCCER Craft Skills – Core Instruction; Electrical I; and Heating, Ventilation, Air Conditioning (HVAC) Theory data on Construction classes. However, the data were not provided for the comparison group for April and September in 2015.

Student Surveys

ASEE evaluation staff provided survey development expertise to create two surveys to help Transportation Academy staff understand project implementation successes and challenges from the perspective of students. See Appendix III for a full copy of survey questions and response choices. In addition to the surveys conducted by ASEE, a copy of the class surveys administered by Transportation Academy staff to students is included as well.

The first survey was developed to measure the level of satisfaction of the incoming students with the career counseling services provided by the UDC staff. The survey also intended to measure the effectiveness of advising services by tracking what area of study the students were advised to choose and what area of study they ultimately ended up choosing. This survey was not administered in 2014-15.

The second survey was developed to measure the quality of Transportation Academy offerings by capturing students' attitudes toward various aspects of the program, such as course scheduling, location, quality of career advising, quality of the instructors and course materials, and students' expectations about the program and its contribution to meeting their career goals.

ASEE researchers first administered the student satisfaction survey in the fall of 2014 online, but only four students responded to the survey. Following this unsuccessful attempt, the Transportation Academy staff administered the survey second time in the classroom and in paper format, but again the response rate turned out to be very low. The responses obtained from these two attempts did not provide any useful information for program evaluation; therefore, they were not reported.

To increase response rate, ASEE then proposed a new strategy to TA staff on March 25, 2015. This involved re-administering the online survey in multiple waves with an incentive. However, the survey was not administered in 2015. Rather than relying on surveys to collect feedback from students on their satisfaction with the program, ASEE proposed to conduct additional focus groups to collect similar information that the surveys collected, but in the form of focus groups. A memo outlining the next steps for the survey process from March 25, 2015 is included in Appendix III.

Transportation Academy Instructor Interviews

As part of the formative evaluation of Transportation Academy, ASEE conducted four phone interviews with three Transportation Academy instructors and with the Director of Excel Automotive Institute. The purpose of the interviews was to capture instructors' perspectives on what program areas are working and what areas are not working at the Transportation Academy. The summary of findings from the interviews follows.

Summary of Results from Interviews

- Even though the majority of the students drop out from the program (for an Electronics I course) without earning any credentials, the instructors believe that they gain valuable hard and soft skills from this experience.

- To address poor academic preparation, the instructors suggested that the program should offer more remedial courses, especially in Mathematics and English, and have appropriate prerequisites for the classes.

- The instructors believed that more laboratory equipment to gain hands-on experience supplementing theoretical lessons would lift student interests as well as learning outcomes.

- Some of the basic certifications that the students are being prepared for bear very little value in the job market. Transportation Academy should offer a complete sequence of courses that lead to more marketable certifications. For example, the electronics instructor noted that the SET certificate is a basic credential in the electronics technician profession. Therefore it is very challenging for any student without prior work experience to find employment with this credential. CET is the advanced level certificate, which could greatly increase the odds of finding employment in this field.

- Quality control is an issue. Sometimes students without proper motivation in the subject matter are often placed in the class. The students that are most benefited by the program are the ones that have relevant work history and have the proper perspective on progressing their career further.

- Transportation Academy needs to develop better relationship with the area employers to provide their students with the opportunity to enter the job market through internships etc. Enhanced career counseling services at Transportation Academy is essential.

- The administrators should focus more on strengthening the structure of the program as well as laying out a long-term vision on the future of the program. For its long-term sustainability, the program has to be a part of something that is bigger than awarding a certificate, such as part of an Associate's degree offered by UDC. Giving the students broader but realistic perspectives on the incremental benefits of the program and making it more sensitive to the difficulties its clientele face could improve overall morale and address retention issues.

In addition to the summary of findings from the instructor interviews, there is a follow-up memo in appendix IV which touches on the recommendations by interviewed instructors.

Student Focus Groups

As part of the periodic evaluation of Transportation Academy program, ASEE administered three focus group sessions in April, 2015 with students to gather qualitative data about their experiences in the program.

Table 1 Focus Group Schedule

Class	Date	Start Time	Location	Number of Participants	Duration (min)

HVAC Technician 609	April, 11, 2015	4:45 pm	UDC North Capitol street	8	45
Automotive Technology	April 23, 2015	7:30 pm	Excel Institute	17	90
HVAC Technician 608	April, 25, 2015	4:00 pm	UDC North Capitol street	2	60

Each session began with signing the consent forms by the participants. The instructors were present at the beginning of the sessions and assisted with mobilizing the students and leading them to the classrooms in which the sessions were held. In HVAC 608 session, the instructor could not persuade all the students to stay after the class and only two students participated in the session. Low participation rates could be attributed to the timing of the sessions, which were scheduled at the end of the day, following an eight-hour long class and a certification test. In all sessions, about half of the participants spoke actively. In the future, we might consider holding the sessions at a different time that works best for the students.

The conversations in all three sessions were recorded for transcription and further analyses. Refreshments were provided at each session. The discussions were moderated by the researchers from ASEE. The questions were designed to capture student perception and experience in the areas of career goals and motivations, application, admission, counseling, classroom, instruction, cost of attendance, schedule, and job placement and academic progression. An abbreviated version of the results of the focus groups are listed below. For the more detailed report, please see the appendix.

Focus Group Summary of Findings

Motivation and Career Goals

> Students thought positively about the outcome of the program, not only because it prepared them for acquiring credentials, but also because it helped them build self-confidence and provided them with skills to be self-reliant on meeting their own automotive maintenance needs.

Hearing about the Program

Students felt that the program was not well publicized.

Application Process

Most students expressed concerns about the admissions process which was described as confusing, primarily due to lack of standardized processes in place as well as lack of institutional knowledge and coordination among admissions staff.

Counseling Experience

Students indicated that academic counseling service is satisfactory but career counselling service needs improvement.

Class Experience

Students appreciated hands-on training more than textbook-based theoretical learning.

Instruction

Students were positive about the quality of their instructions.

Cost of Attendance

Students appreciated free tuition but still many struggled to cover transportation costs.

Class Schedule and Attendance Requirement

Many students struggled with meeting strict attendance requirements, apparently a major reason for high withdrawal rates in the program.

Job Placement and Academic Progression

Students felt that the program should put greater emphasis on employment outcomes and close the existing gap between the school and the local employers through more industry partnerships.

The program should also provide students with more opportunities to transition into a degree program, such as allowing credit transfers from workforce development programs to associate`s degrees.

Student Recommendations

The following were areas of improvement based on student focus group feedback.

- Job placement
- Transition to a degree program
- Financial help with transportation

- Improve program administration

Program Implementation

Implementation of the Transportation Academy was documented through interviews with instructors, focus groups with students, and discussions with key staff about implementation during quarterly meetings. In addition, a series of seven interviews with key Transportation Academy staff were conducted at the end of the program.

Program implementation can be affected by a variety of factors. For example, Durlak and DuPre (2008) identified factors that can affect the implementation of federally funded programs. Those factors are: 1) community factors which include politics, funding and policy; 2) provider characteristics which include implementation involved perceptions related to the need for, and potential benefits of the innovation, self-efficacy, and skill proficiency; and 3) innovation characteristics which include implementations are adaptable and flexible.

Successful programs require a combination of fidelity and adaption, and this was the case for University of the District of Columbia Community College's (UDC-CC) Transportation Academy. We found that community factors, namely politics and policy, affected key parts of implementation of the program as it was proposed to the Department of Labor (see Appendix IX for a summary of UDC-CC's proposed Transportation Academy program). The factors of politics and policy can be traced back to the relative newness of UDC-CC, which came into existence only two years before the start of Transportation Academy and during a time which is described on the UDC-CC website as "a dynamic year of transition and adjustment for the newly created community college" (UDC-CC, 2015). The politics and policy factors that affected implementation were not things that UDC-CC's Work Force Development and Life Long Learning could directly control, yet still impacted the implementation for the Transportation Academy, particularly when it came to purchasing laboratory space and equipment which then affected other areas of program implementation

The initial vision of the Transportation Academy was very big; meaning the program was broadly conceived to cover many areas of transportation needs in the D.C. area, including things like diesel engine repair and road and bridge maintenance. The final scope of the Transportation Academy was narrower, with focus on automotive technology, electrical and HVAC.

In the original proposal that UDC-CC submitted to the Department of Labor, there were five core elements which were highlighted in order to provide a foundation for program implementation.

They were as follows:

- evidence-based design,
- industry engagement to identify credentials,
- plans to stack and lattice credentials,
- online and technology-enabled learning,
- strategic alignment.

The description of implementation below follows the outline from the original proposal. Through implementation discussions during quarterly meetings with Transportation Academy staff, and through the review of transcripts of interviews with Transportation Academy staff that occurred after implementation of the Transportation Academy, we note that two general, overarching themes that affected implementation of the Transportation Academy. First, as noted previously, UDC-CC was a new organization and was going through a dynamic time when the Transportation Academy started. The newness of the organizations contributed to some purchases not being made for the program as were originally proposed; for example, based on the original proposal to Department of Labor, around $900,000 was allocated for purchase of a laboratory space and equipment for the Transportation Academy program, but limited purchases were made by UDC-CC, meaning the Transportation Academy had to find other venues to hold classes, including holding classes at the UDC-CC main campus, the Backus Campus, and hiring a third party, the Excel Automotive Institute, to provide classes. In addition, UDC-CC developed only one articulation agreement with other area schools. We also attribute this to the newness of UDC-CC. If the community college had existed for a longer time, UDC-CC would have had articulation agreements in place with area schools that Transportation Academy could add to rather than having to develop articulation agreements from scratch.

Also, as noted from the interview transcripts, the Transportation Academy had a lot of staff turnover. For example, the program had three different directors during implementation. Transportation Academy staff who were interviewed did not provide a definitive reason for staff turnover. Some suggested the vague and broad scope of the Transportation Academy wasn't appealing to staff, and another explanation was good people were hired for the Transportation Academy and then internally "poached" by other programs. Regardless of the reason or reasons, as reported in interviews, staff turnover did affect implementation of the Transportation Academy project and contributed to the project not reaching the "bigness", the diversity of courses, as originally conceived.

Evidence-Based Design

The original conceptualization of the Transportation Academy was premised on an evidence-based approach pioneered at Valencia Community College of Orlando, Florida, to create pathways to STEM occupations for high school students and adults. Valencia Community College offers technical certificates that when combined with general education courses lead to an Associate's degree. This approach enables individuals to either "learn and earn" or follow a traditional post-secondary education pathway. UDC-CC planned to use this model combined with input from local businesses to develop a stackable certificates that lead to a degree. This allowed students to get certification to become a technician or to continue with their studies while earning college level credit.

Implementation of an evidenced-based design is a strength of the Transportation Academy program (see Appendix I for a diagram of the program model). Based on interview transcripts and feedback from focus groups, the things that directors could control in the evidenced-based design were well implemented. The following is a description of key aspects of the model and

includes student recruitment, student testing, student advising, course taking, link to jobs, and feedback loop.

Student Outreach and Recruitment

Student recruitment for the Transportation Academy focused on reaching out and finding D.C. residents who have the ability to succeed in the job market, were not particularly motivated during high school, but now have become serious about finding a job and establishing a career. Recruitment was conducted in numerous ways with a focus on areas of D.C. that have the highest unemployment rates, Wards, 5, 7, and 8. Settings for recruitment included Union Station, local Giant grocery stores located in high unemployment neighborhoods, high schools, and job fairs. Additional outlets included public libraries as well as Job Corps, car dealerships and local churches. Students were referred from community organizations that work with young people and spread information about Transportation Academy course offerings at UDC-CC.

Additional efforts were made to recruit students who were already active as students at UDC-CC. Student advisors and student support specialists would educate students about opportunities available through the Transportation Academy throughout student registration. Contact information from prospective students is stored in a database for roughly 5,000 to 10,000 students and was used to contact students about Transportation Academy course offerings. Word of mouth was also used to increase enrollment in the Transportation Academy. Transportation Academy staff would announce Transportation Academy classes at related classes, such as construction related courses, emphasizing that the certifications they would receive through successful completion of the courses and exams would make them more marketable. These high touch approaches were a reflection of the desire the staff had to ensure students and the program could succeed.

Student Testing

After a potential student expressed interest in the Transportation Academy they spoke with a Student Success Specialist who advised them based on their expressed interests and guided them on taking an on-line workforce skills placement test called CASAS as a first step towards class placement. The test was administered by the Director of Assessment at UDC-CC, who had a couple of helpers at each UDC-CC class site to proctor the on-line exam. After a student took the CASAS they were able to choose which courses to take. Transportation Academy staff provided guidance based on the potential student's test score, prior grades, and expressed interests, but the ultimate decision was up to the student; as potential students could select non-Transportation Academy courses also.

The CASAS test selected for the Transportation Academy focused on workplace competency skills.   The test consisted of fifty questions and took about fifty minutes to complete. The CASAS was offered three to four times a day during the registration period, as well as select times at UDC-CC Transportation Academy locations.

The CASAS included two parts, math and reading. The CASAS had five different levels, A through E, where A is the worst and E is the best. The levels drill in on the competencies to help an instructor figure out exactly where students have deficits so they could specifically train or teach onto those competencies to help students improve. For the electronics class the required math score was increased because the class was more demanding. Tutoring was available to help students who did not meet the minimum CASAS math scores. Students had to complete tutoring and retake the test and receive a high enough math score before they could take a Transportation Academy class.

Student Advising

When meeting students, Transportation Academy staff also went to great lengths to educate students about the program and worked to make sure the Transportation Academy was a good fit for the student's interest and long term career goals. As one Transportation Staff reported, "we ensure that students had the right information as far as the expectations of the class, the skill set of the class. If our classes had prerequisites, we make sure that we communicated that information to the students."   Another Transportation Academy staff reported, when advising students, we would ask questions like, "What are your career goals? Are you a hands-on type of a person? What type of a work environment do you feel comfortable working in?"

Transportation Academy Courses

UDC-CC provided courses in three areas, Automotive Technology, Electronics and HVAC. Automotive Technology courses were provided by the Excel Automotive Institute which is a non-profit organization with the goal of training underemployed and unemployed for jobs in the field of automotive technology. Automotive classes were held at the Excel Institute work site. Electronics courses were held at UDC-CC's main campus and the Backus Campus. HVAC courses were held at UDC-CC's main campus, Backus Campus and the Shadd Campus. Below is a description of Transportation Academy courses, as described on the UDC-CC website.

Automotive Technology
The Transportation Academy launched the Automobile Tech I Program in Fall 2014. The Automobile Tech I program is an 8 month program that meets the National Automotive Technicians Education Foundation (NATEF) requirements.   The Automobile Tech I program consists of NATEF's Maintenance and Light Duty Repair (MLR), Basic Electronics, Technical Writing, and ASE G1 Test Review. This program requires 653 hours of training, approximately Eight (8) months in duration for classes that are held in the evening hours (5pm – 9pm, Monday thru Friday). The program is a combination of classroom and lab/shop instruction as outlined by NATEF's accreditation model. At the end of the program, students will sit for the "ASE Certification in Maintenance and Light Repair" (G1) credential.

Electronics I
This Electronics I curriculum is a 135-hour program that prepares students to understand the concepts and terminology of electronics. It is aimed at providing students with an understanding of the basic principles associated with electrical theory and applications, without the assumption

of any prior knowledge of the topic. The course begins with understanding some of the basic electrical theory principles such as the simple DC circuit, Ohm's Law and the calculation of power and consumption requirements. Areas of study included Electronic Components, Soldering/De-Soldering, Electrical Block Diagrams and Schematics, Power Supplies, Test Equipment and Measures, Series and Parallel Circuits, Technician Work Procedures as well as additional areas of study as detailed in the course objectives. At the end of the course, students sat for the "ETA Student Electronics Technician" credential.

HVAC EPA Section 608 - Universal
The HVAC 608 class was a two day class designed to help facilitate students' prior knowledge of HVAC systems and apply that knowledge in the topic of refrigerant recovery. This course reviewed the rules and regulations regarding refrigerant recovery, recycling and reclaiming, and the effects of refrigerants on the environment. In addition to the text, students will utilize handouts, and other resources identified by the instructor to assist with the completion of the course. At the end of the course, students sat for the "EPA Section 608 Universal HVAC Technician" credential.

HVAC EPA Section 609 - Automotive
The HVAC 609 class was a two day class designed to help facilitate students' prior knowledge of HVAC systems and apply that knowledge in the topic of refrigerant recovery specifically for Motor Vehicle Air Conditioners. This course reviewed the rules and regulations regarding refrigerant recovery, recycling and reclaiming, and the effects of refrigerants on the environment. In addition to the text, students utilized handouts and other resources identified by the instructor to assist with the completion of the course. At the end of the course, students sat for the "EPA Section 609 MVAC Technician" credential.

Link to Jobs

In addition to the Student Support Specialists that focused on advising students before and during courses, Transportation Academy also employed an Employer Outreach Specialist who worked with students after courses on resume writing and mock job interviews. The Employer Outreach Specialist received recommendations from industry partners, were notified of job openings and would pass these onto the students and encouraged them to apply for those positions.

A weakness in linking students to jobs was lack of formal internships/ apprenticeships provided to students after completing a Transportation Academy course.   As will be discussed in more detail in the Industry Council section below, Transportation Academy had challenges developing official internship/apprenticeship programs with their partners due to a variety of reasons including, partners were not set up to take on interns and liability issues with interns working alongside regular employees.

Feedback Loop

Feedback was provided to UDC-CC Transportation Academy staff through the formative evaluation activities conducted as part of the Transportation Academy evaluation. As noted by one interviewee, feedback was provided through "the focus groups that were conducted by

ASEE, we also looked at that data from a different lens. Not like from the evaluation lens, but from the program improvement lens." Focus group results were used in order to bring about positive change in the Transportation Academy project. UDC-CC Transportation Academy staff also conducted formative feedback by soliciting input from students through various means.

UDC-CC conducted surveys as part of the classes offered through the program. In general the student surveys were satisfaction oriented and included items which could be used to improve course content and delivery. One student survey was conducted before the semester started and a second survey was conducted towards the end of the semester. One Transportation Academy staff reported, "the surveys included how the course went and if students have feedback about the instructor."

Informal feedback was also used to understand student's views of the classes and to make changes as needed. One method used was continuous communication with students regarding instructors. Often this information came through Transportation Academy student support staff. As one staff reported, "anytime the students would give information to me, we would always pass that onto the instructors." There was also ongoing dialogue with instructors which focused on resources and materials being used. Transportation Academy support staff would act as a go-between stemming from faculty desire to know more about students. For example, if students were having difficulties and they weren't doing well in a class, then the instructors would let Transportation Academy staff know and the staff members would see what the issues and concerns were with the students. Based on information gleaned from students, then support staff were able to inform instructors on ways to enhance their instructional techniques to address the student feedback.

Transportation Academy staff also facilitated larger discussions held as "town hall meetings," which were informal gatherings of students and staff involved in the Transportation Academy to discuss aspects of the program. "We took that discussion from a town hall and went back to the instructors with some input on how they should focus their classes on what some of the students felt they needed from the classes and how the professors could provide that to them." Town hall meeting feedback was another mechanism which was used to ensure staff and instructors were taking into consideration student feedback to improve program offerings and align them with student needs.   Both formal and informal assessment methods were used improve class offerings and to improve decision making about the Transportation Academy.

Industry Engagement to Identify Credentials
The Transportation Academy established an Industry Council which included members from Volkswagen, Chevrolet, WMATA Metro, D.C. Metro Agency, Amtrak, AAA and a place called Linked, as well as JKL, and the DC Department of Transportation. Additional partners would include the Workforce Advancement Council (WAC), Workforce Investment Council (WIC), and Department of Employment Services. From the beginning of the Transportation Academy, one of the key roles of the industry partners for the Transportation Academy was identifying the

skills needed for the curriculum and the types of qualifications for faculty who would teach. While skills needed in Transportation Academy graduates included technical skills, the review of the skill set of the entire employee was emphasized, as one Transportation Academy staff reported, "employers were very clear that they wanted us to look at the whole employee, not just the technical piece."

Because of Transportation Academy's engagement with industry partners, the Transportation Academy recognized "students needed more professional skills; and therefore, developed a professional skills curriculum." The professional skills component included instructions which would help students be seen as model employees. Aspects of the professional skills program included "communication, work responsibilities, and following the protocols of the organization." The Industry Council played a critical role in providing feedback for the technical and professional skills of the program.

Industry Council members were also tapped as guest speakers to encourage students to pursue the jobs and careers of their choice. Guest speakers were seen as a means to motivate students through discussing opportunities. Classroom visits by partners were viewed positively because "it keeps [students] motivated when an employer shows an interest. When an employer goes to our shops, mingles with the students, has a dialogue with them, invites them to their facilities and things of that nature; that really keeps them motivated." Feedback and engagement from employers to students in a direct connection was key to keeping students engaged and motivated to continue to pursue their next steps.

The Industry Council was essential to the success of the Transportation Academy, but the role of the Industry Council was often described by Transportation Academy staff as getting mixed results. It proved harder than expected to engage a large variety of partners in the Industry Council, and some of the partners who originally expressed interested in the Transportation Academy were inactive when called upon or had a different vision for how a program like the Transportation Academy should be run. An example of a partner that was difficult to engage was the D.C. city's street car. As reported in a Transportation Academy staff interview, we tried "to work with our city partners around street car, [but] their timeline was changing so much and their project scope was changing so much that it was difficult for us to get any traction there." The loss of partners at the offset of the program contributed to the narrower scope of the Transportation Academy course offerings, since only a smaller set of potential employers provided input into the curriculum of the Transportation Academy. A quote from one staff interview,

> "…And we would invite different organizations, different companies to come and talk to us. I wouldn't say it was an argument, but there were different opinions on how our program should go. And it was unfortunate for us that we couldn't agree on some things. We ended up losing a couple of would be partners. But the ones that we still do have are great. So I guess that would be the down side of it. The programs, again, that we do have are very involved. They're happy with us and we're happy with them."

The role of the Industry Council evolved overtime. At the offset of the program, industry council members provided input into in the curriculum and the qualifications for the instructors who would teach Transportation Academy students. During the program, the industry council members validated the curriculum and spoke with Transportation Academy students. As mentioned previously, an area that did not fully crystalize for the Transportation Academy was the creation of student internships, traineeships and job shadowing opportunities that could eventually lead to full-time employment for Transportation Academy students.

Many industry council members were not set up to provide on-site student learning opportunities. Often the structure for an internship or comparable opportunity did not exist, an employer would have to create the structure. "There would have to be steps taken in order to show how such experiential programs for students would fit into the existing work structure. Potential employers often did not want to take time away from their core business to figure out how an on-site student learning opportunity could work."

Liability was also cited as a reason employers may have backed away from providing hands-on training to students. "There's always a reason we can't do internships or we can't do a whole day at their site. Usually, it comes back to liabilities." There is "placement also. We've had a few good interviews, but they have not wanted to step up and make placement offerings or help us place students." So there has been a mixed bag in regards to contributions by some partners.

However, even if opportunities were not made immediately through a partner, there was still a "willingness to identify opportunities for our students," in their field of interest by partners and members of the Industry Council. Other entities also helped get the word out about the Transportation Academy, "community organizations that work with young people are able to spread information about our course offerings that we have here."

Stack and Lattice Credentials

Transportation Academy was successful at implementing a stack and lattice credentials with input from the Industry Council members. The council provided feedback for Transportation Academy staff in order to move forward with identifying credentials and skills which would be in-demand. The result was a focus on the certificates which were to be offered by UDC-CC including the following external third-party credentialing agencies: National Institute for Automotive Service Excellence, Electronics Technicians Association International, and EPA.CFC Certificate Type I, II, III. In Appendix VIII there is a highlight of the student pathways through certificates.

Online and Technology-Enabled Learning

At the start of the UDC project, there were plans to include elements for online and technology-enabled learning. Interview transcripts support this initial emphasis, the plan was to expand the reach of the Transportation Academy by holding entire courses on-line. One interviewee even expressed the desire to take program elements and make them open-source, such as the curriculum. However, outside of these initial plans to create an online presence and use technology to support learning, efforts to reach this ideal were not realized. Part of the reason may reside in the students entering the Transportation Academy. Access to computers was promoted by support staff, however, one of the skill sets found to be lacking with the informal curriculum for select students was data entry skills and a sense that students may not have been accustomed to using online and technology-enabled learning. Most of the instruction was a traditional face-to-face communication approach with an instructor, a textbook and supplemental hand-out materials. The exception was the hands-on training implemented by the Excel Institute within an auto-shop. In general, online supplemental course modules were available, but technology-enabled learning was not realized to the extent it was originally envisioned.

Strategic Alignment and Strategic Vision

UDC-CC proposed to collaborate with local employers, including DDOT and CSX, to ensure that the DC Transportation Academy met its goals. UDC-CC envisioned the role of employers to include:

- Comment on the program's goals and progress;
- Feedback about skills and competencies required in the workforce;
- When appropriate, employment opportunities for qualified participants who complete grant funded education and training programs; and
- When possible, miscellaneous resources to support this effort, which may include access to curriculum, equipment, instructors, funding, internships, or other work-based learning activities.

Some parts of the strategic alignment worked better than others. The Transportation Academy received comments on program goals and progress and received feedback on skills and competencies required in the workforce. Employment and training opportunities were somewhat limited; and examples of shared resources were limited to curricula and identifying instructors.

With the formal ending of the Transportation Academy implementation phase as of March 31, 2016, program sustainability has been a focus of the program. Transportation Academy staff are seeking local funding and national grants to keep the Transportation Academy running as a program. While there were partnerships formed that helped align the program with industry needs, shared resources have been limited to curricula and instructors. This is important given that these partnerships could have been a funding mechanism to continue the Transportation Academy. As the Transportation Academy draws to a close, new partnerships are being sought

which may result in money on a smaller, localized scale, but funds that would enable the full continuation of the program long-term have not yet been found. Also, to sustain the program, Transportation Academy staff are revisiting conversations with organizations which have significant transportation roles locally such as the D.C. Department of Transportation and the Department of Environment. Student inquiries are one way there is continued demand for program sustainability. In the future, Transportation Academy staff are seeking to broaden the program to include class areas in logistics and safety, and planning and transportation construction.

As pointed out by a Transportation Academy staff member, "Transportation Academy is in a unique position because it resides in the capital of the nation; everybody has an association here. We've got the American Association of State Transportation and Highway Officials (AASTH) and the APTA (American Public Transit Association) is here. We have ARTBA, American Road and Transportation Builders Association. We have American Trucking Association here, ATA. Then we've got the premiere research organization for transportation in the country if not the world, the Transportation Research Board at the National Academy of Sciences." When considering expansion, the Transportation Academy is uniquely located to access resources for sustaining the program, but must make those connections.

Summative Evaluation

The summative evaluation presents the outcome metrics for the Transportation Academy. Data comes from three sources. The first was for the final quarterly report which used data from the AspirePath system. The second data source was the National Student Clearinghouse, and the third data source was the Jacob France Institute.

A third party data administrator used a custom data system, AspirePath, in order to store and retrieve information for the Transportation Academy students. By the end of the project a combined data system had been created and implemented which used universal "guid" identifiers for each student in place of student id's. This replaced two older systems which were separate and lead to issues when pulling from the two systems and merging based on the student ids, not the newly created single unique identifier of "guid".

The Department of Labor mapped outcomes are reported using quantitative data obtained from three sources. The first is the previously mentioned AspirePath data system which is used for outcomes 1-5. The second is data obtained from the National Student Clearinghouse for outcome 6 focused on enrollment. The third data source is Jacob France Institute, which is used to report data for outcomes 7-9 and focuses on wage and employment data. A copy of the mapped summative evaluation outcomes is included below. The point of contact for the Jacob France Institute is Keith Watson, a consultant for UDC-CC. UDC-CC already has an MOU (via OSSE) in place for providing data for the Transportation Academy evaluation. The data included in Table 2 is for the initial goals set prior to implementing the Transportation Academy program.

Table 2 Transportation Academy Outcome Measures

	Outcome Measure	Targets for TAACCCT Program (All Participants)		Final Outcomes
1	**Total Unique Participants Served** – Cumulative total number of individuals entering any of the grant-funded programs offered.	Year 1:0 Year 2:160 Year 3: 160	Total:320	306
2	**Total Number of Participants Completing a TAACCCT – Funded Program of Study** Number of unique participants having earned all of the credit hours (formal awards units) needed	Year 1:0 Year 2:120 Year 3:80	Total:200	186

	for the award of a degree or certificate in any grant-funded program.			
3	**Total Number of Participants Still Retained in Their Program of Study or Other TAACCCT-Funded Program** Number of unique participants enrolled who did not complete and are still enrolled in a grant-funded program of study.	Year 1:0 Year 2:60 Year 3:50	Total:110	2014 = 61 2015 = 70 Total = 131
4	**Total Number of Participants Completing Credit Hours** Total number of students enrolled that have completed any number of credit hours to date.	Year 1:0 Year 2:90 Year 3:60	Total:150	205
5	**Total Number of Participants Earning Credentials** Total number of participants completing degrees and certificates in grant-funded programs of study.	Year 1:0 Year 2:90 Year 3:60	Total:150	128
6	**Total Number Pursuing Further Education After Program of Study Completion** Total number of students who complete a grant-funded program of study and enter another program of study, grant-funded or not	Year 1:0 Year 2:54 Year 3:36	Total:30	10 (unique TA students)
7	**Total Number Employed After Program of Study Completion** Total number of students (non-incumbent workers only) who complete a grant-funded program of study who are employed during the quarter after the quarter of program exit.	Year 1:0 Year 2:25 Year 3:30	Total:30	13
8	**Total Number Retained in Employment After Program of Study Completion** Total number of students (non-incumbent workers only) who completed a grant-funded program of study and who entered employment in the quarter after quarter of program of exit who retain	Year 1:0 Year 2:32 Year 3:22	Total: 18	6

	employment in the second and third quarters after program exit			
9	**Total Number of Those Participants Employed at Enrollment (incumbent workers) Who Receive a Wage Increase Post-Enrollment** Total number of students who are incumbent workers (i.e., employed at enrollment) and who enrolled in a grant-funded program of study who received an increase in wages after enrollment.	Year 1:0 Year 2:5 Year 3:10	Total: 10	9

The following four outcome measures are used to assess the impact of UDC-CC's Transportation Academy on students. The measures track the number of students after completing the Transportation Academy (i.e. go on to further education, find employment, continue employment, or receive a wage increase). A chi-square test of independence was used to assess if there is a statistically significant difference between students who went through the Transportation Academy compared to students matched on key characteristics of UDC-CC students who attended a non-Transportation Academy credentialing program. The comparison group was the Construction Academy.

Table 3. Transportation Academy Final Outcome Measures

	Outcome Measure	Targets for TAACCCT Program (All Participants)
6	**Total Number of Participants Enrolled in Further Education After TAACCCT-funded Program of Study Completion** Total number of students (non-incumbent workers only) who completed a grant-funded program of study entering employment in the quarter after the quarter of program exit.	Year 4:(follow-up only): 30
7	**Total Number of Participants Employed After TAACCCT – funded Program of Study Completion**	Year 4:(follow-up only): 30

	Total number of students (non-incumbent workers only) who completed a grant-funded program of study entering employment in the quarter after program exit.	
8	**Total Number of Participants Retained in Employment After Program of Study Completion** Total number of students (non-incumbent workers only) who completed a grant-funded program of study and who entered employment in the quarter after the quarter of program exit who retain employment in the second and third quarters after program exit.	Year 4:(follow-up only): 18
9	**Total Number of Those Participants Employed at Enrollment Who Received a Wage Increase Post-Enrollment** Total number of students who are incumbent workers and enrolled in a grant-funded program of study and who received an increase in wages after enrollment.	Year 4:(follow-up only): 10

A quasi-experimental post-test only design was used since the outcome measures describe the status of students after they complete the program, and do not require measuring change from before the program. A quasi-experimental design was used rather than randomly assigning students to either the Academy or an alternate program such as the Construction Academy because students are able to select the courses of their choice and random assignment would mean someone would need to randomly assign students to one or the other. Students were selected into the Transportation Academy after they found information on the UDC-CC's website, contacted a Student Success Specialist who administered a CASAS, and then counsels the student on which programmatic area of the Transportation Academy is a good fit for them, but the ultimate choice of area of study was made by the student.

A potential weakness of the quasi-experimental design is the selection process into the program may create a selection bias. Also, there are no credentialing programs substantively similar enough to the Transportation Academy to randomly assign students who may be a good fit for the Transportation Academy; therefore, if we randomly assign students, the only control condition would be no treatment, which would be unethical since it would deny citizens a needed government benefit.

To increase the robustness of the evaluation design, the following student characteristics are used to match similar students who went through a similar UDC-CC credentialing program to those who went through the Transportation Academy:
- Gender
- Race
- Ethnicity

- Age

The evaluator chose the Construction Academy in order to match students from the Transportation Academy program. Again, in the absence of a true control group for this study, the matched group is simply the group which does not directly receive the treatment, i.e. the Construction Academy students who did not participate in the Transportation Academy.

The four demographic variables above were used to match students for a technique called propensity score matching. Propensity score matching is a process used to reduce selection bias when matching "control" and "treatment" groups. The purpose is to make the Transportation Academy students and the Construction Academy matched students as similar as possible in order to minimize the differences due to their inherent backgrounds. Minimizing these differences may allow for the focus of any differences between the groups to be a result of the treatment, the training as part of the Transportation Academy, as opposed to the differences inherent in the two groups of students (Adelman, 2013).

A final report was created from the AspirePath system which included all students who had participated in the Transportation Academy. There were four Excel tabs provided which focused on CASAS scores, credentials, students, and sections. Each tab had the unique guid's to act as identifiers. A binary code indicated participation for each of the programs, the Transportation Academy as well as the Construction Academy.

From this list students were sent to the Transportation Academy program coordinator and Database Administrator for AspirePath. The program coordinator for the Transportation Academy had already sent two large student files from Banner to the database administrator for matching purposes. These files included a total of 6,000 students from UDC-CC who participated in the WDLL programs (Workforce Development and Lifelong Learning).

Summative Evaluation Findings Part II: Quantitative Outcomes Analysis

Summary of Propensity Score Matching

Propensity Score Matching is a technique used when there is no opportunity or no practical way to have a true comparison group. This happens when random assignment to groups is not possible as in clinical trials. The purpose is to match participants on similar characteristics in order to reduce the bias which might be possible as a result of differences inherent in individuals between the two groups. With the Transportation Academy and Construction Academy there were four variables chosen to match participants: age, sex, race, and ethnicity. These were predetermined prior to implementation of the study.

The Construction Academy was chosen as a comparison group because it was the closest approximation of the Transportation Academy within the same college setting. In general, using internal comparison groups which are the closest approximation of a program of study is recommended. The alternative would be to use an external comparison group. Using an external

comparison group could provide issues methodologically as well as with data availability.

Data Review Process with Propensity Score Matching

The first step in performing Propensity Score Matching is to obtain the database of Transportation Academy students and Construction Academy students. Both of these were obtained from the AspirePath student data system. In order to increase the chances of closer matches from the Construction Academy, twice as many students were included from the Construction Academy as compared to the Transportation Academy. Data cleaning which focused on unique Transportation Academy students resulted in no missing data among the four variables of interest: age, sex, race, and ethnicity. Full matches on all four variables were made between the Transportation Academy and the Construction Academy.

The R Studio software program was used to run the analysis. A step-by-step guide (Randolph, Falbe, Manuel, & Balloun, 2014) was used to program R Studio to run the analysis as needed. A copy of the R script is contained in appendix VII. There were two approaches used to perform Propensity Score Matching. The first approach was called nearest neighbor, and the second was called optimal. The first approach, "nearest neighbor", matched a single Transportation Academy student to a Construction Academy student based on logit distance measure. The "optimal matching" emphasized reducing average distance between the entire set of matched pairs. There was minimal difference between using the two approaches. Nearest neighbor was used to run the analysis. The nearest neighbor was used given it was the simplest approach between the two. The focus of the study was on individual matching and characteristics, hence the rational for using an approach which emphasized individuals during the matching process.

After running the analysis, the matched Transportation Academy and Construction Academy list was sent to UDC Transportation Academy Program staff to collect data on the four remaining data points for program outcomes 6-9. This includes data on enrollment from the National Student Clearinghouse as well as employment data from the Jacob France Institute. Data were pulled from the institutional research office at UDC as well as the 3rd party point of contact for the workforce data system which included Transportation Academy students.

Summary of Outcomes Comparison

The following summary outcomes focus on the comparison of the Transportation Academy students with the Construction Academy students. Outcomes were predetermined by the Department of Labor.

Outcome 6: Total Number of Participants Enrolled in Further Education After TAACCCT-funded Program of Study Completion

In order to answer question six, student unit record level data was requested from the National Student Clearinghouse. This data was requested through the institutional research office for the University of the District of Columbia. Two reports were delivered from the National Student Clearinghouse data. The first was a summary of the number of UDC students which had enrolled in courses by institutions. There were a total of fifteen institutions where students were enrolled, including UDC. A list of institutions is included below. As expected, the institutions were in the greater Washington, DC metro area. Overall, 35% of students were included.

Out of these 14 institutions, five were private institutions and nine were public institutions. Also, there were six two-year institutions included as well as eight four-year institutions included. Seven states were represented by the fourteen institutions under review. The states include the following: Washington, D.C., Maryland, Minnesota, Arkansas, Virginia, California and North Carolina. For one state there was a degree indicated, yet no enrollment reported for this institution.

The purpose of Outcome 6 was to compare Transportation Academy students to Construction Academy students in enrollment after participating in their respective programs of study. Steps were taken to ensure enrollment in courses from the raw National Student Clearinghouse data under review occurred after the enrollment phase for the participation in the program of study.

The total number of unique Transportation Academy students was the same as the total number of unique Construction Academy students in the National Student Clearinghouse (NSC) database. Both groups had ten students. Hence, given the rationale of the ability of the chi-square statistical approach to determine a difference in total unique students is void given the simple fact the exact same number of students were reported in the NSC data for both the Transportation Academy and the Construction Academy.

However, the chi-square test for independence can be used to look at total enrollment patterns for students by group. This includes focusing on the total number of courses enrolled in after enrolling in a class for the Transportation Academy or Construction Academy (respective for each group). This is a slightly different approach than focusing on the total of unique students. The rationale for this is to further extend the ability to determine differences in enrollment patterns across groups where there may actually be a difference between groups, unlike the unique student's approach where the outcome is given.

- Are there any differences in total enrollment by group?

Table 4. Outcome 6 Chi-Square Transportation Academy and Construction Academy Data Summary

Total Classes Enrolled	CA	TA
1	2	1
2	3	1
3	2	3
4	2	2
6	1	1
8	0	1
10	0	1

The results from a Pearson's Chi-squared test for independence were not statistically significant using alpha < .05, with χ^2 = 3.53, df = 6, p = .74. Therefore, the null hypothesis is true. By knowing which group a student belonged to, Transportation Academy or Construction Academy, there is no relationship to the number of courses enrolled. The groups are independent. The output for the chi-square analysis when considering unique students was χ^2 = 0, df = 1, p = 1.

While this data is true for the chi-square test for independence which focused on the total number of courses enrolled in for students, this also remained true for the initial Department of Labor review of data which focused on unique total enrollment. Since both the Transportation Academy and the Construction Academy groups had the same number of students enrolled in both groups, there was no difference in the outcomes, hence the groups were independent. Participating in the Transportation Academy or the Construction Academy was no indication of future course enrollment. Appendix VII contains the R scripts used to run the analysis for Outcome 6.

Outcomes 7-9: Jacob France Institute Data

Outcomes 7-9 used data gathered from the Jacob France Institute. The Jacob France Institute collects date on earnings by quarter for students. This data was collected for both the Transportation Academy and Construction Academy students for the matched pairs comparison which was the product of the Propensity Score Matching process. Data were retrieved by the 3rd party data consultant Keith Watson.

During the data collection process from the Jacob France Institute, there were several data integrity issues. The first issue was a lack of data for earnings reported within the state of Virginia. This is related to the lack of participation for Virginia for about the past two years. This is significant given Virginia is a state which can readily be a place of employment for the Transportation Academy and Construction Academy students.

There were also three students who had social security numbers which were not readily matched. All three of these students who were not able to be matched were Transportation Academy students.

For Outcomes 7-9 there was some degree of variation between the periods of time under review after the Transportation Academy class or the Construction Academy class were completed to review. This also changed by employment status, depending on the question under review. Select outcomes focused on employed workers while others focused on those who indicated no job at the start of participating in either the Transportation Academy or the Construction Academy programs.

The population under review also focused on Transportation Academy students who successfully completed a certificate program. A student had to successfully finish a program within the Transportation Academy to be included for review. The certification date was used to identify the quarter of completion, and the following quarter after certification completion date was used to identify the following quarter. The earliest reported certification completion date for Transportation Academy students was October 11, 2014, or the fourth quarter of 2014. These sequential quarters were used to respond to the Department of Labor mapped outcomes.

Since the Transportation Academy implementation phase began in January 2014, the earliest possible fully completed courses would be the second quarter of 2014. For the data under review, the quarters with earnings reported which met the criteria for certification completion data ended up being the last quarter of 2014 and the first three quarters of 2015. The fourth quarter of 2015 and the first quarter of 2016 were not available due to ongoing discussions between OSSE (Office of the State Superintendent of Education) and the Jacob France Institute. These discussions revolved around continuing access to Jacob France Institute. The UDC Transportation Academy is under the purview of OSSE. The UDC Transportation Academy did not have the authority to access this data until the negotiations between OSSE and the Jacob France Institute were complete and therefore were not included in the analysis.

Outcome 7: Total Number of Participants Employed After TAACCCT – funded Program of Study Completion

Outcome 7 focused on the total number of participants employed after they completed a Transportation Academy course of study. The comparison was the following quarter after they completed a Transportation Academy course of study. There were a total of thirteen unique

students who completed the Transportation Academy and were employed in the following quarter. There were a total of sixteen unique Construction Academy students who completed a course of study in the Construction Academy and were employed in the following quarter after participation.

In order to determine enrollment earnings were reviewed. Those students who indicated they were not employed at the time of participating in either the Transportation Academy or Construction Academy were reviewed. If there were no earnings reported during the quarter of participation in either the Transportation Academy or the Construction Academy followed by earnings reported, then students were considered to have found employment after participating in the program. If a quarter reported a small sum after participating in the program, such as 20 dollars in earnings, this was not considered to be indicative of having earned employment. There were three students whose social security numbers were unable to be mapped.

The results from a Pearson's Chi-squared test were not statistically significant using alpha $< .05$, with $\chi^2 = 0.31$, $df = 1$, $p = .58$. Therefore, the null hypothesis is true. By knowing which group a student belonged to, Transportation Academy or Construction Academy, there is no relationship to the employment outcome of students enrolled in either the Transportation Academy or the Construction Academy.

Outcome 8: Total Number of Participants Retained in Employment After Program of Study Completion

The total number of participants retained in employment after program of study completion was identified through the earnings reporting by quarter from the Jacob France Institute. In order for a quarter to be valid, the quarter had to occur after the quarter of participation, which left four quarters available for review. These included the following four quarters: fourth quarter 2014 and the first three quarters of 2015. The earliest certificate completion date for the Transportation Academy was October 11th, 2014, with the corresponding earliest quarters eligible for review being the first quarter of 2015.

Given the narrow window of quarters under review, Outcome 8 is difficult to review given the manner in which the consecutive quarters needed to be present to review sustained enrollment. With the current review process in place there were a total of five Construction Academy students with sustained employment as well as six Transportation Academy students with sustained employment. Given the relatively equal amount of students in each group, no differences are to be observed between groups when sustained employment is reviewed. Even though equal numbers were observed, a simple chi-square analysis was run. The results of the chi-square analysis were as follows $\chi^2 = 11$, $df = 10$, $p = .35$.

Outcome 9: Total Number of Those Participants Employed at Enrollment Who Received a Wage Increase Post-Enrollment

Outcome 9 focused on wage increases for workers who were already employed prior to participating in the Transportation Academy or the Construction Academy. This included employment which was part time or full time. The data under review included Jacob France Institute data through the third quarter of 2015. This is a limitation of the data set. Had there been more data reported for the fourth quarter 2015, perhaps there would have been more students being shown to have an increase in wages.

While initially the fourth quarter data was thought to be included in the final available data set, this data was not available at the time of analysis. The first quarter of 2016 was not available given ongoing negotiations between OSSE (Office of the State Superintendent of Education) as well as the Jacob France Institute. Pending the resolution of these negotiations, the final data available relevant to conduct the summative evaluation for the Transportation Academy and Construction Academy students. This includes the final quarter of 2015 as well as the first quarter of 2016. When the second quarter of 2016 becomes available, this will also include a chance for analyzing this data.

The total number of students who met the criteria for Outcome 9 was a total of sixteen for both the Construction Academy (n = 7) and the Transportation Academy (n = 9). There was no difference by group for receiving a raise for students participating in either the Transportation Academy or the Construction Academy.

The process used to determine the possibility for a raise included showing a raise after enrolling in a Transportation Academy or Construction Academy class. Employment was indicated by earnings reports. There also had to be earnings reported during the quarter in which the student participated in the classes in order to meet the Department of Labor requirement for "incumbent workers".

There were a number of students which indicated earnings for the third quarter of 2015, and which were potentially able to receive raises after participating in either the Transportation Academy or Construction Academy. The total number of students receiving raises was one short of the program goal of 10, however, given the lack of data available for the final quarters of the Transportation Academy program, it is anticipated that the Transportation Academy met the initial goal of 10 students receiving raises after participating in classes.

Even though there was no practical difference in the number of students participating in the Transportation Academy versus Construction Academy, the chi-square analysis was still run. As expected, the results were not statistically significant, with $\chi^2 = 16$, $df = 15$, $p = .38$.

Conclusion

The Transportation Academy was proposed with a broad vision for how the University of District of Columbia, Community College can provide training to fill transportation workforce needs in the District of Columbia and to date has fulfilled some of that vision, however, time will tell whether or not the Transportation Academy will meet the initial "vision of bigness" originally intended of the program. Depending on how the program continues to grow, particularly in the way it engages its industry partners, will likely result in continued progress towards the initial broad vision.

UDC-CC is a new institution and was going through a "dynamic transition" when the Transportation Academy was first being implemented. The newness of UDC-CC affected the implementation of the Transportation Academy in key areas, particularly in purchasing lab space and other equipment as well as the creation of articulation agreements with area schools. In addition, Transportation Academy was an entirely new program at UDC.

Also, the Construction Academy (which served as a comparison group) and the WDLL (Workforce Development and Lifelong Learning) were relatively new programs in their own right. While the Construction Academy was an existing program, the length of existence had only been for a short period of time. So, the Transportation Academy was new, as was the comparative program and umbrella program of WDLL to which both the Transportation Academy and the Construction Academy belonged.

For the most part the metrics have been met regarding the Department of Labor mapped outcomes 1-9. Even with data availability issues, there were times when the Transportation Academy met the original outcome goals. Continued broadening of the Transportation Academy will likely increase enrollment and certifications of participating students. Feedback from final Transportation Academy staff interviews revealed how substantial traction with word of mouth reputation was leading to increased enrollment in Spring 2016. Continued progress will allow the Transportation Academy to grow in reputation and allow for a burgeoning partnership among UDC, government, and industry to allow for successful training and placement of students into the greater Transportation industry.

One success of the Transportation Academy was simply bringing into existence a program which would not have otherwise existed. While aspects of the program presented obstacles, such as the lack of an independent auto shop in the downtown Washington, DC metro area which would have allowed for the independent running of auto shop classes through UDC, there were partnerships which allowed for access to these resources. The Excel Institute was one such partnership which may continue into the future.

The continued existence and growth of the Transportation Academy can bring together entities in a region where there is opportunity for collaboration. While the Industry Council which was originally established may not have panned out as originally planned, members who remained active provided significant feedback and contributions. Continuing to build on the success of existing partnerships can help the Transportation Academy grow and fully realize its potential as a much-needed, quality program which can meet the needs of multiple constituencies.

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Appendix I: Diagram of UDC-CC's Transportation Academy Program (Student Pathways)

Potential student goes to UDC-CC's website and expresses interest in a UDC-CC program of study – including the Transportation Academy

UDC-CC staff follow-up with student – student attends an information session about UDC-CC programs – 8 sessions each week at different sites

Student counseled out of TA – if wishes to attend TA but not a good fit

Student advised to take alternate course, other than the Transportation Academy

Automotive Technology Career Pathway
- Automotive Maintenance & Light Repair Certificate
- AAS Degree (Automotive Technology)
- Related Bachelor Degree Option
- --(Includes GED option)

Student Success Specialist schedules a meeting with students. Students take the Comprehensive Adult Student Assessment Systems (CASAS)

Student Success Specialist (SSS) reviews assessments and tests results. Meets with student to learn their skills and goals. SSS advises potential student on appropriate course selection.

HVAC Program
-608 certification
-609 EPA certification

Electrical Technology
CETa certification

Global Logistics

Student takes Math Remediation -

UDC-CC Career Student Center works with student to find gainful employment

Student gainfully employed at higher pay

Student promoted in current job

Student Success Specialist (SSS meets with student periodically to enhance student's perseverance through courses.

Appendix II: Transportation Academy Evaluation Plan

Formative Evaluation (Process Evaluation)

The formative evaluation will document the implementation of the Transportation Academy and will aim to answer how well the five main components of the project were implemented and how the components contribute to the overall goals and outcomes of the project. The six main components are:

1) **Strategic Alignment** – UDC-CC will collaborate with local employers, including DDOT, CSX, WMATA, others to assure credits lead to needed employee skills.
2) **Transferability Strategic Alignment** – UDC-CC will establish transferability and articulation agreement with local schools.
3) **Evidence based design** – Eligible workers find transportation academy on UDC-CC website. Workers complete a battery of assessments that are used by a student success specialist who advises them on whether or TA is for them, and if so, what courses they should take and next steps.
4) **Stackable and latticed credentials** – Transportation Academy provides a variety of career pathways via stackable credentials. TA will work with industry to make sure career pathways are well suited for available jobs. Planned certificates provided by UDC-CC include Rail, Street, and Water, certified by the National Institute for Automotive Service Excellence; basics for first-level electronics certified by Electronics Technicians Association, International; and passenger and refrigerated transport, certified provided by EPA.
5) **On-line technology enabled learning** – Transportation Academy will offer hybrid classes that combine online, simulation, classroom-based, and hands-on learning.
6) **Creation of a Sustainability Plan** – complete plan that will sustain program after DOL Transportation Academy funding ends.

To provide feedback to the Transportation Academy implementation team, focus groups will be conducted with the following program stakeholders. The exact focus group questions will be determined in consultation with the Transportation Academy implementation team close to the time of the focus groups, so as to provide the most useful and timely feedback on the implementation of the program from the views of various stakeholders. Reports will be written and provided to the Transportation Academy implementation team, one report for each focus group. The reports will also be used to inform the final Transportation Academy evaluation report.

Table 5 Focus Group Summary

Stakeholder Group	Frequency of Focus Group	Year
Students	Twice a year (once a semester)	Year 2 and Year 3
Teachers	Once a year	Year 2 and Year 3
Employers	Once a year	Year 3 and Year 4

Outcomes Evaluation

The following table documents data to be collected to document project outcomes for the Transportation Academy. The evaluation team will work Karan Srinivas, Project Director, DC Transportation Academy to understand the AspirePath software and other systems used by UDC-CC for purposes on data collection for this project. The evaluation team will map data available through AspirePath and other software used by UDC-CC for tracking students, and education and employment administrative data, to make sure data are available to document project

outcomes and to evaluate the project. The evaluation team will create a report for UDC-CC which describes data elements that will be used for reporting outcomes data and to assess impact, how the data will be obtained, and a schedule for collecting the data. The evaluation team plans to hold quarterly Formal Data Reviews with Edith Westfall, Director, Center for Workforce Strategies; and Karan Srinivas, Project Director, DC Transportation Academy, to assure data are collected and reported correctly, and to brief them on outcomes findings.

Timelines and Deliverables

The following is a table that lists out timelines and deliverables related to the evaluation of the Transportation Academy.

Table 6 – Evaluation Timeline and Activities/Deliverables

Evaluation Timeline	Activity or Deliverable	Description
Within 15 days after the award	Kick-off meeting	Kick-off meeting at UDC-CC (ASEE Evaluation staff; Director, Center for Workforce Strategies; Transportation Academy Director; others invited by UDC-CC)
Within 30 days after the award	Design Report	Detailed strategy for carrying out the project's activities, revised as necessary based on Program Team's comments
Within 90 days after the award (Nov 30, 2013)	Evaluation Plan	Detailed description of evaluation strategy. Submitted to the Program Team Must be approved by the DOL TACT National Office before implementation.
Within 90 days of kick-off meeting (Nov 30, 2013)	Project Logic Model	Logic model of the Transportation Academy will include project inputs, activities, and short and long term outcomes.
Within 90 days months of kick-off meeting (Nov 30, 2013)	Determine type of evaluation used (for Year 4)– Impact or Quasi-Experimental Design	Report that describes the type of evaluation method to be used, the rational why, and details on how it will be done.
November '13 (Nov 30, 2013)	Interim Report	Since the contract will likely not be awarded until the August or September 2013, the first interim report will summarize the activities since the beginning of the project (Evaluation Plan, Project Logic Model, and description of type of evaluation design to be used).
Year 2 - FY14 (Formative Evaluation – focus on process evaluation and providing feedback)	• Formative Evaluation Reports to UDC-CC (TBD) • Survey • Focus group(s) • Interviews	• Formative Evaluation Reports to UDC-CC – report content and frequency, and method of reporting will be discussed and decided in consultation of UDC-CC. • Survey – (survey of student participants)

	• Quarterly Data Reviews	• Focus group(s) – (focus group(s) of survey participants) • Interviews (interviews with key project implements at UDC-CC) • Outcome data report – (track/document outcome data for Outcomes 1 to 9 in Table 2, for Year 2) • Data Reviews held quarterly at UDC-CC.
November '14	Interim Report	Will include all Year 2 Outcomes in Table 2 and all formative evaluation data collection conducted during Year 2.
Year 3 - FY15 (Formative Evaluation – focus on process evaluation and providing feedback)	• Formative Evaluation Reports to UDC-CC (TBD) • Survey • Focus group(s) • Interviews • Quarterly Data Reviews	• Formative Evaluation Reports to UDC-CC – report content and frequency, and method of reporting will be discussed and decided in consultation of UDC-CC. • Survey – (survey of student participants) • Focus group(s) – (focus group(s) of survey participants) • Interviews (interviews with key project implements at UDC-CC) • Outcome data report – (track/document outcome data for Outcomes 1 to 9 in Table 2, for Year 3) • Data Reviews held quarterly at UDC-CC.
November '15	Interim Report	Will include all Year 2 and Year 3 Outcomes in Table 2 and all formative evaluation data collection conducted during Year 3.
Year 4 - FY16 (Summative Evaluation – focus on describing implementation and measuring program impact)	Summative Evaluation Report	Overall summary of implementation and evaluation of program impact (Outcome 6 – 9 in Table 2, Year 4)
September 15, 2016	Final Report	Final Summative Evaluation Report – Report will summarize implementation of the project, based on previous formative reports. Outcome data for first four years will be reported with comparison group in Year 4 as a counterfactual. PDF version of report will be compliant with Section 508 of the Rehabilitation Act.
September 15, 2016	Public Use CD	CD containing all data gathered during the course of the evaluation, stripped of all personal identifiers, provided to the Program Team.

Figure 1. Logic Model – UDC-CC Transportation Academy

Resource/Input	Activities	Output	Outcomes	Long Term Outcomes
- Department of Labor Funding - Director of the Center for Workforce Strategies - Project Manager - Evaluation - ASEE Technical Assistance - Student Success Specialists **Strategic Alignment** – UDC-CC will collaborate with local employers, including DDOT, CSX, WMATA, others to assure credits lead to needed employee skills. **Transferability Strategic Alignment** – UDC-CC will establish transferability and articulation agreement with local schools	**Evidence based design** – Eligible workers find transportation academy on UDC-CC website. Workers complete a battery of assessments that are used by a student success specialist who advises them on whether or TA is for them, and if so, what courses they should take and next steps. **Stackable and latticed credentials** – Transportation Academy provides a variety of career pathways via stackable credentials. TA will work with industry to make sure career pathways are well suited for available jobs. Planned certificates provided by UDC-CC include Rail, Street, and Water, certified by the National Institute for Automotive Service Excellence; basics for first-level electronics certified by Electronics Technicians Association, International; and passenger and refrigerated transport, certified provided by EPA. **On-line technology enabled learning** – Transportation Academy will offer hybrid classes that combine online, simulation, classroom-based, and hands-on learning. **Creation of a Sustainability Plan** – complete plan that will sustain program after DOL Transportation Academy funding ends.	- Students earn credit hours needed for the award of a degree or certificate in any grant-funded program. - Students take courses toward a credential. - Students earn credentials. - Sustainability Plan	- Transportation Academy is sustained after Department of Labor funding ends. - Students are employed after TAACCCT-funded program of study completion - Student enroll in further education after TAACCCT-funded Program of Study Completion. - Students retained in Employment after Program of Study Completion	Students receive a Wage Increase after completing program of study.

Meeting Minutes Memo

The following is a copy of meeting summary from March 27, 2014. The summary outlines the process for accessing data as well as the ideal timing for focus groups.

UDC-CCDC/ASEE update meeting: 3-27-2014

TACT 2 Evaluation Meeting

801 N. Capitol Street NE, Room 331

March 27, 2014 – 9AM – 10:30AM

I.   Implementation Update from UDC-CC team – what has happened since November?
- Karan had mentioned he is saving documents, for evaluating the implementation process, we would like to review the documents and then fill in the gaps with key informant interviews.

II.   Data mapping of outcomes – how do we gain access AspirePath?
- Will need access to finish up data mapping, we can then advise UDC-CC on any additional data needed (ie. Race, gender, ethnicity and age). Proposed comparison group – NCCER Craft skills – Core Instruction; Electrical I; and HVAC theory.

III.   Formative Data collection – focus groups (students/teachers) – when would be a good time to hold these? Survey of students – is this something that would be useful? When would be a good time, and what things would you like covered?

Program and management updates

3 programs were launched:
1. Electronics – launched in March 2014 -→ July, 2014 (2 handouts by Karan, also scanned don the drive)
2. HVAC – the program is 2 kinds: hybrid and 608 class (2 day class that focuses on what it takes to be certified.
   - Section 1: March 21-22, 2014
   - Section 2: End of April, 2014
   - Section 3: end of May, 2014
3. Automotive technology - an entire 2-year program that began last week of January, 2014

UDC-CCDC TA is also looking at partnerships with the Excel Institute for automotive training May – Dec, 2014 and Feb – Sep, 2015 (handout by Karan and also scanned). All of the classes will be offered by UDC, and UDC hires the Excel Institute teachers. They need to monitor how far along with the GED their students are. The idea is that classes that students have taken at the Excel Institute would count for UDC.

4. The forth [proposed] program is Global Logistics – project management for transportation program. Karan is researching the career prospects for the field. An online component is also planned for the program – ASTL online interactive tool that anybody can buy from Polk State College.

Karan is working on program design and documentation [Dropbox] and he is updating the workplan.

TA's website is up too.

Intake updates

With the Ballou Stay HS partnership, they are already enrolled at the high school, but also enrolled at UDC-CCDC TA ('dual enrollment'). With Electric and HVAC, they recruited a lot of current students (not new students), so these students just got transferred into AspirePath. The general demographics is mostly African-American male (70/30 – 60/40 male vs. female), average age about 30. Starting the first week of April, UDC-CCDC TA will be hosting and facilitating intake activities at their North Capitol Street location, which is a great advantage – raises visibility and success. The process consists of a quick PPT presentation to introduce TA to prospective candidates, after which they launch the assessment right a way.

AspirePath

Now that the TA sections (of students) are enrolled, Stewart will be giving us access to AspirePath.

To-do Items

For the student survey that we are planning, we need to consider the following questions that UDC_CCDC TA wants the answers for [a lot of them are already being asked by the end of class teacher evaluation/classroom experience survey that students get (copy scanned) – so cross reference when developing our survey):
  - Students expectations and clarity on program
  - Impact of   student success specialist
  - Was the class successful
  - Do students have clear idea of what they are doing next as a result of the class

Classes will start in May, so July, 2014 is the earliest possible time for the focus groups.

Karan will send us a partner list of organizations that UDC-CCDC TA partners with.

Appendix III: Student Surveys

UDC-CC Transportation Academy Career Counseling Survey

Date: _____

Think back to when you spoke with a UDC-CC career advising staff member for career counseling after the UDC-CC Workforce Development Information Session and please respond to the following statements.

1) I received good career advice and guidance from the UDC-CC career advising staff member at the individual counseling session.
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree

2) Which of the following career areas did the UDC-CC career advising staff member advise you to choose?
   a. Health care
   b. Construction Trades
   c. Hospitality
   d. IT & Office Management
   e. Child Development
   f. Other_____

3) Which of the following career areas did you end up choosing at UDC-CC?
   a. Health care
   b. Construction Trades
   c. Hospitality
   d. IT & Office Management
   e. Child Development
   f. Other_____

4) I think I made the right career decision.
   a. Strongly agree
   b. Agree
   c. Neutral
   d. Disagree
   e. Strongly disagree

UDC-CC Transportation Academy Student Survey

Date: _____

Please take a few minutes and provide your feedback on your experience in UDC-CC's Transportation Academy.

Which program in UDC-CC's Transportation Academy are you currently enrolled or have been enrolled?

○ Automotive Technology

○ Electronics (Electronics I)

○ HVAC (CFC/608)

Are you currently taking courses in UDC-CC's Transportation Academy?

○ Yes

○ No

Did you withdraw from any of these programs at UDC-CC's Transportation Academy?

○ Yes

○ No

If you answered yes, please describe why you withdrew.

How did you hear about the Transportation Academy? (Select all that apply)

☐ Private Employment Office

☐ Unemployment Office

☐ Community Organization

☐ Community Event

☐ School/College

☐ District Employee

☐ Current or Former Student

☐ Family

☐ Friend

☐ Website/Internet

☐ Newsletter

☐ Poster/Brochure

☐ Postcard

☐ Radio/TV Advertisement

- ☐ Metro Advertisement

- ☐ Walk-in

- ☐ Other, please specify...

Please indicate your level of agreement with the following statements. If you are no longer taking courses, please respond to the statements for the courses you took previously.

Courses are scheduled at times that are convenient for me.

- ○ Strongly Agree

- ○ Agree

- ○ Neutral

- ○ Disagree

- ○ Strongly Disagree

Courses are held at locations that are convenient for me.

- ○ Strongly Agree

- ○ Agree

- ○ Neutral

- ○ Disagree

- ○ Strongly Disagree

My instructor(s) come to class well prepared.

- ○ Strongly Agree

- ○ Agree

- ○ Neutral

- ○ Disagree

- ○ Strongly Disagree

What I am taught matches with the course content stated in the syllabus.

- ○ Strongly Agree

- ○ Agree

- ○ Neutral

- ○ Disagree

- ○ Strongly Disagree

The instructor(s) is/are available to discuss course related issues, either in person, or by electronic means.

- ○ Strongly Agree

- ○ Agree

- ○ Neutral

- ○ Disagree

- ○ Strongly Disagree

I made a good career choice when I entered UDC-CC's Transportation Academy.

- ○ Strongly Agree

- ○ Agree

- ○ Neutral

- ○ Disagree

- ○ Strongly Disagree

Did you take any math courses or math tutoring sessions in the past 6 months prior to taking Transportation Academy courses at UDC-CC?

- ○ Yes

- ○ No

If yes, please describe how the math courses/tutoring sessions are or are not helping you succeed in the Transportation Academy course.

Think back to when you first applied to the Transportation Academy and please respond to the following statements.

I received good advice and guidance from Transportation Academy staff when I applied for classes in the Transportation Academy.

- ○ Strongly Agree

- ○ Agree

- ○ Neutral

- ○ Disagree

- ○ Strongly Disagree

Comment:

When I applied to classes in the Transportation Academy I received enough information from the staff that I had a good idea of what I was getting into.

- ○ Strongly Agree

- ○ Agree

- ○ Neutral

- ○ Disagree

- ○ Strongly Disagree

Comment:

I know what to expect from my courses.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

Comment:

I know how many courses I need to complete prior to taking my certification test.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

Comment:

Think about your expectations about the Transportation Academy courses and please respond to the following statements.

I expect to get a better job or receive a promotion after I complete all my Transportation Academy courses and take my certification test(s).

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

Comment:

While I take courses, I have been meeting with Transportation Academy staff who help me understand my course options and what to expect after I complete my certification test(s).

○ Strongly Agree

○ Agree

○ Neutral

○ Disagree

○ Strongly Disagree

Comment:

I know what I will be doing after I complete my courses.

○ Strongly Agree

○ Agree

○ Neutral

○ Disagree

○ Strongly Disagree

Comment:

What do you plan to do after you complete the courses?

Select all that apply.

☐ Take more courses at UDC-CC or elsewhere.

☐ Pursue a college degree (AA or BA)

☐ Get a promotion

☐ Get a raise

☐ Change career

☐ Get a new job

☐ Other, please specify... _____

Please answer the following questions based on your experience in the Transportation Academy.

What is the one thing that you like most about the Transportation Academy?

If you could improve one thing about the Transportation Academy, what would it be?

Thank you for completing our survey.

Survey Memo

The following is an excerpt taken from a memo written on 3-25-15 from AEIR staff to Transportation Academy staff. The purpose was to follow-up on the renewed survey strategy in light of low response rates.

Student Survey Strategy

To address high non-response rates in previous survey attempts, we suggest re-administering the online survey with an incentive. We plan to administer the survey in multiple waves to capture student opinions at various stages of their study. We propose to give out two $25 Wal-Mart/Target/Giant gift cards to two students (picked in random drawing) who complete the online survey.

ASEE would need from TA an appropriate timelines during which each wave of the survey will be administered as well as an updated list of students to be contacted by email for each wave.

An announcement about the survey should be made by both TA staff and the instructors to the students with an emphasis on the incentive. Amlan will work with Karan to finalize the logistical details.

Each wave of the survey will be kept open for two weeks. After its closing, ASEE will review the survey responses and provide TA with the names of the students who are picked in the random drawing. Those students will be contacted by TA and asked to pick up their gift cards from the TA office.

We do not plan to make any changes to the survey questionnaire, unless TA suggests us any revisions. We plan to experiment with various incentive structures to measure their effects on the survey response rates. Survey results will be reported to TA at the quarterly meetings.

Figure 2. Transportation Academy Internal Class Evaluation Form.

The following is an example of a class evaluation survey administered to students who take courses in the Transportation Academy at UDC.

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Workforce Development Exit Survey/Teacher Evaluation

Please circle the number that best represents your opinion. Using a scale of 1 -5 with 1 being the lowest and 5 the highest.

Quality of Course Content and Instructional Materials					
Course Name: **Site:**	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
The course met my expectations.	1	2	3	4	5
The material presented was relevant to my needs.	1	2	3	4	5
The material presented was appropriate for the time allotted for the course.	1	2	3	4	5
I understood the content of the course.	1	2	3	4	5
Learning tools were available when required or requested.	1	2	3	4	5
Learning materials were current and reflect subject appropriately.	1	2	3	4	5
Materials were clear and easy to understand.	1	2	3	4	5

Provide an overall rating of the VALUE of the course. [3]	Very Little	Some	Average	More than Most	Among the Best I've Ever Had

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Workforce Development Exit Survey/Teacher Evaluation

Quality of Instruction					
Instructor Name:	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
Instructor had solid knowledge of the subject.	1	2	3	4	5
Instructor presented the subject clearly and understandably.	1	2	3	4	5
Instructor used concrete examples to make points clear.	1	2	3	4	5
Instructor started classes on time and used class time well.	1	2	3	4	5
I felt adequately challenged in class.	1	2	3	4	5
I felt I could ask questions during and after class.	1	2	3	4	5
The instructions for assignments were clear and provided enough guidance for me to know what is expected of me.	1	2	3	4	5
I felt well prepared for the level of the courses and the work required.	1	2	3	4	5

Provide an overall rating of the instructor's effectiveness[1]	Marginally effective	Sometimes effective	Usually effective	Always effective	Exceptionally Effective

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COMMUNITY COLLEGE   Workforce Development Exit Survey/Teacher Evaluation

Institutional Questions					
	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
I will consider enrollment in an Associate's or Bachelor Degree Program.	1	2	3	4	5
I will enroll in another Workforce Development Program/Course.	1	2	3	4	5
Staff has been pleasant and helpful.	1	2	3	4	5
The admission process was clear and efficient.	1	2	3	4	5

What programs or courses would you like to see added to the Workforce Development catalog?

What can we do to make the overall experience for students better?

If you withdrew from your program/course, please explain why you chose to withdraw.

Additional Comments:

Appendix IV: Instructor Interviews

The following is an excerpt from a memo written on 3-25-15 as a follow-up to the instructor interviews. The memo was written by AEIR staff at ASEE for Transportation Academy staff.

Follow-up: Recommendations by Interviewed Instructors

As is common in evaluations like this one, ASEE made a written agreement with the instructors that we interviewed that we would only provide their responses in aggregate to protect their anonymity. That said, due to the very small sample size, it is possible to identify which instructor provided which response since their answers could only come from one class. We understand UDC-CCs need for actionable information, but wish to balance that with ASEEs agreement with the instructors to keep their responses anonymous. Below we have provided answers that we feel balance both UDC-CCs need for actionable information with our agreement with the instructors. If UDC-CC feels they need additional details, we respectfully request that UDC-CC follow up with the instructors so we can respect our agreement.

- Academic preparation of entering TA students both in the areas of English and Mathematics was expressed as a matter concern by all instructors. HAVC instructors particularly suggested employing stricter pre-requisites for their classes. Along this line, the electronics instructor suggested expanding remedial course offerings.
- The electronics instructor experienced that the thirteen-week long Electronics-I does not cover enough material to prepare students for the SET certification. He believes that successfully passing this certification test would require at least one year worth of preparation, supported by a sequence of three Electronics courses.
- The electronics instructor also believes that the SET certificate is a basic credential in the electronics technician profession. Therefore it is very challenging for any student without prior work experience to find employment with this credential. CET is the advanced level certificate, which could greatly increase the odds of finding employment in this field.
- To close the gap between certification and employment, placing student in job-training programs through internships/apprenticeships should be considered. This thought was echoed by all participants.

Appendix V: Focus Group Detailed Findings

Introduction
As part of the formative evaluation of the Transportation Academy program, ASEE facilitated three focus group sessions in April, 2015 with students to gather qualitative data about their experiences in the program.

Class	Date	Start Time	Location	Participants	Duration (min)
HVAC-609	April 11, 2015	4:45 pm	UDC-CC	8	45
Auto Tech	April 23, 2015	7:30 pm	Excel Institute	17	90
HVAC-608	April 25, 2015	4:00 pm	UDC-CC	2	60

Each session began with signing consent forms by the participant. Each student consented to participate in the focus group and allow ASEE to record conversations to be analyzed and reported anonymously in an aggregated form in the final report. The instructors were present at the beginning of the sessions and assisted with mobilizing the students and leading them to the classrooms in which the sessions were held. In HVAC 608 session, the instructor could not persuade all the students to stay after the class and only two students participated in the session. Low participation rates could be attributed to the timing of the sessions, which were scheduled at the end of the day, following an eight-hour long class and a certification test. In all sessions, about half of the participants spoke actively. In the future, we might consider holding the sessions at a different time that works best for the students.

The conversations in all three sessions were recorded for transcription and further analyses. Refreshments were served at each session. The discussions were moderated by researchers from ASEE. Questions were designed to capture student perception and experience in the areas of career goals and motivations, application, admission, counseling, classroom, instruction, cost of attendance, schedule, and job placement and academic progression.

This report consists of the following sections - Motivation and Career Goals, Hearing about the Program, Application Process, Counseling Experience, Class Experience, Instruction, Cost of Attendance, Class Schedule and Attendance Requirements, Job Placement and Academic Progression, and Recommendations from the Participants. Each section starts with bolded key points, followed by additional descriptions.

Motivation and Career Goals
Students thought positively about the outcome of the program, not only because it prepared them for acquiring credentials, but also because it helped them build self-confidence and provided them with skills to be self-reliant on meeting their own automotive maintenance needs.
Participants appeared quite motivated to advance their education and career in the automotive industry. They aspired to be employed with private employers such as local car dealerships or large public transportation agencies such as WMATA. A few participants also expressed interest in starting their own automotive repair and maintenance business. They also thought that the program would not only help them earn a credential to enter the trade, but also provide them with valuable skills to be self-reliant on meeting their own automotive maintenance needs.

Hearing about the Program
Students felt that the program is not well publicized.
Some of the sources from which the participants came to know about the program were words of mouth, advertisements on the UDC building, and commercials on the radio. However, they felt that the program was not well publicized and could do better at reaching out to a larger population of students.

Application Process
Most students expressed concerns about the admissions process which was described as confusing, primarily due to lack of standardized processes in place as well as lack of institutional knowledge and coordination among admissions staff.

Participants expressed mixed experiences with the application process. Particularly they complained about lack of clear instructions provided to the applicants, including prior information regarding the CASAS placement tests and their contents, long waiting time to take the tests and obtaining the results, and cumbersome registration process that followed. They found difficulty in connecting with the right admissions staff and/or advisers for the programs they were interested in. They also pointed that much of the confusion emanated from lack of standardized processes, institutional knowledge among staff, and coordination between campuses and desks within the admissions office. One participant from the Automotive Technology class went on to generalize these problems at the institution level, saying "I would say that these problems are basically systemic to UDC. It's basically the case of the right hand does not know what the left hand is doing. Historically, UDC has been overbooking classes, because the booking and scheduling system is not set up properly. So advisers are placing too many people into classes, without knowing that there were too many students already in the class. And that has been the case with technology classes."

Counseling Experience

Students indicated that academic counseling service was satisfactory but career counseling service needed improvement.

As mentioned by the participants, the counseling process at the beginning of the program was overall satisfactory. They were given sufficient information on course sequence, instructors, and other administrative and logistical aspects of the program. However, the participants indicated that they received very limited to no information and guidance on the employment outcomes of the program. Therefore, they were unsure about how their certifications would lead to employment in their chosen fields of study.

Class Experience

Students appreciated hands-on training more than textbook-based theoretical learning.

The program draws students with diverse experience and skill sets. Therefore, it is not surprising that they come to the class with different levels of expectations. While the majority of the participants found that the pace of the first few weeks of foundation classes was just right for them, others who had multiple years of relevant work experience found that the pace was too slow. All participants were more appreciative of the hands-on part of the learning experience in the workshop than their textbook based exercises.

Some participants found the HVAC-608 and 609 classes were overwhelming due to short class time and technical nature of the content. They described their learning experiences in those classes as ineffective due to lack of hands-on training. However, they thought the textbook was of good quality and easy to follow. "The class would be more beneficial if you could connect what was being explained in the book with hands on experiences with the equipment. Without that, making the connection is hard. It's like the info goes in one ear and out the other," a participant from HVAC-608 class stated.

Instruction

Students were very positive about the quality of their instructors.

Overall, participants provided positive feedback about the quality of instruction and the level of knowledge and experience that their instructors brought to the classroom. They also mentioned that the instructors were very helpful, accommodating, and always made an effort to find extra time to meet with them outside classroom hours to work on their problems.

Cost of Attendance

Students appreciated free tuition but still many struggled to cover transportation costs.

Participants appreciated UDC's assistance in covering the tuition and cost of certification tests. Nevertheless, some of them still felt that getting to the Excel Institute especially from Southeast DC region had been quite challenging due to lack of direct transit connections. Multiple transfers had increased the cost of transportation which put additional financial burden on them. Many participants mentioned that they were unemployed with no other source of income at the time of attendance.

Class Schedule and Attendance Requirement

Many students struggled with meeting strict attendance requirements, apparently a major reason for high withdrawal rates in the program.

Participants mentioned that the strict attendance requirements set by the program had been difficult for many to meet. Maintaining a balance between class schedule and commitment to

family and full-time employment appeared to be unsustainable for many students. They understood that UDC-CC already had taken measures such as offering weekend classes to add more flexibility to the class schedule. Nevertheless, participants said that they still struggled to meet attendance requirement due to personal and work-related obligations. This problem is particularly pronounced in the long-term classes such as Automotive Technology. They believed that half of the class dropped out for myriad reasons, including failure to keep up with attendance requirements.

> "*I would also suggest talking to the students that dropped out, if you want to get a sense of what's really going on. Because who you have here is the most motivated ones; we would have done the program no matter what*," a participant from Automotive Technology class remarked.

Although participants did not provide specific suggestions about how the schedule issues could be better addressed by the school, they hoped that UDC-CC would take a closer look into the retention issues and make necessary adjustments to the program to better serve the student needs.

Job Placement and Academic Progression

Students felt that the program should put greater emphasis on employment outcomes and close the existing gap between the school and the local employers through more industry partnerships.
The program should also provide students with more opportunities to transition into a degree program, such as allowing credit transfers from workforce development programs to associate`s degrees.

As mentioned earlier, participants said that career counseling and job placement services were almost non-existent at the Transportation Academy. They felt that the program could be more beneficial to students if they were given internship opportunities in the industry to gain real world
work experience, supplementing their academic training at UDC-CC.

> "*Course should provide student with real life situation, which can be accomplished by internship placement even for one day to enable students to see whether this is something they would like to pursue as a career path. Currently, school's emphasis on completion has disconnected it with employment situation*" a participant from HVAC-609 class remarked.

Participants felt that more industry partnership and school's greater emphasis on employment outcome would significantly benefit the program and its students. In this context, they drew upon the examples of construction pathways and nursing programs at UDC-CC that have demonstrated success in direct job placements due to strong relationships with the local employers.

Participants also reflected on the lack of opportunities for students earning credentials from workforce development programs, such as Transportation Academy, to progress towards earning a college degree. They thought that although two years' worth of developmental education leading to earning a technical certificate was a worthwhile endeavor, not being able to transfer those credits towards an associate's degree is a major roadblock to pursuing further education for many motivated students.

> A participant from HVAC-609 class stated, "*Students may not have jobs, but they should have more opportunities to progress or transition into a degree program. Training programs should be qualified for degree. Nobody wants to take out another loan to take placement tests and preparatory courses all over again. Other colleges offer workforce development credits that count towards a degree.*"

Recommendations from Participants
When asked what would be the one most important issue they would like UDC-CC to address, the participants mentioned the following:
- Job placement
- Transition to a degree program
- Financial help with transportation
- Improve program administration

Appendix VI: End of Program Interview Protocol

Administration and Staff Interviews

As part of the summative evaluation, eight interviews were conducted using a structured interview format. One interview was conducted with the Director of the Transportation academy prior to their leaving the role. The remaining seven interviews were conducted after the implementation of the program ended. Structured interviews were completed with a single interviewer and a single respondent for approximately 30-45 minutes. For each of the questions, respondents were asked to respond to each of the questions from their unique roles and experiences within the Transportation Academy. The following is a summary of findings and themes across questions for all of the eight respondents under review. Respondents were reviewed for consensus for summary purposes in alignment with the questions.

Interview Questions

1. How was the curriculum selected, used, or created?
2. What delivery methods were offered?
3. What was the program administrative structure?
4. What support services and other services were offered?
5. Did the grantees conduct an in-depth assessment of participant's abilities, skills and interests to select participants into the grant program?
6. What assessment tools and process were used?
7. Who conducted the assessment?
8. How were the assessment results used?
9. Were the assessment results useful in determining the appropriate program and course sequence for participants?
10. Was career guidance provided and if so, through what methods?
11. 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?
12. What factors contributed to partners' involvement or lack of involvement in the program?
13. Which contributions from partners were most critical to the success of the grant program?
14. Which contributions from partners had less of an impact?
15. How were students recruited?
16. Were students surveyed post-class?
17. Was a continuous improvement loop established?
18. Is there anything else that we didn't cover in this interview that should be included in the final evaluation report?

Appendix VII: Data on Outcomes

Figure 3

R Code for Propensity Score Matching

```
setwd("G:/UDC-CC/Quantitative Data")
 install.packages("MatchIt")
 mydata <- read.csv ("G:/UDC-CC/Quantitative Data/TADataMatchIt.csv")
 attach(mydata)
 mydata[1:10, ]
 require(MatchIt)
 m.out = matchit(Group ~ Age + sex + race + ethnic, data = mydata, method = "nearest", ratio =
1)
 m.out = matchit(Group ~ Age + sex + race + ethnic, data = mydata, method = "optimal", ratio =
1)
 summary(m.out)
 plot(m.out, type = "jitter")
 plot(m.out, type = "hist")
 m.data1 <- match.data(m.out)
 write.csv(m.data1, file = "G:/UDC-CC/Quantitative Data/NearestMatched.csv")
 write.csv(m.data1, file = "G:/UDC-CC/Quantitative Data/OptimalMatched.csv")
```

Figure 4

R Propensity Score Matching output

Summary of balance for matched data:

	Means Treated	Means Control	SD Control	Mean Dif
distance	0.2967	0.2899	0.0843	0.006
Age	37.8333	37.2460	11.5583	0.587
sexFemale	0.1032	0.0873	0.2834	0.015
sexMale	0.8968	0.9127	0.2834	-0.015
raceBlack or African American	0.7857	0.7698	0.4226	0.015
raceOther	0.0079	0.0000	0.0000	0.007
raceUnknown	0.2063	0.2302	0.4226	-0.023
raceWhite	0.0000	0.0000	0.0000	0.000
ethnicNot Hispanic/Latino	1.0000	1.0000	0.0000	0.000

	eQQ Med	eQQ Mean	eQQ Max
distance	0	0.0072	0.4569
Age	1	1.2222	51.0000
sexFemale	0	0.0159	1.0000
sexMale	0	0.0159	1.0000
raceBlack or African American	0	0.0159	1.0000
raceOther	0	0.0079	1.0000
raceUnknown	0	0.0238	1.0000
raceWhite	0	0.0000	0.0000
ethnicNot Hispanic/Latino	0	0.0000	0.0000

Percent Balance Improvement:

	Mean Diff.	eQQ Med	eQQ Mean	eQQ Max
distance	85.1715	100	84.3937	0
Age	88.3278	80	75.8621	0
sexFemale	55.4574	0	60.0000	0
sexMale	55.4574	0	60.0000	0
raceBlack or African American	26.6874	0	0.0000	0
raceOther	0.0000	0	0.0000	0
raceUnknown	14.5968	0	0.0000	0
raceWhite	100.0000	0	100.0000	100
ethnicNot Hispanic/Latino	100.0000	0	100.0000	100

Sample sizes:

	Control	Treated
All	353	126
Matched	126	126
Unmatched	227	0
Discarded	0	0

Figure 5

Propensity Score Matching Histograms
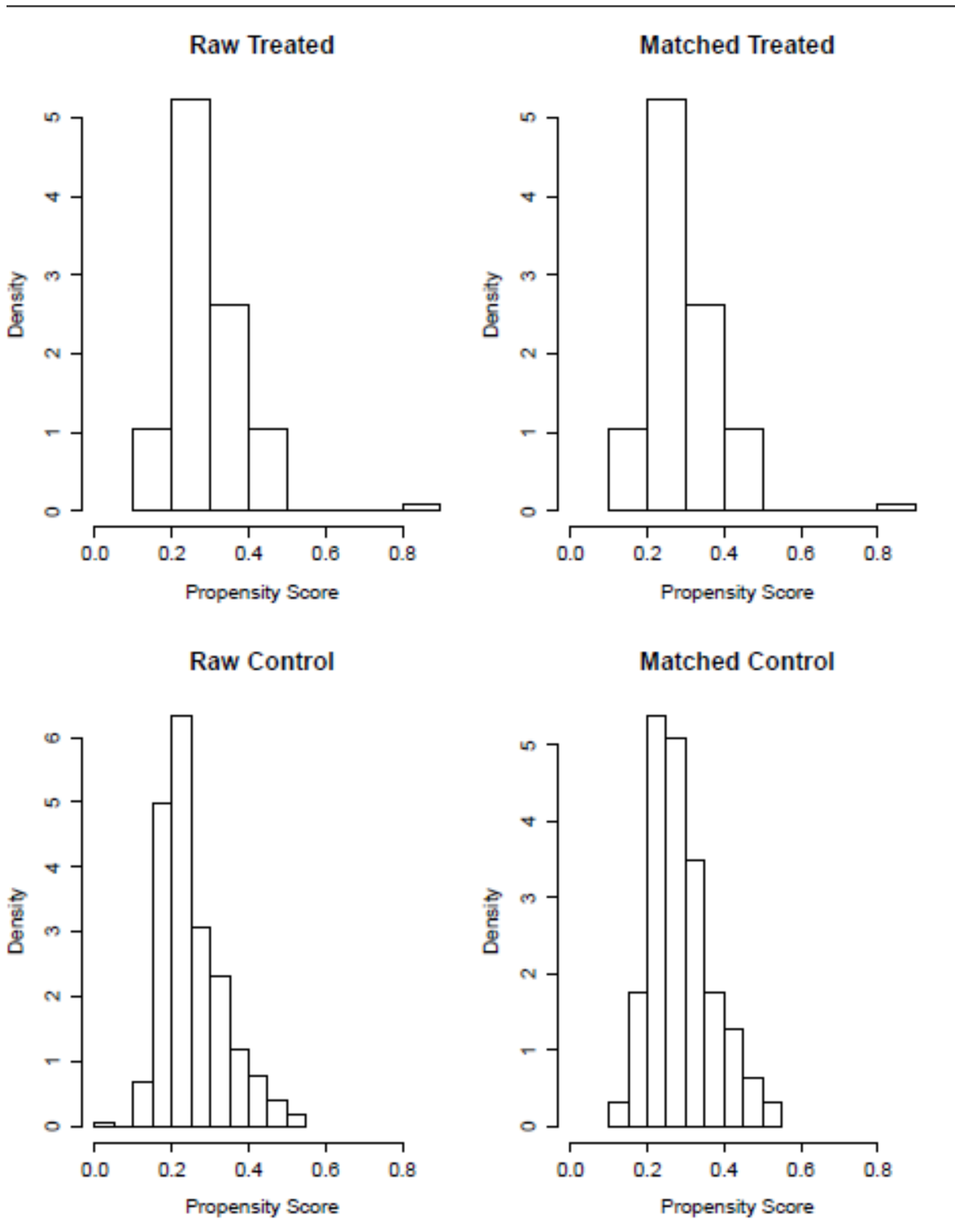**Matched Transportation Academy (Treated) and Construction Academy (Control)**

Figure 6 Chi-Square Analysis R Scripts

Outcome 6:

#Set working directory

```
Clearinghouse <- read.csv('Students_for_chi-square.csv')
head(Clearinghouse)
table(Clearinghouse$Classes_after_TA, Clearinghouse$Group)
chisq.test(table(Clearinghouse$Classes_after_TA, Clearinghouse$Group))

TAandCA <- read.csv('Clearinghouse_for_chi-square.csv')
head(TAandCA)
table(TAandCA$Continued_Enrollment,TAandCA$Group)
chisq.test(table(TAandCA$Continued_Enrollment, TAandCA$Group))
```

Outcome 7:

#Set working directory

```
JacobFrance7 <- read.csv('Q7_Employment_Quarter_After_Certificate.csv')
head(JacobFrance7)
table(JacobFrance7$Quarter_follow_certificate_date,JacobFrance7$Group)
chisq.test(table(JacobFrance7$Quarter_follow_certificate_date,JacobFrance7$Group))
```

Outcome 8:

```
#Set working directory
JacobFrance8 <- read.csv('Q8_TA_and_CA.csv')
head(JacobFrance8)
table(JacobFrance8$guid,JacobFrance8$Group)
chisq.test(table(JacobFrance8$guid,JacobFrance8$Group))
```
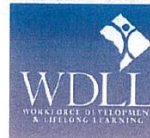
Outcome 9:

```
#Set working directory
JacobFrance9 <- read.csv('Q9Crosstabs.csv')
head(JacobFrance9)
table(JacobFrance9$guid,JacobFrance9$Group)
chisq.test(table(JacobFrance9$guid,JacobFrance9$Group))
```

Appendix VIII: Supplemental Marketing Materials for Transportation Academy

Figure 7. Transportation Academy Recruitment Flyer

UNIVERSITY OF THE
DISTRICT OF COLUMBIA
COMMUNITY COLLEGE

WDLL
WORKFORCE DEVELOPMENT
& LIFELONG LEARNING

Transportation Academy

Are you interested in a career in transportation? Are you a person who likes to work with your hands and wants to improve the transportation sector of the city?
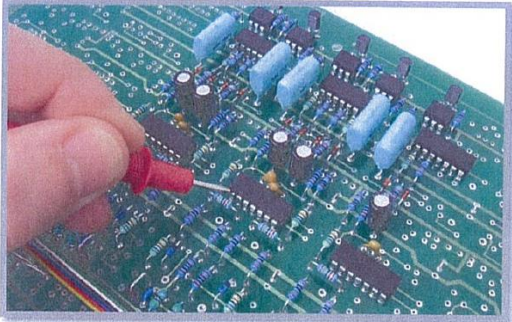
The UDC-Community College's Workforce Development and Lifelong Learning Division created a Transportation Academy (TA) for residents of the District of Columbia. The TA will consist of three main areas of transportation: (1) Automotive Technology, (2) Electronics Technology, and (3) HVAC. Each of these areas break down into a list of non-credit bearing courses that allow the student to become certified in the respective area of expertise. Students meet with a Student Success Specialist to assess prior learning, identify areas and skills of interest, and education readiness. Students also receive enhanced career counseling, such as job readiness workshops, access to online career development tools, and in-person counseling to help them enter into and advance in transportation careers.

The following courses will be offered starting in **March 2014**:

(1) Electronics I
(2) HVAC 608 Refrigerant Recovery

Electronics I

This **Electronics** course will help students understand the concepts and terminology of electronics. It is aimed at providing students with an understanding of the basic principles associated with electrical theory and applications, without the assumption of any prior knowledge of the topic. The course begins with understanding some of the basic electrical theory principles such as the simple DC circuit, Ohm's Law and the calculation of power and consumption requirements. Students will progress from an understanding of electricity to an understanding of electronics through both in-class room and lab learning. Areas of study will include Electronic Components, Soldering/De-Soldering, Electrical Block Diagrams and Schematics, Power Supplies, Test Equipment and Measures, Series and Parallel Circuits, Technician Work Procedures as well as additional areas of study as detailed in the course objectives.

Course Date(s)/Time(s): March 21st-July 26th (Friday's 5:30pm -7:30pm & Saturday's 9am – 2pm)
Location: 801 N. Capitol St. NE
Total hours: 135
Certification: ETA Student Electronics Technician (SET) Certification

HVAC 608 Refrigerant Recovery

The HVAC 608 course is a **two day** class designed to help facilitate students' prior knowledge of HVAC systems and apply that knowledge in the topic of refrigerant recovery. This course will review the rules and regulations regarding refrigerant recovery, recycling and reclaiming, and the effects of refrigerants on the environment. In addition to the text, students will utilize Blackboard, handouts, and other resources identified by the instructor to assist with the completion of the course. At the end of the course, students will have the opportunity to take the EPA certification test online with a proctor for an additional fee of $25.00 which must be purchased by the student with a valid credit card.

Course Date(s)/Time(s): March 21st-22nd or April 25th-26th or May 2nd-3rd; Friday's & Saturday's 8am-4pm (3 offerings)
Location: 801 N. Capitol St. NE
Total hours: 16
Certification: EPA Section 608 CFC Certification

Who Can Enroll in this Program?
To enroll in the **Transportation Training Program**, students must:
- ✓ Be 18 years or older.
- ✓ Have a high school diploma or a GED certificate.
- ✓ Pass the Comprehensive Adult Student Assessment System (CASAS) exams with scores of at least 231 in reading and a 221 in math.

How Much Does this Program Cost?
This program is offered at no cost to eligible DC residents.

What do I need to apply?
At the time of application, you must submit the following documents:
- ✓ **Proof of United States Residency**
- ✓ **Driver's License**, or State-Issued Non-Driver's ID Card
- ✓ **High School Diploma**, or GED Certificate
- ✓ **CASAS Assessment** with a minimum reading score of 231 and math of 221.

Students are **not** officially enrolled until all documents have been submitted and accepted.

How Do I Enroll?
Call or visit any of the Workforce Development and Lifelong Learning locations. Visit, http://cc.udc.edu/workforce_development for more information.

Contact Info:

Student Success Specialist
202-274-6535

Project Specialist
202-274-7021

Figure 8. Transportation Academy and Ballou Flyer

Automotive Technology
With the UDC-CC Transportation Academy & Ballou STAY

Do you enjoy working with your hands and cars? Do you have good communication and critical thinking skills ?

Consider a career as an Automotive Technician– one of the region's high demand careers in the Transportation sector. Automotive Technicians diagnosis and repair vehicles using electronic systems and hand tools.

The UDC-Community College is proud to offer a certification in Automotive Technician, through a partnership between the Workforce Development and Lifelong Learning Division's Transportation Academy and the Ballou STAY High School. In this 540-hour program, students become familiar with the eight basic areas of the automotive field:

- Brakes
- Electrical
- Engine Performance
- Steering
- Suspension
- Automatic Transmission/Transaxle
- Manuel Transmission/Transaxle
- Engine Repair
- HVAC

Daily tasks for Auto Techs include using electronic systems and observation to diagnose vehicle issues, repair automobiles using specialized hand tools, and using test equipment to ensure repairs are effective.

Who Can Enroll in this Program?
To enroll in the Automotive Technology Program, students must:
- ✓ Be a DC Resident
- ✓ Be 18 years or older.
- ✓ Have a high school diploma or a GED certificate OR be enrolled in a GED program.
- ✓ Pass the Comprehensive Adult Student Assessment System (CASAS) exams with scores of at least 2XX in reading and a 2XX in math.

No previous experience in automotive technology is required, and this program accepts students with wide range of previous experience.

What Does this Program Involve?
The Automotive Technology Program is 540 hours, [including coursework and practicums.] Coursework covers the eight basic areas of the automotive field and is aligned with ASE certification. Practicums take place in the classroom, in labs,[and in repair shops.] They ensure students have the hands-on experience with the day-to-day responsibilities of being an Automotive Technician. In addition to course work, Transportation Academy students receive regular meetings with Student Success Specialists to discuss academic progress and resolve potential challenges.

When and Where are Classes?
Training takes place over a two year period from August to June, Monday through Thursday, from 3:30pm – 5:00pm at the [Toyota Garage] at Ballou STAY.

How Much Does this Program Cost?
There is no tuition for eligible DC residents, but there is a $50 materials fee each year.

What do I need to apply?
Interested individuals must enroll in District of Columbia Public Schools Ballou STAY program. This includes:
- ✓ **DC Public School Enrollment Packet**
- ✓ **Proof of DC Residency**

Additionally, individuals must meet Transportation Academy requirements, including:
- ✓ **CASAS Assessment** with a minimum reading score of 2XX and math of 2XX.

More information about enrolling in Ballou STAY can be found here:
http://www.balloustay.com/apps/pages/index.jsp?uREC_ID=204291&type=d. Students are **not** officially enrolled until all documents have been submitted and accepted.

How Do I Enroll?
Call or visit Ballou STAY. Visit,
http://www.balloustay.com/apps/pages/index.jsp?uREC_ID=204291&type=d for more information

How Do I Become Certified?
After satisfactorily completing the **Automotive Technology Program** at Ballou STAY, you'll be eligible to take the ASE certification exam. After successfully completing the exam, you become certified for employment in the metropolitan DC area and beyond.

Who should I talk to if I have questions?
Call or visit Ballou STAY or the Transportation Academy.

> **Ballou STAY Hgih School**
> 3401 4th St SE
> Washington, DC 20032
> 202.645.3390
>
> **UDC-CC Transportation Academy**
> 801 N. Capitol St NE, Room 329
> Washington, DC 20002
> 202.274.XXXX

Figure 9 ETA Exam Flyer

TAKING AN ETA EXAM

Taking an ETA Examination(s)

1. Decide which ETA certification(s) you would like to take and review the free objectives/competencies provided by ETA. Call to see if additional study materials are available.

2. Find an ETA Certification Administrator (CA) close to you to proctor the exam. You can search ETA's online database of test sites at www.eta-i.org/test_sites.html, or contact ETA at (800) 288-3824.

3. If a test site is not close to you, then you may contact a local library to proctor your exam.

4. Decide whether to take the exam online with Trapeza or on paper. Note: A Certification Administrator must be present regardless of which test format is chosen.

5. Arrange a time to take the exam with the chosen Certification Administrator.

6. Arrive early with the proper materials to take the exam. You may bring scratch paper and a non-programmable calculator to the exam. For most exams, you will be given two hours if needed. Photo ID and #2 pencils required.

7. Once completed, the Certification Administrator will submit your exam and information along with payment. If you test online with ETA, then you will be able to view your score(s) immediately.

8. Examinations are processed within 7-10 business days of arrival at ETA headquarters. However, scores may be requested online through the ETA website (www.eta-i.org/exam_results.html).

9. If you fail an ETA certification examination, you may then request an Examination Review* which covers the questions you missed. Examination Reviews are available for an additional $25.00.
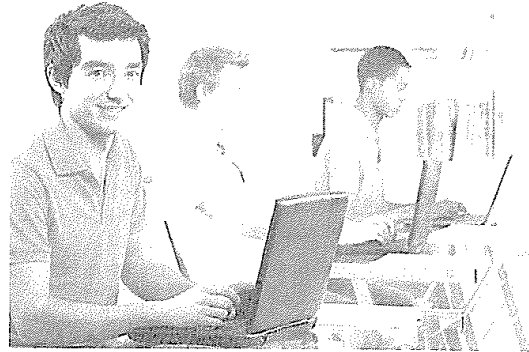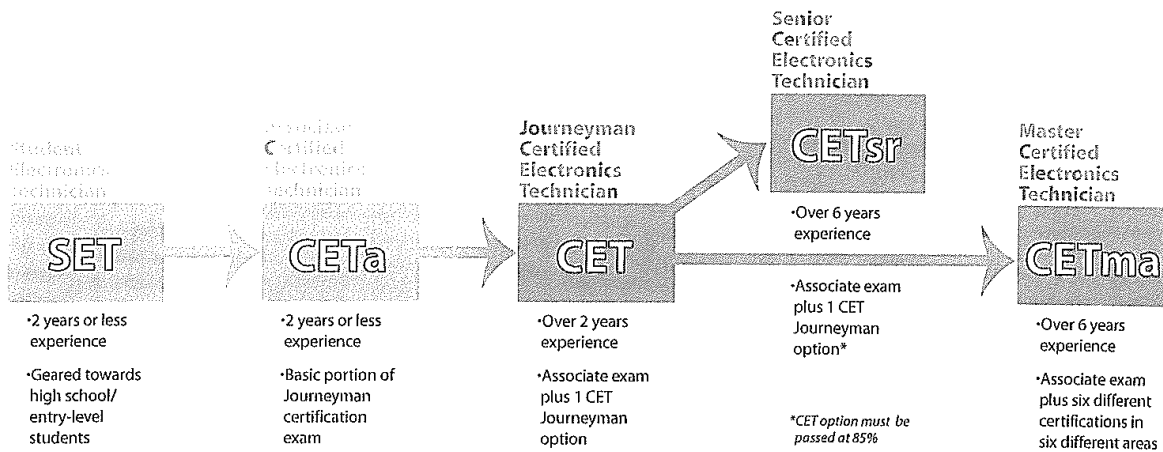
*Note: Some ETA certification exams are not eligible for Examination Reviews.

**As provided for under the ADA (American's with Disabilities Act), if you require special needs accomodation in order to complete the certification process, then please notify your Certification Administrator when scheduling your exam.

Ladder of Career Progression:
ETA provides a stackable, latticed path for career advancement. Basic entry levels for Student and Associate Electronics; Journeyman, Senior and Master CET.; Basic, Journeyman and Master Residential Electronics Systems Integrator (RESI); Master Satellite Installer; Fiber Optics Installer, Outside Plant, Technician and Designer, or endorsements for specific disciplines have been designed into the program as the need occurs.

SET
- 2 years or less experience
- Geared towards high school/entry-level students

CETa
- 2 years or less experience
- Basic portion of Journeyman certification exam

CET — Journeyman Certified Electronics Technician
- Over 2 years experience
- Associate exam plus 1 CET Journeyman option

CETsr — Senior Certified Electronics Technician
- Over 6 years experience
- Associate exam plus 1 CET Journeyman option*
- *CET option must be passed at 85%

CETma — Master Certified Electronics Technician
- Over 6 years experience
- Associate exam plus six different certifications in six different areas

Appendix IX: Summary of UDC-CC's Transportation Academy proposal to the Department of Labor

UDC-CC's Proposed Transportation Academy

In 2012 the University of the District of Columbia-Community College (UDC-CC) proposed to the Department of Labor to create a District of Columbia Transportation Academy with Trade Adjustment Assistance Community College and Career Training-Round Two (TAACCCT-II) Grant Program funds. The focus of TAACCCT-II funds was to create and expand innovative partnerships between community colleges and businesses to train works with the skills employers need. The focus UDC-CC program on transportation came from an identified need for skilled works in rail, street, air and water transportation industries in the D.C. area. The goal was to develop a program from scratch to train District residents in occupations ranging from building transportation infrastructure to running transportation operations.

As noted in UDC-CC's proposal, although the D.C. metro area had one of the lowest unemployment rates in the country at the time, 8.5%, some sections of the city where residents would benefit most from the Transportation Academy suffered from much higher unemployment rates, for example Ward 8 stands at 22.5%, and Ward 7 is 14.7%.

Many technical jobs were going unfilled due to the inability to find candidates with proper skills and training, particularly in the area of urban transportation and infrastructure. UDC-CC proposed to fill this void by developing training programs for District adults—both new and incumbent workers. Jobs in this sector, while industrial in nature, were also knowledge-based as are jobs in the Washington metro area economy.

Therefore, any training needed to teach participants to be lifelong learners who can use technology to keep their skills sharp. The proposed DC Transportation Academy would be comprised of programs, courses, and stackable certificates/credentials that focused on urban transportation and infrastructure occupations that were in demand by the region's public and private sectors. UDC-CC envisioned all areas the DC Transportation Academy would cover all aspects of Washington's urban transit needs including rail (streetcar, freight rail, passenger rail – intercity and commuter, metro), street (road and bridge construction, bridges, streetlights, parking meters/machines, diesel vehicles, natural gas vehicles, electric vehicles, conventional fuel vehicles, hybrid fuel vehicles, electric charging stations, low impact landscaping), Air (aviation maintenance, air transport), and water (diesel engines).

The proposed DC Transportation Academy would build UDC-CC's capacity to increase employability and employment of workers affected by foreign trade as well as dislocated and unemployed adults. The workforce training program would use technology, simulations, practical application of research based training strategies, business thinking and solutions and course development to create a career path that would give employees hope for a professional future and goals to strive towards. UDC-CC proposed working closely with regional employers, the DC Department of Employment Services (DOES), the DC Workforce Investment Council (DC WIC), and American Job Centers in the District to help participants obtain competencies and skills in demand by regional employers in targeted industries.

Serving the Education and Training Needs of TAA-Eligible Workers

The District of Columbia has a single TAA Certification determination (TAW 74688B, PriceWaterhouseCoopers, Decision date 11/5/2010, Impact Date 09/30/2009, Expiration 11/5/2012). The f workers were primarily involved with information technology. Per conversations with the DC

Department of Employment Services (DOES), all workers are re-employed. UDC-CC has a close working relationship with DOES, who will work with UDC-CC if any new TAA certifications are issued.

Evidence of Job Opportunities in the Targeted Industries & Occupations

UDC-CC identified transportation as an underserved industry in the D.C. metro area. Transportation, distribution, and logistics cluster accounted for 2.5 percent of employment in 2008 and was projected to have 591 average annual openings and an average growth rate of 5.2 %, adding 1,005 new jobs to reach 20,394 jobs in 2018. The DC Transportation Academy would support the reintegration of employees who had been impacted by trade adjustment and other economic factors in seeking education, career counseling, skill enhancement, and job placement.

Prior to writing their proposal, UDC-CC staff met with the District Department of Transportation (DDOT) and CSX Corporation, one of the nation's leading transportation suppliers to validate rail-related occupations as those in demand in the Washington Metropolitan area. As part of the project, UDC-CC proposed to include DDOT contractors, CSX, and other employers in the planning process to ensure that the DC Transportation Academy was linked to employer needs. The industry group was to include working with local employers to review and validate curricula; provide feedback about skills and competencies required in the workforce; consider program participants to fill job vacancies; and when possible, provide miscellaneous resources to support this effort, which may include equipment, instructors, funding, internships, or other work-based learning activities.

The Transportation Academy was to fill an identified gap in the existing regional training programs, with particular focus on urban transportation and civil infrastructure, the program would provide training that was limited to one or two of the skills required for successful employment. Other regional transportation academy programs were not easily accessible for many District residents, were typically oversubscribed, and were not focused on the needs of District employers and District projects. In the District, UDC-CC's proposal noted, there was a single high school program, which focuses on sending students to college not into the local workforce. Further these programs did not address significant, long-term projects in the District which included the introduction of street cars, urban freight lines, a massive storm water project, large low impact development reconstruction, and the extensive bus and rail system.

In 2012, UDC-CC offered classes that provided District residents a start in careers that used electrical, HVAC, and customer service skills. While these were useful skills for the target industry, expanding offerings to meet industry and employer specific requirements, they are not sufficient for a successful career. In addition, UDC-CC was limited in the number of students it could serve in it's course delivery method. Before expanding offerings, UDC-CC planned to work closely with DOES, the DC Workforce Investment Council (WIC), DDOT, DC Department of the Environment (DDOE), and local employers to match programs with occupations and opportunities for employment. UDC-CC's proposed primary focus was on leveraging prior learning and the creation of stackable certificates. To support UDC-CC's focus, UDC-CC planned to add online classes, accelerate courses where appropriate, and examine other ways to increase the number of students served.

To support expanded offerings, UDC-CC anticipated providing professional development opportunities for instructors and staff. Key areas of proposed professional develop planned to cover included: using technology in the classroom, matching curriculum to competencies, and using data to enhance learning and feedback. In addition to faculty development and a change in course delivery, UDC-CC proposed to increase opportunities for hands on learning. UDC-CC anticipated setting up labs to support hands on learning, for example, diesel, compressed natural gas, and conventional fuel engines are in use by a wide range of urban transportation vehicles.

Therefore, setting up an environment where students could combine online learning, classroom lecture, and active learning by working on a variety of diesel engines. Having these specialized systems in a lab would engage students who are hands-on, not book, learners.

2. DESCRIPTION OF THE PROJECT AND CORE ELEMENTS

The UDC-CC proposed to use grant funds to address five core elements. The Transportation Academy was conceived to incorporate innovative strategies in course delivery and student feedback utilizing evidence-based approaches throughout the project's life, from assessment to program design and delivery to evaluation and improvement feedback loops. The Transportation Academy was to provide adult learns who are community college students what they most needed: course offerings, flexible scheduling arrangements, availability of career counselors, and an on-line career tool. This will allow incumbent workers to be promoted and to increase wages.

Core Element 1 - Evidence-based Design

UDC-CC proposed to use an evidence-based approach pioneered at Valencia College, and proposed to work with education, agency, public, and private organizations to create pathways in urban transportation and civil infrastructure for adults. The approach was anticipated to address both students who are academically prepared and those who are challenged by math and reading but have a desire to be in the industry. By building on Valencia's model, the project was to focus on immediate employer needs and the participants' desire for work but also incorporate a strong STEM focus to prepare participants for advancement and lifelong learning. UDC-CC proposed that partners would work with local business for paid learning experiences to augment class and lab work.

To ensure that dislocated workers and other prospective students were made aware of the program offerings, Student Success Specialists were to be available. Eligible incoming workers and prospective students would be advised about steps they needed to take to increase their core skills portfolio to prepare for education and training. Results of the intake assessment and core skills development were to be available to all parts of the UDC-CC and the evaluation team so that performance could be monitored throughout the project. UDC-CC proposed a rapid feedback loop from the monitoring effort so to equip UDC-CC with crucial information about student performance so that UDC-CC staff could intervene as necessary with additional support and improve counseling services for future participants.

Core Element 2 - Industry Engagement to Identify Credentials.

UDC-CC proposed to work with a variety of organizations to create career pathways and the underlying stackable credentials. UDC-CC would work with industry at the individual level to review current and emerging position descriptions and the credentials that the best candidates should have. At the group level planned to rely on industry to validation of curriculum and competencies. Government agencies were to be part of the process in terms of emerging regulations regarding skill sets and certifications. At the national and association level, UDC-CC proposed to look for existing third-party certifications and how the DC Transportation Academy could utilize them to meet employer and participant requirements.

Core Element 3 - Plans to Stack and Lattice Credentials.

The UDC-CC proposed using layers of integrated or—stackable certificates, which would enable —low-skilled workers to advance to better jobs and higher levels of education within an occupational pathway. Certificates would help to create a logical framework and path forward, and could also accelerate the education process by providing students with a demonstrated level of occupation-specific mastery that could translate to increased wages in the workplace.

The Core Competency framework proposed by UDC-CC was based on a well-researched clustering of occupations, —Career Clusters, developed by the National Center for O*NET Development for the US DOL Employment and Training Administration (ETA). By using

Career Clusters, proposed leveraging a framework that the DOL has already researched and that will help align deliverables with employer needs (knowledge, skills, and abilities). The DC Transportation Academy proposed to leverage existing work by using Transportation, Distribution, and Logistics Competency Model with a focus on Transportation Operations & Maintenance section. UDC-CC proposed to offer third-party credentialing organization rather than the individual credentials:

Certificates and Certifications to be offered by the UDC-CC:

Certifying Body	Length of Credential/Program	Areas
National Institute for Automotive Service Excellence	Less than one year	Rail – freight & passenger rail, metro Street – diesel, conventional fuel, natural gas, and electric vehicles Water – diesel vehicles
Electronics Technicians Association, International	Less than one year	Basics for all occupations requiring first-level electronics
EPA.CFC Certificate, Type I, II, III	Less than one year	Passenger and refrigerated transport.

UDC-CC proposed using a well-implemented prior learning assessment to facilitate student participation. A students (such as a TAA worker) would participate in an assessment, either on-line or in person. The UDC-CC planned to evaluate existing prior learning assessment tools in the transportation field and use, adapt, or develop appropriate tools. By leveraging the available ACE-certification crosswalk, the DC Transportation Academy planned to focus on prior learning assessments for competencies not currently covered by ACE.

Core Element 4 - Online and Technology-Enabled Learning

UDC-CC proposed to incorporation of technology into program design and delivery by leveraging work done by Wallace State Community College, Valencia College, and other institutions to offer hybrid classes that combine online, simulation, classroom-based, and hands-on learning. During the start-up phase, UDC-CC proposed that staff from UDC-CC would visit institutions offering best practices in order to determine the best fit for the DC Transportation Academy. UDC-CC envisioned using on-line technology to deliver class and evaluate students. Continuous two-way evaluation would allow instructors to isolate any difficulties a student is having academically and students to evaluate what is effective in the course so that changes can be made.

UDC-CC proposed deploying online learning systems with comprehensive evaluation and improvement throughout the process. In 2012, UDC-CC used Blackboard as its main online learning system, and UDC-CC proposed to use the TAACCCT-II grant to evaluate systems used at other community colleges to identify best practices that could be put in place with the DC Transportation Academy.

UDC-CC anticipated that incorporating technology into the DC Transportation Academy would increase flexibility in course delivery, which would allow UDC-CC to experiment with programs

to accelerate completion, offer mid-course drop-in or test out by students with demonstrated competencies, and facilitate delivery at multiple sites. By the end of the grant, UDC-CC expected that the lessons learned by offering technology-enhanced courses and programs at the DC Transportation Academy would enable technology to be incorporated into other programs at the community college.

UDC-CC also planned for the DC Transportation Academy to integrate technology into the intake process. A well implemented and coordinated intake process will facilitate student participation. The UDC-CC's student intake process was to be comprehensive and would assess 1) student's prior learning, ideally with college credit recommendations for skills already mastered; 2) education readiness by using proven tools such as the National Work Readiness Certificate, Comprehensive Adult Student Assessment Systems (CASAS), and ACCUPLACER®; and 3) interest by using the Strong Interest Inventory as defined by the RIASEC/Holland Codes personality types and/or the O*NET interest profiler.

Core Element 5 - Strategic Alignment

UDC-CC proposed to collaborate with local employers, including DDOT and CSX, to ensure that the DC Transportation Academy met its goals. UDC-CC envisioned the role of employers to include:

- Comment on the program's goals and progress;
- Feedback about skills and competencies required in the workforce;
- When appropriate, employment opportunities for qualified participants who complete grant funded education and training programs; and
- When possible, miscellaneous resources to support this effort, which may include access to curriculum, equipment, instructors, funding, internships, or other work-based learning activities.

UDC-CC also planned to work with public agencies in the District of Columbia. DOES is the agency responsible for TAA workers as well as being the public workforce agency. The other public agency that will be part of the program is the DC WIC. At the time of writing the grant, UDC-CC already worked closely with both agencies and planned to continue to do so. Although DC had no TAA certified workers at the time of writing the proposal, DOES was referring District residents who become unemployed to UDC-CC's workforce development programs.