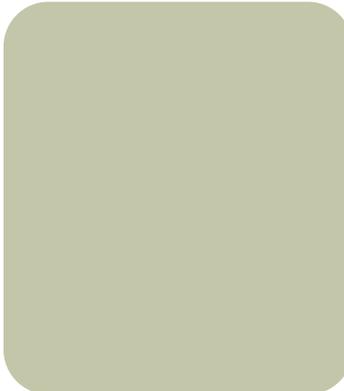


# Des Moines Area Community College Workforce Training Academy Connect Program: Implementation and Early Impact Report

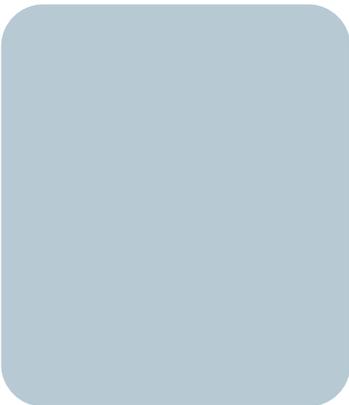


## Pathways for Advancing Careers and Education

OPRE Report No. 2018-82



October 2018



**PACE**  
Pathways for Advancing  
Careers and Education

# Des Moines Area Community College Workforce Training Academy Connect Program: Implementation and Early Impact Report

## Pathways for Advancing Careers and Education (PACE)

OPRE Report No. 2018-82

October 2018

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## Overview

This report documents the implementation and early impacts of the Workforce Training Academy Connect (WTA Connect) program, operated by Des Moines Area Community College (DMACC) in Des Moines, Iowa. WTA Connect aimed to help low-income, low-skilled adults access and complete occupational training that can lead to increased employment and higher earnings. It is one of nine career pathways programs being evaluated under the Pathways for Advancing Careers and Education (PACE) study sponsored by the Administration for Children and Families.

WTA Connect aimed to provide a pathway for low-skilled students to enroll in occupational certificate courses when their low levels of basic skills made them otherwise ineligible. It provided basic skills remediation (including enrollment in high school equivalency classes if needed), development of self-efficacy and goal-setting skills, and proactive advising. After completing the basic skills requirements, WTA Connect participants could enroll in occupational certificate courses in fields such as healthcare, advanced manufacturing, and administrative support. The entire package of program components was provided free to participants.

Using a rigorous research design, the study found that WTA Connect resulted in a modest increase in attainment of credentials by participants within the 18-month follow-up period, but no other educational or career impacts. Future reports will examine whether this credential effect translates into gains in employment and earnings.

## Primary Research Questions

- Was the intervention implemented as designed?
- How did services received differ between study participants who could access the WTA Connect program versus those who could not?
- What were the effects of access to WTA Connect on short-term educational outcomes: credentials attained and hours of occupational training received?

## Purpose

Low-income workers with only a high school education face poor and declining employment prospects. Postsecondary training, often at community colleges, offers one strategy for improving this population's education and employment opportunities, especially if targeted to occupations where there is high and growing demand for skilled workers. Many such adults are "nontraditional" students—that is, often they are older, are parents, lack college-level academic skills, and have few economic resources.

Career pathways programs are designed to address these barriers to earning postsecondary credentials with labor market value by providing well-defined training steps targeted to locally in-demand jobs, combined with a range of financial, academic, employment, and personal supports and services. To assess the effectiveness of a career pathways program such as WTA Connect, the PACE evaluation used an experimental design in which program applicants were assigned at random to a "treatment" group who could access the program or a "control" group who could not, then compared their outcomes.

## Key Findings & Highlights

- Fifty percent of the WTA Connect treatment group participated in education or training. Program staff attributed non-participation to a number of barriers (e.g., participants finding work) and treatment group members that did not engage cited reasons such as work and family responsibilities.
- Of those treatment group members who participated in and started basic skills remediation, almost three-quarters completed it and enrolled in occupational training.
- The treatment group was significantly more likely than the control group to receive a variety of supports including career counseling, tutoring, help arranging supports for school or work, and job search assistance.
- The treatment group earned significantly more credentials (the confirmatory outcome measured in this report) than control group members, although only 19 percent of treatment group members received credentials. There were no impacts on hours of occupational training, career outcomes, or career pathways employment.

## Methods

The WTA Connect evaluation's implementation study examined the design and operation of the program and the treatment group's participation patterns; its impact study measured differences in education and training and employment outcomes.

From April 2012 to December 2014, nearly 1,000 program applicants were randomly assigned to either the treatment or the control group. The impact study used data from a follow-up survey at 18 months after random assignment.

Prior to estimating WTA Connect impacts, the research team published an analysis plan that organized and limited the number of statistical tests conducted so as to avoid the problem of "multiple comparisons" in which a potentially large number of the tests could reach conventional levels of statistical significance by chance. To address this issue, the team established three categories of hypotheses (confirmatory, secondary, and exploratory) and publicly registered confirmatory and secondary outcomes prior to starting analyses.

## Executive Summary

Low-income workers with only a high school education face poor and declining employment prospects.<sup>1</sup> Postsecondary training, often at community colleges, offers one strategy for improving this population's education and employment opportunities, especially if targeted to occupations where there is high and growing demand for skilled workers (Capelli 2014; Conway and Giloth 2014; Holzer 2015). Policymakers, workforce development organizations, educators, and other key stakeholders are very interested in how to improve the match between the nation's need for a skilled workforce and low-income adults' need for employment.

### WTA Connect Program

This report offers early evidence on the implementation and impacts of one effort to meet the occupational training needs of low-income, low-skilled adults: the **Workforce Training Academy Connect (WTA Connect)** program operated by **Des Moines Area Community College (DMACC)** in Iowa between 2012 and 2015. WTA Connect aimed to provide a pathway for low-skilled students to enroll in occupational certificate courses.

Over an initial 18-month follow-up period, members of a randomly assigned treatment group with access to the WTA Connect program:

- received credentials at a higher rate than control group members (the confirmatory outcome measured in the report), although only 19 percent of treatment group members received a credential;
- received credentials from a licensing/certification body at a higher rate; and
- did not receive significantly more hours of occupational training than control group members.

WTA Connect built on an existing DMACC program, the Workforce Training Academy, which provided occupational training in targeted high-demand, high-growth fields at no cost to participants who met minimum basic skills and income requirements. Because many applicants were denied admission to the Academy due to their low basic math and reading skills, DMACC staff designed a new program that would “connect” those low-skilled students to the Academy. WTA Connect prepared program participants for the Academy's occupational certificate courses with **basic skills remediation, proactive advising, and other supports**.

After completing the basic skills requirements, WTA Connect participants could enroll in the occupational certificate courses in the Academy such as healthcare, advanced manufacturing, and administrative support. At the end of occupational training, participants completed a job readiness course and could pursue employment or further education in a college diploma or degree program.

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<sup>1</sup> “The Rising Cost of Not Going to College,” *Pew Research Center, Social & Demographic Trends* (blog), published February 11, 2014, <http://www.pewsocialtrends.org/2014/02/11/the-rising-cost-of-not-going-to-college/>.

The entire package of WTA Connect program components was provided at no cost to participants, including all tuition and course materials. These components included:

- **Basic skills remediation.** WTA Connect aimed to quickly improve basic skills through its own self-paced, internet-based curriculum and instructor-supervised labs. Participants then did not have to retake and pass the Academy’s admissions assessment to enroll in occupational training. In the absence of WTA Connect, control group members had to improve their basic skills using the Academy’s standard remediation software or on their own and then achieve required scores on the assessment.
- **Advising.** WTA Connect students received support from dedicated achievement coaches who helped participants enroll, identified and addressed barriers to participation, and monitored their academic progress over the course of the program.
- **Non-academic supports.** In addition to free tuition, WTA Connect provided other non-academic supports—transportation supports, such as bus passes or gas cards; screening to assess participants’ eligibility for public benefits; and a workshop on goal-setting and self-efficacy skills.<sup>2</sup>
- **Employment assistance.** Students in occupational training were required to attend a job readiness course and, upon completion of training, could schedule one-on-one sessions with an employment coach.

### Pathways for Advancing Careers and Education (PACE) Evaluation

Abt Associates and its partners are evaluating WTA Connect as part of the **Pathways for Advancing Careers and Education (PACE)** evaluation. Funded by the Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services, PACE is an evaluation of nine programs that include key features of a “career pathways framework.”

The **career pathways framework** guides the development and operation of programs aiming to improve the occupational skills of low-income adults by increasing their entry into, persistence in, and completion of postsecondary training. These students are primarily older and “nontraditional.” The framework describes strategies for overcoming barriers to education and training that these students can face. Key features of programs within this framework include

- a series of well-defined training steps;
- promising instructional approaches targeted to adult learners;
- services to address academic and non-academic barriers to program enrollment and completion; and
- connections to employment.

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<sup>2</sup> Self-efficacy is defined as an individual’s perceived capability in performing the necessary tasks to achieve personal goals. “The Role of Social Supports and Self-efficacy in College Success,” *Institute for Higher Education Policy*, Research to Practice Brief Fall 2010, [http://www.ihep.org/sites/default/files/uploads/docs/pubs/pcn\\_socialsupports.pdf](http://www.ihep.org/sites/default/files/uploads/docs/pubs/pcn_socialsupports.pdf).

The WTA Connect evaluation had two parts: An **implementation study** examined the design and operation of the program and patterns of enrolled students' participation. An **impact study** used an experimental design to measure differences in educational and employment outcomes between individuals randomly assigned to a group that could receive WTA Connect (treatment group) and a group that could not (control group).<sup>3</sup> Using data from baseline surveys, a follow-up survey, program administrative records, and site visits/monitoring calls, this report provides the results from the implementation study. It describes the **early impacts of the program (18 months after random assignment) on education, training, and employment**, including attainment of a credential since random assignment, the confirmatory outcome to assess the early effects of WTA Connect.

## Key Findings

### *From the Implementation Study*

- *Recruitment of eligible participants was challenging, but WTA Connect nearly reached a revised enrollment goal through technical assistance and target group expansion.*

Though WTA Connect had a pipeline of potential participants (applicants too low skilled for the Workforce Training Academy), the program was new and thus unknown to the college and community when implemented for the PACE study in 2012. Initially the program struggled to meet its random assignment goal of 1,200 study participants over a two-year period. The research team and ACF reduced the sample goal to 1,000 participants and extended random assignment for eight months. The program ultimately reached 94 percent of its reduced enrollment goal largely through two mechanisms.

First, program staff worked with a technical assistance provider, Public Strategies, Inc. (PSI), to hone the marketing message to potential applicants. Program staff found that applicants and those who were assigned to the treatment group did not fully understand the program steps, starting with basic skills remediation, and the package of services. Staff also heard from some applicants that WTA Connect was a “second choice” program for those whose assessment scores made them ineligible for the Workforce Training Academy and its occupational trainings. The initial program name, the Prepared Learner Program, may have contributed to this impression. The rebranding of the program was part of the technical assistance effort, along with the message that it was one of several pathways into the Academy, each appropriate for different populations.

Second, WTA Connect staff expanded the program's target population beyond Workforce Training Academy applicants who were denied admission due to low basic skills. Program staff identified students who lacked a high school diploma as a new target population, as well as students who enrolled in for-credit classes and subsequently dropped out for academic or

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<sup>3</sup> Random assignment ensures that the treatment and control groups will be alike in their observed and unobserved characteristics, and that any systematic differences in their outcomes can be attributed to the treatment group having access to program services.

financial reasons. Program staff were able to recruit GED/HiSET<sup>4</sup> preparation course students into the study, but found that those assigned to the treatment group often did not persist and complete the program. Program staff were not able to recruit large numbers of former for-credit students and ultimately ended this strategy.

- ***Staff modified new program components as they learned from implementation experience.***

WTA Connect included components not previously available to Workforce Training Academy participants. Staff piloted and modified the new components during the first few months of the PACE evaluation. Initially, WTA Connect's basic skills remediation combined structured classroom training and an online curriculum. It transitioned to a self-paced, online learning approach, however, to reduce program costs and accommodate participants' schedules. WTA Connect intended to contextualize the remediation by incorporating occupational content into basic skills instruction. Ultimately, it did not, in part, because the online approach did not lend itself to contextualization. It was also challenging to develop contextualized basic skills curricula when WTA Connect covered a variety of occupational areas. Initially, WTA Connect ran its own GED classes specifically for WTA Connect students, but later decided to instead use existing GED/HiSET classes at DMACC's Urban Campus.

- ***Decisions made outside of the program increased the overlap in target population and services between WTA Connect and the Workforce Training Academy.***

During the study period, DMACC moved WTA Connect and the Workforce Training Academy into its Continuing Education division; the new division leadership subsequently instituted two changes that affected the program and the study. First, the division lowered the eligibility cutoff scores for the Workforce Training Academy, thus cutting into the pool of potential WTA Connect applicants. Second, division leadership added Journeys, a pre-occupational training life skills course, to the Academy, which duplicated a key element of WTA Connect's existing curriculum. These two changes increased the overlap in both target population and services between WTA Connect and the Academy—thereby reducing the degree to which the evaluation's design could distinguish effects due to WTA Connect alone.

- ***Iowa's change from the GED to HiSET affected treatment group members working toward a secondary credential.***

In January 2014, Iowa switched from the GED to HiSET. This affected students seeking a GED who had enrolled in WTA Connect prior to the switch. Some students had already worked through several GED prep courses and subject tests. Their progress did not accrue toward the HiSET credential, however, and they had to start over with HiSET prep courses, which slowed their progress. Additionally, DMACC had to develop a HiSET curriculum, which slowed enrollment in secondary training. According to program records, in the six months prior to the adoption of the HiSET, 86 percent of treatment group members without a high school diploma

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<sup>4</sup> The state of Iowa switched from the GED® to the Educational Testing Service's HiSET® high school equivalency test during the study period.

or equivalent enrolled in the GED classes. Between January and June 2014, as the HiSET was adopted and implemented, only 11 percent of treatment group members without a high school credential did so. Moreover, the completion rate dropped from 18 percent during the July to December 2013 period to five percent during the January to June 2014 period.

- ***WTA Connect faced challenges engaging treatment group members and implemented an additional screening tool in response.***

Early in the random assignment period, WTA Connect staff noticed more than one-quarter of treatment group members were either not engaged in program activities and unresponsive to staff contact efforts, or were making slow, if any, progress in the program. In response to conversations with the research team regarding the reasons for disengagement, the program added a non-academic barriers assessment. Staff administered a self-completed assessment form during the pre-random assignment information sessions to identify barriers to program participation, such as mandatory work requirements for public benefits, unmet childcare needs, a DMACC account hold<sup>5</sup> preventing enrollment, substance abuse, and health concerns. In 2014, staff expanded the non-academic assessment to include a post-information session telephone screening. Staff reported that few applicants were screened out as a result of these steps, however.

- ***Flexible, self-paced program components may have affected participant engagement and persistence.***

The WTA Connect program designers intentionally created a flexible and self-paced program with the goal of accommodating participants' schedules and other life demands. However, that design may not have provided the structure the low-skilled and disadvantaged population needed to persist and complete the program while combining school and other life commitments. With an emphasis on flexibility, the program did not have a clear start and end date or sequence of activities. Few program components were mandatory. Basic skills remediation was required, but the course itself was self-paced and delivered online. Advising, another touchpoint that could engage students, was encouraged but not mandatory. Ultimately half of the treatment group did not engage in any program activities.

- ***WTA Connect emphasized employment rather than further education.***

WTA Connect envisioned an educational pathway for program completers; during the PACE study period, however, the systems to support a smooth transition from training to education were not yet in place. The certificate courses that WTA Connect students completed were non-credit; during the period of PACE study enrollment, they did not transfer for credit in DMACC's diploma and degree programs. WTA Connect also had its roots in the Workforce Training Academy, traditionally an employment-focused training center. With employer-driven certificate programs and employment-focused supports (such as the Career Readiness Lab),

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<sup>5</sup> An account hold results when a student has an unpaid financial obligation to the college. The hold prohibits students from enrolling in courses until the debt is resolved.

WTA Connect students' experience in the program mostly prepared them to seek a job after certificate completion, not further education.

- ***Only half of treatment group members attended any education or training.***

Of those study participants assigned to the treatment group, 50 percent attended any education or training. All 50 percent attended basic skills remediation, which was the first step in the WTA Connect program. A sizable proportion—39 percent of all treatment group members, or 78 percent of those who enrolled in basic skills courses—completed remediation and thus were eligible to enroll in an occupational training course.

The follow-up survey asked respondents who did not enroll in any education or training to rank a number of potential reasons for their decision as very important, somewhat important, or unimportant. For the 50 percent of WTA Connect participants who did not enroll, the most common very important reasons were “didn’t have enough time due to work” (47 percent) and “didn’t have enough time due to family responsibilities” (46 percent). WTA Connect staff believed additional reasons were that some respondents had found jobs, moved out of the state, or became incarcerated, and that because WTA Connect was free, participants found it easy to not enroll or to drop out.

- ***Almost three-quarters of treatment group members who started basic skills education attended occupational training.***

Of the treatment group members who enrolled in any education or training (i.e., the 50 percent who started basic skills remediation), 74 percent continued to the next step in the program and enrolled in at least one occupational training program. The majority of those who attended education and training attended only one occupational training (a smaller proportion attended two occupational trainings). Of the treatment group members who started basic skills remediation, 56 percent completed at least one occupational training program.

- ***WTA Connect had a statistically significant impact on education or training receipt.***

The WTA Connect program increased participation in any education and training by 14 percentage points (50 percent of the treatment group versus 36 percent of the control group). The WTA Connect program increased the treatment group’s attendance at a two-year college (42 percent compared with 26 percent), reflecting the program’s operation at a community college. The program also increased receipt of basic skills instruction (29 percent of treatment group members versus 18 percent of control group members), English as a Second Language instruction (seven percent compared with three percent), and life skills instruction (15 percent compared with six percent).

- ***WTA Connect had a statistically significant impact on receipt of a variety of supports.***

The WTA Connect program had an impact on receipt of career counseling (20 percent of treatment group members versus nine percent of control group members), as well as help arranging supports (15 percent versus six percent) and receipt of job search assistance (15 percent versus eight percent). Although these differences are statistically significant at the one percent level, only a small proportion of treatment group members reported engaging in these services. Among the subset of study participants who attended education and training,

treatment group members were significantly more likely than control group members to receive a number of supports: career counseling, job search/placement assistance, academic advising, help arranging supports for work or school, and tutoring.

#### *From the Impact Study*

- *The WTA Connect program increased completion of credentials, the primary outcome for the early analysis of this program. However, the size of the increase was modest, and there was not an increase across all sources of credentials.*

Credential attainment since random assignment was the confirmatory study outcome. Nineteen percent of treatment group members received a credential within 18 months, compared to 14 percent of the control group, a difference significant at the 10 percent level. Credential attainment was disaggregated by source; there was a significant difference between the treatment and control groups for only one of the three sources—a licensing/certification body. Fifteen percent of the treatment group earned credentials from this source compared to 10 percent of control group members, which was significant at the five percent level.

Thus, it appears that most of the difference in credential attainment between the treatment and control groups is due to credentials from a licensing/certification body. In addition, the sizes of these effects on credentials, although significant, are modest, which might be explained by two factors. First, only half of the treatment group received any education or training at all, limiting the scale of the effects on the group overall. Second, for those who did attend education or training, only 23 percent attended full-time while working part-time or less. Again, this limited the amount of education or training that could be received by the treatment group.

- *The WTA Connect program had no effect on measures of early career progress, employment, or other domains 18 months after random assignment.*

There were no statistically significant differences between the treatment and control groups on three measures of self-assessed progress toward career goals: perceived career progress, confidence in career knowledge, and access to career supports. The program also did not have an impact on two indicators of career pathways employment: working in a job paying at least \$12 per hour and working in a job requiring at least mid-level skills. Finally, the program did not have an impact on outcomes in three additional domains: psycho-social skills, life stressors, and family structure.

### **Next Steps in the WTA Connect Evaluation**

This WTA Connect report focuses on implementation of the program and its early effects on participant education and training. At 18 months after random assignment the key program goal examined was increased attainment of credentials, with limited analysis of employment and earnings.

The **next WTA Connect report will cover a 36-month follow-up period**. It will take a more detailed look at program effects on students' economic outcomes for a period when these are expected to occur. The report will examine **employment outcomes**, such as average rate of employment and average earnings over successive follow-up quarters, and **job characteristics**, such as occupation, hourly wage, receipt of fringe benefits, and career progress. Thus, it will

begin to answer the question as to whether the credential attainment gains that WTA Connect achieved after 18 months will translate into economic gains in the workplace in the longer term. An analysis at 72 months after random assignment will estimate long-term effects of the program.

## 1. Introduction

Low-income workers with only a high school education face poor and declining employment prospects.<sup>6</sup> Postsecondary training, often at community colleges, offers one strategy for improving this population’s education and employment opportunities, especially if targeted to occupations where there is high and growing demand for skilled workers (Capelli 2014; Conway and Giloth 2014; Holzer 2015). How to facilitate a better match between the nation’s need for a skilled workforce and the needs of low-income adults for employment is a topic of great interest to policymakers, workforce development organizations, educators, and other key stakeholders.

Research indicates that making such a match is not easy, as many low-income, low-skilled adults face considerable barriers to completion of postsecondary education. Many such adults are “nontraditional” students—that is, often they are older, are parents, lack adequate basic academic skills, and have few economic resources.<sup>7</sup> Research further shows that on average, nontraditional students fare worse in postsecondary settings than do traditional students (Visher et al. 2008; Cooper 2010; Goldrick-Rab and Sorensen 2010). Institutions often assign students who need to improve their basic academic skills to developmental (remedial) education; many of these students never progress beyond it (Rutschow and Schneider 2011). Others drop out due to financial setbacks or difficulties juggling school, work, and family responsibilities. Some have difficulties navigating the college environment, including course sequences and financial aid. Many have difficulty meeting academic standards (Bridges to Opportunity Initiative 2008).

This report provides early evidence on the implementation and impacts of one effort to meet the occupational training needs of low-income, low-skilled adults: the **Workforce Training Academy Connect (WTA Connect) program** operated by **Des Moines Area Community College (DMACC)** in Iowa. WTA Connect operated between 2012 and 2015.

Since 2000, DMACC has operated the Workforce Training Academy, which targets high-demand, high-growth fields with occupational training, at no cost to participants who meet income and other eligibility requirements. DMACC staff report that during the early 2010s, about 600 students annually were denied admission to the Academy’s occupational certificate programs due to low scores on admissions tests of basic math and reading skills. Those denied admission needed to improve their skills using ACT KeyTrain® remediation software or on their own, then retest and achieve the required scores before they could enter the Workforce Training Academy. DMACC staff conceived of a new program to directly “connect” these low-skilled adults to the Workforce Training Academy. Implemented in 2012, the new program—WTA Connect—aimed to quickly remediate students’ basic skills and remove the re-testing

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<sup>6</sup> “The Rising Cost of Not Going to College,” *Pew Research Center, Social & Demographic Trends* (blog), published February 11, 2014, <http://www.pewsocialtrends.org/2014/02/11/the-rising-cost-of-not-going-to-college/>.

<sup>7</sup> National Center for Education Statistics, “Nontraditional Undergraduates / Definitions and Data,” accessed September 1, 2016, <https://nces.ed.gov/pubs/web/97578e.asp>.

requirement for program completers to enter Academy courses. Students with no high school diploma or equivalency credential would also be eligible for WTA Connect.

WTA Connect prepared its participants for occupational certificate courses by providing basic skills remediation (including enrollment in high school equivalency classes if needed), non-academic supports, and proactive advising. After completing the basic skills requirements, WTA Connect participants enrolled in occupational certificate courses in fields such as healthcare, advanced manufacturing, and administrative support. The entire package of program components was free to participants. At the end of WTA Connect, students completed a job readiness course and could pursue employment or further education in a college diploma or degree program.

Abt Associates is evaluating the WTA Connect program as part of the **Pathways for Advancing Careers and Education (PACE) evaluation**, a study of career pathways programs funded by the Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services.<sup>8</sup> The WTA Connect program was designed and implemented in order to be included in the PACE evaluation.

The evaluation of WTA Connect includes both an implementation study to examine its design and operation and an impact study that relies on a random assignment research design to estimate the impacts of access to WTA Connect on participants' education and training, employment, and other outcomes.

This report describes WTA Connect implementation and early impact findings on participant outcomes over an approximately 18-month follow-up period.<sup>9</sup> This chapter describes the PACE evaluation, summarizes findings from the research literature regarding the type of components implemented by WTA Connect, and provides a roadmap to the rest of the report.

## 1.1. Pathways for Advancing Careers and Education (PACE) Evaluation

Funded by ACF, the PACE evaluation is a 10-year study of nine programs that include key features of a "career pathways framework." Initiated in 2007, PACE is the first large-scale, multi-site experimental evaluation of career pathways programs.

The career pathways framework guides the development and operation of programs that aim to improve the occupational skills of low-income individuals, primarily older nontraditional students, by increasing their entry into, persistence in, and completion of postsecondary training. Central to accomplishing these improved outcomes, the framework articulates signature strategies for overcoming the barriers that nontraditional, occupational students often face. For example, key features of programs within this framework include having a series of well-defined training steps, promising instructional approaches, supportive services, and connections to employment (Fein 2012).

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<sup>8</sup> More information on the PACE evaluation can be found on ACF's Office of Planning, Research, and Evaluation website: <http://www.acf.hhs.gov/opre/research/project/pathways-for-advancing-careers-and-education>.

<sup>9</sup> The time frame was selected because on average, students completed the 15-month follow-up survey 18 months after random assignment.

Programs consistent with the career pathways framework typically have multiple components, as illustrated by the package of basic skills remediation and supportive services provided by WTA Connect. The multi-component nature of such programs reflects the observation that nontraditional students face multiple barriers to success and that addressing only a single one is unlikely to substantially improve their employment or other prospects. The career pathways framework is flexible, however, and not a specific program model. Thus, which components a local program adopts and how it implements them can vary greatly.

Reflecting this diversity, each of the nine programs in the PACE evaluation represents a different program model. All share some program components that are part of the career pathways framework, but each also has distinct and unique elements, reflecting the target populations, occupational trainings offered, and industries of focus. Because of this variation, PACE evaluates and reports findings for each evaluated program individually.<sup>10</sup>

The central goal of the PACE evaluation is to determine the effectiveness of each of the nine programs using a common evaluation design and conceptual framework (**impact study**). The most critical element of the evaluation design is **random assignment** of eligible applicants either to a **treatment group** that can access the career pathways treatment or to a **control group** that cannot. Random assignment ensures that the study's treatment and control groups will be equivalent in their observed and unobserved characteristics, and that any systematic differences in their subsequent outcomes can be attributed to the treatment group having access to program services (i.e., the program's impacts). Systematic differences in outcomes due to the characteristics of individual members in each group can be ruled out.

Consistent with this career pathways framework and the career pathways theory of change (described in Chapter 2) guiding the PACE evaluation, the key outcomes for which the PACE study estimates effects are in the **education and training and employment areas**, although the study also estimates effects in other areas, such as family well-being.

The PACE implementation and early impact program reports analyze outcomes over approximately 18 months following random assignment. The WTA Connect impact analyses rely

#### Programs in PACE

- Bridge to Employment in the Health Care Industry at San Diego Workforce Partnership, San Diego, CA
- Carreras en Salud at Instituto del Progreso Latino, Chicago, IL
- Health Careers for All at Workforce Development Council of Seattle-King County, Seattle, WA
- Pathways to Healthcare at Pima Community College, Tucson, AZ
- Patient Care Pathways Program at Madison College, Madison, WI
- Valley Initiative for Development and Advancement (VIDA), Lower Rio Grande Valley, TX
- Washington Integrated Basic Education and Skills Training (I-BEST) program at three colleges (Bellingham Technical College, Whatcom Community College and Everett Community College), Washington State
- Workforce Training Academy Connect at Des Moines Area Community College, Des Moines, IA
- Year Up (Atlanta, Bay Area, Boston, Chicago, National Capital Region, New York City, Providence, Seattle)

<sup>10</sup> All PACE-related reports can be found on [www.career-pathways.org](http://www.career-pathways.org) as well as [www.acf.hhs.gov/opre/research/project/pathways-for-advancing-careers-and-education](http://www.acf.hhs.gov/opre/research/project/pathways-for-advancing-careers-and-education).

primarily on surveys for individuals in the treatment group and control group. Future reports will analyze outcomes three years and six years after random assignment.<sup>11</sup> These latter two sets of reports will also include benefit-cost studies for some of the nine PACE programs.

## 1.2. Research Context for Key Features of the WTA Connect Program

The WTA Connect target population was low-income adults with basic skills at a sixth- to eighth-grade level. To help this population ultimately obtain an occupational credential, WTA Connect staff designed an intervention that combined basic skills remediation and supportive services to prepare students for and support them through occupational training. In doing so, it sought to incorporate a number of promising strategies from the career pathways framework.

**Basic skills remediation.** WTA Connect aimed to quickly improve participants' basic math and reading skills to the ninth-grade level needed for entry into the Workforce Training Academy. To do this, it provided a self-paced, internet-based curriculum and instructor-supervised labs, and removed the re-testing requirement for program completers to enter Academy courses. In the absence of WTA Connect, low-scoring Academy applicants had to improve their basic skills using its ACT KeyTrain® remediation software or on their own, then retest and achieve the required scores. Staff reported this was a longer path that few applicants successfully completed.

There is evidence that accelerating delivery of developmental education can improve outcomes for low-skilled students, but there are few rigorous studies of the effectiveness of such a strategy to date (Bailey and Smith Jaggars 2016). Interim outcomes from one random assignment study of an accelerated, online, self-paced developmental math course, which had supervised labs like WTA Connect, showed no improvement in outcomes (Gardenhire et al. 2016). In terms of removing the retesting requirement, the literature does not address the issue directly. However, studies have found that a fair proportion of students who failed a placement test could nevertheless have succeeded in college courses (Scott-Clayton et al 2012; Scott-Clayton and Stacey 2015). Thus, removing any testing or retesting barrier would likely improve the flow of students into and through training.

**Advising.** WTA Connect students received support from achievement coaches who helped them enroll, identified barriers to their participation and solutions, and monitored their academic progress over the course of the program. The achievement coaches aimed to meet with all students a minimum of four times in a one-on-one or group setting. Several rigorous studies have demonstrated that augmenting existing advising services with more intensive advising, sometimes combined with other services, can lead to greater persistence in education, although sometimes only for the short term (Bettinger and Baker 2011; Scrivener and Weiss 2009; Scrivener et al. 2015).

**Non-academic supports.** WTA Connect provided all program components (including services and course materials) at no cost to participants. Thus, WTA Connect students did not have to

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<sup>11</sup> These reports will be part of the Career Pathways Intermediate Outcomes and Career Pathways Long-Term Outcomes studies, respectively.

apply for loans or grants to cover the cost of their education. A large body of evidence indicates that insufficient resources are a barrier to entry and completion of education and training for low-income students and that financial assistance can increase postsecondary attendance and persistence (Deming and Dynarski 2010; Dynarski and Scott-Clayton 2013). Additionally, WTA Connect provided other non-academic supports—transportation assistance in the form of bus passes or gas cards, screening to assess participants’ eligibility for public benefits, and a workshop on goal-setting and self-efficacy skills.<sup>12</sup>

**Employment assistance.** Students in occupational training were required to attend a job readiness course and, upon completion of training, could schedule one-on-one sessions with an employment coach. Research on the effectiveness of such assistance is mixed, with some studies showing positive employment effects but others not (Klerman et al. 2012).

### 1.3. Structure of This Report

The organization of the remainder of this report is:

- Chapter 2 presents the WTA Connect evaluation’s conceptual framework and research questions; details the evaluation design; describes the study sample; and summarizes the evaluation’s data sources.
- Chapter 3 describes the WTA Connect program’s context, design, and administrative structure.
- Chapter 4 presents the implementation study findings, including changes to the program design to address challenges in implementation, participation in WTA Connect by treatment group members, and an overall comparison of participation in education and training across the treatment and control groups.
- Chapter 5 presents the impact study’s early findings, focusing on the main impact—credentials received over an 18-month follow-up period—as well as a series of other education, career, and life outcomes.
- Chapter 6 summarizes the implementation and impact findings and discusses their implications for the longer-term study.

The appendices provide additional details about the WTA Connect eligibility requirements (Appendix A); baseline data (Appendix B); survey-based outcomes (Appendix C); and the approach to outliers (Appendix D).

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<sup>12</sup> Self-efficacy is defined as an individual’s perceived capability in performing the necessary tasks to achieve personal goals. “The Role of Social Supports and Self-efficacy in College Success,” *Institute for Higher Education Policy*, Research to Practice Brief Fall 2010, [http://www.ihep.org/sites/default/files/uploads/docs/pubs/pcn\\_socialsupports.pdf](http://www.ihep.org/sites/default/files/uploads/docs/pubs/pcn_socialsupports.pdf).

## 2. PACE Evaluation Design and Data Sources

This chapter describes the larger PACE evaluation design and its application to WTA Connect. It begins with a discussion of the PACE career pathways theory of change and the research questions that the theory of change implies. It then briefly describes the evaluation design and analysis procedures for the impact study, including the random assignment process and the outcome of that process. A brief description of the implementation study analysis follows.<sup>13</sup> Finally, the chapter summarizes the main data sources for the implementation and impact studies.

### 2.1. Career Pathways Theory of Change

The career pathways theory of change guides both the implementation study (that is, it identifies which aspects of program services are expected to affect outcomes) and the impact study (that is, it identifies which outcomes the program is expected to affect). The theory of change also generates key hypotheses about the direction of expected effects that the impact evaluation will test for statistically significant change.<sup>14</sup> In addition, the theory of change implicitly assumes time horizons by which the program is expected to have effects, and thus the theory determines the key outcomes at any particular time of follow-up.

Exhibit 2-1 depicts the PACE career pathways theory of change, as applied to WTA Connect.<sup>15</sup> It shows how a program (inputs) is hypothesized to produce effects on intermediate outcomes, which in turn will lead to effects on main outcomes. Effects on intermediate outcomes are expected earlier than effects on main outcomes, but the exact timing depends on particular features of the program, such as the length of occupational training and what, if any, steps precede it (e.g., basic skills instruction). In addition, because effects on intermediate outcomes may persist, the study will also measure them at later points in time.

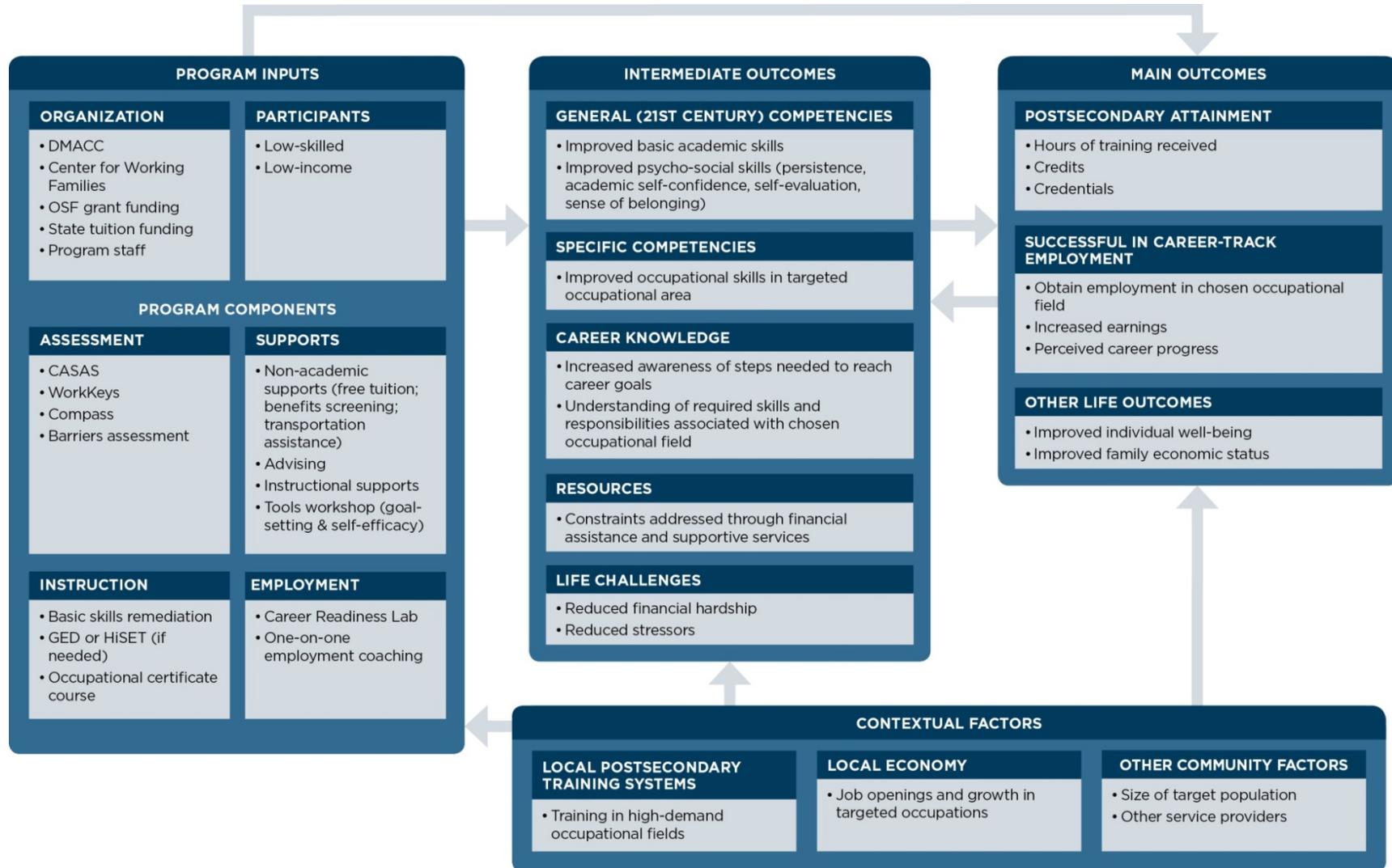
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<sup>13</sup> The research team developed a detailed evaluation design report for the PACE evaluation, including the evaluation of WTA Connect (Abt Associates 2014).

<sup>14</sup> The implementation study describes the set of services that students in the treatment group experienced. In addition to descriptive statistics, it includes a small number of impact estimates that show the difference in services received between treatment and control group members. The impact study focuses solely on estimates of the effects of the program on intermediate and main outcomes.

<sup>15</sup> See Fein (2012) for an extended description of the framework.

Exhibit 2-1. Career Pathways Theory of Change for WTA Connect



As shown in Exhibit 2-1, starting in the box at the left, the career pathways theory of change begins with two types of **program inputs**:<sup>16</sup>

- **Organization.** Organizational inputs include the college operating the program (DMACC), co-location with nonprofit partners (Evelyn K. Davis Center for Working Families),<sup>17</sup> funding (grant from the Open Society Foundations (OSF) and Iowa state tuition funding<sup>18</sup>), and staff.
- **Participants.** This input includes the characteristics of the target population (low-income, low-skilled adults with an interest in occupational training).

This same box includes four kinds of **program components** that are expected to improve participant outcomes by overcoming specific barriers that are hypothesized to impede successful entry into and completion of occupational training:

- **Assessment.** The WTA Connect program used a variety of assessments to determine whether an applicant had sufficient basic academic skills to be eligible for the program. For the first half of the PACE study period, CASAS® tests in math and reading were the primary assessment. In August 2013, due to a decision made by leadership at DMACC, the primary assessment became the ACT WorkKeys®, though CASAS scores were still accepted. At the end of 2013, WTA Connect also began accepting ACT Compass® assessment scores for applicants who had previously enrolled in for-credit coursework. (See Appendix A for a timeline of the assessments used over the study period.) The program also developed its own assessment to identify participants' potential non-academic barriers to academic success, implemented in October 2012.
- **Instruction.** Participants received basic skills remediation in math and reading from WTA Connect. Those without a high school diploma or equivalent credential enrolled in the college's GED® or HiSET® preparation courses.<sup>19</sup> After completing remediation, students could enroll in the same occupational certificate courses as Workforce Training Academy students could. The occupational certificates were available in a variety of fields: administrative support, healthcare (nursing and medical office), building maintenance, welding, and advanced manufacturing.
- **Supports.** WTA Connect participants paid no tuition for either remediation or occupational training. The program also offered screening for public benefits eligibility and transportation assistance. Dedicated achievement coaches met with participants

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<sup>16</sup> Program inputs can include components available only to treatment group members as well as components available to both treatment and control group members, because the interaction of the two types of components can lead to impacts.

<sup>17</sup> For the first four months of the PACE study period, WTA Connect operated out of a different location.

<sup>18</sup> State tuition funding includes Iowa's GAP Tuition Assistance Program ([link](#)) and its Pathways for Academic Career and Employment fund ([link](#)).

<sup>19</sup> The GED® test is a joint product of the American Council on Education and Pearson; see <https://www.gedtesting.com>. The HiSET® exam is a product of the Educational Testing Service; see <https://hiset.ets.org/>.

one-on-one and in group settings to monitor their academic progress and provide referrals to other supports, as needed. Tutors provided instructional support. Through a workshop called Tools, participants developed self-efficacy and goal-setting skills.

- **Employment.** Occupational training courses culminated in a job readiness course, called the Career Readiness Lab, to improve participants' job search, application, and (once hired) retention skills. One-on-one employment coaching was available as needed.

The middle box shows the **intermediate outcomes**, where improvements are expected to lead to better main outcomes. These intermediate outcomes include improved basic skills in reading and math for those participants needing remediation; improved psycho-social skills such as grit and academic self-confidence; increased awareness of the steps needed to meet career goals; attainment of occupational-specific skills; decrease in constraints, due to financial assistance and supportive services; and reduced financial hardship and stressors.

In the far right box, the **main outcomes** are the primary targets that programs seek to change:

- Increased postsecondary attainment—namely accumulated hours and credits (as measures of progress toward a credential) and occupational training credentials.
- Successful employment—including obtaining employment in the chosen field, increased earnings and job benefits, and career progress.
- Improvements in other life outcomes such as individual well-being.

Influencing expected effects are a number of contextual factors. These include the types and number of postsecondary training systems in the local area (including existing training at the Workforce Training Academy), the local economy (in particular for occupations targeted by WTA Connect), and other community factors such as the size and characteristics of the target population and the number and nature of service providers.

## 2.2. Research Questions for the Evaluation of WTA Connect

The implementation study documented WTA Connect as implemented and captured participation patterns of treatment group members in training and other activities (see Chapter 4 for implementation findings). The impact study (see Chapter 5) aimed to measure the effectiveness of WTA Connect in improving students' intermediate and main outcomes.

### *Implementation Study Research Questions*

- What is the intended program model? What is its institutional and community context?
- What intervention did the college actually implement? Did it deviate from plans or expectations?
- What were the treatment group's participation patterns and experiences with program services?
- What are the differences in services, including training, received by treatment and control group members?

### **Impact Evaluation Research Questions**

- What were WTA Connect’s main effects on:
  - Educational attainment, including credentials received, hours of occupational training received, credits received, and other educational outcomes?
  - Entry into career-track employment, higher-wage jobs, earnings, and perceptions of career progress?
  - Participant and family well-being, including income and material hardship?
- To what degree did the program affect intermediate outcomes in the theory of change, such as:
  - Confidence in career knowledge and access to career supports?
  - Psycho-social skills such as grit, academic self-confidence, core self-evaluation, and social belonging at school?
  - Life stressors, such as financial hardship, life challenges, and perceived stress?

For this report, the primary data sources for addressing the impact research questions are two surveys administered at “baseline” (study intake) and a follow-up survey of treatment and control group members initiated at approximately 18 months following random assignment. Analyses of the implementation study questions use information gathered during site visits and monitoring calls, as well as WTA Connect program administrative records. A more complete description of data sources is in the concluding section of this chapter.

Later PACE reports will focus more on employment outcomes and education and training outcomes resulting from activities that require a longer time to complete (e.g., associate’s degree programs). Continued measurement of such outcomes over the long term will be important given that the career pathways framework implies that workers may alternate education and training with employment as they move along a pathway and that labor market returns to credentials can take several years to become fully apparent.

### **2.3. PACE Evaluation Design and Analysis**

As mentioned in Chapter 1, the PACE evaluation uses a random assignment research design to estimate the impact of access to the program on students’ outcomes. The great benefit of such a design is that when properly implemented, it ensures that estimated effects reliably can be attributed to access to the program and not to unmeasured differences in characteristics or external circumstances between individual students with access (treatment group) and without access (control group) to the program.

However, maintaining the comparability of the treatment and control groups requires comparing all of those in the treatment group with all of those in the control group, regardless of whether or not treatment or control group participants actually enrolled in the program (what researchers refer to as an “intent to treat” analysis). A critical implication of this is that the PACE evaluation estimates the impact of *access* to the entire program—to the entire WTA Connect program, in this case—as opposed to the impact of the program’s specific

components. The evaluation does so by comparing the entire control group with the entire treatment group with access to WTA Connect, regardless of the treatment group's actual take-up of any particular program component or any component at all.

A second feature of the impact study design is that both treatment and control group members can access education, training, and support services available in the community that are not exclusive to the program PACE is evaluating. In the case of WTA Connect, the evaluation estimates the effect of the program's components above and beyond what was otherwise available at DMACC and elsewhere in the community during the study period. For example, both treatment and control group members could access training and services at the Workforce Training Academy and DMACC for which they were eligible. Both treatment and control group members could enroll in the Workforce Training Academy occupational certificate courses (i.e., controls were not embargoed from the training), but controls had to remediate basic skills outside of WTA Connect in order to qualify for them.

In summary, the impact study assessed whether the existence of this multi-component career pathways program led to better outcomes for students who were offered the chance to participate, given what these students could have obtained without the program.<sup>20</sup>

### 2.3.1. Intake and Random Assignment Procedures

The research team worked closely with each program in the PACE evaluation to design and implement program intake and random assignment procedures. The steps in the procedures for the WTA Connect program specifically were:

- **Recruitment.** DMACC was responsible for recruiting eligible and interested applicants for the WTA Connect program. Program staff had to recruit twice as many applicants as they planned to serve in order to be able to assign half to a control group. WTA Connect primarily focused on recruiting internally, from among a pool of Workforce Training Academy applicants, but also tried to establish relationships with external partners. (More information about WTA Connect recruitment follows in Chapter 3.)
- **Eligibility.** To be eligible for WTA Connect, applicants needed basic math and reading skills at the sixth- to eighth-grade level. (See Appendix A for specific assessment score requirements for admission.) The program did not require that applicants have a high school diploma or equivalent credential. Staff also administered the program's assessment developed to identify participants' potential non-academic barriers to academic success.
- **Informed consent.** At the mandatory WTA Connect orientation session, program staff provided applicants with an overview of the program and the PACE study, particularly

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<sup>20</sup> Three technical appendices provide additional details about analysis methods. Appendix B describes data collected at baseline, gives further detail on baseline characteristics of treatment and control group members, and explains procedures for using these data to adjust for imbalances arising by chance during random assignment. Appendix C provides detail on survey-based outcome measures, adjustments for item non-response, and analyses of survey non-response. Finally, Appendix D documents the research team's approach to outliers.

how random assignment governed admission to it. After hearing the details, some applicants decided it was not the best fit for them and left. Staff provided those who were still interested in the program with a copy of the PACE informed consent form. Applicants who declined to sign the informed consent form were not included in the study and were not eligible for the WTA Connect program. Those who signed the form became study participants.

- **Baseline data collection.** Next, staff had participants complete a Basic Information Form (BIF) and a Self-Administered Questionnaire (SAQ).
- **Random assignment.** Program staff used an online system to randomly assign study participants such that the treatment and control groups each included approximately half of the research sample.
- **Services according to random assignment status.** Those assigned to the study's treatment group had access to WTA Connect services (but were not required to enroll). Those assigned to the control group could not access WTA Connect services but could access any similar services available in the community for which they were eligible, including at DMACC.

Between April 2012 and December 2014, DMACC staff randomly assigned 943 study participants: 470 to the treatment group and 473 to the control group.

### 2.3.2. Characteristics of the Study Sample

Exhibit 2-2 shows distributions of the treatment and control group members across a series of characteristics. The  $p$ -values in the last column test the hypothesis of no systematic differences between the groups for these characteristics.<sup>21</sup>

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<sup>21</sup> The  $p$ -value from chi-squared tests indicates the likelihood that the observed value or a larger value would occur if there was no difference between the two samples. For example, a  $p$ -value of .32 means that even if the characteristics of the members in the treatment and control groups were identical, the observed difference or a larger difference would occur 32 percent of the time.

**Exhibit 2-2. Selected Characteristics of the WTA Connect Study Sample**

Characteristic	All Study Participants	Treatment Group	Control Group	p-Value
<b>Age</b>				.236
20 or Under	14.3%	14.7%	14.0%	
21 to 24	16.4%	17.2%	15.6%	
25 to 34	27.7%	24.7%	30.7%	
35 or Older	41.6%	43.4%	39.8%	
<b>Sex</b>				.130
Female	62.6%	65.0%	60.3%	
Male	37.4%	35.0%	39.8%	
<b>Race/Ethnicity</b>				.414
Hispanic	15.3%	13.9%	16.7%	
Black Non-Hispanic	47.4%	50.2%	44.7%	
White Non-Hispanic	33.8%	33.3%	34.3%	
Other Non-Hispanic	7.1%	6.3%	7.8%	
<b>Current Education</b>				.054
Less Than a High School Degree	40.1%	39.1%	41.1%	
High School or Equivalent	36.8%	35.7%	37.9%	
Less Than 1 Year of College	10.8%	13.1%	8.4%	
1 or More Years of College	8.2%	9.0%	7.3%	
Associate's Degree or Higher	4.2%	3.0%	5.4%	
<b>Income</b>				.571
Less than \$15,000	56.0%	56.8%	55.1%	
\$15,000-\$29,999	26.1%	26.6%	25.5%	
\$30,000 or More	18.0%	16.6%	19.4%	
Mean	\$16,364	\$15,783	\$16,966	.289
<b>Public Assistance/Hardship Past 12 Months</b>				
Received WIC or SNAP	65.8%	68.8%	62.8%	.057
Received Public Assistance or Welfare	14.4%	14.6%	14.2%	.878
Reported Financial Hardship	62.7%	62.4%	62.9%	.859
<b>Current Work Hours</b>				.674
0	62.2%	61.7%	62.7%	
1 to 19	5.1%	6.0%	4.2%	
20 to 34	13.3%	12.8%	13.8%	
35 or more	19.5%	19.6%	19.3%	
<b>Expected Work Hours in Next Few Months</b>				.406
0	22.4%	20.1%	24.6%	
1 to 19	4.7%	5.3%	4.1%	
20 to 34	27.9%	29.0%	27.0%	
35 or more	45.1%	45.7%	44.4%	

SOURCE: PACE Basic Information Form.

SNAP is Supplemental Nutrition Assistance Program. WIC is Special Supplemental Nutrition Program for Women, Infants, and Children.

NOTE: The appendices provide a fuller set of baseline characteristics, also confirming that random assignment generated well-balanced treatment and control groups. Some percentages for characteristics do not add up to 100.0 percent due to rounding. "Public Assistance/Hardship in Past 12 Months" does not because the categories are not mutually exclusive nor exhaustive.

As shown, treatment and control group members were very similar in most characteristics. There were two characteristics with statistically significant differences. Current education at baseline differed, with treatment group members more likely to have some college experience. Receipt of benefits from the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) or the Supplemental Nutrition Assistance Program (SNAP) also differed, with treatment group members more likely to have received one of these benefits in the last 12 months. The imbalance on education could theoretically be due to one of three causes: (1) systemic manipulation of the randomization system by staff, (2) systemic data entry errors (such as updating the baseline data based on post-randomization experiences), or (3) bad luck. There is no evidence of the first cause: inadvertent or deliberate deviation from random assignment protocols that could have favored one educational group over another. There also is no evidence of the second cause. Given that the number of imbalances (two, one on education and one on WIC/SNAP receipt) was well within the expected range (given the 11 balance tests conducted), the research team concluded that the differences are likely due to chance and addressable by regression adjustment in the impact analysis.

About two-thirds of participants were female. Almost half of participants were Black Non-Hispanic, and one-third were White, Non-Hispanic.

Overall, study participants were low income and low skilled. More than half of the sample members had an annual household income of less than \$15,000. About two-thirds received SNAP or WIC benefits, and a similar proportion reported experiencing financial hardship in the past year.

Study participants were, for the most part, not of traditional college age, with the largest proportion older than 35 (42 percent). The majority of participants had a high school diploma or less (77 percent). Almost two-thirds of participants (62 percent) were not working at the time of study enrollment, but the majority (78 percent) expected to work some hours in the following months.

### **2.3.3. Analysis Plan for the Impact Study**

Prior to estimating WTA Connect impacts, the research team published an analysis plan specifying key hypotheses and outcome measures.<sup>22</sup> The team subsequently assessed data quality, refined the analysis plan, and publicly registered it on the What Works Clearinghouse<sup>23</sup> and the Open Science Framework websites. The research team also registered the DMACC-specific outcomes on the Open Science Framework website.<sup>24</sup> The purpose of the analysis plan and registration was to guide the work of the team and publicly commit to particular

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<sup>22</sup> See Abt Associates (2015).

<sup>23</sup> The analysis plan was posted to the What Works Clearinghouse (WWC) online registry of randomized control trials (RCT) on May 20, 2016. In September of 2016, under the terms of a grant from the Institute of Educational Sciences, the RCT registry information was removed from the WWC website and transferred to the Society for Research on Educational Effectiveness (SREE). SREE plans to re-launch the registry in late 2018, at which time the analysis plan will be available in a searchable online database.

<sup>24</sup> See <https://osf.io/frbth/>.

hypotheses and an estimation approach, in alignment with ACF’s commitment to promote rigor, relevance, transparency, independence, and ethics in the conduct of evaluations.<sup>25</sup> Pre-specification and registration help to establish the scientific rigor of research by documenting that inspection of early results did not influence the selection of findings in PACE reports.

### *Hypothesis Testing*

An essential principle in the PACE analysis plan is to organize and discipline the number of statistical tests conducted. Like most social policy evaluations, the nine PACE studies target an array of different outcomes. If the evaluation did not adjust in some way for multiple hypothesis tests, a potentially large number of the tests would reach conventional levels of statistical significance by chance, even if there were no effect on any outcome. This is known as the problem of “multiple comparisons.” To address this issue, the research team established three categories of hypotheses: confirmatory, secondary, and exploratory:

- **Confirmatory hypotheses** involve outcomes most critical to judging whether the program seems to be on track—that is, producing the results expected at a given follow-up duration. Given the relatively small sample sizes in the PACE studies, the team generally limited such tests to one per program in the early impact report (at 18 months since randomization) and two tests in each subsequent report (at three and six years after randomization)—selecting outcome(s) under the “main” category in the program’s theory of change (see Exhibit 2-1).
- **Secondary hypotheses** involve a set of additional indicators consistent with expected effects within the period covered by the study report.

Each confirmatory and secondary hypothesis has a hypothesized direction of change, an increase or decrease in the outcome. Therefore, the team tested each confirmatory and secondary hypothesis for significance only in the specified direction, ignoring possible effects in the other, by applying one-tailed tests of statistical significance.

- **Exploratory hypotheses** cover an additional set of possible effects whose direction and timing are less certain. Accordingly, the team applied two-tailed tests to these hypotheses.

Chapter 5 identifies the specific hypotheses in each category tested for WTA Connect.

### *Impact Estimation*

Random assignment ensures that on average, samples of treatment and control group members will have similar characteristics at the outset and that measured differences in subsequent outcomes provide unbiased estimates of program impacts. To address any effects on percentage point estimates of chance differences arising from random assignment, the research team typically estimates impacts using a procedure that compensates for chance differences in measured baseline characteristics. Such procedures also help to increase the precision of estimates.

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<sup>25</sup> See <https://www.acf.hhs.gov/opre/resource/acf-evaluation-policy>.

The approach applied in PACE involves, first, estimating a statistical model relating each outcome to baseline variables for the control group sample. Next, the procedure applies this model to calculate predicted values for each treatment and control group member. In the last step, the approach calculates average differences between actual and predicted values in both groups and the differences between the two averages provide the impact estimate. Appendix B provides a detailed description of this method.<sup>26</sup>

The research team estimated this approach both for continuous outcomes (e.g., total college credits earned) and for binary outcomes (e.g., yes/no questions). For survey-reported outcomes, weights were used to average outcomes. Additional details can be found in the appendices.

Formally, estimation uses the following equation:

$$\hat{\delta} = \frac{1}{n_T} \sum_i T_i (Y_i - \hat{Y}_i) - \frac{1}{n_C} \sum_i (1 - T_i) (Y_i - \hat{Y}_i),$$

where  $\hat{\delta}$  is the estimated impact of being in the treatment group (whether or not the person attended the program or used any of the offered services);  $Y$  is the observed outcome of interest (e.g., credits);  $\hat{Y}$  is a prediction of  $Y$  based on baseline variables measured at random assignment;  $T$  is an indicator of treatment status (which is set equal to 1 if the individual is assigned to the treatment group and 0 if the individual is assigned to the control group);  $n_T$  and  $n_C$  are the respective sample sizes of the treatment and control groups; and the subscript  $i$  indexes individuals.

#### 2.3.4. Analysis Plan for the Implementation Study

The PACE evaluation's implementation study relies on both qualitative and quantitative analyses, as well as a broad variety of data sources. Key analyses include the following:

- **Descriptive.** Describing each program's design and context and developing its theory of change relied primarily on review of program materials (e.g., assessment tools); in-person discussions with program staff and leadership during two rounds of site visits, and biweekly or monthly calls between study and program leadership during the study period when random assignment was ongoing.
- **Quantitative.** A quantitative analysis of the proportion of program participants who reached major program milestones served to systematically document their experience in the program. This relied on college administrative records and follow-up surveys of treatment and control group members.

<sup>26</sup> As explained in the appendix, the approach is a variant on the traditional approach to regression-adjustment methods used in impact analyses. The latter typically involves linear regression of each outcome on an indicator of treatment status and a series of baseline variables. In this approach, the coefficient on the treatment indicator provides the regression-adjusted impact estimate.

- **Fidelity.** The quantitative analysis of how and the extent to which participants moved through the program also enabled the comparison of the actual delivery of the program versus its design. For WTA Connect, this involved examining at what level students entered the program, the proportion who completed or failed to complete one or more education or training programs, and the extent to which those who completed a program moved on to a subsequent one. To address the question of how program delivery changed over time, program staff members were asked about internal or external obstacles and how they altered the program in an attempt to overcome them.
- **Service differences.** The random assignment design of the impact study implicitly ensures that any effects of the program result from the different experiences of treatment and control group members. Thus, a key task of the implementation study is to describe the difference in services the two groups received. This is particularly important for the PACE evaluation, as the control group is not barred from receiving similar services to the study's treatment group. In the case of WTA Connect, the same occupational training courses, employment services, and high school completion classes were open to both treatment and control group members, if eligible.

## 2.4. Data Sources

The PACE evaluation's implementation and impact studies use a variety of data sources.

**Baseline surveys.** Prior to random assignment into the evaluation, program applicants completed two baseline surveys: The Basic Information Form (BIF) collected demographic and economic information. The Self-Administered Questionnaire (SAQ) measured a variety of attitudes, beliefs, and psycho-social dispositions, as well as more sensitive personal characteristics.

**Follow-up survey.** The research team sought to survey all PACE study sample members starting 15 months after random assignment. On average, surveys were completed 18 months after random assignment. The survey asked questions on participants' training and service receipt, postsecondary educational attainment, employment, income, debt, and participation in income support programs. It used a mixed-mode approach, conducted initially by telephone and then in person for those sample members not reached by telephone. For the WTA Connect evaluation, Abt's survey unit completed surveys with 368 treatment and 375 control group members, yielding response rates of 78 percent and 79 percent, respectively.<sup>27</sup>

**Administrative records.** The research team relied on college administrative records to describe the experience of treatment group members in WTA Connect. The team did not have 18 months of records for the full treatment group sample because WTA Connect ceased operations in July 2015, six months after the final cohort was randomly assigned.

**Site visits and monitoring calls.** For the implementation study, the research team conducted two rounds of site visits. The first visit to DMACC was in December 2012, eight months after random assignment began. The goal of this visit was to document the program's theory of

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<sup>27</sup> See Appendix C for response bias analyses.

change and early implementation of key components and to assess implementation of evaluation procedures. A second visit, in November 2014, one month before random assignment concluded, documented modifications to program operations or the provision of services, as well as implementation challenges and plans for sustaining the program beyond the study period. During both visits, the research team interviewed college leadership, program managers, staff involved in evaluation activities (e.g., recruitment, intake, random assignment), instructors, and staff providing academic and non-academic supports.

In addition to these visits, the research team had regular conference calls with program staff during the random assignment period to discuss program updates, recruitment activities, intake and random assignment processes and any challenges, engagement in the program by treatment group members, and staffing changes.

**Program documents.** The research team obtained and reviewed program documents, including assessment tools, marketing materials, academic planning tools, course syllabi and worksheets, orientation handouts, and course schedules.

## 3. About WTA Connect

Understanding the context in which a career pathways program such as WTA Connect operates generally, and its local context specifically, provides useful background on the forces shaping program design and implementation. This chapter begins with a description of the local context during the time the program operated (2012 to 2015). It then describes the design of WTA Connect training and support services. Additional details about the program staffing and organizational structure follow.

### 3.1. Local Context

Characteristics of the local environment are important to evaluating WTA Connect's implementation and impacts. The first is the demand for the training offered by the program. The second characteristic is the institutional context in which the program was designed and implemented. DMACC's Workforce Training Academy has long been the major source of short-term occupational training in the area. The Academy also had considerable experience serving a disadvantaged student population with low skills and barriers to employment. Both contextual factors are described below.

A third contextual factor relevant to the PACE evaluation's random assignment design is the degree to which educational opportunities comparable to those of the intervention are available to the control group. This is discussed in Section 3.2.4.

#### 3.1.1. Demand for WTA Connect

Assessing demand for the program involved understanding both the number of potential applicants and the demand for workers with training in the occupations addressed by the program.

DMACC gauged students' potential demand for the program based on the population who applied to the Workforce Training Academy but whose academic assessment scores in math and reading were below the levels required to enroll. According to college staff, prior to the PACE study about half of the Academy's 1,200 yearly applicants were candidates for WTA Connect due to low test scores. An additional pool of candidates was individuals who did not apply to the Workforce Training Academy because they lacked the required high school diploma or equivalency credential. DMACC staff estimated that in total, about 1,200 individuals would be eligible for and potentially interested in WTA Connect over the planned two-year PACE study enrollment period.

On the employer side, DMACC designed the Workforce Training Academy to respond to employer needs, offering occupational certificates only in high-growth, high-demand fields. DMACC developed new occupational training certificates and phased out others based on employer input from industry sources. One was Central Iowa Works, a workforce intermediary with industry sector boards that worked with DMACC to provide up-to-date information on local demand. As a result, the set of occupational certificate programs offered by the Workforce Training Academy, and thus available to WTA Connect participants, changed over time. During the PACE study, the Academy focused on a variety of sectors: healthcare, administrative support, welding, building maintenance, and advanced manufacturing.

In Iowa, “healthcare support” occupations—including the Certified Nursing Assistant (CNA) training offered by WTA Connect—are expected to be the fastest-growing occupational category, with 31 percent growth over the period of 2010-2025 (Carnevale et al. 2015). The same report projects that “office and administrative support” —which maps to the program’s administrative support and medical administrative trainings—will account for the largest share of new job openings, estimated at 13 percent. Manufacturing is the largest industry in Iowa, accounting for 16 percent of employment (versus 11 percent nationally). This industry includes advanced manufacturing,<sup>28</sup> one of the occupational fields for which the program provided training. The report projects that manufacturing jobs will grow by 11 percent over the period of 2010-2025.

### 3.1.2. Enhancement of Existing Training

WTA Connect was implemented in 2012. Its basic skills bridge program was new, but DMACC had a history of providing workforce training to disadvantaged populations. In 2000, DMACC established the Community Workforce Partnership (CWP) division to expand access to the college for underserved populations. CWP’s key offering was the Workforce Training Academy, which provided tuition-free occupational training certificate courses for students who were eligible based on meeting a minimum basic skills level (ninth grade or higher) and income criteria.<sup>29</sup>

DMACC staff reported that prior to the PACE study period, the Workforce Training Academy recruited formerly-incarcerated individuals and received referrals from substance abuse, Temporary Assistance for Needy Families (TANF), SNAP, and homeless programs. CWP had a strong track record in the community of providing training and supportive services to vulnerable populations and was an Annie E. Casey Foundation Center for Working Families grantee (the grant ended prior to the PACE study period).

DMACC identified a gap in its CWP services—a lack of workforce training available for individuals whose basic skills test scores were too low for the Workforce Training Academy. DMACC staff expected that with some additional supports, low-income individuals with basic skills slightly below the Academy’s ninth-grade cutoff could be successful in its occupational certificate programs. DMACC designed and implemented WTA Connect with the goal of “connecting” these low-skilled students to the Workforce Training Academy.<sup>30</sup>

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<sup>28</sup> Definitions vary, but advanced manufacturing typically uses innovative technology to improve products or processes and usually requires fewer (higher-skill, higher-paid) workers than traditional manufacturing. <http://www.economicmodeling.com/2015/10/02/defining-advanced-manufacturing-at-the-industry-level-and-pinpointing-its-growing-hubs/>.

<sup>29</sup> The Workforce Training Academy admitted applicants with incomes at 250 percent or less of the federal poverty level, which qualified them for training tuition-free through DMACC’s funding streams. In 2012, this qualifying income level was \$27,925 for an individual and \$57,625 for a family of four. Because the program had PACE study-related funds from the Open Society Foundations, it also had flexibility to admit participants whose incomes were above that eligibility threshold.

<sup>30</sup> WTA Connect was originally called the Prepared Learner Program. DMACC changed the program’s name in December 2013, during the PACE study period.

## 3.2. Program Design

WTA Connect combined existing and new program components. DMACC already offered several program components through the Workforce Training Academy, notably tuition-free occupational training and employment assistance. These had traditionally been available to applicants who qualified immediately for the Academy or who self-remediated, retested, and qualified later.

WTA Connect was designed to make those existing components available to a lower-skilled population of students. The program added new components—basic skills remediation and supports (e.g., advising, Tools, and instructional supports). The new components aimed to help the target population remediate quickly and then enroll and succeed in the Academy’s occupational training.

Once implemented, the program continued to evolve as the leadership refined the new program components and adapted to a changing college environment. The program design described below reflects where the program stabilized about two years into the PACE study period.<sup>31</sup> Chapter 4 provides more detail on changes in implementation that occurred over the course of the study.

### 3.2.1. Training

The WTA Connect training began with basic skills remediation, followed by non-credit occupational certificate courses students selected from among the Workforce Training Academy offerings. Students who did not have a high school diploma or equivalency credential enrolled in GED or HiSET test preparation courses at DMACC rather than in the basic skills remediation.

#### *Basic Skills Remediation*

For participants who already had a high school diploma or equivalency credential, basic skills instruction was delivered by education2020® (e2020), a self-paced, internet-based curriculum that used video lessons followed by practice and short quizzes.<sup>32</sup> To complete a specific module, participants had to achieve a passing score on the quiz at the end of the lesson. Participants could complete the required online modules either in an instructor-staffed computer lab or from any location that had internet access. Students were not required to complete all online modules before enrolling in occupational training, but they had to demonstrate good progress and reach at least 50-percent completion. Unlike those in the control group, WTA Connect participants did not have to retake and pass the academic assessment before enrolling in occupational training.

The basic skills curriculum in WTA Connect was not contextualized to occupational fields, but students participated in a total of two 2½-hour weekday evening sessions that staff described as “contextualized math.” In these sessions, participants attended an industry-specific talk (healthcare, maintenance/welding, or administrative) in which employers discussed how math

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<sup>31</sup> For more about WTA Connect program components and curriculum, see Hamadyk and Gardiner (2014).

<sup>32</sup> In 2015, education2020 became Edgenuity® (<https://www.edgenuity.com/>).

is used in their profession. A staff member who provided instructional support for basic skills remediation organized the sessions and facilitated them. For instance, an administrative assistant employed at John Deere made a presentation to students planning to enroll in the Administrative Support Basics certificate course. The presenter described how she coordinated travel schedules for five different managers, explained how she used math to coordinate schedules across multiple time zones, and demonstrated how she coordinated a major event.

WTA Connect participants who did not already have a high school diploma or equivalency credential enrolled in GED or HiSET preparation courses at DMACC, rather than in WTA Connect's basic skills remediation.<sup>33</sup> Once they passed the test and earned their secondary credential, they could enroll in the Academy's occupational training.<sup>34</sup>

### *Occupational Training*

WTA Connect participants selected a non-credit occupational certificate course based on their skills and interests. They learned about the occupational offerings during a mandatory orientation session prior to enrollment in the study, but they did not have to commit to an occupational area before enrolling.

Once enrolled in WTA Connect, participants attended a career planning session to guide their selection of an occupational area. The focus of the career planning session was to assess their career interests and introduce participants to the job responsibilities, associated salaries, and advancement opportunities of the various areas. Program staff believed that though some participants might enter the program with an occupational area in mind, their preferences could change after exposure to other options.

Participants used a web-based tool, IHaveaPlanIowa™, to complete a short interest assessment and generate a list of careers matching their interests and personality.<sup>35</sup> They then used another web-based tool, O\*NET Online, to complete a career research assignment.<sup>36</sup> Its purpose was for participants to further assess whether an occupation was a good fit.

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<sup>33</sup> DMACC (and the state of Iowa) switched from the GED to HiSET in January 2014. HiSET preparation consisted of seven-week courses offered by the Adult Education and Literacy center on the DMACC Urban Campus, across the street from the WTA Connect building (Evelyn K. David Center). The courses were grouped by subject: Math Levels 1-4; Writing, Reading, Social Studies, and Sciences (WRSS); and STAR Reading (intensive instruction for students who needed additional support). They prepared students for the five HiSET tests covering writing, science, math, literature and the arts, and social studies. Students' academic assessment scores determined which subject areas and levels they started in.

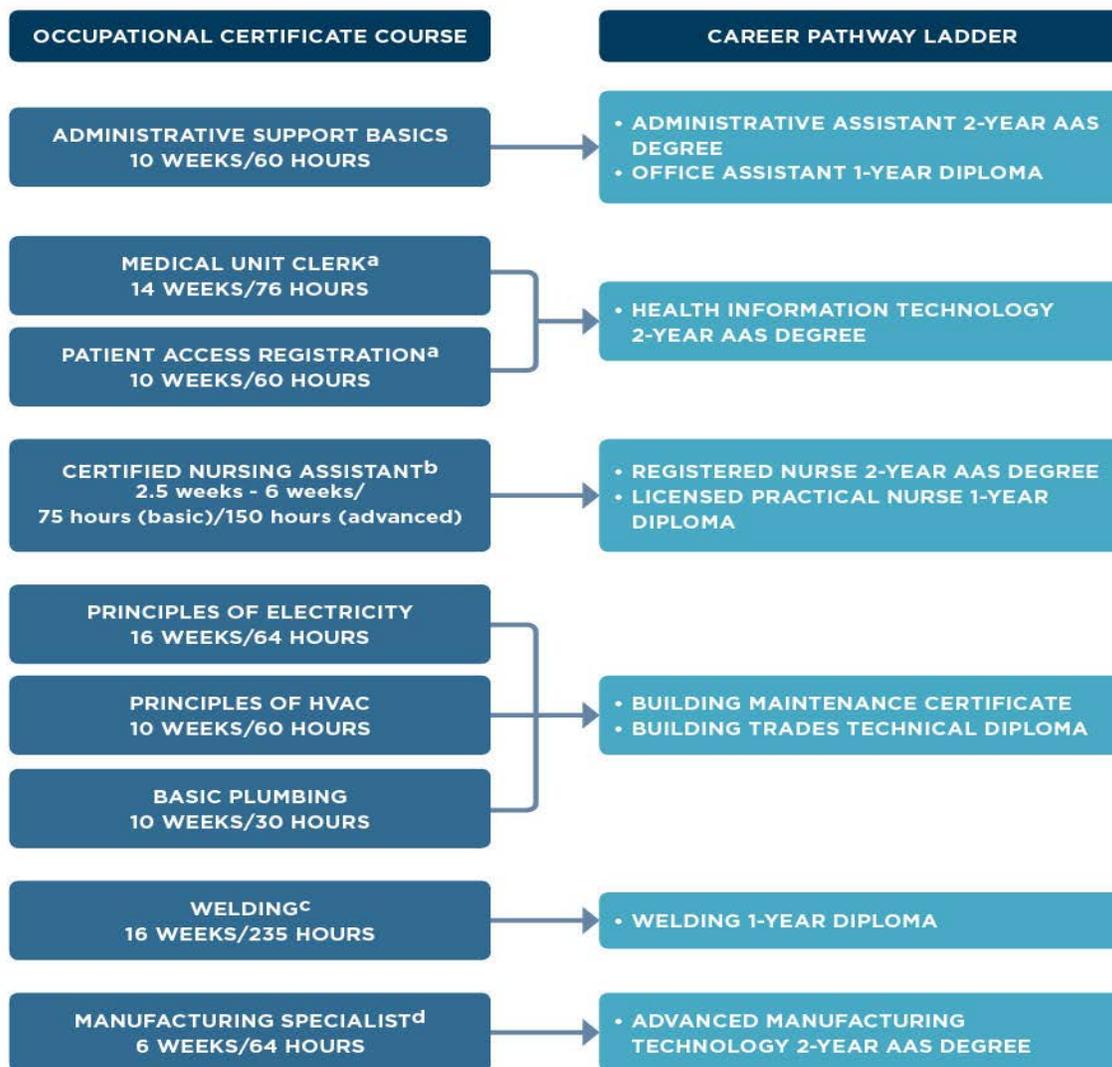
<sup>34</sup> The Program Director had some discretion to enroll students in occupational training even if they had not passed GED/HiSET yet but demonstrated good progress toward doing so. Students were considered on a case-by-case basis by the WTA Connect program staff in consultation with the GED/HiSET instructors. The Program Director estimated about 20 students were in that category over the program's two years in operation. The staff made this allowance only for students they felt confident would succeed in occupational training.

<sup>35</sup> IHaveaPlanIowa (<https://www.ihaveaplaniowa.org>) is a comprehensive web-based planning tool that assists users with exploring education and career options. First launched in 2009, it was implemented by the Iowa College Student Aid Commission in partnership with the Iowa Department of Education.

<sup>36</sup> O\*NET Online (<https://www.onetonline.org>) is an interactive application for exploring and searching occupations. It is sponsored by the U.S. Department of Labor, Employment & Training Administration.

After completing or making sufficient progress with the required basic skills remediation (or passing the HiSET), participants could enroll in their selected occupational certificate course. The occupational courses lasted between 2½ and 16 weeks. The course offerings varied over time (Exhibit 3-1).

**Exhibit 3-1. WTA Connect Occupational Programs**



<sup>a</sup> Medical Unit Clerk was phased out at DMACC in January 2013 and replaced with Patient Access Registration.

<sup>b</sup> CNA was offered at DMACC prior to PACE, but was not included in the PACE study until June 2012.

<sup>c</sup> Welding was offered at DMACC prior to PACE, but was not included in the PACE study until April 2013.

<sup>d</sup> Manufacturing Specialist was a new offering at DMACC starting in June 2014.

The courses were part-time and typically met several days a week in the evening to accommodate students with daytime jobs. For example, during one semester, the Patient Access Registration certificate course met Monday and Wednesday evenings from 6:00 to 9:00 p.m. WTA Connect students and Workforce Training Academy students attended the same courses.

Participants who completed a WTA occupational certificate course could either seek employment or pursue additional education in a diploma or degree program. Though the non-credit occupational certificate courses did not count for credit in DMACC's diploma or degree programs, the college provided suggested programs in the career pathway associated with each occupational certificate course, as shown in the second column of Exhibit 3-1.

### **3.2.2. Support Services**

To support WTA Connect participants through basic skills remediation and occupational training, the program provided advising and other, non-academic supports, including financial assistance and a workshop called Tools focused on self-efficacy and goal setting. The program also provided instructional supports.

#### ***Financial Assistance***

WTA Connect provided all components of the program (including supportive services, tuition for the basic skills courses and occupational training, and class materials such as books) free to participants. DMACC financed the tuition through a variety of funding streams, including private grants and state and federal funds. Upon entering the program, each participant was assigned an achievement coach who worked with him or her to complete any paperwork or eligibility documentation required for the funding stream that would support that particular student. Depending on the tuition funding stream identified, the participants might have been required to provide proof of income or other documentation.

The program also provided transportation supports in the form of bus passes or gas cards. It also offered benefits screening to assess each participant's eligibility for public benefits.

#### ***Tools Workshop***

WTA Connect designed the Tools workshop to help participants better understand the challenges they might face in the program and to facilitate a process of self-discovery, identifying obstacles, and goal setting. Program staff viewed Tools as an important component because many participants entered the program lacking confidence, because they either had been unemployed or underemployed for long periods of time or had negative prior work or school experiences. Tools aimed to help participants acknowledge their background (including cumulative bad experiences) and remember their strengths and transferable skills. During the workshop, participants identified their strengths and barriers to success (e.g., low self-esteem; personal or family issues; financial obstacles) and engaged in group activities to facilitate self-reflection and self-assessment of their professional goals.

The Tools workshop was an initial program activity. Participants completed the course shortly after program enrollment. The course was designed to be delivered over three, three-hour sessions in a small group setting, but was later reduced to a single session (see Chapter 4 for details).

#### ***Advising***

WTA Connect achievement coaches guided participants through enrollment, identified barriers to program persistence and completion, made referrals for supportive services, and monitored students' academic progress. Though not mandatory, participants were encouraged to attend

four advising sessions with an achievement coach in a mix of one-on-one and group settings. Participants also could receive more frequent support as needed.

During the first advising session, shortly after admission to the program, an achievement coach met with a small group of students to discuss course enrollment, including the basic skills remediation requirements and when the next term of occupational training would start. Students left the session with a support plan and a schedule for completing the program components. The second advising session focused on monitoring students' progress through basic skills remediation and Tools and on their progress toward enrollment in occupational training. The third session was an occupational training–specific group meeting, during which the achievement coach reviewed the status and readiness of each participant immediately prior to the start of training.

Once occupational training started, instructors contacted the achievement coach when they identified issues with a participant's attendance, behavior, or study skills. The fourth advising session occurred once occupational training concluded, focusing on participants' transitions to further education or employment.

### ***Instructional Supports***

WTA Connect provided tutoring for students who needed extra assistance with HiSET coursework or math and reading remediation in e2020. Two designated program staff members hosted tutoring hours in an open computer lab setting, available during weekday daytime and evening hours. Students were encouraged to come with specific questions or skills on which they wanted to focus, or they could use the time to work through the e2020 online modules on a computer in the lab.

### **3.2.3. Employment Assistance**

WTA Connect required that all participants attend the Academy's job readiness course, called the Career Readiness Lab, at the end of their occupational certificate course. The lab was occupation-specific and integrated into the training schedule. The Career Readiness Lab met for 24 hours of class time. It included units on assessing personal skills, succeeding at work, obtaining employment, exploring career pathways, and demonstrating job readiness skills to employers. The unit on obtaining employment covered job search strategies, writing resumes and cover letters, identifying references, and interviewing techniques. Students participated in a mock interview and met one-on-one with the instructor to receive feedback. The instructor often invited employers to make presentations during the unit on succeeding at work to discuss employer expectations and qualities desirable in a job candidate.

Upon completion of the Career Readiness Lab, participants who needed additional support were encouraged to meet one-on-one with a Workforce Training Academy employment coach. For those participants interested in further education, they instead met one-on-one with an academic advisor who provided hands-on assistance with their transition to for-credit programs at the college.

### **3.2.4. Comparable Services**

Programs have the greatest potential to produce impacts when they offer services distinguishable from those available elsewhere at the institution or in the community. Because

DMACC is the only community college provider in the local area, and most control group members interested in occupational training are likely to enroll there, this comparison focuses on services available at the college (rather than in the community more broadly).

Exhibit 3-2 below summarizes the services available to treatment and control group members at DMACC compared to services available only to treatment group members.

**Exhibit 3-2. Comparison of Career Pathways Program Components Available to PACE Study Participants Overall versus Treatment Group Members at DMACC**

Career Pathway Component	Control and Treatment Group (Existing Services at DMACC)	Treatment Group Only (Additional Services in WTA Connect)
Assessment	<ul style="list-style-type: none"> <li>Academic assessment: CASAS or WorkKeys® (or Compass®)</li> <li>Non-academic barriers assessment</li> </ul>	
Training	<ul style="list-style-type: none"> <li>Enrollment in Workforce Training Academy if retake and pass assessment with 9th grade or higher math and reading skills, providing access to occupational certificate courses</li> <li>For applicants scoring below 9th grade, self-directed remediation through KeyTrain® (available at Workforce Training Academy) or on their own</li> <li>For applicants without a high school diploma, GED® or HiSET® test preparation</li> </ul>	<ul style="list-style-type: none"> <li>Access to the Workforce Training Academy's occupational certificate courses at a lower skill level (6th-8th grade math and reading); No requirement to retake the WorkKeys® assessment.</li> <li>Self-paced online basic skills remediation courses (via e2020™) with support and monitoring from WTA Connect staff</li> </ul>
Supports	<ul style="list-style-type: none"> <li>General college advising not related to occupational training</li> <li>General support services provided by partners at the Evelyn K. Davis Center for Working Families, including benefits screening and referrals</li> <li>Free tuition for occupational training</li> </ul>	<ul style="list-style-type: none"> <li>Proactive advising from achievement coach</li> <li>Instructional supports (tutoring in open computer lab)</li> <li>Free tuition for basic skills remediation courses</li> <li>Transportation supports (gas cards, etc.)</li> <li>Tools workshop: goal-setting and self-efficacy skills instruction</li> </ul>
Employment Assistance	<ul style="list-style-type: none"> <li>Career Readiness Lab after occupational training</li> <li>One-on-one employment coaching after occupational training</li> </ul>	<ul style="list-style-type: none"> <li>Career planning session after enrollment in WTA Connect (IHaveAPlanIowa, O*Net Online)</li> </ul>

SOURCE: Program documents and site visits.

**Assessment.** All applicants for WTA Connect were required to complete an assessment of their academic skills to determine program eligibility, either CASAS (pre-August 2013) or WorkKeys®.<sup>37</sup> All applicants also completed an assessment of non-academic barriers, starting in October 2012 when the program added it to the eligibility process. Program staff developed the assessment to gauge whether an applicant would have difficulty participating in the program (e.g., had to complete job search activities as a condition of receiving public benefits or was blocked from course sign-up by DMACC<sup>38</sup>).

<sup>37</sup> At the end of 2013, WTA Connect began accepting ACT Compass™ assessment scores as well, for students who had previously enrolled in for-credit coursework.

<sup>38</sup> Early in the PACE study period, program staff found that some participants admitted to the program were blocked from signing up for courses because they had failed to pay previous DMACC tuition bills.

**Training.** Students in the control group whose basic skills were below the ninth-grade eligibility cutoff for admission to the Workforce Training Academy could access its occupational training only if they increased their skills levels, reapplied to the Academy, and were admitted. They had to remediate without WTA Connect’s basic skills courses and support. Control group members could use KeyTrain® online remediation software (offered by the Academy)—similar to e2020™—or they could study on their own. While the remediation software was similar for the two groups, only treatment group members had access to instructional support to assist them in progressing through the online program. If control group members retested and achieved qualifying scores, they could access the same occupational certificate courses as treatment group members at no cost.

**Supports.** Control group members could receive supportive services available to all DMACC students, including general college advising. They could also receive services at the Evelyn K. Davis Center, including screening for benefits eligibility and referrals to community partners for social and other services.

**Employment Assistance.** Control group students could access the same college employment services as treatment group members if they remediated their basic skills and enrolled in the Workforce Training Academy. These services included the Career Readiness Lab upon completion of occupational training and one-on-one employment coaching.

### 3.3. Program Administration

This section first describes the WTA Connect organizational structure, program management, and staff responsibilities. It then focuses on recruitment and enrollment activities.

#### 3.3.1. Organizational Structure and Staffing

DMACC changes in July 2013 affected the organizational structure and leadership of WTA Connect. As noted above, the program was initially housed in the Community and Workforce Partnership (CWP) division, which had operated all of DMACC’s workforce training programs for more than 10 years. The Dean of the DMACC Urban Campus oversaw the CWP division and was highly involved in the design and early implementation of WTA Connect, as well as the decision to be part of PACE. DMACC disbanded CWP and the Dean of the Urban Campus retired. The program lost a strong advocate in the retired Dean, which may have had implications for program sustainability following the PACE study.

DMACC moved the former CWP programs to the Continuing Education division. The new Executive Director of Continuing Education and other leaders instituted a number of changes that affected WTA Connect design and its contrast with other services (see Chapter 4).

Prior to this change, in August 2012, the WTA Connect physical location moved from the Urban Campus to the newly opened Evelyn K. Davis Center, which also housed the United Way of Central Iowa and several other community-based organizations. The location at the Center reinforced the program’s workforce focus and separation from the college’s traditional academic programs (see Chapter 4.1 for further discussion). WTA Connect’s basic skills remediation and support services were located at the Center. The HiSET courses (Urban

Campus) and the occupational certificate courses (DMACC Center for Career and Professional Development at Southridge) were offsite.

In terms of staffing, the Program Director oversaw all program operations and served as the point of contact for the PACE research team. The program hired staff to deliver the program components available only to treatment group members—self-paced online basic skills remediation, the Tools workshop, proactive advising, and instructional supports. Two achievement coaches provided advising to program participants. Both were full-time employees of the program, but one achievement coach split his time between advising and recruitment, and one focused exclusively on advising (the former is referred to as the Recruiter when describing his recruitment responsibilities). Two part-time instructional support staff provided tutoring during the open computer lab time for basic skills remediation. One part-time instructor led the Tools sessions.

WTA Connect also used DMACC staff from other programs and divisions to deliver the program components that were not specific to WTA Connect—HiSET prep courses, occupational certificate courses, and job readiness training. Workforce Training Academy instructors taught all occupational training and the job readiness course. Academy staff also provided one-on-one employment coaching and advising on further education. WTA Connect students who needed to pass the HiSET enrolled in existing HiSET preparation courses taught by DMACC instructors at the Urban Campus.

### 3.3.2. Program Recruitment and Enrollment

WTA Connect's original recruitment strategy relied on identifying a pool of candidates who had applied for the Workforce Training Academy, but were ineligible due to their low basic skills. Applicants interested in the Workforce Training Academy were required to attend a mandatory orientation session during which an Academy staff member provided an overview of available services and administered an academic assessment.<sup>39</sup> Afterwards, WTA Connect staff received a list of applicants whose assessment scores fell into the program's eligibility range (sixth to eighth grade), and a staff member followed up with them. This recruitment strategy, built into the Academy's eligibility process, consistently filled a pipeline of applicants for the program, but not enough to meet the study sample size goal (which was initially 1,200).

To supplement this pipeline, the program recruited applicants who lacked a high school diploma or equivalency credential, which made them ineligible for the Workforce Training Academy. The program recruited directly from DMACC's GED/HiSET preparation courses and produced marketing materials advertising the opportunity to progress toward occupational training while earning a high school diploma or equivalent credential.

WTA Connect also recruited from external partners, but had little success in developing strong referral streams. The partnership that resulted in the most referrals was with Iowa Workforce Development (IWD), the state's labor agency. IWD agreed to allow the WTA Connect Recruiter to attend two different types of its sessions—WorkKeys® testing and mandatory Promise Jobs

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<sup>39</sup> At the beginning of the PACE study period, the Workforce Training Academy administered the CASAS. It switched to WorkKeys® in August 2013.

meetings. The Promise Jobs program provides work and training services to recipients in the Family Investment Program (FIP), Iowa's TANF program. The Iowa Department of Human Services contracts with IWD to provide Promise Jobs services for most FIP recipients. The WTA Connect Recruiter made presentations to both groups of clients multiple times per week, passing around a sign-up sheet to collect names and contact information of those interested, so that he could later follow up with a phone call.

Staff invited individuals interested in WTA Connect to attend a weekly orientation session. During the orientation session, program staff delivered a PowerPoint presentation that summarized the services and training available through the program, and provided an overview of the evaluation and random assignment. Those still interested in applying to WTA Connect at the end of the session completed the non-academic barriers assessment form and proceeded to study intake, conducted in a group setting as described in Chapter 2.3.1.

## 4. Implementation Study Findings

Prior chapters described the signature components of the WTA Connect program as designed, as well as the contextual factors that could facilitate or impede successful program implementation and outcomes for participants. This chapter reports on the program components as implemented. It then describes participation patterns, including enrollment in occupational training courses. It concludes by comparing education and training and service receipt for the treatment group versus the control group.

### 4.1. Implementation of WTA Connect

Through interviews with program staff during two rounds of site visits and regular monitoring calls, the research team assessed recruitment strategies, as well as the degree to which the WTA Connect program components were implemented as designed.

As described in Chapter 3, some WTA Connect components were created specifically for the program and some existed prior to its implementation. Because implementation of WTA Connect was concurrent with the start of the PACE study, the design of the new program components evolved over the study period as staff and leadership decided adaptations were needed. The program also operated in the context of broader organizational change at DMACC and in the state of Iowa, which resulted in additional changes outside of WTA Connect's control. See Exhibit 4-1 for a list of major changes made at the program and the organization. Key implementation study findings are described in detail below.

#### Exhibit 4-1. Timeline of Key Events and Changes to WTA Connect

Event / Change
<b>2012</b>
<ul style="list-style-type: none"> <li>• April: Random assignment starts.</li> <li>• August: Evelyn K. Davis Center opens; program and staff move in.</li> <li>• October: Non-academic barriers assessment added to application process, administered prior to random assignment.</li> <li>• November: WTA Connect transitions basic skills remediation from structured classroom instruction plus online curriculum to self-paced, online-only delivery through e2020.</li> </ul>
<b>2013</b>
<ul style="list-style-type: none"> <li>• July: WTA Connect and Workforce Training Academy become part of the DMACC's Continuing Education division. Begin reporting to Executive Director of Continuing Education.</li> <li>• July: WTA Connect no longer provides its own 48-hour Fast Track GED® preparation classes; enrolls its students in GED classes provided by DMACC/Urban Campus.</li> <li>• August: Primary academic assessment switches from CASAS® to WorkKeys®. Workforce Training Academy lowers its eligibility cutoff scores for admission (narrowing WTA Connect's eligibility range).</li> <li>• December: Rebranding, with name change from Prepared Learner Program to WTA Connect.</li> </ul>
<b>2014</b>
<ul style="list-style-type: none"> <li>• January: State of Iowa switches from GED to HiSET®.</li> <li>• May: Continuing Education division requires Journeys life skills course (similar to Tools workshop) for all students (including WTA Connect) prior to occupational training. Originally three sessions, decreases to one session.</li> <li>• December: Extended from April 2014, random assignment ends.</li> </ul>

- *Recruitment of eligible participants was challenging, but WTA Connect nearly reached a revised enrollment goal through technical assistance and target group expansion.*

Though WTA Connect had a pipeline of potential participants (applicants too low skilled for the Workforce Training Academy), the program was new and unknown to the college and community when implemented for the PACE study in 2012. Program staff had no history on which to base enrollment numbers. Staff agreed to recruit 1,200 study participants for the evaluation over a two-year period, to be evenly assigned between the treatment group and control group.

Early on, WTA Connect struggled to meet its random assignment goal. As the end of the two-year period approached, program staff believed that reaching a study sample of 1,200 would be unlikely. As a result, in April 2014 WTA Connect worked with the research team and ACF to reduce the sample goal to 1,000 study participants and to extend random assignment eight months, through December 2014. The program ultimately reached 94 percent of its reduced goal of 1,000, largely through two mechanisms.

First, program staff worked with a technical assistance provider, Public Strategies, Inc. (PSI), to hone the marketing message to potential applicants. Program staff had found that applicants and participants did not fully understand the package of services and the basic skills remediation requirements. Staff also heard that some applicants viewed WTA Connect as a “second choice” (i.e.; less desirable) program for those whose low assessment scores made them ineligible for the Workforce Training Academy and its occupational training. The initial program name, the Prepared Learner Program, may have contributed to this impression. The rebranding of the program was part of the technical assistance effort, along with the message that it was one of several pathways into the Academy, each appropriate for different populations. PSI developed a new PowerPoint presentation for program staff to use during mandatory pre-enrollment orientation sessions, and it created new marketing materials to engage potential applicants on specific topics of interest (e.g., CNA training; training opportunities for individuals lacking a high school diploma or equivalency credential). In addition, PSI helped program staff track the flow of potential participants through the recruitment steps, assess the effectiveness of the program’s recruitment strategies, and explore potential new target populations and recruitment sources.

Second, WTA Connect staff expanded the program’s target population beyond Workforce Training Academy applicants who were denied admission due to low basic skills. First, staff considered GED/HiSET students whose assessment scores were above the WTA Connect range good candidates because they were not eligible for admission to the Workforce Training Academy. Initially, GED/HiSET students were subject to the same assessment score requirements as other applicants (sixth- to eighth-grade level in math and reading). In March 2013, staff expanded the eligible skill range for this population to increase the applicant pool. Applicants with no secondary credential could have assessment scores as high as 10th grade.

This new eligibility criteria allowed the program to recruit applicants who wanted to obtain a GED/HiSET and work toward occupational training concurrently. Ultimately, about 40 percent of the total study sample came from this target population. While staff noted the new target population helped the program reach its study enrollment numbers, they found the expansion

hurt persistence and completion rates since some students dropped out or made slow progress in GED/HiSET courses and thus did not continue on to occupational training. In December 2013, program staff ended recruitment of this target population.

Second, program staff targeted DMACC students who had enrolled in for-credit classes and subsequently dropped out due to academic or financial reasons. Starting in May 2013, the Program Director obtained a regularly updated list of such students from credit program staff. The program recruiter then called students whose credit-bearing programs were in WTA Connect occupational areas. Staff hoped that no-cost basic skills remediation and occupational training would attract these students by removing the education-related financial barriers that may have led to withdrawal, while providing an alternative path back to for-credit programs.

Unfortunately, the recruiter reported the strategy was not successful despite identifying hundreds of potential applicants. Often the contact information for students was out-of-date. When he did reach a potential applicant, he found the student was often unenthusiastic about moving from a for-credit program to a non-credit one. Ultimately, the program ended this strategy because it was not an efficient use of staff time.

- ***Staff modified new program components as they learned from implementation experience.***

WTA Connect included components not previously available to Workforce Training Academy students. Staff piloted and modified these new components during the first few months of the PACE evaluation. Program staff had planned to provide all instruction in person, but instead shifted the basic skills remediation to self-paced instruction online with support from staff. WTA Connect also relied less than anticipated on program staff to provide instruction, instead enrolling program students in courses already being offered at the college.

The program initially implemented an approach to basic skills remediation that combined structured classroom instruction and an online curriculum. Starting in November 2012, the program transitioned to providing all basic skills remediation in the self-paced, online format delivered through e2020, to help control program costs and accommodate participants' schedules. Program staff saw this change as consistent with research supporting flexible delivery methods.<sup>40</sup> WTA Connect initially intended to contextualize the basic skills remediation. Ultimately, it did not, in part due to adoption of e2020, which did not lend itself to contextualization. It was also challenging to develop contextualized basic skills curricula when the program covered a variety of occupational areas. Instead, the program devoted two sessions to industry-specific presentations in which employers or practitioners discussed how math is used in their profession.

For students who lacked a high school diploma or equivalency credential, WTA Connect initially provided its students with its own GED prep classes — a 48-hour curriculum called Fast Track. In July 2013, the program decided to instead use existing GED classes at DMACC's Urban Campus, across the street from its offices in the Evelyn K. Davis Center. The program continued to use

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<sup>40</sup> For more on flexible delivery methods, see Fein (2012).

this approach for the remainder of the study period, including after Iowa changed its high school equivalency program from GED to HiSET in January 2014.

As described in Chapter 3, the WTA Connect designers developed a workshop called Tools to help students better understand the challenges they might face in the program and facilitate a process of self-discovery, identification of obstacles, and goal setting. When PACE enrollment began, program participants completed three, three-hour sessions of Tools. Over the PACE study period, the program decreased the number of sessions, first to two sessions, because staff believed that some of the content was being covered during students' first of four advising sessions with an achievement coach. The program later decreased Tools to a single session, as described next.

- *Decisions made outside of the program increased the overlap in target population and services between WTA Connect and the Workforce Training Academy.*

Staff reported that after WTA Connect moved to the Continuing Education division, leadership instituted two key changes that affected the program and the PACE study. These changes were lowering admission requirements for the Workforce Training Academy and adding a new life skills course that duplicated some of WTA Connect's existing curriculum. The changes increased the overlap in target population and services between WTA Connect and the Workforce Training Academy.

**Lowering admissions requirements.** WTA Connect made the switch from the CASAS assessment to WorkKeys® in August 2013 as a result of a change in the Continuing Education division and a state initiative to support the National Career Readiness Certificate.<sup>41</sup> The program set its WorkKeys® eligibility cutoff scores just below those for the Workforce Training Academy, as it had originally done with CASAS. WTA Connect program staff reported that in the switch to WorkKeys®, however, the Academy had lowered its cutoff (from ninth to eighth grade), effectively siphoning off part of the WTA Connect applicant pool.

**New life skills course.** In May 2014, the division implemented a mandatory 17-hour course called Journeys that focused on life skills and was similar to WTA Connect's Tools workshop. Both WTA Connect and Workforce Training Academy students had to complete Journeys before starting occupational training courses. WTA Connect staff agreed that the Journeys course was useful, but reported the division's decision had not been coordinated with them. Due to the content overlap between Journeys and Tools, WTA Connect reduced the number of Tools sessions to one.

The Continuing Education leadership provided two reasons for adding Journeys as a required component. First, employers had stated that DMACC's occupational certificate completers had sufficient technical skills but lacked soft skills. Second, Journeys was designed to increase students' commitment to their program. Leadership reported their perception that when students received something for free (as they did the tuition-free occupational training), they

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<sup>41</sup> The NCRC is a portable, evidence-based credential that certifies essential workplace skills.  
<http://www.act.org/content/act/en/products-and-services/workkeys-for-educators/ncrc.html>

did not appreciate it, showing up only at orientation or sporadically throughout a course. The mandatory Journeys course forced students to engage. If they missed just one session, they had to re-enroll and complete Journeys in order to move on to occupational training. Thus, by the time they enrolled in an occupational certificate course, they had demonstrated a level of commitment to the program.

- *Iowa's change from the GED to HiSET affected treatment group members working toward a secondary credential.*

The state of Iowa switched from the GED to HiSET in January 2014, which also affected WTA Connect. This affected students seeking a GED who had enrolled in WTA Connect prior to the switch. According to staff, some students had already worked through several GED prep courses and subject tests at the time of the change and their work did not accrue toward the HiSET credential. Rather, they had to start over with HiSET prep courses. Additionally, DMACC had to develop a HiSET curriculum, which slowed enrollment in secondary training. According to program records, in the six month period prior to the adoption of the HiSET, 86 percent of treatment group members without a high school diploma or equivalent enrolled in the GED classes. Between January and June 2014, as the HiSET was adopted and implemented, only 11 percent of treatment group members without a high school credential did so. Moreover, the completion rate dropped from 18 percent during the July to December 2013 period to 5 percent during the January to June 2014 period.

- *WTA Connect faced challenges engaging treatment group members and implemented an additional screening tool in response.*

About four months into the period of random assignment, WTA Connect staff reported that more than one-quarter of treatment group members were unresponsive to staff contact or were making slow, if any, progress in the program. With the research team, they identified that some students were stalled by barriers that made them unlikely to succeed, such as mandatory work requirements, unmet child care needs, a DMACC account hold<sup>42</sup> preventing them from signing up for classes, substance abuse, and health issues. After identifying this issue, the program added a non-academic barriers assessment as part of determining eligibility for the program in an effort to address the lack of student engagement.

Staff designed and implemented an assessment in October 2012—a paper form administered to applicants at WTA Connect orientation sessions—to identify such barriers. Staff reviewed the assessment after each information session to identify otherwise eligible applicants with major barriers. Program staff reported that the assessment did not frequently result in screening applicants out of the study, however. Program staff sometimes would advise an applicant to work on a barrier and reapply—for example, to start making payments on old tuition debts.

In 2014, the paper assessment was expanded to include a follow-up telephone screening. A staff member called applicants who had identified a barrier on the paper form to get additional

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<sup>42</sup> An account hold results when a student has an unpaid financial obligation to the college. The hold prohibits students from enrolling in courses until the debt is resolved.

details. Staff said they implemented this change because it let them better understand how applicants' barriers might affect program participation.

A stronger screening process might have resulted in a less disadvantaged population enrolling in the study and ultimately being randomly assigned to the treatment group. Instead, staff reported that over time, the level of disadvantage increased in successive WTA Connect cohorts, potentially because DMACC lowered eligibility cutoff scores for admission to the Workforce Training Academy in August 2013 (as discussed above).

- ***Flexible, self-paced program components may have affected participant engagement and persistence.***

The WTA Connect program designers intentionally created a flexible and self-paced program with the goal of accommodating participants' schedules and other life demands. However, that design may not have provided the structure the low-skilled and disadvantaged population needed to persist and complete the program while combining school and other life commitments.

With an emphasis on flexibility, the program did not have a clear start and end date or sequence of activities. Few program components were mandatory. Basic skills remediation was required, but the course itself was self-paced and delivered online. Students could begin remediation any time, as opposed to a managed enrollment model with fixed start and end dates for student cohorts. As described further below, a large share of treatment group members never started activities. Advising, another touchpoint that could engage students, was encouraged but not mandatory; participation varied significantly. One of the achievement coaches reported that some students met with her on a weekly basis or more frequently, whereas other students were difficult to reach and did not engage with advising services. As described below, the majority of treatment group members did not participate in four advising sessions. Of those who attended any education or training, only 18 percent reported receiving academic advising three or more times.

- ***The program emphasized employment rather than further education.***

WTA Connect envisioned providing an educational pathway for program completers, but during the PACE study period the systems to support a smooth transition to further education were not yet in place. Initially, WTA Connect and the Workforce Training Academy did not have strong connections to the Continuing Education division at DMACC, which offered the diploma and degree programs that would be the next career pathway steps after an occupational certificate. The certificate courses that students completed as part of WTA Connect were non-credit. Thus students who continued on to a diploma or degree program started with no credit for their prior coursework.

During the two-year PACE study enrollment period, the Continuing Education division aimed to facilitate the transition from non-credit certificate courses to credit-bearing programs. This included awarding students enrolling in diploma or degree programs with credit for non-credit courses previously completed in the same educational pathway. But this did not happen in time for WTA Connect students who wanted to enroll in a diploma or degree program to receive credit for the coursework they'd already completed. Also, as part of the work underway late in

the study period, Continuing Education hired six new “pathway navigators” to serve as a connection point for students transferring from non-credit to credit programming. This also was too late to help most of the program participants in the treatment group.

WTA Connect also has its roots in the Workforce Training Academy, traditionally an employment-focused training program. With employer-driven certificate programs and employment-focused supports (such as the Career Readiness Lab), WTA Connect students’ experiences in the program prepared them to seek a job after completion, not to further their education. At the same time, program staff reported that employment was a priority for program participants simply because participants’ immediate goal was to provide for themselves and their families. This goal is not surprising given the disadvantaged population enrolled in the program and the pipeline of applicants flowing in from the Workforce Training Academy, which was best known in the community for its occupational training.

## 4.2. Education and Training Participation Patterns

This section analyzes rates of the treatment group’s participation in WTA Connect education and occupational training. The analysis, based on DMACC program administrative records, reports the overall level of participation, completion rates, and progression through basic skills remediation and occupational courses over an 18-month follow-up period. The analysis is based on the 62 percent of the treatment group sample for which 18 months of follow-up data were available.<sup>43</sup>

- *Only half of treatment group members attended any education or training.*

As Exhibit 4-2 below shows, 50 percent of the treatment group attended education or training in the 18 months following random assignment. All 50 percent attended basic skills remediation, which was the first step in the WTA Connect program. A sizable proportion—39 percent of all treatment group members, or 78 percent of those who began basic skills education—completed the remediation, and thus were eligible to enroll in an occupational training course.

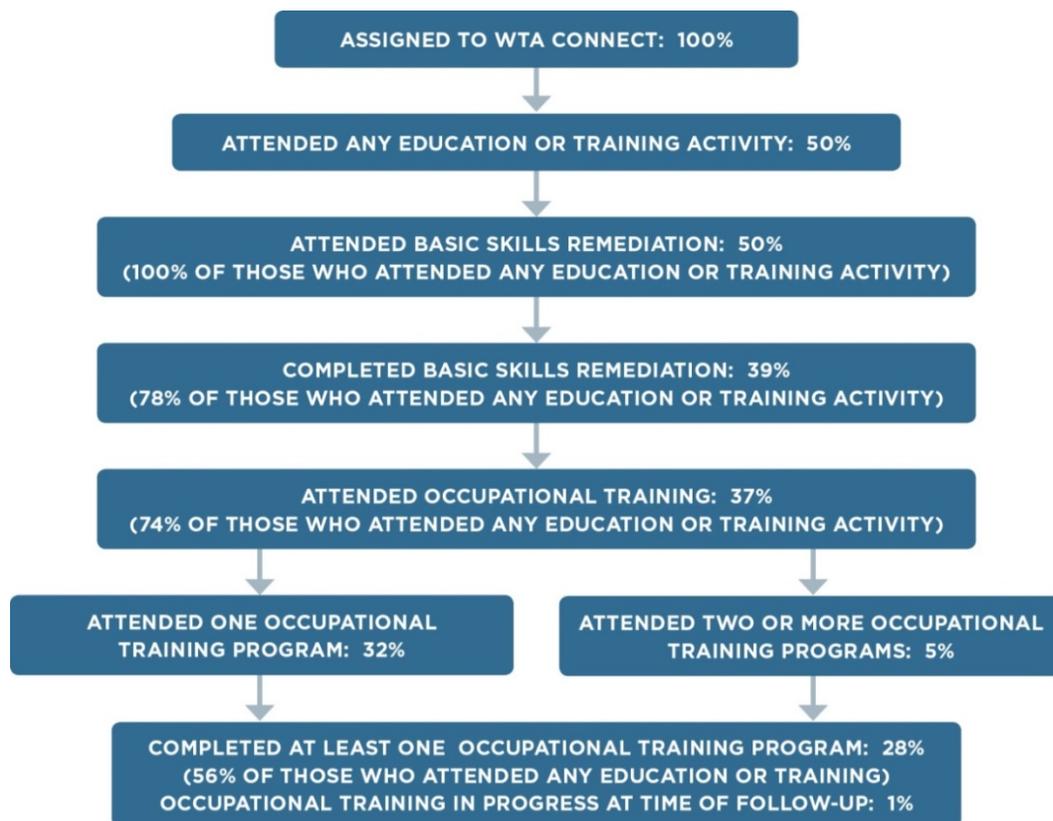
There are a number of possible reasons half of treatment group members did not participate in basic skills remediation or occupational training. The follow-up survey asked respondents who did not enroll in any education or training to rank a number of potential reasons for their decision not to enroll as very important, somewhat important, or unimportant. For the 50 percent of WTA Connect participants who did not enroll, the most common reasons reported as very important were “didn’t have enough time due to work” (47 percent) and “didn’t have enough time due to family responsibilities” (46 percent). When combined with those who ranked those reasons as somewhat important, the proportions of treatment group members who did not enroll who cited work and family commitments was 68 percent and 62 percent, respectively (not shown). Other reasons cited as very or somewhat important were “not sure the program was the best option” for the participant (61 percent) and “didn’t think

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<sup>43</sup> Because the program ended in July 2015, program participants randomly assigned after January 15, 2014, had less than 18 months of follow-up data.

academic skills were strong enough” (61 percent). WTA Connect staff reported a variety of reasons they believed treatment group members did not engage in the program, partially due to the nature of the target population. For example, after random assignment, some individuals found jobs, moved out of the state, or became incarcerated.

**Exhibit 4-2. Participation in and Completion of WTA Connect Program among Treatment Group Members within an 18-Month Follow-Up Period**



Sample size: 292 (all treatment group members randomly assigned by January 15, 2014).  
SOURCE: DMACC program administrative records.

- ***Almost three-quarters of treatment group members who started basic skills education attended occupational training.***

Seventy-four percent of those who began basic skills remediation attended at least one occupational training program, representing 37 percent of all treatment group members (see Exhibit 4-2). As a proportion of participants who *completed* basic skills remediation, fully 95 percent of treatment group members attended at least one occupational training program (37 of 39 percent). The majority of those who progressed to occupational training (86 percent) attended only one occupational training (32 of 37 percent), comprising 32 percent of all treatment group members.

- ***The most common occupational training programs attended by treatment group members were Certified Nursing Assistant and Administrative Support Basics.***

Exhibit 4-3 shows the occupational training programs attended, the completion rate for attendees, and the average length of stay in the specified program for those treatment group

members who began basic skills remediation through WTA Connect (i.e., the 50 percent). The most commonly attended program was CNA/Advanced CNA (18 percent). Sixty-three percent of CNA enrollees completed the training, and the average length of stay in the program was about one month. The next most commonly attended program was Administrative Support Basics (16 percent). Eighty-three percent of those enrollees completed the program. Exhibit 4-3 shows that the highest completion rate was among Patient Access Registration program participants (100 percent); the lowest was Welding (0 percent<sup>44</sup>). A few students were still in training at the end of the follow-up period.

**Exhibit 4-3. Type of Program Attended, Completion Rates, and Average Length of Stay among Treatment Group Members Who Participated in Education and Training within 18-Month Follow-Up Period**

Component	Total	Of Participants in Specified Program		
		Completion Rate	Average Length of Stay (months)	Still Participating at End of Follow-Up
Basic Skills Remediation	100%	78%	— <sup>a</sup>	0%
Occupational Training	74%	76%	2.7	4%
Any Education/Training <sup>b</sup>	100%	59%	—	3%
<b>Occupational Training</b>				
Attended One Occupational Training Program	64%	73%	2.5	2%
Administrative Support Basics	16%	83%	2.7	
Building Maintenance <sup>c</sup>	9%	54%	4.0	
CNA or Advanced CNA <sup>d</sup>	18%	63%	0.9	
Welding <sup>e</sup>	1%	0%	—	
Medical Unit Clerk <sup>f</sup>	6%	78%	3.0	
Patient Access Registration <sup>f</sup>	12%	100%	2.2	
Other	1%	50%	—	
Attended Two Occupational Training Programs	10%	93%	8.3	7%
Building Maintenance (e.g., HVAC and Plumbing)	7%	100%	—	
CNA and Advanced CNA	4%	80%	8.3	

Sample size: 147 (includes treatment group members randomly assigned prior to January 15, 2014, and who attended any education or training).

NOTE: Average length of stay reflects time in occupational training only and includes those who dropped out. Data were not available to calculate start and end dates of basic skills remediation.

<sup>a</sup> Average length of stay was not available in the data for basic skills remediation and some of the occupational trainings.

<sup>b</sup> Any Education/Training” represents the share of participants who completed all education/training in which they enrolled—either basic skills remediation only or both basic skills remediation and occupational training.

<sup>c</sup> Building maintenance includes the following occupational trainings: Principles of Electricity, Principles of HVAC, and Basic Plumbing.

<sup>d</sup> CNA was offered at DMACC prior to PACE, but was not included in the PACE study until June 2012.

<sup>e</sup> Welding was offered at DMACC prior to PACE, but was not included in the PACE study until April 2013.

<sup>f</sup> Medical Unit Clerk was phased out at DMACC in January 2013 and replaced with Patient Access Registration.

SOURCE: DMACC program administrative records.

<sup>44</sup> Two students in total enrolled in Welding. One of the two was still in progress at the 18-month point; the second dropped out.

- *Ten percent of treatment group members who participated in education and training attended two occupational training programs.*<sup>45</sup>

The most common pairing of occupational training programs was in the building maintenance cluster (e.g., Principles of Electricity, Basic Plumbing, Principles of HVAC). Seven percent of treatment group members who participated in education and training attended two building maintenance programs, and all completed them (see Exhibit 4-3). Four percent attended a pairing of CNA and Advanced CNA trainings<sup>46</sup>, and 80 percent completed them. Overall, seven percent of these participants were still attending one of the two trainings at the end of the 18-month follow-up period.

### 4.3. Impact on Receipt of Services

This section focuses on the degree to which WTA Connect affected the treatment group members' enrollment in education and training and receipt of counseling and advising. An implication of the career pathways framework is that any improvements in the main outcomes (discussed in Chapter 5) will result primarily from impacts on service receipt.

These analyses expand the previous analysis in Section 4.2 that described treatment group experiences based on program administrative records. The analyses in this section use data from the follow-up survey to compare the program experiences of treatment and control group members in order to gain insight into how any differences in those experiences might lead to impacts on more distant outcomes. Exhibit 4-4 briefly explains how to read impact tables.

#### Exhibit 4-4. How to Read Impact Tables

Exhibit 4-5 and Exhibit 4-6 in this chapter, as well as exhibits in Chapter 5, list the outcome measure in the analysis in the left-most column (**Outcome**), with the unit of that outcome in parentheses (e.g., "(%)").

The **Treatment Group** column presents the treatment group's regression-adjusted mean outcome, followed in the next column by the control group's actual mean outcome (**Control Group**). The regression adjustments correct for random variation in baseline covariates between the two groups (and thus differ slightly from the raw means). The **Impact** column lists the difference between the treatment and control group means.

There are several common standards for judging statistical significance—that is, for judging the strength of the evidence that the observed difference between the treatment and control group values is the result of that program element and not the result of chance. The smaller the *p*-value, the stronger the evidence. In this report, tests are considered statistically significant and highlighted in tables if the *p*-value is less than or equal to 0.10. Tests with smaller *p*-values are separately flagged:

\* for 0.10      \*\* for 0.05      \*\*\* for 0.01

The penultimate column is **Standard Error**, a measure of uncertainty in the estimated impact that reflects both chance variation due to randomization and any measurement error. The final column, ***p*-Value**, is the calculated probability that the observed difference between the treatment and control group values is due to chance.

Outcomes in *italics* apply to a subset of survey respondents (e.g., those who attended education/training). These estimates are not impacts, but unadjusted, non-experimental comparisons.

<sup>45</sup> As noted in Exhibit 4-3, this finding is based on the 62 percent of treatment group members for whom the full 18 months of data is available.

<sup>46</sup> The Advanced CNA training provides students an opportunity to gain the additional competencies and clinical experiences needed to seek employment in a hospital, as opposed to a nursing home or long term care facility.

Specifically, the following section discusses impacts on education or training receipt after random assignment (Exhibit 4-5) and receipt of advising and employment services (Exhibit 4-6).

**Exhibit 4-5. Receipt of Education or Training after Random Assignment**

Outcome	Treatment Group	Control Group	Difference	Standard Error	p-Value
<b>General Aspects of Education &amp; Training Receipt</b>					
Received education or training since random assignment (%)					
In any field	50.0	36.1	+13.9***	3.7	<.001
Since random assignment, ever attended (%)					
Two-year college	41.6	26.3	+15.4***	3.5	<.001
Four-year college	1.1	1.7	-0.6	0.9	.509
Proprietary school	1.8	2.1	-0.3	1.1	.768
Adult high school/education	1.0	1.3	-0.3	0.8	.715
Community/nonprofit organization	2.5	1.0	+1.4	1.0	.143
Other	3.4	4.7	-1.3	1.5	.366
<b><i>Of those who received education or training since random assignment:</i></b>					
<i>Time spent at school and work at first place attended (%)</i>					
<i>Full-time school and full-time work</i>	3.8	7.9	-4.1	2.7	.131
<i>Full-time school with no or part-time work</i>	22.7	29.7	-7.0	5.1	.173
<i>Part-time school and full-time work</i>	25.1	24.6	+0.6	4.9	.906
<i>Part-time school with no or part-time work</i>	48.4	37.9	+10.5*	5.6	.063
<i>Views of classes at first place attended (%)</i>					
<i>Strongly agrees relevant to life/career<sup>a</sup></i>	46.4	41.5	+4.9	5.7	.388
<i>Used active learning methods most/all of the time<sup>b</sup></i>	32.9	37.2	-4.3	5.4	.429
<i>Perceived strong emphasis on community</i>	13.0	18.9	-5.9	4.2	.159
<b>Basic Skill Instruction and Tests</b>					
Received basic skills instruction since random assignment (%)					
Academic skills	28.9	17.7	+11.3***	3.1	<.001
English as a Second Language	7.0	3.0	+4.0**	1.6	.013
Took college placement exam (%)					
English	17.7	12.6	+5.0*	2.7	.062
Math	18.0	12.2	+5.8**	2.7	.032
Passed college placement exam (%)					
English	11.0	7.3	+3.6	2.2	.102
Math	9.7	5.7	+3.9*	2.0	.051
<b>Life Skills Instruction</b>					
Received life skills instruction since random assignment (%)	15.4	6.1	+9.3***	2.3	<.001
<b>Sample size (full survey sample)</b>	<b>368</b>	<b>375</b>			
<b>Sample size (subset who received education or training)</b>	<b>194</b>	<b>135</b>			

SOURCE: Abt Associates calculations based on data from the PACE short-term follow-up survey.

NOTES: Where not italicized, outcomes apply to the full survey sample, and impact estimates are fully experimental and regression-adjusted. Outcomes in italics apply to subset of survey respondents (e.g., those who attended education or training)—for these estimates, between-group differences are unadjusted, non-experimental comparisons. Statistical significance levels, based on two-tailed t-tests tests of differences between research groups, are summarized as follows: \*\*\* statistically significant at the one percent level; \*\* at the five percent level; \* at the ten percent level.

<sup>a</sup> Percentage who either strongly agreed that classes were relevant to career interests or who strongly disagreed that classes did not relate to anything else in life.

<sup>b</sup> Gives the average percentage who described classes as involving each of a series of active learning approaches at least often, or at least most of the time (items used different scales).

- *WTA Connect had a statistically significant impact on education or training receipt.*

Exhibit 4-5 shows statistically significant impacts on study participants' receipt of education and training. The WTA Connect program produced a 14-percentage point impact on the proportion of treatment group members who received training in any subject compared with the control group (50 percent versus 36 percent). The WTA Connect program increased treatment group members' attendance at a two-year college by over 15 percentage points compared with the control group (almost 42 percent compared with 26 percent), reflecting the program's location at a community college.

The program produced an 11-percentage point difference in receipt of basic skills instruction (29 percent of treatment group members versus 18 percent of control group members). WTA Connect provided online-based basic skills instruction with computer lab time, which likely accounted for the difference. WTA Connect produced a nine-percentage point increase in receipt of life skills instruction (15 percent versus six percent), likely due to WTA Connect's Tools course. Treatment group members reported a four-percentage point difference in receipt of English as a Second Language instruction compared to the control group (seven percent versus three percent), although WTA Connect did not include an ESL component.

Treatment group members were somewhat more likely than control group members to complete a college placement exam (e.g., Compass). There was a five-percentage point difference in completion of a college placement exam in English (18 percent of treatment group members versus 13 percent of control group members) and a six-percentage point difference in math (18 percent versus 12 percent). This may reflect treatment group members pursuing enrollment in additional coursework at the college either during or after completing WTA Connect. Treatment group members completed and passed English and math college placement exams at a higher rate than control group members, though the difference in pass rates for math was not statistically significant.

Exhibit 4-5 also shows non-experimental comparisons for the subset of treatment and control group survey respondents who reported attending any education or training (see italicized rows). There is only one statistically significant difference between the groups in time spent at school and work and their view of classes at the first place attended. Those treatment group members were more likely to report that they attended school part-time and worked part-time or not at all (48 percent versus 38 percent), perhaps reflecting their enrollment in WTA Connect, a part-time program, and a greater likelihood of not working full-time while enrolled.

**Exhibit 4-6. Receipt of Various Supports after Random Assignment**

Outcome	Treatment Group	Control Group	Difference	Standard Error	p-Value
Received assistance from any organization since random assignment (%)					
Career counseling	19.7	9.4	+10.2***	2.6	<.001
Help arranging supports for school/work/family	14.9	5.9	+9.0***	2.3	<.001
Job search or placement	15.3	7.8	+7.5***	2.3	.001
<b><i>Of those who received education or training since random assignment:</i></b>					
<i>Received supports at first place of instruction attended (%)</i>					
<i>Career counseling</i>					
<i>Ever</i>	27.1	15.2	+11.9***	4.4	.008
<i>Three or more times</i>	14.0	6.1	+7.9**	3.2	.015
<i>Academic advising</i>					
<i>Ever</i>	33.3	25.3	+7.9	5.1	.120
<i>Three or more times</i>	18.3	10.5	+7.7**	3.9	.048
<i>Financial aid advising</i>					
<i>Ever</i>	21.9	18.9	+3.0	4.5	.506
<i>Three or more times</i>	5.6	7.3	-1.7	2.8	.539
<i>Tutoring</i>					
<i>Ever</i>	28.4	18.5	+9.9**	4.8	.040
<i>Three or more times</i>	22.1	9.6	+12.5***	4.1	.002
<i>Help arranging supports for school or work</i>					
<i>Ever</i>	19.5	11.3	+8.2**	4.1	.044
<i>Three or more times</i>	11.1	5.3	+5.8*	3.1	.063
<i>Job search/placement assistance</i>					
<i>Ever</i>	22.8	13.0	+9.7**	4.3	.025
<i>Three or more times</i>	15.1	6.7	+8.4**	3.4	.015
<i>Received financial assistance at first place of instruction (%)<sup>a</sup></i>					
<i>Grants/scholarship</i>	78.9	73.0	+5.9	4.8	.220
<i>Loan</i>	10.2	18.1	-7.9*	4.1	.056
<i>Offered opportunities for related work experience as part of training at first place of instruction (%)</i>					
<i>Clinical internship</i>	25.6	20.1	+5.5	4.7	.249
<i>Visits to local employer</i>	21.6	11.2	+10.3**	4.1	.012
<i>Work-study job</i>	12.5	11.3	+1.3	3.7	.724
<i>Apprenticeship</i>	3.2	2.0	+1.2	1.7	.488
<i>Any related work experience (including other)</i>	39.9	34.2	+5.7	5.5	.300
<b>Sample size (full survey sample)</b>	<b>368</b>	<b>375</b>			
<b>Sample size (subset who received education or training)</b>	<b>194</b>	<b>135</b>			

SOURCE: Abt Associates calculations based on data from the PACE short-term follow-up survey.

NOTES: Where not italicized, outcomes apply to the full survey sample, and impact estimates are fully experimental and regression-adjusted. Outcomes in italics apply to subset of survey respondents (e.g., those who attended education or training)—for these estimates, between-group differences are unadjusted, non-experimental comparisons. Statistical significance levels, based on two-tailed *t*-tests tests of differences between research groups, are summarized as follows: \*\*\* statistically significant at the one percent level; \*\* at the five percent level; \* at the ten percent level.

<sup>a</sup> Reported receiving grant or loan to help cover either tuition/school expenses or living expenses.

- *WTA Connect had a statistically significant impact on receipt of a variety of supports.*

Exhibit 4-6 shows that the WTA Connect program had more than a 10-percentage point impact on receipt of career counseling (almost 20 percent of treatment group members versus nine percent of control group members), as well as a nine-percentage point impact on help arranging supports (15 percent versus six percent) and an almost eight-percentage point impact on job search assistance receipt (15 percent versus eight percent).

Although these differences are statistically significant at the one percent level, the proportion of treatment group members who reported engaging these services was low, particularly given the variety of services available through WTA Connect. Because program services were not mandatory, students may have opted not to use them.

Exhibit 4-6 also shows non-experimental comparisons for the subset of study members who attended education or training. Among this subset, treatment group members were significantly more likely to ever receive career counseling than were control group members (27 percent versus 15 percent) and were significantly more likely to receive career counseling three or more times (14 percent versus six percent). Significantly more treatment group members ever received job search/placement assistance (23 percent versus 13 percent) and received assistance three or more times (15 percent versus seven percent). This difference in job search/placement assistance, along with treatment group members' higher receipt of career counseling, likely reflects WTA Connect's job readiness components—the Career Readiness Lab and one-on-one employment coaching. Treatment group members were not significantly more likely to ever receive academic advising, but were almost eight percentage points more likely to receive academic advising three or more times (18 percent versus 11 percent), likely due to advising provided by the WTA Connect achievement coaches.

Significantly more treatment group members than control group members ever received help arranging supports for work or school (20 percent versus 11 percent) and received help three or more times (11 percent versus five percent). Treatment group members were significantly more likely to receive tutoring. The program produced a statistically significant difference in ever receiving tutoring (28 percent of treatment group members versus 19 percent of control group members) and in receiving tutoring three or more times (22 percent versus 10 percent). The impacts on tutoring are in keeping with WTA Connect's instructional supports.

The program did not produce impacts on one support—receipt of financial aid advising. This is consistent with the program model, given that WTA Connect paid for student tuition through a variety of funding streams and students did not need to navigate the financial aid system. Further confirming that finding, the program produced an eight-percentage point decrease in receipt of a student loan (10 percent of treatment group members versus 18 percent of control group members).

Finally, the program produced a more than 10-percentage point increase in visits to local employers (22 percent versus 11 percent), perhaps due to employer-related activities embedded in occupational training courses and the Career Readiness Lab. The program did not produce statistically significant impacts on other types of work experience as part of training.

#### 4.4. Summary

The WTA Connect program produced a statistically significant impact in the percentage of treatment group members who received education or training in any subject compared with the control group (50 percent versus 36 percent). While treatment group members received education and training at a higher rate than the control group, both groups had relatively low rates of education/training receipt. Additionally, the program produced an impact on the proportion of treatment group members who received basic skills instruction and life skills instruction. Treatment group members were significantly more likely to take college entrance exams in English and math and to pass college entrance exams in math.

Only half of study participants assigned to the treatment group engaged in any education or training activities. All 50 percent attended basic skills education, which was the first step in the WTA Connect program. Though only half of treatment group members engaged basic skills education, a sizable proportion—39 percent of all treatment group members, or 78 percent of those who attended basic skills education—completed it and thus were eligible to enroll in an occupational training course. As a proportion of participants who completed basic skills remediation, 95 percent of treatment group members attended at least one occupational training program.

Because implementation of WTA Connect was concurrent with the start of the PACE study, the design of the new program components evolved over the study period as staff and leadership decided adaptations were needed. The program also operated in the context of broader organizational change at DMACC and in the state of Iowa, which resulted in additional changes outside of the program's control. As described in Chapter 4.1, division-level changes at DMACC were not coordinated with WTA Connect, and some changes had negative consequences for the program's recruitment efforts and program design. In addition, the statewide switch from GED to HiSET midway through the study period created a barrier for students seeking a secondary credential. The program experienced challenges with student engagement, which is evident in the program participation patterns described in Chapter 4.2.

## 5. Early Impacts of the WTA Connect Program

This chapter reports estimates of early impacts of the WTA Connect program students' educational attainment, career progress, and non-economic outcomes. The estimates are for impacts over an 18-month period following random assignment for the full sample of respondents to a follow-up survey. The chapter begins by describing the hypothesized impacts and outcomes that were included in the analysis.

Subsequent sections present findings on educational outcomes, career progress, career pathways employment, and psychological and social outcomes, respectively. In each case, subsections distinguish among confirmatory, secondary, and exploratory analyses.

### 5.1. Key Hypotheses and Outcomes

WTA Connect was designed for people whose basic academic skills, as measured by an admissions assessment, did not qualify them to enter the Workforce Training Academy. The goal of the WTA Connect program was to allow participants with basic skills assessment scores below the ninth grade level to enter and succeed in the Academy's training programs. To that end, it focused on improving both academic and non-academic skills. Under the program's theory of change, remediating the skills of program participants will allow them to enter and succeed in the Workforce Training Academy and earn a short-term credential. As a result, program completers would obtain jobs at higher wages and be placed on a track that would lead to further career advancement through subsequent training or additional education, as well as improve their general well-being and economic status and that of their families.

The PACE research team classified outcomes as confirmatory, secondary, or exploratory depending on whether they addressed confirmatory, secondary, or exploratory hypotheses, respectively, about the impacts of the WTA Connect program. Exhibit 5-1 lists and describes each outcome.

For the WTA Connect early analyses, the *confirmatory* outcome is whether or not a study participant **received a credential** from any source. Because the WTA Connect program is designed to feed into the Workforce Training Academy, which awards credentials that take at most 16 weeks to earn, it is reasonable to assume that if WTA Connect was successful in preparing students for the Academy, many of the treatment group members would have earned credentials within the 18-month follow-up period. The theory of change for PACE predicts a positive expected direction for any effect on the confirmatory outcome.

*Secondary* analyses tested hypotheses on additional educational outcomes beyond the confirmatory outcome, as well as on outcomes based on self-assessment of career development and employment outcomes. These additional outcomes and associated hypotheses capture short-term effects suggested by the theory of change; as is the case for the confirmatory hypothesis, they have an expected direction (positive).

**Exhibit 5-1. Outcomes in the Impact Analysis**

Outcome	Description	Sample Size	
		Treatment	Control
<b>Confirmatory (Confirmatory Hypothesis)</b>			
Received a credential from any source	Credential earned by 18 <sup>th</sup> month after random assignment	368	375
<b>Secondary (Secondary Hypotheses)</b>			
<b>Education</b>			
Hours of occupational training by place	Total hours of training at a college, another location (e.g., community-based organization); any location <sup>a</sup>	361	370
Credential receipt by source	Credential by the type of granting authority: a college, another education/training institution, a licensing/certification body; any source	368	375
<b>Career Progress</b>			
Perceived career progress	Three-item scale of self-assessed career progress; response categories range from 1=strongly disagree to 4=strongly agree	368	375
Confidence in career knowledge	Seven-item scale of self-assessed career knowledge; response categories range from 1=strongly disagree to 4=strongly agree	368	374
Access to career supports	Six-item scale of types of career-supportive relationships in workforce and education settings; response categories range from 1=no to 2=yes	368	374
<b>Employment</b>			
Working at or above a specified wage	Earning \$12 or more per hour <sup>b</sup>	361	364
Working in job requiring at least mid-level skills	Whether employed in a job requiring calibrated set of skills based on federal standards <sup>c</sup>	367	373
<b>Exploratory (Exploratory Hypotheses)</b>			
<b>Psycho-Social Skills</b>			
Grit	Eight-item scale capturing persistence and determination; response categories range from 1=strongly disagree to 4=strongly agree	368	375
Academic self-confidence	Twelve-item scale; response categories range from 1=strongly disagree to 6=strongly agree	368	371
Core self-evaluation	Twelve-item scale; response categories range from 1=strongly disagree to 4=strongly agree	368	375
Social belonging in school	Five-item scale capturing sense of belonging; response categories range from 1=strongly disagree to 4=strongly agree	368	373
<b>Life Stressors</b>			
Financial hardship	Two-item scale capturing financial hardship, reported as either an inability to pay rent/mortgage or not enough money to make ends meet; response categories are either 0=no or 1=yes	366	372
Life challenges	Seven-item scale capturing life challenges that interfere with school, work, or family responsibilities; response categories range from 1=never to 5=very often	368	373
Perceived stress	Four-item scale capturing perceived stress; response categories range from 1=never to 4=very often	368	374

Outcome	Description	Sample Size	
		Treatment	Control
<b>Family Structure</b>			
Living with spouse	Two-item scale; response categories are either 0=no or 1=yes <sup>d</sup>	367	373
Had child since random assignment or currently pregnant	Two-item scale; response categories are either 0=no or 1=yes <sup>e</sup>	245	234

SOURCE: PACE follow-up survey. The sample size varies slightly by question since not all survey respondents answered every question.

NOTES:

<sup>a</sup> Credits were converted into occupational training hours, and non-credit “clock hour” courses were converted into in-class hours. See Appendix C.

<sup>b</sup> Threshold selected because it was close to the 60th percentile of hourly wages among employed control group members.

<sup>c</sup> Skill levels based on the federal O\*NET system with thresholds targeted to PACE program target occupations. Occupational categories were coded for PACE by Census Bureau staff from standard open-ended survey items.

<sup>d</sup> Living with an unmarried partner is not counted as living with the spouse.

<sup>e</sup> Analysis restricted to responses by women.

Finally, *exploratory* outcomes provide additional evidence on program impacts, generally for outcomes of interest with some, though less certain, expectation for effects. The research team expected college experience and advising to improve psycho-social skills and to reduce life stressors, so measures of these are included as exploratory outcomes. Education and training can affect the family as well, so impacts on living with one’s spouse and having a child since random assignment were also included as exploratory outcomes.

All of the data in this chapter come from the PACE 18-month follow-up survey. The overall response rate on the survey was 79 percent. The response rate for the treatment group, 78.3 percent, was only one percentage point different from that of the control group, 79.3 percent. This generated 368 cases for the treatment group and 375 for the control group.

## 5.2. Impacts on Educational Attainment

This section describes effects on confirmatory and secondary educational outcomes. As shown in Exhibit 5-2, there are three groups of such outcomes. The first outcome, which is associated with the confirmatory hypothesis, is whether a study member received a credential from any source since random assignment. The second set of outcomes, which are secondary, measure total hours of occupational training since random assignment, by site (at a college or another type of place) and overall. The third outcome disaggregates credential receipt by the type of entity awarding the credential, which could be a college, another education or training institution, or a licensing or certification body.

- *WTA Connect increased completion of credentials, the confirmatory outcome for the early analysis of this program. However, the size of the increase was modest, and there was not an increase for every source of credentials.*

Of the educational outcomes, only the confirmatory outcome and one of the secondary outcomes showed significant differences between treatment and control groups. For credential attainment since random assignment (the confirmatory outcome), the treatment group received credentials at a rate of 19 percent and the control group at 14 percent. The difference of over four percentage points is statistically significant at the 10 percent level.

When credential attainment is disaggregated by source (a secondary outcome), there is only a significant difference between the treatment and control group for receiving a credential from a licensing/certification body. Fifteen percent of the treatment group earned credentials from this source, compared to 10 percent of the control group. The five percentage point difference between the two groups is significant at the five percent level. Given that there are no significant differences in credential attainment from other sources, it appears that most of the difference between the treatment and control groups is due to the difference in credentials from a licensing/certification body.

The magnitude of these effects overall (in terms of point estimates) may be explained by two factors. First, only half of the treatment group received any education or training at all, limiting the scale of the effects on the treatment group overall. Second, for those who did attend education or training, only 23 percent attended full-time while working no more than part-time (see Exhibit 4-5). Again, this limited the possible amount of education or training that could be received by the treatment group.

- **WTA Connect had no impact on hours of occupational training received.**

The other set of secondary educational outcomes examined are hours of occupational training, both overall and by source. As Exhibit 5-2 indicates, impacts of the WTA Connect program were all positive, but were not significant. The treatment group received 60 hours of training overall and the control group, 48 hours. These are relatively low levels of training receipt for both groups, between one and two weeks of full-time training.

**Exhibit 5-2. Early Impacts on Educational Outcomes (Confirmatory and Secondary Hypotheses)**

Outcome	Treatment Group	Control Group	Difference	Standard Error	p-Value
<b>Confirmatory Outcome</b>					
Received a credential from any source (%)	18.7	14.4	+4.3 *	2.8	.060
<b>Secondary Outcomes</b>					
Total hours of occupational training at (average)					
A college	46.1	37.4	+8.8	11.2	.217
Another place	13.5	10.1	+3.3	7.0	.317
Any place	59.6	47.6	+12.0	13.2	.183
Received a credential from (%)					
A college	7.2	5.5	+1.7	1.8	.174
Another education/training institution	1.7	4.5	-2.8	1.3	.980
A licensing/certification body	15.3	10.4	+4.9 **	2.5	.026
Any source	18.7	14.4	+4.3 *	2.8	.060
<b>Sample size</b>	<b>368</b>	<b>375</b>			

SOURCE: Abt Associates calculations based on data from the PACE short-term follow-up survey.

NOTES: Statistical significance levels, based on one-tailed t-tests tests of differences between research groups, are summarized as follows: \*\*\* statistically significant at the one percent level; \*\* at the five percent level; \* at the ten percent level.

### 5.3. Impacts on Early Career Progress (Secondary Hypotheses)

This section presents impacts on three measures of self-assessed progress toward career goals.

- *WTA Connect had no effect on early career progress.*

As Exhibit 5-3 shows, there was not a statistically significant impact on perceived career progress, confidence in career knowledge, and access to career supports. For the last two outcomes, the values for both groups were basically the same. Although the WTA Connect program included content on careers, such as visits from employers, it did not make a measurable impact on these self-assessed measures.

**Exhibit 5-3. Early Impacts on Selected Career Outcomes (Secondary Hypotheses)**

Outcome	Treatment Group	Control Group	Difference	Standard Error	Effect Size	p-Value
<b>Secondary Outcomes</b>						
Perceived career progress <sup>a</sup>	3.08	3.02	+0.06	0.06	+0.07	.333
Confidence in career knowledge <sup>b</sup>	2.97	2.98	-0.01	0.05	-0.01	.850
Access to career supports <sup>c</sup>	1.64	1.64	+0.00	0.02	+0.00	.979
<b>Sample size</b>	<b>368</b>	<b>375</b>				

SOURCE: Abt Associates calculations based on data from the PACE short-term follow-up survey.

NOTES: Statistical significance levels, based on two-tailed tests of differences between research groups, are summarized as follows: \*\*\* statistically significant at the one percent level; \*\* at the five percent level; \* at the ten percent level.

<sup>a</sup> Three-item scale tapping self-assessed career progress; response categories range from 1=strongly disagree to 4=strongly agree.

<sup>b</sup> Seven-item scale tapping self-assessed career knowledge; response categories range from 1=strongly disagree to 4=strongly agree.

<sup>c</sup> Six-item scale tapping self-assessed access to career supports; response categories range from 1=no to 2=yes.

#### 5.4. Impacts on Indicators of Career Pathways Employment (Secondary Hypotheses)

This section presents impacts on two indicators of career pathways employment: whether study participants were working in a job paying at least \$12 per hour and whether they were working in a job requiring at least mid-level skills. As shown in Exhibit 5-4, there was no significant impact on either of these outcomes. This is not surprising given that only half of the treatment group received any education or training at all, and only 28 percent of treatment group members completed occupational training. Though some occupational training completers may have experienced improved employment outcomes by the end of the 18-month follow-up period, the low rate of overall participation would limit the size of the average effect across the entire group.

**Exhibit 5-4. Early Impacts on Indicators of Career Pathways Employment (Secondary Hypotheses)**

Outcome	Treatment Group	Control Group	Difference	Standard Error	Effect Size	p-Value
<b>Secondary Outcomes</b>						
Working in a job paying \$12/hour or more	22.1	22.0	+0.1	2.9	+0.00	.967
Working in a job requiring at least mid-level skills	8.1	7.4	+0.7	2.1	+0.02	.732
<b>Sample size</b>	<b>368</b>	<b>375</b>				

SOURCE: Abt Associates calculations based on data from the PACE short-term follow-up survey.

NOTES: Statistical significance levels, based on two-tailed tests of differences between research groups, are summarized as follows: \*\*\* statistically significant at the one percent level; \*\* at the five percent level; \* at the ten percent level.

## 5.5. Impacts on Psycho-Social Skills, Life Stressors, and Other Outcomes (Exploratory Hypotheses)

This section reports impacts on outcomes in three additional domains: psycho-social skills, life stressors, and family structure. The first group of outcomes consisted of indices of self-assessed psycho-social skills. As defined in Exhibit 5-1, these were grit (i.e., persistence and determination), academic self-confidence, core self-evaluation, and sense of social belonging in school. The second group of outcomes included self-reported indices of life stressors, defined as reports of financial hardship, life challenges, and perceived stress. The last group of outcomes concerned family structure: whether the study participant was living with a spouse and whether the participant had had a child since random assignment or was pregnant at the time of the follow-up survey. These outcomes were included in the analyses because the literature suggests that education and career progress can in the short run raise the opportunity costs of marriage and childbearing (Buckles 2008).

Exhibit 5-5 summarizes the findings. WTA Connect had no significant effects on any of these outcomes.

**Exhibit 5-5. Early Impacts on Other Outcomes (Exploratory Hypotheses)**

Outcome	Treatment Group	Control Group	Difference	Standard Error	Effect Size	p-Value
<b>Exploratory Outcomes</b>						
<b>Indices of Psycho-Social Skills (average)</b>						
Grit <sup>a</sup>	2.91	2.92	-0.01	0.04	-0.01	.871
Academic self-confidence <sup>b</sup>	4.35	4.31	+0.04	0.06	+0.05	.497
Core self-evaluation <sup>c</sup>	3.12	3.12	0.00	0.04	0.00	.959
Social belonging in school <sup>d</sup>	3.17	3.15	+0.02	0.04	+0.03	.667
<b>Indices of Life Stressors (average)</b>						
Financial hardship <sup>e</sup>	0.61	0.59	+0.02	0.03	+0.05	.526
Life challenges <sup>f</sup>	1.68	1.63	+0.05	0.04	+0.11	.153
Perceived stress <sup>g</sup>	2.30	2.31	-0.02	0.06	-0.02	.789
<b>Family Structure (%)</b>						
Living with spouse	30.9	29.2	+1.7	2.8	+0.05	.532
Had child since random assignment/currently pregnant <sup>h</sup>	16.3	17.5	-1.3	3.2	-0.04	.695
<b>Sample size</b>	<b>368</b>	<b>375</b>				

SOURCE: Abt Associates calculations based on data from the PACE short-term follow-up survey.

NOTES: Statistical significance levels, based on two-tailed tests of differences between research groups, are summarized as follows: \*\*\* statistically significant at the one percent level; \*\* at the five percent level; \* at the ten percent level.

<sup>a</sup> Eight-item scale capturing persistence and determination; response categories range from 1=strongly disagree to 4=strongly agree.

<sup>b</sup> Twelve-item scale capturing academic self-confidence; response categories range from 1=strongly disagree to 6=strongly agree.

<sup>c</sup> Twelve-item scale capturing core self-evaluation; response categories range from 1=strongly disagree to 4=strongly agree.

<sup>d</sup> Five-item scale capturing sense of belonging; response categories range from 1=strongly disagree to 4=strongly agree.

<sup>e</sup> Two-item scale capturing financial hardship, reported as inability to pay rent/mortgage or not enough money to make ends meet; response categories are 0=no to 1=yes.

<sup>f</sup> Seven-item scale capturing life challenges that interfere with school, work, or family responsibilities; response categories range from 1=never to 5=very often.

<sup>g</sup> Four-item scale capturing perceived stress; response categories range from 1=never to 4=very often.

<sup>h</sup> Applies only to female respondents.

## 5.6. Summary

Impact analyses associated with the initial 18-month follow-up showed only two impacts, both on credential attainment. WTA Connect produced an impact on credential attainment from any source (the confirmatory outcome), and an impact on credential attainment from a licensing/certification body. However, overall credential attainment levels for the treatment group (as well as the control group) were low, and there were no indications that this attainment led to any improvement in employment outcomes relative to the control group.

There were no significant impacts on hours of training, on self-assessed career progress, on indicators of career pathways employment outcomes, on self-assessed psycho-social skills, on self-assessed life stressors, or on family structure.

## 6. Conclusions

Through the WTA Connect program, DMACC aimed to increase low-skilled adults' enrollment in and completion of occupational certificate courses by providing basic skills remediation and supports. This chapter summarizes early findings on service receipt and educational impacts 18 months following random assignment. It then describes areas that longer-term analyses will explore.

### 6.1. Summary of Key Findings

WTA Connect “connected” a lower-skilled population to DMACC’s Workforce Training Academy who otherwise would be ineligible for it. The program prepared participants for the Academy’s occupational certificate courses with a combination of basic skills remediation (including enrollment in high school equivalency classes as needed), development of self-efficacy and goal-setting skills, financial and other supports, and advising. The entire package of WTA Connect components was free to participants. DMACC staff expected the program would increase treatment group members’ enrollment in and completion of occupational training certificates in high-growth, high-demand fields as compared with a control group who would have to remediate basic skills on their own before applying to the Academy for training.

According to survey data collected approximately 18 months following random assignment, WTA Connect had impacts on service receipt. Treatment group members were significantly more likely than control group members to receive:

- Education or training (50 percent versus 36 percent);
- Basic skills instruction (29 percent versus 18 percent); and
- Life skills instruction (15 percent versus six percent).

Treatment group members were also significantly more likely than control group members to receive services, including:

- Career counseling (20 percent versus nine percent);
- Help arranging supports for school, work, and/or family (15 percent versus six percent); and
- Job search assistance or placement (15 percent versus 8 percent).

While treatment group members received education and training and services at a higher rate than control group members, both groups had relatively low rates of participation in these activities. For example, only 20 percent of treatment group members received career counseling and only 15 percent received help arranging supports for school, work, and/or family.

WTA Connect produced few impacts on educational outcomes. Treatment group members were significantly more likely to receive a credential from any source than were their control group counterparts (19 percent versus 14 percent), but, again, both groups had relatively low rates of credential receipt. There were no impacts on hours of occupational training, career outcomes, or career pathways employment.

One explanation for the minimal impacts on outcomes is the low proportion of treatment group members who engaged in any education or training: only 50 percent. Because the evaluation assessed the impact of *access* to WTA Connect (“intent to treat” analysis) rather than the impact of the program on those who *received* services (“treatment on the treated”), all treatment group members were included in the calculations, regardless of whether or not they attended a single day. The half of treatment group members who did not participate in activities essentially diluted the program’s potential impacts, which highlights the program’s larger challenge with engaging participants in the program services. (The same is true for the control group.)

It is not possible to assess with certainty why half of the treatment group did not participate. Survey data and staff interviews suggest a few possibilities. First, the target population—low-income, low-skilled adults—may have faced unexpected challenges or changes in life circumstances. Program staff reported that in some cases, after random assignment, treatment group members found jobs, moved out of the area, or became incarcerated. According to the follow-up survey, the most common reasons respondents rated as very important in their decision not to enroll were “didn’t have enough time due to work” (47 percent) and “didn’t have enough time due to family responsibilities” (46 percent).

Second, the program staff’s approach to eligibility determination may have resulted in the random assignment to the treatment group of some prospective students who were not fully committed to entering the program. Beyond meeting academic assessment score requirements and demonstrating income eligibility, applicants were not assessed for their occupational interests, education and training plans, career goals, or reasons for applying to the program. Staff reported this was intentional; they believed that some enrollees would need to complete the WTA Connect career planning session and goal-setting components (during Tools) in order to fully formulate career and training goals. Staff did develop and administer a non-academic assessment to screen for barriers to program participation, even adding a telephone follow-up, but reported that few applicants were screened out as a result of these steps.

Finally, as noted in Chapter 4, WTA Connect’s flexible, self-paced design may not have provided the structure its low-skilled and disadvantaged population needed to initially engage in the program and persist in it while combining school and other life commitments. The program lacked a clear schedule and sequence of activities. Such a design might have been more appropriate for a higher-skilled and more resourced population.

For treatment group members who did attend education or training, however, the outcomes are promising in terms of successful progression through the program. Almost 80 percent of program participants completed basic skills remediation. Of those who completed, 95 percent enrolled in occupational training (or about three-quarters of those who attended basic skills remediation). Moreover, of those who enrolled in occupational training, about three-quarters completed at least one occupational certificate course. Thus, once participants engaged in WTA Connect’s education component, they tended to enroll in and complete occupational training. It is possible that the more motivated treatment group members self-selected into education and training activities, and thus a higher level of engagement would not necessarily translate into stronger occupational training completion patterns. However, a future iteration of WTA

Connect could explore whether investing staff resources in engaging participants early on and/or structuring initial components with a hard start date are associated with higher occupational training enrollment and completion rates.

## 6.2. Implication for Longer-Term Findings

This initial report on WTA Connect focuses on the implementation of the program and its early effects on education and training outcomes of treatment group members. Based on the career pathways framework and the WTA Connect theory of change, the expectation was that if the program was to achieve its goals, by 18 months after random assignment there would be significant positive effects on credential receipt (the confirmatory outcome). Though there was a small, significant impact on credential receipt, overall credential attainment levels for the treatment group (as well as the control group) were low; only about 19 percent of treatment group members received any credential in the follow-up period, and there were no indications that this led to improvement in career pathways employment outcomes relative to the control group.

The next report on WTA Connect will cover a 36-month follow-up period for the full research sample. It will provide a more systematic look at impacts on employment for a period when any such impacts can be expected to emerge. That report will examine a broad variety of employment outcomes, including average employment and earnings over successive follow-up quarters and job characteristics (e.g., occupation, hourly wage rate, receipt of fringe benefits, career progress). Thus, the report will begin to answer whether the gains in credential attainment that WTA Connect achieved after 18 months will translate into economic gains in the workplace in the longer term. In addition, estimation of the long-term effects of PACE programs at approximately 72 months after random assignment will be the subject of a longer-term follow-up report.<sup>47</sup>

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<sup>47</sup> For more on the 36-month and 72-month studies, see the Career Pathways Intermediate Outcomes Study at <https://www.acf.hhs.gov/opre/research/project/career-pathways-intermediate-outcomes-cpio-study>, and the Career Pathways Long-term Outcomes Study at <https://www.acf.hhs.gov/opre/research/project/career-pathways-long-term-outcomes-study>, respectively.

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