

*New Jersey Health Professions
Pathways to Regional Excellence
Project TAACCCT Evaluation
Final Report: Executive Summary*

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TAACCCT Program/Intervention Description and Activities

I. Project and Purpose

The overarching goal of the NJ-PREP consortium in proposing the TAACCCT project was to continue elements of a previous HPOG grant and build on and scale promising practices from that project with a focus on career pathways development. Areas of improvement were identified, and strategies were planned to move toward the broader goal of creating the college infrastructure required to prepare people for the healthcare workforce by developing career pathways into the health professions. Under the NJ-PREP TAACCCT grant, the twelve consortium partners prioritized their efforts on four primary strategies: 1) Accelerate time to program completion for TAA and other adults by creating flexible, innovative, and well-articulated pathways towards high-skill, high-wage healthcare career opportunities; 2) Effectively engage employers, workforce systems, and industry associations in all aspects of program design, development and implementation so skills and competencies align with employer expectations; 3) Integrate the effective use of technology in ways that will engage participants in their learning while improving overall levels of program retention and completion and that prepares participants for further learning and high-skill, high-wage employment; and 4) create a supportive system for assisting adults in succeeding in their programs of study and transitioning towards high-skill, high-wage healthcare employment.

Accelerate time to completion. Among its strategies, the college partners planned to standardize their approaches to prior learning assessment; develop or enhance healthcare training programs that could be shared regionally while addressing gaps in regional healthcare training and curriculum; and integrate innovative technology in ways that address the remedial skill needs of TAACCCT students, thereby reducing the time to program completion.

Effectively engage employers, workforce systems, and industry associations. Employers, Workforce Investment Boards (WIBs), and industry associations planned to partner with the colleges on better preparing individuals for healthcare occupations by offering work-based learning experiences; participating in curricular review; ensuring that program outcomes are consistent with the skills required of employees; serving on the Consortium Leadership Council; and ensuring that credentials are transportable.

Integrate the effective use of technology. The consortium planned to implement EdReady, an educational technology product, in helping at-risk students overcome their basic skills deficiencies and go on to earn their postsecondary credentials. The partner colleges planned to institute the technology into a common pathways orientation program known as Smart Start to prepare individuals for enrolling and succeeding in their programs of study. Other technology proposed included Smart Sparrow adaptive learning systems, digital tutors, and medical simulations into new and enhanced courses.

Create supportive systems. A strong career awareness component was planned to be developed and expanded across the partnership. The idea was that students would enroll in their programs of study having already considered future opportunities and how the program in which they are enrolled would prepare them for the next step on the career ladder. Moreover, through case management, the industry-sector coaches and advisors would give participants the support they need to complete their programs of study.

These four strategies were implemented across the NJ-PREP consortium with varying degrees of effectiveness.

II. Interventions

Across the twelve consortium schools, the following interventions were evaluated:

TABLE 1: KEY TAACCCT GRANT ACTIVITIES AND MAJOR PROGRAM STRATEGIES

Activities	Major Program Strategy: Pathways Development	Major Program Strategy: Technology Use	Major Program Strategy: Employer and Workforce System Engagement	Major Program Strategy: Student Supports
Develop and reform programs to include stackable credentials, modularized curriculum, skill alignment, work-based learning, apprenticeship, articulation agreements, competency-based learning, Common-core competencies, curriculum frameworks, and credentialing requirements.	X		X	
Purchase equipment for hands-on training in healthcare courses, including simulation equipment.		X		
Implement Smart Start classes to promote career awareness and development.	X			X
Implement contextualized and adaptive learning systems, including EdReady, Smart Sparrow, MOOCs.*		X		
Develop regional PLA standards and undergo Thomas Edison State University credit review process.	X			
Implement networking sessions, career support network.				X
Hire and train job developers to provide comprehensive counseling and advising to				X

Activities	Major Program Strategy: Pathways Development	Major Program Strategy: Technology Use	Major Program Strategy: Employer and Workforce System Engagement	Major Program Strategy: Student Supports
students, share best practices in job development.				
Engage with employers through local collaborations, the Consortium Leadership Council, a workplace committee, and North Jersey Partners.			X	
Collaborate with the workforce system to promote referrals.			X	
Develop and implement system to track student data and maintain statewide scorecard.			X	
Develop and contribute OER to, and incorporate OER from, SkillsCommons repository.	X			
Promote faculty and staff professional development.	X			

* Three elements of technology integration were originally proposed for the grant project: EdReady, online adaptive learning platforms such as Smart Sparrow, and the incorporation of MOOCs (Massive Open Online Courses) or simulations. EdReady was found to be the best suited to incorporation across the Consortium and the most sustainable of the three options.

The following components of the above-listed interventions were evaluated:

- Recruitment/enrollment of target population
- Program development/redesign/changes
- Job developer role at each college
- Development and use of guided career pathways/stackable credentials
- Job placement
- Development and use of externships/clinicals
- Use of prior learning assessment
- Use of Thomas Edison State University credits
- Attendance of Mental Health First Aid instructor training
- Use of Mental Health First Aid courses in consortium schools
- Use of SmartStart
- Use of Ed Ready
- Creation and use of networking sessions
- Existence of non-credit to credit transitions and articulation

- Implementation of equipment/supplies
- Engagement of and collaboration with employers and workforce partners
- Use of statewide scorecard
- Use of OER for grant-produced resources

III. Populations Served

- A total of 3,035 participants completed TAACCCT programs
- Over 85 percent of participants were female
- Over 60 percent were from underrepresented minority groups.
- The average age of participants was 36
- Most participants reported they were not married (71 percent)
- Very few reported a disability (1 percent)
- Nearly 54 percent of participants reported they were incumbent workers, who reported an average wage of \$12.57 per hour.

IV. Evidence-based Model

The proposed strategies to build capacity to train TAA-eligible adults for demand occupations in the region’s healthcare sector were based on evidence-based practices, including accelerated skill, competency, and credential acquisition; advanced technology; work-based learning; and student support systems.

Strong evidence indicates that sector-based approaches result in higher earnings and more benefits and those participants are more likely to be employed than participants in general training programs, thereby supporting the Project’s focus on the healthcare sector.¹ The use of prior learning assessments is backed by strong evidence that PLAs improve retention, accelerate program completion time, and improve degree completion for adults.² The use of Smart Start was based on strong evidence that contextualizing developmental education leads to accelerated learning.³ Stacking and latticing of certificates and credentials has strong evidence that it leads to higher certificate and degree completion.⁴ Technology, in the form of EdReady

¹ Maguire, Sheila, Freely, Joshua et al. Tuning into Local Labor Markets, Findings from the Sectoral Impact Study, Public Private Ventures, 2010.

http://www.ppv.issuelab.org/resource/tuning_in_to_local_labor_markets_findings_from_the_sectoral_employment_impact_study

² Klein Collins, Rebecca. “Fueling the Race to Post-Secondary Success: A 48-Institution Study of Prior Learning Assessment and Adult Student Outcomes” Council for Adult and Experiential Learning, March 2010.

http://www.cael.org/pdf/PLA_Fueling-the-Race.pdf

³ David Jenkins, Ceclia Speroni, et. al (2010). A Model for Accelerating Academic Success of Community College Remedial English Students: Is the Accelerated Learning Program Effective and Affordable? Community College Research Center Working Paper Number 21. Martin, Vanessa and Joseph Broadus (2013) Enhancing GED Instruction to Prepare Students for College and Careers, MDRC

⁴ David Jenkins and Madeline Joy Weiss. (2011) Charting Pathways to Completion for Low-skilled Community College Students. Community College Research Center Working Paper Number 34.

learning software, creates a hybrid learning environment. Hybrid learning has strong evidence that outcomes are the same for students in hybrid instruction compared with classroom-only instruction,⁵ providing strength to the project's strategy to use online platforms for greater accessibility.

In addition, simulation labs were added to some consortium schools. Strong evidence demonstrates that simulation environments allow students to practice and culminate their skills in a safe and controlled environment that promotes confidence and student interaction in the classroom⁶ while preliminary evidence suggests higher completion rates through the use of adaptive learning systems and digital tutors.⁷ In particular, simulation has been scientifically shown to better patient outcomes, reduce medical errors, and positively impact retention of skilled workers by offering a dynamic environment that can replay difficult case scenarios, allow for practice of new procedures or protocols before being practiced on live patients and/or promoting better health communication especially in crisis environments.⁸

V. Evaluation Design Summary

VI. Goals of Evaluation

The EERC evaluation used the career pathways framework as the guide for both the implementation and outcomes. The project was focused on expanding access to and improving institutional capacity for healthcare training and education in New Jersey. It was hypothesized that this could be achieved using four primary strategies: accelerated credential acquisition, educational technology, student supports, and employer and workforce system engagement. Data was collected in a variety of ways including site visits, interviews, focus groups, document review, surveys, a Salesforce data tracking system, and attendance at project meetings and events.

In addition to the four sets of research questions listed in the DOL SGA (on curriculum, program design and administration, student assessment, and partner roles/contributions), the Rutgers team identified several research questions to guide the evaluation based on the unique focus of NJ PREP:

Program and Strategy Design:

- How did colleges understand the goals of NJ PREP?

⁵ William G. Bowen, Matthew M. Chingos, et al. Interactive Learning Online at Public Universities: Evidence from Randomized Trials, May 22, 2012; <http://www.sr.ithaka.org/research-publications/interactive-learning-online-public-universities-evidence-randomized-trials>

⁶ Johnston, B., Boyle, L., MacArthur, E., & Manion, B. F. (2012). The role of technology and gaming in nurse education. *Nursing Standard*, 27, 28, 35-38.

⁷ Newman, Stokes and Bryant (2013). "LEARNING TO ADAPT: A Case for Accelerating Adaptive Learning in Higher Education" Education Growth Advisors. Retrieved June 2014.

⁸ Lateef, Fatimah; Simulation-based learning; Just like the real thing, *Journal of Emergencies, Trauma, and Shock* 2010 Oct-Dec; 3 (4): 348-352.

- How did colleges operationalize these goals at the institutional level?
- How were these goals operated at the consortium level?

Program Operations:

- What strategies and activities for career pathway development have NJ PREP colleges implemented? To what extent have these strategies and activities been implemented as expected? If not, why not?
- How do key employer and workforce partners work with NJ PREP and its colleges? What are the successes and challenges in these relationships?
- How has NJ PREP used technology to enhance their programs? What are the successes and challenges of the use of technology in the NJ PREP programs?
- What supports has NJ PREP provided to help adults complete programs and successfully transition into the workforce? What are successes and challenges with these supports?
- What are the educational outcomes of NJ PREP's participants? What are the employment outcomes of NJ PREP's participants?

VII. Implementation Study Design

The implementation evaluation was guided by several broad research questions. More detailed research questions were also posed for many of the activities and interventions in the project and are discussed throughout the main report.

- What strategies and activities for career pathway development have NJ PREP colleges implemented? To what extent have these strategies and activities been implemented as expected? If not, why not?
- How do key employer and workforce partners work with NJ PREP and its colleges? What are the successes and challenges in these relationships?
- How has NJ PREP used technology to enhance their programs? What are the successes and challenges of the use of technology in the NJ PREP programs?
- What supports has NJ PREP provided to help adults complete programs and successfully transition into the workforce? What are successes and challenges with these supports?
- What are the educational outcomes of NJ PREP's participants? What are the employment outcomes of NJ PREP's participants?

For the program implementation analysis, the Rutgers team assessed NJ PREP's progress in the development and implementation of its planned activities. This examination:

- Considered the fidelity of program implementation to the proposed model,
- Evaluated the consistency of implementation across colleges,
- Identified strengths and weaknesses in program implementation,
- Provided ongoing feedback to guide the project's mid-course corrections, and sustainability and scale.

The following areas were studied: Curriculum, program design and administration, student assessment, and partner roles/contributions.

The four focal areas of NJ PREP were also studied:

- career pathway development and the noncredit to credit transition;
- industry engagement efforts and their relationship to labor market alignment;
- the use of technology to support learning;
- supports to help students make career choices and move along their career pathway.

Implementation analyses data was collected via in-person interviews during annual site visits, phone interviews, in-person focus groups, targeted information-gathering emails, document review, attendance at grant meetings and events, and surveys.

Outcomes/Impact Study Design

The outcomes evaluation considered students served at each college and a quasi-experimental design comparing TAACCCT students and students attending similar programs in private New Jersey institutions. The outcomes evaluation used difference-in-differences (DID) and regression with probabilistic matching statistical models. The examined outcomes included students served, credentials achieved, and employment and wage outcomes.

VIII. Implementation Findings

IX. Institutional Capacity

Some NJ PREP goals were well-aligned with the institutional goals of consortium schools. These included:

- A priority to better align healthcare programs with the needs of local healthcare industry employers
- Expansion of healthcare programs
- A priority to build career pathways and to create/expand stackable credentials
- A focus on building stronger industry connections

Other goals were well-aligned with the institutional goals of some, but not all, consortium schools. These included:

- Goals to create stronger prior learning assessments
- Objectives to create clear non-credit to credit transitions
- A focus on infrastructure, including space allocation and the addition of equipment and/or supplies
- A focus on building stronger relationships with workforce partners

- The integration of technology into programs to better prepare students for college-level work

At each school, NJ PREP goals that were closely aligned with institutional goals created strong institutional buy-in, with encouraged faster implementation as well as sustainability planning. For example, at those schools where plans were already underway to expand lab space or create hands-on learning opportunities, these elements occurred quickly, and institutional capacity was leveraged to ensure sustainability. At schools where non-credit to credit articulation was already an institutional priority there was success in bridging noncredit and credit programming. In the case of goals that were not well aligned with institutional priorities, however, implementation was slow or nonexistent, and program elements were not sustained. Examples of this included non-credit to credit transitions, prior learning assessment redesign, and technology integration.

X. Key Steps Taken at Program Level

All twelve consortium schools implemented their programs with fidelity to the original model, although some schools experienced unexpected delays. Delays included issues related to:

- Space acquisition/renovation
- Accreditation processes and program acceptance
- Equipment ordering and delivery
- Program changes to better align with industry standards (such as the extension of program hours)
- **Internal collaboration included:**
 - Job developers and faculty working together to provide student support
 - Site coordinators, department heads, and faculty working together to modify programs to better align with industry standards
 - Faculty and department heads across multiple departments working together to share equipment and supplies
 - Department heads, staff, and faculty working together to create shared simulations at those schools where simulation equipment was purchased
- **Consortium-level collaboration included:**
 - Site coordinators sharing success stories, challenges, and promising strategies with other site coordinators at monthly meetings
 - Site coordinators meeting at a national professional development event to share successes stories, challenges, and promising strategies
 - Administrators and college leadership meeting to share information, challenges, and successes at a quarterly executive board meeting

- **External collaboration included:**
 - Job developers working with employers and local One-Stops to strengthen program curriculum, participate in classroom visits, host student tours, and collaborate on career fairs and mock interviews
 - Job developers working with local employers to set up new clinical and externship sites
 - Faculty and employers working together to integrate soft skills into curriculum
 - Staff at schools with new simulation equipment hosting open houses and tours to invite local employers and community members to see new program space

XI. Strengths and Weakness at the College Level

There were a variety of strengths and weakness among consortium schools.

Relative to strengths, most schools effectively:

- Collaborated internally and externally to build stronger programs that were better tailored to their respective job markets
- Embedded SmartStart and EdReady into their TAACCCT programming
- Developed the job developer role to assist students with job readiness skills and interview preparation
- Created effective internships/externships/clinical experiences for students to gain hands-on learning experiences
- Integrated networking sessions for students to learn vital information and skills outside regular classroom learning

Relative to weaknesses, some schools had difficulty:

- Hiring or retaining job developers
- With staff turnover in leadership positions, such as site coordinators, department deans, or higher-level college leaders
- Filling enrollment quotas in some programs; some schools discontinued some programs because enrollments were too low
- Getting up to speed with the Salesforce data management system; the grant data manager made multiple visits to schools to help them learn the system including training new staff
- Understanding the Thomas Edison State University (TESU) credit-transfer program
- Securing institutional buy-in for noncredit to credit program articulation
- Securing institutional buy-in to restructure the prior learning assessment process

XII. Participant Impacts and Outcomes

The Consortium enrolled a total of 3,542 participants in TAACCCT programs.

School	Enrollment Number	% of Total Enrollments
Bergen	362	10.22%
Brookdale	253	7.14%
Essex	334	9.43%
Hudson	186	5.25%
Mercer	407	11.49%
Middlesex	343	9.68%
Morris	156	4.40%
NJ HCTN	36	1.02%
Ocean	440	12.42%
Passaic	378	10.67%
Raritan	168	4.74%
Sussex	279	7.88%
Union	200	5.65%
Total	3542	100%

- Students enrolled in 31 different programs offered by the Consortium. A few of these programs accounted for a very high number of enrollments, including the nursing assistant programs (18 percent of enrollments), phlebotomy (10 percent of enrollments), and clinical medical assistant (9 percent). Others accounted for moderate numbers of enrollments including home health aide (6 percent), administrative medical assistant (5 percent), EKG (6 percent), EMT (5 percent), and pharmacy technician (4 percent).

Program	Enrollment	% Total Enrollments
Home Health Aide	336	6.31
Administrative Medical Assistant	276	5.19
Clinical Medical Assistant	499	9.38
Billing & Coding	314	5.90
Certified Alcohol and Drug Counselor	29	0.55
Nursing Assistant	980	18.42
Community Health Worker	36	0.68
Computed Tomography	4	0.08
Dental Assistant	141	2.65
Dental Hygiene	10	0.19
Dental Radiography	89	1.67
Diagnostic Medical Sonography	38	0.71
EKG, Electrocardiogram, & Telemetry	333	6.26
EKG/Phlebotomy	80	1.50
EMT	257	4.83
Emergency Dispatcher	7	0.13
Health Sciences	8	0.15
Licensed Practical Nurse	66	1.24

Program	Enrollment	% Total Enrollments
MRI	2	0.04
Mammography	9	0.17
Massage Therapist	26	0.49
Occupational Therapy Aide	18	0.34
Patient Care Technician	417	7.84
Pharmacy Technician	233	4.38
Phlebotomy	545	10.24
Physical Therapy Aide	70	1.32
Radiology Technician	20	0.38
Registered Nurse Refresher	91	1.71
Respiratory Technician	2	0.04
Smart Start	331	6.22
Surgical Technician	54	1.01
Total	5,321	100.0

- **Employment after Completion.** Regarding the effect of participation in NJ-PREP on a student’s employment status after program completion, the data showed that there was no statistical difference between NJ-PREP program completers and a comparison group of trainees.
- **Earnings after Completion.** Although post completion earnings were different for NJ-PREP TAACCCT trainees and comparison group trainees, they were generally statistically indistinguishable. Some statistical tests did, however, indicate that completers of NJ-PREP TAACCCT programs earned about \$150 less per quarter than students who completed comparable health sciences programs at other postsecondary training providers.
- **Employment in the Healthcare Industry after Completion.** Some statistical tests indicated that NJ-PREP trainees were statistically more likely to be employed in the healthcare industry than a comparison group of students trained in health sciences at other postsecondary training providers, while others indicated that there was no statistically distinguishable difference between the two groups.

XIII. Limitations of Study

Confounding. All observables have not been included in this analysis. We have, however, included arguably the most important predictors of a person’s labor market success at time t: their prior wages and employment history as well as other variables that are strongly associated with employment and wages, including age, sex, and race.

Selection Bias. We seek to mitigate selection bias by including in the comparison group individuals who made the choice to undertake the exact same programs of study as the

comparison group during the same year. Further, the study includes the propensity score via TMLE in one set of models to ensure that the treatment and control observations are as similar as possible. That said, the literature on double robustness combined with the effectiveness of the BART model at reducing bias give us confidence that selection bias is low.

History. Factors external to the NJ PREP program — such as changes in certification requirements for a health care occupation — could affect the outcomes of the treatment group. It is likely, however, that these factors would also affect the individuals in the comparison group, since that group includes individuals trained in the same occupational fields at the same time as the treatment group.

Maturation. As with history, maturation of the subjects would occur to the same extent in the treatment and comparison groups.

Mortality. The study includes only completers in the treatment and comparison groups. If there are differential rates of program completion across the NJ PREP colleges and the private postsecondary training providers from which the comparison group was drawn, it could affect the results. For this reason, our study estimates the Average Treatment Effect (ATE) and is not an Intention to Treat analysis.

Diffusion. Because the trainees studied in this evaluation received training from different postsecondary institutions, diffusion effects are likely close to zero.

Other limitations. the New Jersey UI wage data do not contain information on the employment and earnings of anyone outside of the state, the researchers were unable to capture the post-training labor market experiences of anyone who found employment in New York or Pennsylvania (or any other state). It also does not include Federal employees. This could bias the results of this study to the extent that individuals in the treatment group have a different likelihood of finding work outside of New Jersey or for the Federal government than those in the comparison group.

Because there is a six-month lag in the wage data used to calculate an individual's employment status and earnings, data on some program exiters were not available for the third or fourth quarters after program completion. In order to keep a sufficiently large sample size, the researchers limited their analysis to only the first four quarters after program exit, allowing them to assess the program's effect on short- and medium-term outcomes but not on their long-term labor market success.

XIV. Conclusions

A. Key Lessons for Replication

In replicating programs and activities undertaken by the NJ PREP consortium, other colleges should consider the following:

- Schools should consider who will maintain employer relationships after the grant period has ended and the job developer role is no longer maintained.
- Although noncredit programming, such as most TAACCCT programs, can be run by the school's CE department after the grant period has ended, grant-sponsored student supports will not be present. Therefore, schools should consider the student population they are targeting and whether they can succeed without the student supports offered during the grant period.
- Sustainability of programs after grant funding has ended is often better managed when several departments are sharing the cost of the student support/technology/equipment
- Students served by TAACCCT and other similar grants are often low-income, and many cannot afford student fees or book fees—therefore sustainability options should not rely on student fees to support programs post-grant
- Schools with institutional buy-in for specific program elements such as noncredit articulation and prior learning assessment had better outcomes than those without it. Institutional buy-in is necessary for long-lasting change
- When grant funds are leveraged with other grant funds, such as institutions building off successive grants, programs and activities can be scaled or expanded in steps, which can be easier for institutional implementation

XV. Next Steps for Research

- Future research should include exploration of the intersection of career pathways with guided pathways reforms—when are students choosing their ultimate career?
- Next steps should also include considering a students' movement along their career pathway, including advancement and second steps. Are students making several career moves before reaching their career goals? Are they returning to school multiple times for additional credentials or degrees?



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