



NON-TRADITIONAL LEARNER PARTICIPATION IN POSTSECONDARY CAREER TECHNICAL EDUCATION PROGRAMS

[Without Limits: A Shared Vision for the Future of Career Technical Education \(CTE\)](#) calls for state career preparation ecosystems to be designed with an equity lens, able to adapt and flexibly respond to the diverse needs of each learner — including genders under-represented within a given career pathway — throughout the CTE continuum.¹ The gender occupational divide weakens state economies by decreasing economic productivity and reducing diversity in decision-making.² By connecting learner outcomes and practices from the field, state leaders can strengthen policies to ensure equitable access and outcomes for every learner and better meet the needs of the state’s economy and labor market.

CLOSING OCCUPATIONAL GENDER GAPS: A FOCUS OF FEDERAL CTE LEGISLATION

The federal investment in CTE has had a long-standing focus on addressing gender gaps in CTE, spanning back to the 1970s. The Strengthening Career and Technical Education for the 21st Century Act (Perkins V) continued this focus through its accountability indicators, requiring states to increase the concentration of secondary and postsecondary learners in non-traditional occupations based on their gender (4S1 — and 3PI Non-traditional Program Concentration). By creating gender parity in which “women participate in the labor force



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at the same rate as men, work the same number of hours as men, and are employed at the same levels as men across sectors,” the United States would see an estimated \$4.3 trillion increase in the gross domestic product in 2025.⁴ These accountability indicators call for the removal of barriers that prevent any learner from accessing, exploring or completing a career pathway of interest, as well as more indirectly calling upon the labor market to address the wage inequities most commonly associated with occupations dominated by women. While these equity gaps require closure, the complexity of gender-based policy will need to be examined in future iterations of the federal legislation given recent proposals to expand the categories of gender identity.⁵

States are required to allocate at least \$60,000 and no more than \$150,000 of their Perkins V state leadership funds for activities that prepare individuals for non-traditional fields. States distribute these funds in myriad ways (e.g., direct grants versus competitive subgrants) and support a range of activities such as Advance CTE’s [Brave Dialogues](#) training, microaggression training, mentorship opportunities, community programs to engage learners’ families, early exposure initiatives and recruitment activities.⁷ The Office of Career, Technical, and Adult Education (in the U.S. Department of Education) developed a [Non-traditional Occupations Crosswalk](#) tool to help states and Perkins V sub-recipients identify CTE programs and programs of study that prepare learners for non-traditional fields.⁸ This crosswalk uses data from the Classification of Instructional Programs (CIP), the Standard Occupational Classification (SOC) system, a CIP-SOC crosswalk, a 2019 population survey that the U.S Bureau of Labor Statistics designed to capture workforce data, and Advance

By creating gender parity in which “women participate in the labor force at the same rate as men, work the same number of hours as men, and are employed at the same levels as men across sectors,” the United States would see an estimated \$4.3 trillion increase in the gross domestic product in 2025.⁴



In Perkins V the term, “non-traditional fields” or “non-trad” refers to occupations or fields of work for which individuals from one gender comprise less than 25 percent of the individuals employed in each such occupation or field of work.⁶

CTE’s [National Career Clusters® Framework](#). The Non-traditional Occupations Crosswalk tool allows enrollment data to be disaggregated into the associated occupations within a given Career Cluster. This level of analysis allows for targeted interventions to increase non-traditional enrollment.

The trends in state performance for the secondary and postsecondary non-traditional performance indicators demonstrate the challenges that persist in the field.⁹ In the transition from Perkins IV, the performance indicators for Non-traditional Participation (6S1, 5P1) and Non-traditional Completion (6S2, 5P2) were combined to create a new Non-traditional Program Concentration (4S1, 3S1). To understand how to support learners preparing for non-traditional occupations, state CTE leaders need to monitor learner awareness, enrollment and program persistence and completion to ensure equitable access and completion.



Analysis of Institutional Data Supports Regional Development

In a recent study, conducted by [Jean Claude Mbomeda](#), alumni of the inaugural cohort of [The Postsecondary State Career Technical Education Leaders Fellowship at Advance CTE – Sponsored by ECMC Foundation](#), featuring Butte College, California, longitudinal CTE enrollment and program completion data was analyzed to identify gender equity gaps within the Agriculture, Food & Natural Resources Career Cluster®. At this rural institution, agriculture programs provide learners with the opportunity to develop the industry-aligned skills necessary to earn a family-sustaining wage upon graduation, however, they have historically had an overrepresentation of male learners. Creating greater gender parity in programs that align to regional industry need increases the workforce population and is effective in supporting the development of local, regional and state economies.¹⁰

This study analyzed CTE participants' data between fall 2017 and fall 2021 to examine enrollment patterns within the Agriculture, Food & Natural Resources Career Cluster. The [Percentage Point Gap \(PPG\) equity tool](#) was used to examine disproportionate impact across a variety of indicators, including those in the learner success metrics, course completion, English as a Second Language and basic skills completion, degree and certificate completion, transfer and others.¹¹ While the research was unable to establish a causal impact of certain interventions, statewide strategies and institutional interventions such as having women as guest speakers, providing job shadow opportunities and covering basic needs were implemented in an effort to increase the representation of women in the agriculture program. In addition, the college's [Student Equity Program](#) provides leadership and accountability to resolve systemic inequities for all Butte College learners.¹² The research revealed that, while the gap between the enrollment of men and women in the Agriculture Career Cluster decreased, it still persists.



Disproportionate impact occurs when a subset of learners nonbased on a learner characteristic such as age, race or gender has observably different outcomes when compared to the total learner population.



Wisconsin Technical College System (WTCS) Seeks to Replicate Strong Practices

Since 2013, Wisconsin's performance on the Perkins postsecondary non-traditional indicator has hovered around 17 percent, which means that 17 percent of learners are concentrating in programs that are non-traditional for their gender.¹³ To increase the number of learners enrolled in non-traditional programs, the WTCS Student Success Center conducted an analysis of WTCS non-traditional concentration data to identify areas of strength and opportunity, uncover colleges that have experienced non-traditional success, and create a Scale of Adoption Assessment for non-traditional occupational programs based on research-supported practices. As part of the evaluation, the WTCS team compared institutional data against the Non-traditional Occupational Program Crosswalk released by the U.S. Department of Education in 2020.

Through this analysis, WTCS discovered that non-traditional occupation concentration varied significantly across the Career Clusters, ranging from 7.5 percent to 53.3 percent. The programs within the Hospitality & Tourism and the Business, Management & Administration Career Clusters® were found to have the greatest gender parity. To understand the factors contributing to non-traditional occupational growth, WTCS staff conducted interviews with technical college staff to identify promising practices. Through these conversations, impactful strategies emerged such as:

- Hiring designated non-traditional occupation staff to serve as a point of contact and resource for non-traditional occupation learners;
- Leveraging program alumni to implement non-traditional occupation peer-to-peer supports such as networking events or learner mentoring; and
- Conducting early outreach to middle and high school learners;
- Providing programming at facilities for incarcerated women.

Across the colleges and program areas, these interventions contributed to average increases in non-traditional occupation growth ranging from 10 percent to 18 percent between 2013 and 2019.



Data: A Vital First Step to Closing Equity Gaps

The North Carolina Community College System (NCCCS) built a public-facing dashboard that uses data from its student information system (updated annually) to show CTE non-traditional occupation concentration across the state community college system. Outcomes data is disaggregated by institution and learner characteristics such as gender, employment status, program area and Perkins special populations. During the development of the dashboard, the Research and Performance Management team at NCCCS conducted regular meetings with internal stakeholders to collect feedback on which features would be of greatest use and later provided professional development webinars to launch the dashboard. Postsecondary CTE teams meet regularly to continue advancing local knowledge of how to leverage the data dashboard in line with the completion of the Comprehensive Local Needs Assessment.

Later this year, NCCCS plans to launch a new collection of internal reports and dashboards that will allow for learner-level program data to be viewed by community college and administrative office leaders. This change will allow for more targeted approaches to address any equity gaps that were not as readily visible in the public-facing dashboard.

While data alone does not solve the non-traditional occupation problem, empowering educators and administrators with accessible and accurate data is a foundational and necessary first step to closing equity gaps.



Differentiated Interventions for Learner Populations

Illinois is using its Perkins V state leadership resources to support professional learning and targeted technical assistance for local recipients specifically in the areas of gender equity, microaggressions, stereotype threat, and effective practices for recruiting and retaining learners preparing for non-traditional careers. Through these investments, it became apparent that differentiated interventions for specific learner populations were critical to addressing gaps in non-traditional enrollment. The Illinois Center for Specialized Professional Support (ICSPS) has developed [a series of videos to introduce special populations](#);¹⁴ [a series of webinars designed to support programs in improving outcomes for special populations](#);¹⁵ and [super strategies for recruiting and retaining all special populations](#), including learners pursuing non-traditional occupations in postsecondary CTE programs.¹⁶

For example, women are more likely to participate in science, technology, engineering and math (STEM) when introduced to programs through hands-on learning experiences. This approach builds their self-confidence.¹⁷ ICSPS' review found confidence was an essential component for women to find success in non-traditional career pathways such as STEM. This drilling down to the root cause and being mindful of intersectional equity considerations is vital to the differentiated interventions that are necessary for the long-term and sustained closing of equity gaps.



CONCLUSION

This brief has identified strategies that states can implement to increase enrollment and retention of learners preparing to enter non-traditional fields. Leveraging data to identify equity gaps, curating the strategies to engage specific learner populations, and making explicit the alignment between programs and occupations with family-sustaining wages benefit the overall health of state economies. Through these efforts, every learner will have the opportunity to engage with and develop skills to lead more choice-filled lives.



- ¹ Advance CTE. (2021). *Without limits: A shared vision for the future of Career Technical Education*. https://cte.careertech.org/sites/default/files/CTEWithoutLimits_Vision_2021.pdf
- ² Barker, H. (2021). *Strategies to increase the concentration of students in nontraditional occupations (NTO)*. Wisconsin Technical College System Student Success Center Team. <https://cte.careertech.org/sites/default/files/files/resources/NTO%20Action%20Research%20Brief%20Final.pdf>
- ³ Perkins Collaborative Resource Network. (n.d.). *Accountability: Indicators of performance*. <https://cte.ed.gov/accountability/core-indicators>
- ⁴ Ellingrud, K., et al. (2016). *The power of parity: Advancing women's equality in the United States*. McKinsey & Company. <https://www.mckinsey.com/featured-insights/employment-and-growth/the-power-of-parity-advancing-womens-equality-in-the-united-states#:~:text=In%20a%20new%20report%2C%20The,the%20economic%20potential%20of%20women>
- ⁵ The Office of the Chief Statistician of the United States. (2023). *Recommendations on the best practices for the collection of sexual orientation and gender identity data on federal statistical surveys*. <https://www.whitehouse.gov/wp-content/uploads/2023/01/SOGI-Best-Practices.pdf>
- ⁶ Carl D. Perkins Career and Technical Education Act of 2006, 120 Stat. 683 (2018). <https://www.govinfo.gov/content/pkg/COMPS-3096/pdf/COMPS-3096.pdf>
- ⁷ Advance CTE. (2021, August). *Brave dialogues: A guide to discussing racial equity in Career Technical Education*. <https://careertech.org/resource/brave-dialogues>
- ⁸ U.S. Department of Education Office of Career, Technical, and Adult Education. (2020). *2020 Nontraditional Occupations Crosswalk*. <https://s3.amazonaws.com/PCRN/downloads/Introduction-to-the-2020-Nontraditional-Crosswalk.pdf>
- ⁹ U.S. Department of Education Office of Career, Technical, and Adult Education. (2019, November). *Carl D. Perkins Career and Technical Education Act of 2006 report to Congress on state performance, program year 2015–16*. <https://s3.amazonaws.com/PCRN/uploads/PerkinsRTC201516.pdf>
- ¹⁰ Mbomeda, J. C. (2023). *Gender equity gaps in the Agriculture Career Cluster at a rural-serving community college in Northern California*. Advance CTE. <https://careertech.org/resource/gender-equity-rural-california-community-college-mbomeda>.
- ¹¹ California Community Colleges Chancellor's Office. (n.d.) *Percentage Point Gap Method*. [https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Digital-Innovation-and-Infrastructure/Research/Files/PercentagePointGapMethod2017.ashx#:~:text=What%20is%20the%20Percentage%20Point%20Gap%20Method%3F&text=The%20percentage%20point%20gap%20\(PPG\)%20method%20subtracts%20the%20overall%20percentage,the%20disaggregated%20subgroup%20\(%20%CC%82](https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Digital-Innovation-and-Infrastructure/Research/Files/PercentagePointGapMethod2017.ashx#:~:text=What%20is%20the%20Percentage%20Point%20Gap%20Method%3F&text=The%20percentage%20point%20gap%20(PPG)%20method%20subtracts%20the%20overall%20percentage,the%20disaggregated%20subgroup%20(%20%CC%82)
- ¹² Brown, M. (2021). *Diversity, equity and inclusion: Student Equity Program at Butte College*. <https://www.butte.edu/diversity/student-equity.html>
- ¹³ Barker, H., Ph.D. (2021) *Strategies to increase the concentration of students in nontraditional occupations (NTO)* Wisconsin Technical College System Student Success Center. <https://cte.careertech.org/sites/default/files/files/resources/NTO%20Action%20Research%20Brief%20Final.pdf>
- ¹⁴ Illinois Center for Specialized Professional Support. (n.d.). *Special populations*. <https://ilequity.com/special-pop>
- ¹⁵ Illinois Center for Specialized Professional Support. (n.d.). *Special populations resources*. <https://icsps.illinoisstate.edu/special-pops-resources>
- ¹⁶ Illinois Center for Specialized Professional Support. (n.d.). *Super strategies*. <https://icsps.illinoisstate.edu/equity/super-strategies>
- ¹⁷ *Ibid.*



[The Postsecondary State Career Technical Education Leaders Fellowship at Advance CTE – Sponsored by ECMC Foundation](#) (The Fellowship) strives to address the growing shortage of state postsecondary CTE leadership by closing racial representation gaps and removing equity barriers to leadership advancement. Through individualized support, intentional network building and a real-world fellowship project, Advance CTE – ECMCF Fellows will gain the skills and network to pursue leadership positions and advance high-quality, equitable state post-secondary CTE systems.

This brief features original research and presents policy recommendations to highlight new and relevant CTE research topics being pursued by the inaugural class of The Fellowship. By highlighting this work and positioning the findings as potential action steps for Advance CTE’s members and the national CTE landscape, we aspire to elevate a new – more diverse – generation of CTE leaders.

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