



OCTAE Program Memorandum 24-8
UNITED STATES DEPARTMENT OF EDUCATION
OFFICE OF CAREER, TECHNICAL, AND ADULT EDUCATION

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Perkins V FAQ

The Carl D. Perkins Career and Technical Education (CTE) Act of 2006 as amended by the Strengthening Career and Technical Education for the 21st Century Act (Perkins V or the Act) provides Federal support for the nation's CTE programming. Perkins V seeks to improve the academic and technical achievement of youth and adult learners, strengthen the connections between secondary and postsecondary education, and improve accountability. It also positions States and local communities to implement a vision for CTE that balances the needs of learners with the current and emerging needs of the economy, positioning students for success in the workforce.

In the six years since the passage of Perkins V, the Department has received requests for technical assistance, clarification of terminology, and analyses of best practices that States have taken to implement the statute. The purpose of this Frequently Asked Questions (FAQs) document is to address these questions and to provide the most up-to-date research and evidence-based practices to ensure that Federal funding is directed toward CTE programs that support students in acquiring the exposure, skills, and experiences that lead to further postsecondary education and employment in high-wage, high-skill, and in-demand occupations.

1. **CTE Concentrator**

a. **How can State Longitudinal Data Systems support States in identifying and validating secondary CTE concentrators or for other Perkins reporting?**

States should have clear definitions and procedures to identify and validate CTE concentrators and other Perkins data, including using reliable data sources. For example, States can use transcript data from their State longitudinal data systems (SLDS), if available, to identify and validate whether students are CTE concentrators. SLDS are typically a reliable source of data about students and their outcomes, and often include course history data, which can be used to identify and validate CTE concentrators. By connecting individual-level data over multiple years from State education, human services, and workforce agencies and programs, SLDS not only support the validation of CTE concentrators, but also can “enable researchers, policymakers, and practitioners to identify and understand important relationships and trends” that may connect K-12 and postsecondary education to workforce outcomes.¹ Using data from SLDS can reduce the cost and complexity of data collection by relying on a single centralized data source and may be more accurate than other sources since data generally go through initial reviews before being included in the SLDS. Use of SLDS may also help to connect administrative information from multiple sources to provide data on other metrics needed for Perkins reporting, such as students' post-program outcomes. SLDS data may also be supplemented with

¹ National Center for Education Statistics (2023), Profile of State Data Capacity in 2019 and 2020: Statewide Longitudinal Data Systems (SLDS) Survey Descriptive Statistics. Retrieved from:

<https://nces.ed.gov/pubs2022/2022051.pdf>

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other data sources. For example, one research study in Delaware found that using local educational agencies' (LEAs) records as a sole data source led to systematic errors that excluded 11 percent of valid CTE concentrators, including those from special populations.² To reduce under counting of CTE concentrators, Delaware now uses a hybrid system that principally identifies CTE concentrators using student transcript data collected in their SLDS, but still gives LEAs the opportunity to identify additional CTE concentrators if they have data that are not in SLDS, such as student transcripts from out of State.

b. May a State establish additional requirements for the identification of secondary CTE concentrators beyond the statutory definition in section 3(12) of Perkins V, such as specifying the number of credits, the grades a student must earn, or the types of CTE courses that must be completed?

No. When identifying secondary CTE concentrators, a State may not add additional requirements that are not in the statutory definition. The statute defines a secondary CTE concentrator as “a student served by an eligible recipient who has completed at least 2 courses in a single career and technical education program or program of study” (section 3(12)(A) of Perkins V) and does not delineate any additional requirements to be considered a CTE concentrator. Some States have sought to establish additional requirements for the identification of secondary CTE concentrators, such as specifying that a student must earn a grade of 2.0 in each CTE course or specifying that the second course must be at the advanced level. The Department has informed these States that the additional requirements are impermissible for the purposes of identifying secondary CTE concentrators under Perkins V as they narrow the statutorily required definition and may result in excluding students that meet the statutory definition.

c. May a State establish additional requirements for the identification of postsecondary CTE concentrators beyond the statutory definition in section 3(12) of Perkins V, such as specifying the grades a student must earn?

No. A State may not add other requirements to the statutory definition, such as a minimum GPA, in identifying CTE concentrators at the postsecondary level. The statutory definition of CTE concentrator at the postsecondary level is “a student enrolled in an eligible recipient who has— (i) earned at least 12 credits within a career and technical education program or program of study; or (ii) completed such a program if the program encompasses fewer than 12 credits or the equivalent in total” (section 3(12)(B) of Perkins V). As such, States may not add other requirements as they may narrow the statutorily required definition and result in excluding students who otherwise would meet the statutory definition.

² Huang, Y., Lee, H., et al. (2024), “Misclassification of Career and Technical Education Concentrators: Analysis and Policy Recommendations” (EdWorking Paper 23-889), Annenberg Institute at Brown University. Retrieved from: <https://edworkingpapers.com/ai23-889>. The 11% CTE concentrators that were excluded from Delaware’s CTE concentrator count were not identified by LEAs were more likely to be males, English language learners, students with individualized education plans, and students who were eligible for free and reduced-price lunches under the National School Lunch Program.

2. Middle Grades

a. **How may States support middle schoolers in CTE Programs?**

Perkins V, for the first time, authorizes funds to be used for middle grades, and these funds may be used to support activities in grades 5 to 8.³ Specifically, section 3(5)(D) of the Act expanded the definition of CTE programs to include career exploration at the high school level or as early as the middle grades. Similarly, States may support “career exploration and career development activities,” which are provided, “through an organized, systemic framework designed to aid students, including in the middle grades, before enrolling and while participating in a CTE program,” described in section 135(b)(1) of the Act. Middle grades may also include “introductory courses or activities focused on career exploration and career awareness” which is described in section 135(b)(1)(A) of the Act.

CTE programming in middle grades often focuses on career exploration but could also provide information about available high school CTE programs, enrollment requirements, and options available to students preparing for the transition into high school. Providing clarity to eligible recipients in the types of programs, activities, or student supports that are funded under Perkins V is important because State requirements and policies may vary significantly. Therefore, States should take into consideration the type of information and supports that students and their families need to make informed decisions about their students’ secondary education.

3. Recognized Postsecondary Credentials

a. **How often might States publish information on which recognized postsecondary credentials they include in their accountability model?⁴**

States may update and publish a list of their recognized postsecondary credentials as frequently as they deem necessary. The Department recommends that for those industry-recognized credentials that the State includes in its calculation of CTE concentrator attainment of a recognized postsecondary credential, that the State update this list at least every other year and in a time frame that occurs prior to the date eligible recipients complete the comprehensive local needs assessment (CLNA) under section 134(c) of Perkins V. Specifically, the CLNA describes how the CTE programs offered by an eligible recipient are “aligned” to State, regional, Tribal, or local in-demand industry sectors or occupations identified by the State or local workforce development boards or are “designed to meet local education or economic needs not

³ The Perkins statute defines “middle grades” as it is defined in section 8101(32) of the Elementary and Secondary Education Act of 1965, described in section 3(5)(D) of the Act.

⁴ Two of the core indicators of performance in Perkins V measure the attainment of a “recognized postsecondary credential” by CTE concentrators. Section 113(b)(2)(A)(iv) of Perkins V gives States a choice among three secondary program quality indicators, one of which is attainment of a recognized postsecondary credential (Section 113(b)(2)(A)(iv)(I)(aa)). Section 113(b)(2)(B)(ii) of Perkins V establishes as a core indicator of performance the percentage of postsecondary CTE concentrators who receive a recognized postsecondary credential during participation in or within 1 year of program completion. Perkins V uses the definition of “recognized postsecondary credential” from section 3(52) of the Workforce Innovation and Opportunity Act, which is “a credential consisting of an industry-recognized certificate or certification, a certificate of completion of an apprenticeship, a license recognized by a State or the Federal Government, or an associate or baccalaureate degree.”

identified by State boards or local workforce development boards,” which is described in section 134(c)(2)(B)(ii) of the Act. Regularly updating the list of credentials to coincide with the biennial CLNA may provide eligible recipients with current information about in-demand industry sectors or occupations and opportunities to expand the types of credentials that are available in CTE programs. The results of the CLNA also focus how eligible recipients use subgrant funds, which is described in section 135(a) of the Act, and updated information on recognized postsecondary credentials may help to support how eligible recipients apply their local funds.

b. How might States publish information on which recognized postsecondary credentials they include in their accountability model?

There are multiple approaches that States could use to make this information available to the public such as posting it publicly in an easily accessible location, holding meetings with various stakeholders to share information, or disseminating the information through various channels, manuals, or administrative policy or procedures. For example, Tennessee developed a process where, each year, schools, businesses, and other organizations submit newly identified postsecondary credentials for review and consideration in the State’s approach to measure postsecondary recognized credentials.⁵ These credentials are then vetted by a team of educators, employers, and multiple State agencies including the State workforce development board. Postsecondary credentials that meet the State’s established framework are approved and then categorized into three tiers aligned with employer and industry value (e.g., Tier 1 – “Recognized,” Tier 2 – “Valued,” or Tier 3 “Preferred”). The list is organized by tier and career cluster and posted publicly on the Tennessee Department of Education website annually. A State may also wish to append information regarding their list of postsecondary recognized credentials to their data manuals or to similar tools that provide guidance to LEAs on how data are reported.

4. Postsecondary Credits in High School

a. Can States determine an appropriate threshold level of credits when determining which students count in their measurement of whether a CTE concentrator has attained postsecondary credits for purposes of measuring CTE program quality?

Yes. The statute defines this quality indicator as “the percentage of CTE concentrators graduating from high school *having attained postsecondary credits* [emphasis added] in the relevant career and technical education program or program of study earned through a dual or concurrent enrollment program or another credit transfer agreement” (section 113(b)(2)(A)(iv)(bb)). States may establish the number of postsecondary credits that must be attained for a CTE concentrator to be included in the numerator of the indicator to support better student postsecondary and wage outcomes. Indiana, for example, requires a CTE concentrator to earn at least 9 postsecondary credits in courses that map toward a postsecondary certificate or degree program to be included in the numerator.⁶ States may also set thresholds for the attainment of postsecondary credits to include a minimum number of

⁵ Tennessee Department of Education (2023), Tennessee Promoted Student Industry Credentials. Retrieved from: https://www.tn.gov/content/dam/tn/education/ccte/eps/Tennessee_Promoted_Industry_Credential_Report_2024_final.pdf.

⁶ Based on Perkins V State information submitted to the Department in 2024.

credits and the types of credit transfer agreements that they include in this measurement, such as requiring guaranteed credit transfer for all credits earned in high school to be accepted at all State institutions of higher education. Earning postsecondary credits through dual or concurrent enrollment is an evidence-based strategy to increase high school achievement and completion, and has been found to increase and accelerate postsecondary enrollment and credential attainment.⁷ Research on early college high schools in which students earned a year (or nearly a year) of college credits during in high school shows improved high school academic achievement and increased likelihood of high school graduation, postsecondary enrollment, and postsecondary credential attainment, among other impacts.⁸

Given the research included in this FAQ, States may wish to consider the benefits of establishing a minimum threshold that is greater than three postsecondary credits for this indicator, which may be more beneficial to CTE concentrators who complete this coursework. States may also wish to consider increasing the availability of academic and technical dual enrollment courses, including early college programs, that award postsecondary credits to students as part of a secondary CTE program or program of study. For example, a recent rigorous study on dual enrollment CTE programs where participants earned an average of 5.8 college credits found that participation increased the likelihood of high school graduation and enrolling at a 2-year institution of higher education.⁹ In addition, a study that used data from the National Education Longitudinal Study of 1988 found that high school students who earned six postsecondary credits were 12 percentage points more likely to earn a postsecondary credential than nonparticipants. There was no difference for students who only earned three postsecondary credits.¹⁰

5. **Work-Based Learning**

a. **Can States determine an appropriate threshold for work-based learning (WBL) when measuring the percentage of CTE concentrators graduating from high school having participated in WBL for purposes of measuring CTE program quality?**

Yes. The Perkins V statute includes as a performance indicator “the percentage of CTE concentrators graduating from high school having participated in work-based learning” (section 113(b)(2)(A)(iv)(cc)) and subsequently defines work-based learning as, “sustained interactions

⁷ What Works Clearinghouse, Institute of Education Sciences, U.S. Department of Education (2017), Dual Enrollment Programs: WWC Intervention Report. Retrieved from: https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_dual_enrollment_022817.pdf.

⁸ See Berger, A., (2013), Early College, Early Success: Early College High School Initiative Impact Study, American Institutes of Research. Retrieved from:

https://www.air.org/sites/default/files/downloads/report/ECHSI_Impact_Study_Report_Final1_0.pdf and Edmunds, J.A., et al. (2016), Smoothing the Transition to Postsecondary Education: The Impact of the Early College Model, Journal of Research on Educational Effectiveness, v10 n2 p297-325 2017. Retrieved from: <https://www.tandfonline.com/doi/full/10.1080/19345747.2016.1191574>.

⁹ Edmunds, J.A. et al. (2024), "CTE-focused dual enrollment: Participation and outcomes," Education Finance and Policy 19, no. 4 (2024): 612-633. Retrieved from: <https://direct.mit.edu/edfp/article/19/4/612/117491/CTE-Focused-Dual-Enrollment-Participation>.

¹⁰ An, B.P., (2013), “The Impact of Dual Enrollment on College Degree Attainment: Do Low-SES Students Benefit?” Educational Evaluation and Policy Analysis (March 2013,) Vol. 35, No. 1, pp. 57–75. Retrieved from: <https://journals.sagepub.com/doi/full/10.3102/0162373712461933>.

with industry or community professionals...” (section 3(55)). In practice, this could include internships, Registered Apprenticeships, mentoring, or a combination of these experiences that occur in a single year or over the duration of a student’s experience in a CTE program.¹¹ There is currently limited research on the amount of work-based learning that yields better student academic and employment outcomes.¹² However, related research provides some principles States could consider.

For example, summer youth employment is a form of work-based learning that is usually six weeks in duration with students participating in work for approximately thirty hours per week or 180 hours in total. Research evaluating summer youth employment programs found that the benefits to students increase as they increase time spent beyond the 180 hours, such as participating in multiple years of programing or completing more than 180 hours in one summer.¹³

Several States, including Maryland and Wisconsin, offer youth apprenticeship programs which require a more substantial investment of time, typically 450 hours or more per year. The intense work-based learning structure found in youth apprenticeships mirrors a gold-standard, evidence-based work-based learning model:¹⁴ Registered Apprenticeship.¹⁵ These kinds of high-quality work-based learning opportunities can also improve earnings outcomes for students.¹⁶

¹¹ Giffin, J. et al. (2018), Work-Based Learning Definitions: State Agencies: Themes From States and National Organizations, College and Career Readiness Center, American Institutes of Research. Retrieved from: https://www.air.org/sites/default/files/2024-07/WorkBasedLearning_StateDefinitions.pdf.

¹² Shields, K. A., Hutchins, B. C., Reese, K., Fletcher, E. C., & Hughes, K. (2024). Building robust district work-based learning data collection systems. American Institutes for Research, Career and Technical Education Research Network. <https://cteresearchnetwork.org/resources/district-work-based-learning-data-collection>.

¹³ Schwartz, Amy Ellen, Jacob Leos-Urbel, Joel McMurry, and Matthew Wiswall. "Making summer matter: The impact of youth employment on academic performance." *Quantitative Economics* 12, no. 2 (2021): 477-504. Retrieved from: <https://www.econometricsociety.org/publications/quantitative-economics/2021/05/01/Making-summer-matter-The-impact-of-youth-employment-on-academic-performance>.

¹⁴ The U.S. Department of Labor’s [Clearinghouse for Labor Evaluation and Research](#) found that several studies using quasi-experimental designs provided moderate causal evidence that participation in Registered Apprenticeship increases rates of employment and earnings. They include: (1) Reed, D., Liu, A., Kleinman, R., Mastri, A., Reed, D., Sattar, S., & Ziegler, J. (2012). An effectiveness assessment and cost-benefit analysis of Registered Apprenticeship in 10 states. Oakland, CA: Mathematica Policy Research. Retrieved from:

<https://www.mathematica.org/publications/an-effectiveness-assessment-and-costbenefit-analysis-of-registered-apprenticeship-in-10-states>.

(2) Berger-Gross, A. (2021). The long-term impact of apprenticeship on the employment outcomes of displaced workers. Retrieved from: <https://dx.doi.org/10.2139/ssrn.3976475>.

(3) Dula, C. (2021). The 2021 net impact and cost-benefit evaluation of Washington state’s workforce development programs. Washington Workforce Training and Education Coordinating Board. Retrieved from:

https://www.wtb.wa.gov/wp-content/uploads/2021/05/Net-Impact-Study_FINAL.pdf.

¹⁵ See Department of Labor, Registered Apprenticeship Program;

<https://www.apprenticeship.gov/employers/registered-apprenticeship-program#:~:text=Registered%20Apprenticeship%20is%20an%20industry,portable%2C%20nationally%2Drecognized%20credential>.

¹⁶ For example, see Kemple, “Career Academies, Long-Term Impacts on Labor Market Outcomes, Educational Attainment, and Transitions to Adulthood”, MDRC, (2008) Retrieved from:

https://www.mdrc.org/sites/default/files/full_50.pdf

Three of the 31 States that report work-based learning participation as their program quality indicator include thresholds, with the highest threshold currently set at 250 hours. Given current State practices and the research outlined above, a State interested in setting a threshold might consider, for example, a threshold that goes beyond the research provided for summer youth employment programs, or more than 180 hours. For example, States might consider a typical senior year, with students participating in a work-based learning program that includes multiple forms of WBL, such as job shadowing and an internship, for roughly one day per week for one school year,¹⁷ which would be more than 225 hours.

6. **High Skill, High Wage, or In-Demand**

a. **Why is it important for States to operationalize the terms high-skill and high-wage occupations and industries?**

The terms “high-skill” and “high-wage” are used throughout Perkins V, and thus operationalizing such terms increases compliance and facilitates implementation with Perkins V consistent with congressional intent. For example, section 122(d)(9)(C) requires that States describe their “program strategies for special populations” and “how individuals who are members of special populations” will be provided with programs “designed... for further learning and for high-skill, high-wage, or in-demand industry sectors or occupations” in their State plans. In implementing these statutory requirements, States could consider setting a threshold, described further in this FAQ.

b. **How could States set a threshold for identifying high-wage occupations and industries?**

Given the purpose and goals of Perkins V, States could set a threshold for what constitutes “high-wage” occupations and industries by comparing program outcomes against an established wage benchmark in the State or regionally. For example, States may consider the all-industry annual median or average wage¹⁸ for the most recent year. To source the all-industry annual median or average wage for the State, States might consider using the annual U.S. Census American Community Survey (ACS) data.¹⁹ States might also consider data collected through the Department of Labor’s Bureau of Labor Statistics (BLS), which are available online on the BLS website nationally, by State, and by major metropolitan areas.²⁰ States may also produce similar types of labor market information and may make this information available to the public.²¹ The

¹⁷ Data from the Education Commission of the States indicates that the average number of school days in States that prescribe a minimum number of days of instruction is 178.95 days, or 36 weeks, and researchers using data from the National Teacher and Principal Survey estimate that the typical public school in the U.S. is in session for 6.87 hours per day.

¹⁸ See Bureau of Labor Statistics, U.S. Department of Labor (n.d.) Graphics for Economic News Releases, Employment, and Average hourly earnings by Industry. Retrieved from: <https://www.bls.gov/charts/employment-situation/employment-and-average-hourly-earnings-by-industry-bubble.htm>.

¹⁹ See Census Bureau, U.S. Department of Commerce (n.d.) American Community Survey Data. Retrieved from: <https://www.census.gov/programs-surveys/acs/data.html>.

²⁰ See Bureau of Labor Statistics, U.S. Department of Labor (n.d.), Occupational Employment and Wage Statistics. Retrieved from: <https://www.bls.gov/oes/tables.htm>.

²¹ State-developed labor market information is accessible through the [Projections Central](#), a U.S. Department of Labor-supported website that connects users to occupational projections from each State.

median wage is also the reference point that is most commonly used by States that have established definitions of “high-wage” in their Perkins V State plan.

Many States have already undertaken efforts to set “high-wage” thresholds. According to current Perkins V State Plans, eight States have established definitions of “high-wage” that exceed the all-industry statewide median wage. Seven additional States have definitions that are similar to the all-industry statewide median wage like the all-industry statewide average wage or use another wage threshold that is commonly understood. To ensure that no benchmark for CTE programs falls below a minimally acceptable standard, States could also include a floor, such as a wage that is higher than what a typical high school graduate makes in the State or nationally.

ACS and BLS data also allow States to examine and compare wages across their State and larger geographic regions, such as in neighboring States and geographic regions (Northeast, Southwest, West, Southeast, Midwest), and may provide additional data which can supplement what the State or region produces for use by stakeholders. This comparability of data may be helpful for States or regions that have a percentage of their workforce that live and/or work in other States.

c. How could States assess whether Perkins funded CTE programs prepare students for high-wage occupations or industries?

States could assess actual wage or earnings outcomes for Perkins program participants to determine progress toward meeting the high-wage occupation goals in their State plan. To implement this assessment, States can consider strategies such as using administrative outcome data to track student wage or earnings outcomes, setting the time horizon to evaluate post-program outcomes, and identifying appropriate benchmarks for success.

States can utilize administrative data, such as unemployment insurance wage records, to measure the employment and earnings of program participants. For example, Minnesota developed the Graduate Employment Outcomes tool, which matches postsecondary records with employment records to show employment and wage outcomes by program.²² States that participate in the State Wage Interchange System (SWIS) may also have access to more robust data to track individuals who are employed in other States.

For postsecondary programs, States should determine the appropriate time horizon and benchmark to gauge whether the high-wage standard is met. Evidence on labor market returns to participation in postsecondary programs typically show nearly immediate wage increases with some changes over time.²³ Based on this evidence, States could consider assessing whether a program leads to high-wage outcomes after three years. A State could measure the earnings

²² For Example, See Minnesota Office of Higher Education, employment Outcomes tool; <https://www.ohe.state.mn.us/mPg.cfm?pageID=2111>. Received from, <https://careertech.org/resource-center/series/making-good-on-the-promise/>.

²³ See, for example, Carruthers, Celeste K., and Thomas Sanford. "Way station or launching pad? Unpacking the returns to adult technical education." *Journal of Public Economics* 165 (2018): 146-159 as well as Stevens, Ann Huff, Michal Kurlaender, and Michel Grosz. "Career technical education and labor market outcomes: Evidence from California community colleges." *Journal of Human Resources* 54, no. 4 (2019): 986-1036.

of postsecondary CTE completers three years after program completion relative to a comparison group of individuals aged 24–35 with a regular high school diploma.²⁴

For secondary school students, some CTE programs may lead to immediate employment, while others may lead to future postsecondary study or both, including registered apprenticeships. To most accurately capture the wage outcomes of graduates in these programs, States are encouraged to include all secondary graduates in their examination of wage outcomes. Based on evidence of high school graduate earnings, States could examine whether, for example, 3–6 years after completion of a high school CTE program may be appropriate to account for job search and for completers to show up in unemployment insurance (UI) wage record data systems.²⁵ States can also factor in the outcomes that are reported in performance indicators for secondary CTE concentrators, such as postsecondary enrollment, military service, and AmeriCorps or Peace Corps service.

d. What types of information and data might States consider as they operationalize “high-skill” occupations and industries?

States’ definitions of “high-skill” occupations and industries could consider multiple factors based on occupational data and established benchmarks for skills that are associated with an occupation or industry. While formal education is a component of developing skills among workers, training and experience are also important.²⁶ Further, States’ definitions of “high-skill” occupations and industries may allow for occupational and industry comparison, which may include common measures of skill such as level of education, typical experience required, type of training needed, a skills taxonomy, or other information that allows occupations and industries to be classified based on a State’s definition.

For example, the U.S. Department of Labor’s O*NET system is a database that describes 923 occupations based on information collected through ongoing surveys of workers and consultations with occupation experts. O*NET groups occupations into one of five categories identified as “Job Zones” based on the levels of education, experience, and training necessary to perform the occupation:²⁷

- Job Zone 1: Occupations that require little or no preparation, such as a dishwasher.
- Job Zone 2: Occupations that require some preparation, such as a security guard.
- Job Zone 3: Occupations that require medium preparation, such as an electrician.
- Job Zone 4: Occupations that require considerable preparation, such as an aerospace engineer.

²⁴ As defined by section 8101(43) of the Elementary and Secondary Education Act of 1965.

²⁵ For example, see Ecton, Walter G., and Shaun M. Dougherty. "Heterogeneity in high school career and technical education outcomes." *Educational Evaluation and Policy Analysis* 45, no. 1 (2023): 157-181 as well as Bishop, John H., and Ferran Mane. "The impacts of career-technical education on high school labor market success." *Economics of Education Review* 23, no. 4 (2004): 381-402.

²⁶ For Example: Mincer, Jacob. "On-the-job training: Costs, returns, and some implications." *Journal of Political Economy* 70, no. 5, Part 2 (1962): 50-79.

²⁷ The National Center for O*NET Development (2008), Procedures for O*NET Job Zone Assignment. Retrieved from: https://www.onetcenter.org/dl_files/JobZoneProcedure.pdf.

- Job Zone 5: Occupations that require extensive preparation, such as an anesthesiologist.²⁸

Using this example, States could establish a definition that corresponds to one or several O*NET Job Zones that they believe best represents the types of high-skill occupations and industries in which CTE programs and programs of study are designed to prepare students to enter (such as Zones 3 and 4). Similarly, States could also establish a floor based on the lowest O*NET Job Zone that they believe best represents their definition of high-skill and include occupations that fall into that zone as well as those in higher zones (such as equal to or greater than Zone 3).

As another example, States could use occupational data collected through the BLS, specifically the education and training assignments by detailed occupation.²⁹ This table includes information on 832 occupations and applies common measures of skill such as typical education needed for entry,³⁰ work experience,³¹ and typical on-the-job training (OJT)³² across the occupations it represents. This table also links to the national employment matrix code and occupational outlook handbook.³³ Using this example, States could establish a definition of high-skill that corresponds to one or more levels of typical education needed for entry, work experience, and/or typical OJT. For example, States could craft a definition that uses multiple occupational categories to define “high-skill” occupations such as an occupation, industry sector, or industry into which entry by a new employee typically requires completion of a Baccalaureate degree, Associate degree, Registered Apprenticeship, or 12 months of OJT. In this example, multiple levels of typical education, work experience, and OJT are included to identify those occupations and industries that align to high-skill CTE programs as defined by the State. States could also supplement data provided by the BLS or other sources to include occupations that correspond with the State list of approved recognized postsecondary credentials to include additional occupational data captured by the State within their definition.

These two examples provide States with different types of occupational data which also allow States to examine comparable data across their State and in other regions, such as in neighboring States, geographic regions such as the Northeast, Southwest, West, Southeast, Midwest, or nationally. It may also provide additional data beyond what the State or region produces for use by stakeholders. This comparability of data may be helpful for States or regions that have a percentage of their workforce that live and/or work in other States. Similarly,

²⁸ O*NET Online (n.d.), O*NET OnLine Help: Job Zones. Retrieved from: <https://www.onetonline.org/help/online/zones>.

²⁹ See Bureau of Labor Statistics, U.S. Department of Labor (n.d.), Employment Projections, Education and Training Assignments by Detailed Occupations. Retrieved from: <https://www.bls.gov/emp/tables/education-and-training-by-occupation.htm>.

³⁰ Represents the typical education level most workers need to enter an occupation which includes: Doctoral/professional degree, Master's degree, Bachelor's degree, Associate degree, Postsecondary nondegree award, Some college/no degree, High school diploma/equivalent, No formal educational credential

³¹ Indicates if work experience in a related occupation is commonly considered necessary by employers for entry into the occupation, or is a commonly accepted substitute for formal types of training and assignments for this category and includes: 5 years or more, Less than 5 years, None.

³² Indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation which includes: Internship/residency, Apprenticeship, Long-term OJT/more than 12 months, Moderate-term OJT/more than 1 month and up to 12 months, Short-term OJT/1 month or less, None.

³³ See Bureau of Labor Statistics, U.S. Department of Labor (n.d.), Employment Projections, Education and Training Assignments by Detailed Occupations. Retrieved from: <https://www.bls.gov/emp/tables/education-and-training-by-occupation.htm>.

comparable data may support eligible recipients who are near to neighboring States or are influenced by regional workforce trends. States may also produce similar types of labor market information and may make this information available to the public. State-developed labor market information is accessible through the [Projections Central website](#),³⁴ which is a website supported by the U.S. Department of Labor that collects data and connects users to occupational projections from each State.

e. How must States define “in-demand” occupations or sectors?

Section 3(26) of Perkins V defines an in-demand industry or sector or occupation as in section 3 of the Workforce Innovation and Opportunity Act, which in turn defines this term to mean:

“(i) an industry sector that has a substantial current or potential impact (including through jobs that lead to economic self-sufficiency and opportunities for advancement) on the State, regional, or local economy, as appropriate, and that contributes to the growth or stability of other supporting businesses, or the growth of other industry sectors; or

(ii) an occupation that currently has or is projected to have a number of positions (including positions that lead to economic self-sufficiency and opportunities for advancement) in an industry sector so as to have a significant impact on the State, regional, or local economy, as appropriate.

(B) DETERMINATION—The determination of whether an industry sector or occupation is in-demand under this paragraph shall be made by the State board or local board, as appropriate, using State and regional business and labor market projections, including the use of labor market information.”

States must use this definition of “in-demand” occupations or sectors.

³⁴ See Projection Central from US Department of Labor, Retrieved From: <https://projectionscentral.org/home>.