Overview

The U.S. Department of Education’s Office of Career, Technical, and Adult Education (OCTAE) offers states and other career and technical education (CTE) providers technical assistance (TA) on topics related to CTE data collection, reporting, and accountability through its TA to States program.

The South Carolina Department of Education (SCDOE) applied for TA in 2019–20 to receive support on how to define CTE concentrators to track progress through a CTE program, to ensure that the size, scope, and quality (SSQ) definitions that it had selected were appropriate for its programs and did not present barriers to rural districts, to explore methods for tracking CTE student outcomes and industry-recognized credential attainment, and to survey strategies for setting state-determined performance levels when valid historical data are unavailable.
Introduction
The U.S. Department of Education, OCTAE, offers states the opportunity to apply for and receive TA on topics related to CTE data and accountability. RTI International provides research support and TA under contract to OCTAE.

SCDOE applied for TA in fall 2019. TA specialists from RTI (i.e., “the TA team”) coordinated with Maria Swygert, Team Lead, Federal and State Accountability and Fiscal Compliance and Angel Malone, CTE Director to identify and address South Carolina’s TA questions.
Questions

The TA team and staff from SCDOE reviewed the state’s TA needs during an October 2019 kick-off meeting and discussed TA findings during check-in meetings in January, March, and June 2020. The TA was guided by the following questions:

- **Defining CTE concentrators**
  - How are states defining *CTE concentrators* to align to the statutory (i.e., *Perkins V*) definition in ways that track students’ progression through a program sequence?

- **Defining SSQ**
  - What specific, measurable program attributes are included in SSQ definitions?

- **Industry-recognized credential (IRC) data collection**
  - How are states collecting data on student attainment of IRCs, particularly from IRC vendors?
  - How have states ensured the quality of IRC data, particularly from IRC vendors?

- **State-determined performance levels**
  - How have states set target performance levels, particularly in the absence of reliable historical data?

- **Tracking CTE student outcomes**
  - How are states adjusting to new Perkins reporting requirements for student outcomes?

- **Alternative Career and Technical Student Organizations (CTSOs)**
  - How are states promoting student leadership opportunities beyond CTSOs with a national presence?
Recommendations (Slide 1)

The TA team recommends that the SCDOE consider the following strategies:

**Defining and tracking CTE concentrators**—South Carolina’s concentrator definition reflects the Perkins V statutory definition and is like that of other states. States such as Arkansas, Delaware, District of Columbia, and Oregon also require concentrators to complete advanced coursework. Following their lead, South Carolina could designate relatively advanced CTE courses as “concentrator level” and require completion of at least one concentrator-level course, rather than any courses in a single program or cluster, for concentrator status.

**Defining CTE program SSQ**—To ensure that the state’s SSQ definitions are challenging yet achievable by local education agencies (LEAs) with varying enrollments, capacity, funding, and access to local community and industry resources, the state could adopt a continuous review process for SSQ definitions. This process would invite district and school CTE staff to comment on the criteria and provide feedback on how the SSQ definitions have hindered or supported CTE programs.

The state could also consider offering options for meeting each SSQ standard and allow districts to choose those best suited to local conditions. For example, if labor market alignment is used as a measure of program quality, districts might be required to demonstrate that they prepare students for occupations that meet at least two of the following three criteria: high skill, high wage, or in demand.
**Recommendations (Slide 2)**

Collecting student credential attainment from vendors—Data sharing agreements with credentialing organizations take time and effort to establish and maintain but can yield detailed and comprehensive reliable data on credential attainment. To access vendor data, the state will need to dedicate staff time to managing memoranda of understanding (MOUs) and relationships with individual credentialing organizations, establish incentives for the organizations to participate (e.g., requiring data sharing for a vendor to be included on a state list of approved credentials), and specify the data the organizations will provide to enable matching to student records.

State-determined performance levels—Like other states, South Carolina based its state-determined performance levels for Perkins V accountability indicators on two prior years of data. Due to a change in the examinations used to assess academic proficiency, South Carolina did not have historical data available to set targets for the academic proficiency indicators (2S1, 2S2, and 2S3). For indicators lacking comparable historical data, states including Ohio, Oklahoma, Oregon, and Virginia set levels conservatively and plan to increase the levels if needed during the second year of state plan implementation, as allowed under Perkins V.

SCDOE echoed the approach of these states and set performance levels for indicators lacking historical data conservatively. The state should review the Math (2S2) and Science (2S3) performance levels to assess the need for adjustments. The state should also review indicator 2S1 (Reading/Language Arts) following the transition to a new exam in 2021–22.
Recommendations (Slide 3)

Tracking CTE concentrator outcomes—Surveys of CTE graduates are labor intensive and typically yield data on a small subset of graduates. To collect higher quality data on more graduates, South Carolina might follow the example of a growing number of states that have established cross-agency data sharing to track CTE concentrators’ postsecondary and employment outcomes. The state’s recent award of $3.3 million from the National Center for Education Statistics State Longitudinal Data Systems Grant program to connect K–12 and early childhood education data could serve as a precedent for future cross-agency data sharing. For CTE, the state could pursue connections between the K–12 and employment and postsecondary data systems.

Alternative CTSOs—To expand students’ access to CTSOs beyond those with national representation, South Carolina could establish a process for approving sub-national CTSOs. This process should include a set of criteria for vetting CTSOs, such as those used by Colorado and Iowa that were included in materials shared by the TA team with the state.
Defining CTE Concentrators

Secondary CTE concentrators in Perkins V
A student served by an eligible recipient who has completed at least two courses in a single career and technical education program or program of study. (Sec. 3 (12))

At least eight states have specified the types of courses needed to achieve concentrator status:

- Completion of a specific course in a CTE program sequence (District of Columbia, Michigan, Utah):
  These states have identified relatively advanced courses as “concentrator-level” courses that signal that a student has achieved concentrator status.

- Four states require that concentrators complete intermediate or advanced coursework (California, Idaho, Nebraska, Oregon):
  - Two states *exclude* introductory coursework from counting toward concentrator status.
  - By contrast, students in Arkansas must complete an introductory course (along with an intermediate or advanced course in the same sequence) to reach concentrator status.
  - California requires that students earn a C- or better in their CTE program’s capstone course to be counted as a concentrator.
Defining CTE Concentrators: Oregon Example

A secondary CTE concentrator is a student who earns at least two credits in a single CTE Program of Study. One of those credits must be earned through a course or courses identified as intermediate or advanced. * - Oregon Perkins V State Plan

CTE courses in Oregon are classified as introductory, intermediate, or advanced. Two rationales underpin Oregon’s requirement for concentrators to complete advanced coursework:

- Research demonstrates that students who complete higher level CTE coursework have better education and employment outcomes (Kreisman and Stange 2016).
- Schools are eligible for state career pathways incentive funding for students who complete 3+ CTE credits—requiring that concentrators complete at least intermediate coursework aligns the concentrator definition with the state policy.

*Students may skip courses within the sequence and still achieve concentrator status provided at least one of the courses they complete is intermediate or advanced.
Defining CTE Concentrators: Arkansas Example

A student that has completed one foundational CTE credit and one additional CTE credit for a total of two CTE credits within the same approved CTE program of study.

-Draft State-Determined Performance Levels and Draft Perkins V State Plan

Foundational credits are required—Three rationales support this requirement:

1. To provide a solid foundation and depth of knowledge in the program sequence
2. To ensure consistency in the coursework that students complete by the time they reach concentrator status
3. To promote early participation in CTE programs (foundational courses are available in early grades)
Defining SSQ: Size (Slide 1)

Among the 23 Perkins V state plans reviewed, the most common measures of size are as follows:

- **Number of programs or programs of study:** An LEA must offer the following:
  - Minimum of 12 programs spanning eight career fields in districts with more than 2,250 students in grades 7–12 or 10 programs in eight career fields in smaller districts (Ohio)
  - Variation by total high school enrollment ([Texas](#), p. 47)
    - At least one program in schools with up to 500 students
    - At least two programs in schools with 501 to 1,000 students
    - At least three programs in schools with 1,001 to 2,000 students
    - At least four programs in schools with 2,001 to 5,000 students
    - At least five programs in schools with 5,001 to 10,000 students
    - At least six programs in schools with more than 10,000 students
  - At least one state-approved or state-model program of study (Iowa, Nebraska)

- **Student enrollment**
  - Ten students per program per year (New Jersey)
  - Beginning class enrollment of 15 (West Virginia)
Defining SSQ: Size (Slide 2)

- Capacity—such as adequate staffing or equipment
  - Maintain student-teacher ratios appropriate for equipment provided (Georgia) or sufficient to ensure “quality student experience” (Idaho)
  - Program rates “Level 3 or higher” for Facilities and Equipment on CTE program quality rubric (Oregon, bottom of page 3):
    - Level 1: Provides basic facilities and equipment for elective coursework
    - Level 2: Provides basic facilities and equipment (Level 1) with plans to upgrade to industry-standard facilities and equipment
    - Level 3: Provides industry-standard equipment and facilities appropriate for workforce needs
    - Level 4: Provides specialized equipment used to meet industry standards certification or workforce needs

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<tr>
<th>Criteria types for SSQ: Size</th>
<th>State plans including</th>
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<tbody>
<tr>
<td>Minimum # of programs/programs of study</td>
<td>Number: 12; Percentage: 52%</td>
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<tr>
<td>Student enrollment</td>
<td>Number: 11; Percentage: 47%</td>
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<tr>
<td>Capacity (adequate equipment, staffing)</td>
<td>Number: 9; Percentage: 39%</td>
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<tr>
<td>Minimum # of industries/sectors covered</td>
<td>Number: 4; Percentage: 17%</td>
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\( n = 23 \)
Defining SSQ: Scope

- Postsecondary articulation/alignment
  - Opportunities for dual enrollment/articulated credit (Alabama, Idaho, Wyoming)
- Work-based learning (WBL) opportunities
  - Provides WBL experience (Florida, Georgia) or reports WBL participation (Idaho)
- Opportunities for technical skill attainment or credential attainment
  - Aligned to state career readiness standards with opportunities to earn credentials (Nebraska)
- Alignment to industry needs and/or labor market information
  - Curriculum aligns to business needs (West Virginia)
  - Program prepares students for high-wage, high-skill, or in-demand jobs (Idaho)

Criteria types for SSQ: Scope

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<th>Criteria Type</th>
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<td></td>
<td>Number</td>
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<tr>
<td>Demonstrates postsecondary alignment/articulation</td>
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<tr>
<td>Includes WBL opportunities</td>
<td>11</td>
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<tr>
<td>Promotes technical skill attainment</td>
<td>9</td>
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<tr>
<td>Provides opportunities for credential attainment</td>
<td>9</td>
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<tr>
<td>Alignment to industry needs/labor market information</td>
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n = 23
Defining SSQ: Quality

Criteria for scope and quality are distinct for each state but overlap across states. Some states, for example, include labor marker alignment under size and others include this measure under quality.

- **Equity in terms of CTE program access and performance**
  - Use of data to improve student success and close equity gaps (Idaho)
  - Implementation of support strategies to address achievement gaps across subgroups (Ohio)

- **Promotion of technical skill attainment**
  - Performance on technical skills assessment (Arizona, Idaho)
  - Programs administer at least one technical skills assessment every two years (Idaho)

- **Alignment to industry needs**
  - Offer programs that lead to high-wage, high-skill, or in-demand occupations (Georgia)

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<th>Criteria types for SSQ: Quality</th>
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<td>Promotes technical skills</td>
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<tr>
<td>Alignment to industry needs</td>
<td>8</td>
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<tr>
<td>Assessed based on performance indicators</td>
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\(n = 23\)
Defining SSQ: Summary

State definitions of SSQ reveal alignment and variation between states:

- **Size** definitions tend to focus on the number of CTE programs offered, program enrollment, and capacity (i.e., staffing and equipment)
- Definitions of **scope** are more varied, but opportunities for WBL learning and postsecondary articulation are most common
- **Quality** definitions are more varied still and include equitable access and performance, technical skill attainment, and alignment to industry need*

The TA team did not observe notable differences in how rural and urban states defined SSQ.

* “Alignment to industry need” proved to be a cross-cutting definitional element, figuring in definitions for SSQ depending on the state.
IRC Data Collection: The California CTE Outcomes Survey (Postsecondary)

The California Community College Chancellor’s Office surveys community college CTE participants in degree and non-degree programs 1.5–2 years after exit from the programs.

- Santa Rose Junior College administers the survey under contract to the Chancellor’s Office.
- Response rates vary from 29 to 38 percent, depending on the year.
- The survey collects the following information on CTE student outcomes:
  - Certification: Name and completion status
  - Completion of an apprenticeship after program exit
  - Journeyman’s certificate name
  - Employment type/status (pre- and post-program), length of job search
  - Industry of employment
  - WBL participation
IRC Data Collection: Data Sharing with Certification Providers

- Some states establish agreements for vendors to administer and provide data on a specific exam that the vendors offer, such as South Dakota’s arrangement with ACT for the National Career Readiness Certificate.

- Other states establish data-sharing agreements with test administrators, such as Certiport for Information Technology to access data for multiple exams (as South Carolina has done).
  - Other states using this approach include Florida, Iowa, Minnesota, and North Carolina.

- Comprehensive data sharing agreements: Tennessee requires certification vendors to sign an MOU to provide student data to the state education agency to have their exams included on the list of state-approved credentials (see next slide for more details).
IRC Data Collection: Spotlight on Tennessee

To be on Tennessee’s list of state-approved credentials, credentials must
- be recognized and valued by a career cluster advisory council made of industry representatives,
- align with a CTE course or program of study, and
- articulate to either postsecondary credits or hours or provide access to high-quality employment (i.e., above entry level).

Credential vendors must also agree to report student credential attainment data to the Tennessee Department of Education. Tennessee incentivizes credentials by including credentials in the state’s accountability system and in the state’s Ready Graduate indicator for the Every Student Succeeds Act (ESSA). Despite the benefits, maintaining MOUs with credential vendors presents challenges. Some of those challenges and potential solutions are listed below.

<table>
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<th>Challenges</th>
<th>Solutions</th>
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<tr>
<td>Identifying valued credentials at the state level</td>
<td>Establish a process for regularly updating credential list and associated vendors</td>
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<td>Managing vendor agreements over time</td>
<td>Prioritize credentials based on labor market needs, economic development priorities, and the number of CTE programs (or students) for which the credential is relevant</td>
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<tr>
<td>Lack of student identifiers in vendor data</td>
<td>Work with vendors to collect additional identifying information; include required data elements in MOUs with vendors</td>
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<tr>
<td>Completion data cannot be matched to all students</td>
<td>Ask LEAs to review data and supply proof of additional completions</td>
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Appendix
States can incentivize student IRC attainment and district reporting of IRC data by connecting credential attainment to funding or graduation requirements. States report data on credential attainment to receive the incentive funding or satisfy accountability requirements.

### Incentive Funding
- Kansas’ Excel in CTE program offers each school district $500 for every student who earns an IRC during high school or within six months of graduation.
- Florida’s Career and Professional Education Act offers up to $1,000 to public postsecondary and secondary institutions for each IRC students earn.
- Virginia's Workforce Credential Grant program offers incentives to community colleges and postsecondary students for IRC completion.

### Graduation requirements
- Students on Louisiana's career and technical diploma pathway ("Jump Start") must earn an IRC in order to graduate.
State-Determined Performance Levels

Based on a Perkins state plan review, states set their state-determined performance levels by

- using the average of past years’ performance (one to seven years, typically three years) as a baseline,
- applying Perkins V concentrator definitions retroactively and computing baseline levels based on those definitions,
- consulting with LEAs and stakeholder groups to assess whether the proposed targets were challenging as well as attainable, and
- aligning CTE performance indicators with ESSA targets (as feasible).

In the absence of valid statewide historical data, states are setting targets conservatively and planning for future adjustments. For example, Ohio plans to review its performance levels after two years of implementation as allowed by Perkins V. This is an option South Carolina may consider for indicators 2S1, 2S2, and 2S3, since the state will be using a different exam to assess student academic proficiency than it had used in prior Perkins reports.

States also have the option to adjust performance levels (pending U.S. Department of Education approval) based on unanticipated circumstances or changes to data collection methods for Perkins performance indicators. This is an additional option South Carolina might explore for indicator 2S1, if needed, as the state will be transitioning from the English 1 end-of-course exam to English 2 during the state plan period.
Tracking CTE Student Outcomes

Perkins V also requires states to report post-program participation in volunteer service through the National and Community Service Act of 1990 and the Peace Corps Act.

States employ one of two methods to gather CTE outcomes data:

- Student follow-up surveys
  - CTE programs send surveys to their former concentrators
  - Strengths: Easily updated to add new Perkins V categories
  - Drawbacks: Low response rates; students may be difficult to contact; may require significant staff resources to administer and process

- Longitudinal data system
  - Secondary student records are connected to data in other state agencies (e.g., postsecondary, workforce development, early childhood) or organizations (e.g., National Student Clearinghouse)
  - Strengths: Data are typically available on more students than surveys provide; less staff time/resources required to collect data
  - Drawbacks: Data security requirements can limit or complicate data-sharing agreements; introduction of new reporting requirements requires significant resources and time to adjust agreements and change data collection processes; match rates can be low (and in some states, lower than survey response rates)
Tracking CTE Student Outcomes: North Carolina Common Follow-Up System

- Longitudinal data system that links administrative records across six state agencies
  - North Carolina Department of Public Safety
  - North Carolina Department of Public Instruction
  - North Carolina Department of Commerce
  - North Carolina Department of Health and Human Services
  - North Carolina Community College System
  - University of North Carolina
- Purpose: Track education and employment outcomes for individuals in the state
- Strengths of the system
  - Automated; does not rely on follow-up surveys
  - Provides data on wages and size and industry of employing firm
  - Uses Common Educational Data Standards (CEDS) to harmonize reporting definitions across agencies
- Limitations
  - Does not include start/end date, full-time or part-time employment status, number of hours worked, occupation, or specific geographic location
  - Inconsistent mapping of data elements to CEDS definitions

See the Appendix for additional resources.
How Have States Promoted Student Leadership Opportunities Outside Traditional CTSOs?

States promote leadership opportunities for CTE students through one of the eight affiliate CTSOs of the National Coordinating Council for CTSOs (“NCC-CTSO affiliates”).

However, as Dr. José Figueroa, Education Program Specialist at OCTAE, noted, “each State has the authority to determine, within their jurisdiction, which CTSOs will be approved for the purpose of their CTE programs and possible [state or federal] funding.”

In other words, states can identify and approve other CTSOs, and several states have established processes for approval of “alternative” CTSOs beyond the eight referenced above—including Colorado, Iowa, and Georgia.

Details on CTSO approval processes for each of these states are presented in the following pages.
Spotlight: Alternative CTSOs in Colorado and Iowa

- Colorado CTE programs are permitted to participate in one of the eight NCC-CTSO affiliates or approved state CTSOs.
- Colorado has two state-approved CTSOs:
  - ACE-(SC)2 (Successful Career Students of Colorado)
    - Serves special education students and at-risk students involved in alternative cooperative education.
  - CCSO (Creative Career Student Organization)
    - For students in creative/arts-oriented CTE programs.
- Colorado’s approval process for alternative CTSOs requires CTSOs to have:
  - A constitution or set of bylaws that govern, among other things, how membership in the CTSO will be determined (CTSOs must be open to all students),
  - Lists of current local membership and elected officers,
  - Meeting agendas and minutes (CTSOs are required to meet twice a year, at minimum), and
  - Documentation that CTSO activities and Program of Work is integrated into the classroom curriculum.
- Iowa’s approval process for alternative CTSOs under Perkins V uses similar criteria.
Spotlight: Alternative CTSOs in Georgia

- Georgia has two alternative CTSOs:
  - Career and Technical Instruction (CTI)
    - CTI provides leadership, competitions, and career exploration opportunities to students with disabilities
    - Operates across career clusters—not aligned to a specific CTE program or career cluster
  - GeorgiaFirstRobotics
    - GeorgiaFirstRobotics holds robotics competitions that resemble start-up ventures
    - Known nationally but is not part of the National Coordinating Council for CTSOs and has not been widely adopted

- **Criteria for recognition as a CTSO in Georgia** (p. 87) include the following:
  - Activities related to an industry or occupation aligned to one or more CTE programs or industry clusters
  - Non-profit status and student governance
  - Representation of CTE teachers and administrators and business and industry on the CTSO’s board of directors
  - A minimum of 10 leadership development or competition opportunities
  - Student membership of at least 5,000
  - Compliance with federal anti-discrimination laws
  - Compliance with state auditing and financial accountability requirements
Research and TA Activities

For the 2019–20 TA to States project, the TA team conducted the following research activities to support SCDOE:

- Document reviews: Including review of 44 draft *Perkins V* State Plans, state policies, and procedures
- Twenty-three state plans were selected for a detailed review of state criteria for SSQ and processes for setting state-determined performance levels; states were selected based on the percentage of grade 9–12 students living in rural counties; states with relatively high percentages of rural students were included; these criteria were used to address South Carolina’s interest in how SSQ requirements in rural states compared with more urban states
- Review of additional resources and materials cited in the report
- Interviews and email correspondence with state CTE staff from Arkansas, Colorado, Georgia, Iowa, and Louisiana
References and Resources


North Carolina Common Follow-Up System website

2019 Common Follow-up System Evaluation Report (most recent)
  Summary of student education and employment data gathered through the system

  Characteristics, processes, strengths, challenges, and the future of longitudinal data systems in North Carolina

EdExplainer: Education Data Systems in North Carolina
  Overview of education and workforce data systems in North Carolina, including the Common Follow-Up System and the NCSchoolWorks initiative to link secondary longitudinal data systems to the Common Follow-Up System.