

Connecticut Department of Education
Bureau of Early Childhood, Career and Adult Education

OVERCOMING OBSTACLES TO COLLECTING QUALITY PERKINS DATA:

MEASURE 1S1: ACADEMIC SKILL ATTAINMENT

Submitted by:

MPR Associates, Inc.
2150 Shattuck Avenue, Suite 800
Berkeley, California 94704

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Contact:
Steven Klein (sklein@mprinc.com)
503-675-6619

BACKGROUND

To support states in improving the quality of their Perkins accountability data, in March 2005 the Office of Vocational and Adult Education (OVAE), US Department of Education, invited State Directors of Vocational Education to submit requests for individualized technical assistance. In response, the Connecticut Department of Education (CTDOE) submitted an application seeking recommendations to improve the validity of its measure of secondary academic achievement (1S1).

Presently, the state uses the Connecticut Achievement Performance Test (CAPT) to assess the academic performance of career-technical education (CTE) students. Although CAPT serves as the state's academic assessment for the *No Child Left Behind Act* (NCLB), the test is administered in the 10th grade, before most students concentrate in CTE coursework. Consequently, the state is seeking to improve the validity of its current measure approach, as well as the reliability of information reported to the state.

During project planning discussions with June Sanford, State Director of Career and Technical Education, MPR researchers proposed reviewing strategies states are using to assess the academic skills of CTE students. This memo summarizes state approaches to assessing academic achievement and recommends alternate approaches that the CTDOE may wish to consider to improve its existing Perkins measure.

Background: Measuring Academic Assessment in Connecticut

The CAPT is a statewide, validated assessment administered to all 10th grade students attending Connecticut public schools. Students who meet the state goal standards in one or more of the four content areas included in the exam—Mathematics, Science, Reading Across the Disciplines, and Writing Across the Disciplines—are awarded a Certificate of Mastery. Test results become part of students' permanent school records and are reported on their official school transcript. Students who do not meet Connecticut's goal standards in one or more subject areas may voluntarily retake all or part of the exam in grades 10, 11, and 12.

Although the CAPT is not a state graduation exam, the test is used as the state's secondary assessment for NCLB, and districts must consider CAPT results when determining whether students possess the basic skills necessary for graduation. To assess the academic achievement of students enrolling in CTE coursework, the CTDOE currently reports on the performance of CTE participants who pass all four of the CAPT subject area exams. (A CTE participant includes all students who have taken a CTE course either during or prior to 10th grade.) The state measure is constructed as follows:

Numerator: Number of CTE participants passing all four subject area assessments

Denominator: Number of CTE participants tested

Since it appears likely that Congress will reauthorize Perkins with the requirement that states align their Perkins measure of academic achievement with their state NCLB assessment, it is anticipated that Connecticut will retain CAPT as its Perkins 1S1 measure. While there are challenges associated with using an academic assessment administered in the 10th grade to assess CTE student achievement, many states are struggling with this issue.

State Approaches to Measuring Academic Achievement

The Office of Vocational and Adult Education (OVAE) has identified three measurement approaches that states were using to report Perkins secondary academic attainment outcomes in 2003-04. These included:

- ✓ National or State Academic Assessment System—32 states
- ✓ High School Graduation—12 states
- ✓ Grade Point Average—6 states

Of the 32 states administering a national or state exam as their 1S1 measure, a majority (30 states) base their calculations on CTE concentrators, with the number of courses or units in a sequence varying across states (see Appendix A for a description of state vocational concentrator definitions). Only 2 states—New Mexico and Virginia—presently report on all CTE participants, irrespective of the amount of time spent in vocational coursework (see Appendix B for a list of state measurement approaches).¹

Approximately one-third of states further restrict their 1S1 assessment to CTE concentrators who left secondary education in the reporting year, effectively focusing measurement on 12th grade students. These states include: Arizona, Arkansas, Indiana, Kentucky, Mississippi, Nevada, New Jersey, Ohio, Texas, and Vermont. Presumably, some of these states also include data on CTE concentrators who are juniors graduating early or seniors who drop out of school in the reporting year.

States' focus on CTE concentrators in the final year of their secondary schooling is consistent with system guidance issued by OVAE in August 2001 as part of its *Perkins III Accountability Primer*. In it, OVAE recommended that states construct their 1S1 indicator using the following formulation.

Numerator: Number of students reaching a state-defined threshold level of vocational education and who have met state academic standards and have left secondary education in the reporting year.

Denominator: Number of students reaching a state-defined threshold level of vocational education and who have left secondary education in the reporting year.²

¹ Conversations with New Mexico state administrators indicate that the state is planning to change its measurement approach to focus on vocational concentrators following reauthorization of the Perkins legislation.

² The Perkins III Accountability Primer can be downloaded from the General Resources section of OVAE's Peer Collaborative Resource Network website: http://www.edcountability.net/allresources_p.cfm#chapter2

While not all states have targeted students who have completed their secondary program, nearly all have limited assessment to vocational concentrators. This focus reflects state agencies' willingness to take ownership of only those students who intensively participate in CTE programs.

The timing of state academic testing varies across states, with roughly half of states that use their NCLB exam as their Perkins 1S1 measure administering the exam in the 10th grade. Like Connecticut, some of these states permit students to retake the exam in subsequent years. However, no state is presently assessing academic skill changes (i.e., academic learning gains) of CTE students over time; instead, states confine their reporting to the percentage of CTE participants or concentrators who meet state academic standards.

Finally, states vary in the types of academic skills included in their 1S1 measures, with all but three states—Arizona, Kentucky, and Oregon—basing analysis on student performance across all state subject area assessments. For example, Michigan reports on the number of 10th through 12th grade CTE concentrators who participated in the Michigan Educational Assessment Program and attained an endorsement status of at least a Level 3 (basic) on the English Language Arts, Mathematics, Science, and Social Studies tests.

Issues for Consideration

To assist the CTDOE in improving the quality of its Perkins 1S1 measure, MPR researchers reviewed current state reporting approaches and contacted administrators in the state's *Bureau of Early Childhood, Career and Adult Education* and the *Division of Evaluation and Research* to assess state data reporting options. Based on these conversations, MPR researchers identified a set of issues that affect current state reporting on measure 1S1 and provided recommendations that CTDOE administrators may wish to consider as they prepare for the upcoming Perkins reauthorization.

1. Should the state permit students to self-identify their CTE status?

The CTDOE currently asks students to self-identify whether they have ever participated in a CTE course at the time they take the CAPT exam in grade 10. Student responses are entered directly onto the students' CAPT answer sheet, alongside other self-identified demographic information. Following testing, student exams are forwarded to the CTDOE, which contracts with an independent testing agency to score and report test results back to the state. Performance data reported to the state for CTE students include demographic disaggregates of student outcomes that correspond to categories contained in the federal Consolidated Annual Performance, Accountability, and Financial Status Reporting (CAR) Instrument.

Recommendation

Since students are provided little guidance on what constitutes a state-approved CTE course or whether instruction offered in the middle or elementary grades meets the CTE definition, it is unlikely that student-reported data collected at the time of test administration provide a valid or reliable assessment of student participation in CTE coursework. If the CTDOE seeks to maintain its current measurement focus on CTE participants, then MPR recommends that the state provide students and test proctors with detailed test instructions, including a listing of qualifying CTE coursework and instructions for completing test forms, to assist student in self-identifying their CTE status.

Alternatively, if the CTDOE were to focus measurement on CTE concentrators—in keeping with the approach currently used by a majority of states—then state administrators should delete test instructions requiring students to self-identify their CTE status in favor of alternative strategies for identifying students that are detailed below.

2. Should the state base measurement on all students participating in CTE courses?

Connecticut's current measure of academic achievement assesses the proportion of CTE participants who pass all four of the state subject area exams included in the CAPT assessment. Since testing occurs in the 10th grade, prior to concentrated student participation in CTE coursework, the existing measure does not distinguish students who subsequently fulfill a CTE concentration from those who do not go on to participate in CTE coursework. If students who concentrate in a CTE program area have attributes that distinguish them from other types of students (e.g., greater goal-direction), then the current state measure may fail to accurately quantify the academic achievement of students who intensively participate in CTE coursework.

Recommendation

Although Connecticut initially constructed its measure of academic attainment to include CTE concentrators, the state subsequently expanded its definition to include all students who ever participated in CTE coursework as of the 10th grade, when the CAPT exam is administered. By having students self-identify at the time of test administration, state administrators succeeded in reducing the data burden on local district administrators, who would otherwise have been forced to retrospectively identify CTE concentrators and manually collect CAPT test scores for individual students.

Although the current construction of the state's academic attainment measures complies with federal Perkins reporting requirements, data collected on CTE participants is of limited use in program planning efforts, in part because it is not clear that these self-reported data are accurate. Participation data collected prior to concerted student engagement in CTE coursework also provides little information as to whether CTE concentrators are as likely as other students to meet state academic standards.

Consequently, MPR recommends that the CTDOE consider revising its Perkins measure—coinciding with the reauthorization of Perkins—to focus on students who complete a state-recognized sequence of CTE courses. This will entail changing the manner in which state data are collected, as described below.

3. How should the state collect academic achievement data on CTE concentrators?

In the absence of a centralized, state-level, individual student record information system, the CTDOE must rely on local educators to identify students who complete a CTE concentration. While local administrators are currently collecting data on CTE concentrators for other measures, requiring them to report retrospective data on the CAPT scores of CTE concentrators could impose an additional reporting burden.

Recommendation

MPR researchers believe that the CTDOE can simultaneously improve the identification of CTE concentrators and the quality of CAPT achievement data without substantially adding to the existing reporting burden on local administrators. This can be accomplished by integrating 1S1 reporting requirements into the collection of state CTE skill proficiency data, which are currently collected for measure 1S2 using standardized, statewide CTE skill assessments.

Specifically, the *Bureau of Early Childhood, Career and Adult Education* has, in partnership with the *National Occupational Competency Testing Institute*, developed 19 statewide assessments that align with state CTE performance standards and competencies. These assessments are used to collect technical skill attainment data for all students concentrating in CTE programs. All Connecticut high schools receiving Perkins funds participate in this statewide CTE assessment program, meaning that district administrators are familiar with data reporting requirements.

The state has a number of options for collecting academic performance data in combination with its CTE assessment system.

Option 1: Conduct Electronic Administrative Record Matching

MPR researchers believe that the CTDOE has a unique opportunity to automate state reporting of the academic achievement of CTE concentrators—using state CTE assessments and the state’s CAPT database—so that local educators experience no additional burden collecting Perkins 1S1 data. To do so, state CTDOE administrators would compile unique identifiers of CTE concentrators harvested from CTE assessment answer sheets submitted to the state for scoring.³ These identifiers could then, in turn, be run against the state CAPT

³ These identifiers could consist of students name, birth date, and school or the unique state identifier assigned to each student.

database to extract test scores and demographic information for students who passed the CAPT in the 10th, 11th, or 12th grades. This matching procedure could be performed using the on-line CAPT database or by state CAPT administrators, who would work with CTDOE staff to ensure student privacy.

Under this option, students would only be included in the state's 1S1 measure in the year that they participated in CTE testing. Since students can become a concentrator more than one time—although never in the same CTE area—it is possible that students could be double-counted if they subsequently achieved CTE concentrator status. While the CTDOE could choose to exclude students who qualify as CTE concentrators in multiple program areas, MPR recommends that the state base its assessment on all students sitting for the CTE exam, irrespective of whether they were counted in prior years.

Due to the lag between CAPT testing and when data are entered into students' transcript records, it is unlikely that academic performance data for 10th grade CTE concentrators would be available in time for annual federal reporting deadlines. Consequently, local administrators would in most cases only be able to report achievement data for CTE students who achieved concentrator status in the 11th or 12th grades—a group accounting for roughly 60 percent of all state concentrators in a given year.

State reporting options would include (a) restricting reporting to CTE concentrators who achieve their status in the 11th or 12th grades, (b) limiting reporting to CTE concentrators who achieve their status in the 12th grade, or (c) delaying reporting until CAPT data on 10th grade students became available. CTDOE administrators may wish to confer with CAPT data analysts to identify the earliest date at which administrative record matches could be performed. While failing to include 10th grade CTE concentrators in state reports would underestimate the actual number of students completing a CTE program sequence, so long as year-to-year estimates are reliable for 11th and/or 12th grade students, the state will be able to demonstrate that it is making continuous improvement in students' academic skill attainment.

Option 2: Collect CAPT Performance Data at the Time of CTE assessment

Two to three days prior to taking the state CTE assessment, school administrators meet with CTE concentrators to review test guidelines and complete the demographic section of their exam answer sheet. School administrators could at this time enter onto students' answer sheets whether students passed each of the subject area tests included on the CAPT, using information contained in students' high school transcript. Alternatively, students could self-identify whether or not they passed each indicated exam; however, if this latter approach was used the CTDOE should assess whether students can reliably enter this information. The state may also wish to collect data on the grade level at which students passed each exam to allow for more detailed analyses of student attainment.

Requiring administrators to report student performance on CAPT will likely impose some additional work on local agencies, although the degree of burden will likely vary with testing administrators' familiarity with CTE concentrators' academic background, their familiarity with and access to transcript data, and the number of CTE concentrators tested within a given school. MPR recommends that the state consult with local administrators to determine the degree of difficulty associated with collecting information at the time of testing.

As indicated in Option 1, since CAPT test data are not readily available for students tested in the 10th grade, the state would still need to either limit analysis to CTE concentrators completing testing in the 11th and/or 12th grades, or delay reporting until 10th grade CAPT data became available.

Option 3: Modify the State CTE Assessment to Align with CAPT Academic Standards

A third approach for collecting academic performance data on CTE concentrators would be to integrate an academic assessment into the existing state CTE assessment system.⁴ This could be accomplished by identifying a generic set of math, reading, writing, and science skills contained within each CTE assessment area and aligning them with specific competencies contained in the CAPT exam. One advantage of this approach is that it would allow the state to assess whether students who complete a CTE concentration possess a core set of academic skills identified on the state CTE assessment, and potentially, changes in students' academic skill holding between when they take the CAPT and when they complete their CTE concentration.

There are, however, a number of drawbacks associated with this approach. One is that the state CTE assessment differs from the state NCLB exam. If Congress reauthorizes Perkins with the provision that states use their NCLB exam to assess student academic achievement, as appears likely, then there is some question whether the state will be permitted to substitute its CTE exam for the CAPT. Given content limitations associated with some CTE program areas (i.e., not all CAPT competencies may exist in some programs) and the 90-minute testing window in which state assessments are currently administered, it is also unlikely that the state would be able to identify all of the competencies included in CAPT. This would reduce the accuracy of CTE academic test results, as well as restrict performance comparisons between CTE concentrators tested using the state CTE exam and those in the general population tested with CAPT.

⁴ MPR is indebted to Steven Hoag of the CTDOE, Bureau of Early Childhood, Career and Adult Education for sharing information and ideas about this option in particular, and across all state options in general.

4. Should the state assess changes in academic attainment for individual CTE concentrators?

Even if Connecticut were to modify its Perkins 1S1 population to include CTE concentrators, the state would still be unable to assess the contribution that CTE education makes to students' academic attainment. At best, the state would be able to determine whether CTE concentrators were as likely as other students to meet or exceed state 10th grade academic goals standards, prior to or concurrent with completing a sequence of CTE courses.

Recommendation

While states that assess student learning in the 11th grade may be somewhat better positioned to determine whether concentrated participation in CTE coursework affects students' ability to meet state standards, to date, no state is reporting on the contribution that CTE coursework makes to students' academic attainment. If the CTDOE seeks to assess how intensive participation in CTE coursework affects students' academic performance, MPR recommends that the state consider the following options.

Option 1: Conduct Pre- Post-Assessments of CTE Concentrator Performance Using the CAPT Exam

Although it would be prohibitively expensive to conduct annual pre/post assessments of all CTE concentrators in the state, CTDOE administrators could conduct a one-time study, using a statistically representative sample of students from throughout the state, to assess changes in student performance on the CAPT exam prior to and following intensive participation in CTE coursework.

Option 2: Collect Supplemental Measures of Academic Performance

A number of states are collecting data on the academic grade-point-averages of CTE concentrators to assess the affect that CTE instruction has on academic attainment. To improve the validity of the measure, the CTDOE could conduct a quasi-experimental study, using data on CTE concentrator and non-CTE concentrator students within a given school, to assess whether student participation in CTE education affects educational outcomes. Possible outcome measures could include differences in student academic GPA, course-taking choices, grade retention, dropout, and high school graduation rates, and postsecondary outcomes, such as matriculation in a 2-year or 4-year postsecondary institution.

APPENDIX A: STATE VOCATIONAL CONCENTRATOR DEFINITIONS

State	Definition of Secondary Vocational Concentrator
Arizona	A student who achieves two Carnegie units/credits in a single CTE program is a concentrator. One unit/credit must be in a Level III course. The Tech Prep secondary student population is a subset of the Vocational Concentrator definition with the additional requirement that a grade “C” or better is required within an articulated program. This use of the “C” grade will align the secondary and postsecondary definitions.
Arkansas	A Secondary Vocational Concentrator is a student who enrolled in two units of credit within an occupational area in <u>grades 9-12</u> .
District of Columbia	
Delaware	The definition used for vocational concentrator was “a student enrolled in a career path of three or more vocational-technical courses.” To achieve more consistency in data collection the definition was revised to read “a student enrolled in the third course of an approved career-technical pathway”.
Indiana	A Vocational Concentrator in Indiana is a student who enrolled in a sequence of courses or instructional units that provide the academic and technical skills, knowledge, and proficiencies to prepare the individual for employment and/or further education.
Iowa	A secondary vocational concentrator is a student who has a combination of completed and presently enrolled vocational units totaling at least two vocational units (two years) in the vocational program being reported.
Kentucky	At the secondary level, a vocational concentrator is a student who is enrolled in a technical education program and satisfactorily completes three courses in a sequence of courses for an occupation. The sequence must have industry-validated standards leading to an occupation/career major.
Louisiana	A student who has a 5 year educational plan and has taken or is enrolled in a total of two or more of the vocational courses identified in the 5 year plan.
Massachusetts	Vocational Concentrator: Is enrolled in a state-approved vocational technical education program that also meets the Perkins Act definition of vocational and technical education or is enrolled in a career and technical education program that meets the Perkins Act definition of vocational and technical education.
Michigan	
Minnesota	Any student successfully enrolled in a single CTE program for more than 90 hours (successfully defined as a passing grade).
Mississippi	Secondary – vocational students who have completed the first year of a two-year program and have enrolled in the second year of the program.
Missouri	A secondary career education participant who earns a minimum of two (2) units of credit in a career education program or sequence of career education courses.
Nebraska	
Nevada	A student enrolled in one or more terminal courses. A terminal course is an occupational-specific course that is taken at the end of a sequential course of study. Each school district has the responsibility of identifying the district’s terminal courses.
New Hampshire	A CTE student who has completed greater than 50% of the required sequence of instruction in his/her CTE program and is enrolled in the second half of the program as of October 1 st or March 1 st .
New Jersey	A student who is enrolled in the final level/course of an approved vocational-technical education program after successfully completing previous coursework receiving at least a minimum passing grade.
New Mexico	Those students enrolled in an identified program or coherent sequence of courses or instructional units providing them with the academic and technical knowledge, skills and proficiencies to prepare for employment and/or further/advanced education and those students who have completed three or more career-technical courses in that sequence.
New York	A secondary concentrator is defined as a completer. A secondary CTE program completer is a student who has attended school in the year in which the student is eligible to graduate and has passed a sequence of CTE courses that incorporate the Career Development and Occupational Studies standards of New York State.
North Carolina	A student who completes four vocational (career-technical education) credits in a career major (threshold level of vocational education) <i>and</i> who graduates. This definition has not changed from the previous program year.
North Dakota	A student enrolled in a sequence of two or more credits that provides the academic and technical knowledge/skills/proficiencies within a career & technical education program.

State	Definition of Secondary Vocational Concentrator
Ohio	A career-technical student that is enrolled in the last class of a series of classes within a program or is in the final class of a competency-based series of experiences. This EMIS field is completed in the October and June data collection timeframes.
Oregon	For federal reporting purposes, a “Perkins concentrator” is a student who has accumulated at least two credits in an approved professional technical education program during the four years of high school. In order to obtain this information, Oregon developed a four year individualized student record/course/program record system. Students who meet the concentrator threshold were extracted to provide the required performance management information.
Pennsylvania	A concentrator at the secondary or postsecondary level is defined as a student who is enrolled in a PDE Bureau approved career and technical education program. These definitions are unchanged for this reporting year.
Rhode Island	Secondary vocational concentrators are high school students who enrolled in and completed at least two sequential, semester-long career and technical education courses in either a state recognized career and technical education program or a sequence of recognized courses.
South Dakota	A student who earned two Carnegie units of credit within a program and is at least a junior in high school. (The definition has not changed.)
Texas	A student who demonstrates intent to achieve proficiency equivalent to at least two and one-half credits in a coherent sequence of courses for career and technology preparation and meets all academic requirements.
Utah	For secondary, these are students who complete three semesters (1.5 credits) of training in the same CTE program area during grades 9-12. An CTE Program area consists of all courses beginning with the same first two digits of the CIP Code. A completer is a concentrator who graduates with his or her class.
Vermont	The state articulates a threshold level of technical education, i.e. those academic and technical skills necessary to prepare an individual for employment and/or further education, in the state-approved core competencies for programs. A student who has reached this threshold level of technical education is a student who has either been given instruction in all of a program’s competencies and workplace skills or has attended one technical education program (other than pre-vocational) for at least 80 minutes per day for two years (or its equivalent). In the Vermont core indicators these students are referred to as completers.
Virginia	A career and technical education concentrator is a student who completes a coherent sequence of courses in a specific program area as identified in the Administrative Planning Guide.
West Virginia	Secondary concentrators complete at least four units of credit in a vocational concentration.
Wyoming	A student who has taken three or more semester courses in a vocational program, including those who may be currently enrolled in their third course.

APPENDIX B: STATE MEASUREMENT APPROACHES

STATE	NUMERATOR	DENOMINATOR
Arizona	Number of CTE program concentrators who leave secondary education in the reporting year, that meet or exceed all the state writing standards, as assessed by the Arizona Instrument to Measure Standards (AIMS) test.	Number of CTE program concentrators who leave secondary education in the reporting year, and take the writing standard, as assessed by the Arizona Instrument to Measure Standards (AIMS) test.
Arkansas	Concentrators who score above the 50th percentile on Stanford Achievement Test who left secondary education during the reporting year.	Concentrators tested who left secondary education during the reporting year.
District of Columbia	Number of CTE concentrators who scored basic or above in reading and math on the District of Columbia Criterion-Referenced Assessment in the reporting year.	Number of CTE concentrators who took the District of Columbia Criterion-Referenced Assessment in the reporting year.
Delaware	All assessed vocational students who meet or exceed the standard in reading, mathematics and writing.	All assessed vocational students.
Indiana	Number of vocational education students who passed the ISTEP+ Graduation Qualifying Exam and have left secondary education in the reporting year.	Number of vocational education students who took the ISTEP+ Graduation Qualifying Exam and left secondary education in the reporting year.
Iowa	Number of targeted students rated proficient or higher.	Number of targeted students assessed.
Kentucky	Number of technical education student concentrators who are seniors and who took the state assessment for writing/English and scored proficient (or above) on the test. This is the only score available for seniors who will be leaving secondary education.	Number of technical education students (concentrators) who are seniors and who took the state assessment for writing/English.
Louisiana	Number of CTE students passing state assessments.	Number of CTE students taking state assessments.
Massachusetts	Number of students who passed MCAS for each subject area.	Number of students who are required to take MCAS.
Michigan	Number of 10th through 12th grade CTE program concentrators who took four MEAP tests and attained an endorsement status of at least a Level 3 (basic) on four of the tests.	Number of 10th through 12th grade CTE program concentrators who took four MEAP tests.
Minnesota	Number of CTE Concentrators who have passed the basic requirements tests of Math, Reading and Writing	Number of CTE concentrators who have taken the Minnesota Basic Standards Tests
Mississippi	Completers who pass the 4 Subject Area Tests	Concentrators eligible to graduate.
Missouri	Number of concentrators scoring in the top 3 levels of achievement on the Missouri Assessment Program.	Number of concentrators taking the Missouri Assessment Program.
Nebraska	Number of students concentrating in vocational education and who meet academic standards.	Number of students concentrating in vocational education during the same reporting period.
Nevada	Number of 12th grade occupational students in official enrollment counts of terminal courses passing all portions of Nevada H.S. Proficiency Exam by Aug. 31 following completion of school year	Number of 12th grade occupational students in official enrollment counts of terminal courses

STATE	NUMERATOR	DENOMINATOR
New Hampshire	Number of vocational concentrators who assess as proficient or advanced on the New Hampshire Educational Improvement and Assessment Program (NHEIAP) 10th grade exam.	Number of vocational concentrators who took the NHEIAP 10th grade exam.
New Jersey	Number of vocational concentrators who passed and who have left secondary education in the reporting year.	Number of vocational concentrators who have left secondary education in the reporting year.
New Mexico	Number of 10th grade vocational education students who passed the NM High School Competency Examination.	Number of 10th grade vocational education students who took the NM High School Competency Examination.
New York	Number of CTE completers that passed all required Regents exams	Number of all CTE completers that took exams
North Carolina	Number of vocational concentrators (completers) who score at or above the national average on each of the four ASSET tests: reading, writing, numerical skills, and elementary algebra. (This will entail four separate scores for each LEA and the state for this part of academic achievement.)	All vocational concentrators (completers).
North Dakota	Number of ND Secondary Vocational "Concentrators" who have a composite ACT score of 17 or above.	Number of ND Secondary Vocational "Concentrators" who took the ACT.
Ohio	Concentrators who left school passing all parts of or being exempt from the 9th grade proficiency test upon program completion.	Concentrators who left school.
Oregon	All Perkins Concentrators who scored at or above the statewide proficiency level on a 10th grade Reading test during program year	All Perkins Concentrators who took the 10th grade Reading test during program year.
Pennsylvania	Number of 11th grade career and technical education students reaching the state-defined threshold level of career and technical education and who score at or above the Basic Level on the state academic test. (Revised 12-03-2003) à for PY 04-05	Number of 11th grade career and technical education students reaching the state-defined threshold level of career and technical education
Rhode Island	Number of career and technical education concentrators who meet or exceed the standard in reading, writing, and mathematics on the state administered 10th and 11th grade assessment.	Number of career and technical education concentrators, with valid test scores, who took the state administered reading, writing, and mathematics 10th and 11th grade assessment.
South Dakota	Number of vocational education completers who attained a complete battery percentile rank score of 50 or higher	Number of vocational education completers taking the Stanford Achievement Test
Texas	Number of students reaching a state-defined threshold level of vocational education and who have met state-established academic standards and have left secondary education in the reporting year	Number of students reaching a state-defined threshold level of vocational education and who have left secondary education in the reporting year
Utah	Number of Concentrators scoring at or above the State Avg Stanford Achievement Test	Number of Concentrators who matched with SAT database.
Vermont	Number of completers who have met state academic standards and have left technical education in the reporting year (completers).	Number of completers who have left technical education in the reporting year.

STATE	NUMERATOR	DENOMINATOR
Virginia	Number of students (9-12 grades) who are enrolled concurrently in a career and technical course(s) and a core academic course(s) and have passed the corresponding Standards of Learning end-of-course test(s).	Number of students (9-12 grades) who are enrolled concurrently in a career and technical course(s) and a core academic course(s) and have taken the corresponding Standards of Learning end-of-course test(s)
West Virginia	Completers attaining appropriate WorkKeys level for their concentration.	Total completers.
Wyoming	Number of vocational concentrators proficient on the total Wyoming comprehensive Assessment Systems (WyCAS).	Number of vocational concentrators taking the WyCAS.