

# OCTAE Technical Assistance to States

## Missouri



*Prepared under contract to*  
U.S. Department of Education

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**June 2015**



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RTI International is a trade name of Research Triangle Institute.

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# Introduction and Technical Assistance Strategy

The Office of Career, Technical, and Adult Education (OCTAE), Division of Adult and Technical Education (DATE) sponsors customized technical assistance to support states and grantees in improving the quality of their *Perkins IV* accountability systems. Technical assistance to states is specifically designed to assist states in improving their data and accountability systems.

Missouri requested and was awarded technical assistance to develop recommendations for using career and technical education (CTE) data in a report card for area career centers. RTI International, under contract with DATE, provided technical assistance to Missouri. In collaboration with staff at the Missouri Department of Elementary and Secondary Education (DESE), RTI reviewed CTE report cards from other states (Arkansas, Ohio, South Carolina, and Washington) and conducted focus groups with area career center administrators and teachers, comprehensive high school principals and teachers, and community college administrators and faculty. In total, nine focus groups were conducted by conference call over two months in Spring 2015. The focus groups included a total of 26 participants.<sup>1</sup>

## Focus group participants

| Participant role   | Number of participants |
|--|------------------------|
| CTE administrators from community colleges                     | 6                      |
| Area career center directors                                   | 6                      |
| Directors of area career centers on community college campuses | 2                      |
| CTE coordinators from large school districts                   | 3                      |
| Instructors from comprehensive high schools                    | 3                      |
| Principals or directors from small school districts            | 3                      |
| Area career center instructors                                 | 3                      |
| <b>Total</b>   | <b>26</b>              |

<sup>1</sup> One participant who was unable to join a focus group conference call responded to the focus group questions by e-mail.

The focus group participants were asked to share what they most want and need to know about CTE students in Missouri's area career centers, what they feel that students, parents, teachers, administrators, and policy makers most want and need to know, and what information they feel is most important to include in a report card, and what information should not be included.

Based on the information collected from other states and the focus groups, RTI developed a list of candidate data items for the report card. After DESE staff reviewed the items, RTI created potential metrics and scanned existing data systems to determine if Missouri already collects data that could be used to report the individual metrics.

## Conclusions and Next Steps

The information provided in this report provides an overview of possible report card metrics from a variety of sources. The metrics included in report cards vary, however, depending on the interests and policy priorities of users, and may also change over time. Therefore, report card development is a multi-stage process, and metric selection and prioritization is the next step in developing a Missouri area career center report card.

To further this process, the lists of candidate metrics might be shared with key stakeholders for their thoughts on which metrics best fit the needs of their schools, programs, and students. In addition, the stakeholders involved in those discussions may wish to consider the following criteria when reviewing and selecting from the metrics outlined in this report:

- Data availability--Are data for the metric readily available from all area career centers? Can those data be easily shared with or collected by DESE?
- Comparability--Will the information for the metric be comparable across area career centers? Do or could all area career centers define the elements of a metric the same way?
- Accountability--To what extent can the area career centers influence metric results? To what extent should they be held accountable for results?
- Ability to compare to other populations--Could the results for area career center students be compared to results for all CTE students and all high school students? Are there metrics for which this is more or less important?  
State priorities--Does the metric promote Missouri's priorities for CTE and education overall?

## Potential Report Card Topics

The research team compiled the focus group suggestions and items from other states' report cards into a list of possible items that Missouri could consider for an area career center report card. The items fell into six broad categories.

- Informational
- Secondary education outcomes
- Postsecondary education outcomes
- Employment outcomes
- Effectiveness
- Factors that influence success

**An asterisk (\*)** denotes suggestions from the focus groups that appear in some form on one of the four states' report cards. **A plus (+) sign denotes** potential items of interest that appear on other states' report cards but that were not mentioned by the focus groups.

### Informational

- Enrollment \* (including analysis of sending high school and area career center over time)
- Available programs \*
- Advisory committee engagement, as measured by meeting frequency
- Student travel time to attend an area career center

### Secondary Education Outcomes

- Attendance
- Grades \*
- Dual enrollment or articulated credits earned by students and/or accepted by postsecondary institutions\*

- Participation in CTSOs \*
- Participation in work-based learning opportunities (e.g., internships, job shadowing, cooperative education, teacher externships) \*
- Participation in advanced placement courses +
- Skill gains in math and reading/language arts \*
- Employability / 21<sup>st</sup> century skills
- Program completion \*
- Technical skill attainment\*
- High school graduation \*
- Industry-recognized credential attainment \*

## Postsecondary Education Outcomes

- Continued education after high school \*
- Preparation/readiness for postsecondary education
- Postsecondary persistence
- Postsecondary program completion
- Postsecondary degrees or certificates earned

## Employment Outcomes

- Short- and long-term placement in related and unrelated employment \*
- Short- and long-term earnings

## Program Effectiveness

- Cost per successful student outcome \*
- Program cost per student relative to demand for workers
- Percent of expenditures for instruction +
- Industry assessment of work readiness (technical and employability)

- Student assessment of readiness for further education and career
- Parent satisfaction +

## Factors that Influence Success

- Teacher experience in the field
- Years of teaching experience \*
- Teacher credentials \*
- Teacher participation in professional development \*
- Teacher satisfaction +



## Potential Report Card Metrics

RTI prepared sample performance metrics to illustrate items that could be included in an area career center report card. Many of the metrics will require the use of a common definition of an area career center student (e.g., entry into an area career center, completion of at least one area career center course, or completion of a full term at an area career center, etc.).

Nearly all the performance metrics rely on a common set of data elements to identify key characteristics about students' experiences, such as CTE programs, educational institutions, and area career center enrollment. The essential data elements apply to most of the sample metrics and are therefore not repeated in the individual metric tables in the next section.

| Essential Data Description    | Core Data / MOSIS                    |
|-------------------------------|--------------------------------------|
| Student identifier            | MOSIS Student ID<br>Local Student ID |
| Grade                         | Student Grade Level                  |
| Home/sending district         | Reporting District Code              |
| Home/sending school           | Reporting School Code                |
| Attending district            | Attending District Code              |
| Attending school              | Attending School Code                |
| Term                          | Collection Version                   |
| Year                          | Current School Year                  |
| CTE student                   | Career Ed                            |
| Secondary CTE program         | CTE Program Code                     |
| Entry into area career center | Entry Date                           |
| Exit from area career center  | Exit Date                            |

DESE may want to consider disaggregating the results by demographics of interest, such as gender, income level, or race ethnicity. For each metric, DESE and its partners also may wish to analyze the results for area career center students, all CTE students, and students in comprehensive high schools. The demographic data elements could be used to disaggregate results for most of the sample metrics and are therefore not repeated in the individual metric tables below.

| Demographic Description                     | Core Data / MOSIS  |
|---|--|
| Gender                                      | Gender   |
| Race/ethnicity                              | Race Ethnicity   |
| English language learner (ELL)              | ELL Language   |
| Income level (free and reduced lunch)       | Lunch Status   |
| Students with disabilities                  |  |
| Students in foster care                     |  |
| Students involved with juvenile corrections |  |
| Nontraditional                              | CTE Program Code<br>Gender<br>Nontraditional Student                         |
| Immigrant                                   | Immigrant  |
| Economic region                             | Resident District Code<br>Reporting District Code<br>Attending District Code |
| Urban or rural                              | Resident District Code<br>Reporting District Code<br>Attending District Code |

## Informational

Focus group participants mentioned several topics that might be useful for report card viewers but that are not necessarily metrics of performance.

- Enrollment trends of area career centers and their sending high schools over specified periods of time.
- Available programs by area career center.
- Number of area career center programs for which a program advisory committee meets at least two times per academic year.
- Average number of minutes students travel per day to attend an area career center.

## Secondary Education Outcomes

1. Average daily attendance of area career center students.

| Essential Data Description | Core Data / MOSIS       |
|----------------------------|-------------------------|
| Attendance records         | Regular Hours Attended  |
|                            | Regular Hours Absent    |
|                            | Remedial Hours Attended |
|                            | Hours in Session        |

2. Percentage of area career center students who meet a defined grade point average in their program or at high school graduation.

| Essential Data Description               | Core Data / MOSIS    |
|--|----------------------|
| Cumulative GPA of CTE program coursework | Local Course Number  |
|  | Local Section Number |
|  | Local Course Name    |
|  | State Course Number  |
|  | Assignment Number    |
| Cumulative high school GPA               | GPA                  |
|  | GPA Scale            |
| Graduated high school                    | Graduate             |
| Date of high school graduation           | Graduation Year      |

Note: Some focus group participants expressed reluctance to use grades as a metric due to concerns that it would lead to grade inflation.

3. Percentage of area career center students who complete at least one advanced placement course with a passing grade.

| Essential Data Description                      | Core Data / MOSIS |
|---|-------------------|
| Enrollment in advanced placement course(s)      | Course Code       |
|   | Course Name       |
| Grade(s) earned in advanced placement course(s) | Course Grade      |

4. Percentage of area career center students who earn dual enrollment or articulated credits.

| Essential Data Description                     | Core Data / MOSIS              |
|--|--------------------------------|
| Participated in dual enrollment or dual credit | Dual Enrollment<br>Dual Credit |
| Postsecondary dual enrollment credits earned   |                                |
| Postsecondary articulated credits earned       |                                |

5. Percentage of area career center students who have dual enrollment or articulated credits accepted by a postsecondary institution within one to three years of high school graduation.

| Essential Data Description                                      | Core Data / MOSIS              |
|---|--------------------------------|
| Participated in dual enrollment or dual credit                  | Dual Enrollment<br>Dual Credit |
| Postsecondary dual enrollment credits earned                    |                                |
| Postsecondary articulated credits earned                        |                                |
| Term and year of postsecondary entry                            |                                |
| Dual enrollment credits accepted by a postsecondary institution |                                |
| Articulated credits accepted by a postsecondary institution     |                                |

6. Percentage of area career center students who participate in career and technical student organizations (CTSOs).

| Essential Data Description             | Core Data / MOSIS  |
|--|--------------------|
| Name of CTSO                           | CTSO Name          |
| Term and year of participation in CTSO | Collection Version |

Note: Requires a common definition of eligible work-based learning opportunities.

7. Percentage of area career center students who participate in work-based learning opportunities.

| Essential Data Description  | Core Data / MOSIS |
|---|-------------------|
| Participated in work-based learning opportunity                   |                   |
| Type of work-based learning opportunity                           |                   |
| Term and year of participation in work-based learning opportunity |                   |

Note: Requires a common definition of eligible work-based learning opportunities.

8. Percentage of students who demonstrate improvement in math skills from pre-test at entry into area career center to post-test when leaving the area career center.

| Essential Data Description                       | Core Data / MOSIS |
|--|-------------------|
| Math test score at entry into area career center |                   |
| Math test score at exit from area career center  |                   |
| Date of entry into area career center            |                   |
| Date of exit from area career center             |                   |

Note: Administering pre- and post-tests of mathematics skills is not currently a standard practice at area career centers. Such a metric also will require establishing a definition of “improvement” from pre- to post-test and agreement on eligible assessments and scores.

9. Percentage of students who demonstrate improvement in reading/language arts skills from pre-test at entry into area career center to post-test when leaving the area career center.

| Essential Data Description  | Core Data / MOSIS |
|---|-------------------|
| Reading/language arts test score at entry into area career center |                   |
| Reading/language arts test score at exit from area career center  |                   |
| Date of entry into area career center                             |                   |
| Date of exit from area career center                              |                   |

Note: Administering pre- and post-tests of reading/language arts skills is not currently a standard practice at area career centers. Such a metric also will require establishing a definition of “improvement” from pre- to post-test and agreement on eligible assessments and scores.

10. Percentage of students who demonstrate improvement in employability skills or 21<sup>st</sup> century skills from pre-test at entry into area career center to post-test when leaving the area career center.

| Essential Data Description  | Core Data / MOSIS |
|---|-------------------|
| Employability / 21 <sup>st</sup> century skills test score at entry into area career center |                   |
| Employability / 21 <sup>st</sup> century skills test score at exit from area career center  |                   |
| Date of entry into area career center   |                   |
| Date of exit from area career center  |                   |

Note: Administering pre- and post-tests of employability or 21<sup>st</sup> century skills is not currently a standard practice at area career centers. Such a metric also will require establishing common definitions of employability or 21<sup>st</sup> century skills and agreement on eligible assessments and scores.

11. Percent of area career center students who complete a CTE program at the area career center.

| Essential Data Description       | Core Data / MOSIS            |
|----------------------------------|------------------------------|
| Secondary CTE program completion | Course Enrollment and Grades |

12. Percentage of area career center students who demonstrate proficiency in technical skills related to their CTE program.

| Essential Data Description         | Core Data / MOSIS                       |
|------------------------------------|---|
| Secondary CTE program completion   | Course Enrollment and Grades            |
| Took technical skill assessment    | CTE Technical Skills Assessment Testing |
| Passed technical skill assessment  | CTE Technical Skills Assessment Testing |
| Type of technical skill assessment | Assessment Type<br>CIP Code             |

Note: Consider using the thresholds and assessments already in use for reporting results for Perkins IV.

13. Percentage of area career center students who graduate from high school.

| Essential Data Description     | Core Data / MOSIS |
|--------------------------------|-------------------|
| Graduated high school          | Graduate          |
| Date of high school graduation | Graduation Year   |

14. Percentage of area career center students who earn a third-party industry-recognized credential while in high school.

| Essential Data Description           | Core Data / MOSIS            |
|--------------------------------------|------------------------------|
| Secondary program completion         | Course Enrollment and Grades |
| Received third-party credential      |                              |
| Date received third-party credential |                              |

## Postsecondary Education Outcomes

1. Percentage of area career center students who graduate from high school and enroll in postsecondary education within one to three years.

| Essential Data Description                               | Core Data / MOSIS |
|--|-------------------|
| Graduated high school                                    | Graduate          |
| Term and year of enrollment in postsecondary institution |                   |

2. Percentage of area career center students who graduate from high school, enroll in postsecondary education within one to three years, and take one or more remedial or developmental education courses in their first year of postsecondary enrollment.

| Essential Data Description                     | Core Data / MOSIS |
|--|-------------------|
| Graduated high school                          | Graduate          |
| Term and year of postsecondary enrollment      |                   |
| Placed in remedial math, reading, or writing   |                   |
| Enrolled in remedial math, reading, or writing |                   |
| Completed remedial math, reading, or writing   |                   |

3. Percentage of area career center students who graduate from high school, enroll in postsecondary education within one to three years, and reenroll the following year when applicable.

| Essential Data Description                               | Core Data / MOSIS |
|--|-------------------|
| Graduated high school                                    | Graduate          |
| Term and year of enrollment in postsecondary institution |                   |
| Enrollment in subsequent year                            |                   |

4. Percent of area career center students who complete a postsecondary CTE program (analyze by whether program is related or unrelated to students' secondary CTE program).

| Essential Data Description                        | Core Data / MOSIS            |
|---|------------------------------|
| Secondary program completion                      | Course Enrollment and Grades |
| Graduated from high school                        | Graduate                     |
| Term and year of entry in postsecondary education |                              |
| Postsecondary program                             |                              |
| Postsecondary program completion                  |                              |
| Date of postsecondary program completion          |                              |

5. Percent of area career center graduates who earn a postsecondary degree or certificate (analyze by whether program is related or unrelated to students' secondary CTE program).

| Essential Data Description                        | Core Data / MOSIS            |
|---|------------------------------|
| Secondary program completion                      | Course Enrollment and Grades |
| Graduated from high school                        | Graduate                     |
| Term and year of entry in postsecondary education |                              |
| Postsecondary program                             |                              |
| Postsecondary program completion                  |                              |
| Received postsecondary certificate or degree      |                              |
| Date received postsecondary certificate or degree |                              |
| Received third-party credential                   |                              |
| Date received third-party credential              |                              |



## Employment Outcomes

1. Percentage of area career center students who are employed or in the military within defined periods of time after high school graduation (analyze by placement related and unrelated to secondary program).

| Essential Data Description   | Core Data / MOSIS  |
|------------------------------|--|
| Secondary program completion | Course Enrollment and Grades   |
| Graduated high school        | Graduate   |
| Employed/military            | Placement Status<br>Employment Related<br>Employment Not Related<br>Military Related<br>Military Not Related |
| Industry                     |  |
| Occupation                   |  |

2. Wages of employed area career center students within defined periods of time after high school graduation (analyze by placement related and unrelated to secondary program).

| Essential Data Description                         | Core Data / MOSIS  |
|--|--|
| Secondary program completion                       | Course Enrollment and Grades   |
| Graduated high school                              | Graduate   |
| Employed/military                                  | Placement Status<br>Employment Related<br>Employment Not Related<br>Military Related<br>Military Not Related |
| Quarter of employment or participation in military |  |
| Industry   |  |
| Occupation   |  |
| Wages  |  |

## Program Effectiveness

1. Cost per positive outcome for area career center students.

| Essential Data Description  | Core Data / MOSIS                                     |
|---|---|
| Secondary CTE program   | CTE Program Code                                      |
| Outcome of interest (e.g., completion, graduation, placement, postsecondary completion, etc.) | Course Enrollment and Grades<br>Graduate<br>Placement |
| Cost per student for successful outcome   |   |

2. Program cost per student relative to demand for workers.

| Essential Data Description   | Core Data / MOSIS |
|--|-------------------|
| Secondary CTE program  | CTE Program Code  |
| Secondary CTE program cost   |                   |
| Cost per area career center student in the program                                       |                   |
| Labor market data and employment trends for occupations related to the secondary program |                   |

3. Instructional costs as a percentage of total program expenditures.

| Essential Data Description                   | Core Data / MOSIS |
|--|-------------------|
| Secondary CTE program                        | CTE Program Code  |
| Secondary CTE program cost                   |                   |
| Instructional costs of the secondary program |                   |

4. Percentage of employers who indicated that former area career center students were prepared for work when hired.

| Essential Data Description                             | Core Data / MOSIS |
|--|-------------------|
| Employment   |                   |
| Employer assessment of preparation for work when hired |                   |

Note: This type of information could be acquired through employer surveys. It would require identifying employers who have hired students and developing definitions for work preparation (e.g., technical skills, employability/21<sup>st</sup> century skills, etc.).

5. Percentage of former students who indicate that their secondary CTE program prepared them for further education and/or a career.

| Essential Data Description                   | Core Data / MOSIS            |
|--|------------------------------|
| Secondary CTE program completion             | Course Enrollment and Grades |
| Prepared for further education and/or career |                              |

Note: This type of information could be acquired through surveys of former students. It would require developing definitions of preparation for further education and work.

6. Percentage of area career center students' parents who report satisfaction with their child's education.

| Essential Data Description | Core Data / MOSIS |
|----------------------------|-------------------|
| Parent satisfaction        |                   |

Note: This type of information could be acquired through surveys of parents.

## Factors that Influence Success

1. Percentage of area career center teachers with five or more years of experience in the field in which they teach.

| Essential Data Description                   | Core Data / MOSIS                                       |
|--|---|
| Educator identifier                          | Educator  |
| Years of experience in the field or industry |   |
| CTE educator information                     | Months<br>Program Type<br>Career Education Time Devoted |

Note: Information about educators' work experience in the industry is not currently available through Core Data / MOSIS.

2. Percentage of area career center teachers with five or more years of teaching experience.

| Essential Data Description   | Core Data / MOSIS                                       |
|------------------------------|---|
| Educator identifier          | Educator  |
| Years of teaching experience | Years Experience Total<br>Years Experience District     |
| CTE educator information     | Months<br>Program Type<br>Career Education Time Devoted |

3. Percentage of educators with specified degrees.

| Essential Data Description | Core Data / MOSIS                                       |
|----------------------------|---|
| Educator identifier        | Educator  |
| Degree                     | Highest Degree  |
| CTE educator information   | Months<br>Program Type<br>Career Education Time Devoted |

4. Percentage of educators participating in high quality professional development.

| Essential Data Description               | Core Data / MOSIS                                       |
|--|---|
| Educator identifier                      | Educator  |
| Participated in professional development | Engaged in High Quality Professional Development        |
| Type of professional development         |   |
| Hours of professional development        | Professional Development Hours                          |
| CTE educator information                 | Months<br>Program Type<br>Career Education Time Devoted |

5. Percentage of educators expressing satisfaction.

| Essential Data Description | Core Data / MOSIS |
|----------------------------|-------------------|
| Educator satisfaction      |                   |

Note: This type of information could be acquired through surveys of teachers.