OCTAE Technical Assistance to States

Final Summary Report for Wyoming

RTI
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Final Summary Report for Wyoming

Prepared under contract to
U.S. Department of Education

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June 2016

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Background and Technical Assistance Strategy

The Office of Career, Technical, and Adult Education, Division of Adult and Technical Education, sponsors customized technical assistance (TA) to support states and grantees in improving the quality of their career and technical education (CTE) data and *Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV)* accountability systems.

The CTE section of the Wyoming Department of Education (WDE) requested TA in developing an effective system to improve the quality of its state evaluation of CTE programs. Currently, the state reviews and approves CTE courses for state funding purposes but provides no further feedback to districts on the quality of local CTE programs. In addition, WDE staff highlighted the CTE section's involvement in other key initiatives, including the Career Readiness Initiative, that could inform a new evaluation system for CTE pathways.

In consultation with Guy Jackson, state CTE supervisor at WDE, RTI International identified the following approach to addressing Wyoming's request:

1. Research existing CTE pathway evaluation models: RTI conducted a review of models and guidance for evaluating career pathways at the secondary level using materials developed by other states, including resources and a template created for the U.S. Department of Education's module, *Developing Metrics for Secondary Career and Technical Education Program Reviews*.[1]

2. Gather input from stakeholders on potential pathway evaluation models: Based on the state research, RTI produced an expanded list of candidate measures and a summary of evaluation processes for discussion with WDE staff and members of the Wyoming Career Readiness Council.

This report presents the results of the TA strategy and summarizes considerations and next steps for Wyoming to move forward with a new CTE program evaluation process.

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[1] See http://cte.ed.gov/accountability/technical-assistance-to-states.

State Research

To guide the research into existing state CTE pathway evaluation systems, RTI researchers met with WDE staff via teleconference to discuss Wyoming's current CTE course approval process and goals for a revised system. RTI shared previous work on CTE evaluation systems and proposed an approach for building on this existing work and customizing it for Wyoming. WDE staff requested additional information on the program evaluation and review processes used by local control, rural, and small states, such as Colorado, Montana, Nebraska, North Dakota, and South Dakota. Findings from the previous state research, as it pertains to Wyoming's TA goals, and new research into the states requested by WDE are described below.[2]

Previous Research

As part of a previous TA to States project, RTI staff analyzed CTE program review materials from eight states—California, Florida, Michigan, Minnesota, Ohio, New York, Texas, and Washington. This research yielded information on the types of review metrics used in other states, as well as the content addressed by state review processes. For example, RTI researchers identified three types of metrics—process-based, qualitative, and quantitative—and sorted them into the following categories:

- *Student engagement*: Student participation in CTE programs (e.g., program concentrators) and participation in career and technical student organizations.

- *Facilities and equipment:* Adequacy of infrastructure for instruction, industry practice, and safety.

- *Technical skills assessments*: Measurement of student technical skills, including the attainment of industry-recognized credentials.

- *Career development:* Availability of guidance and mentoring opportunities for students.

- *High school completion:* Number of students receiving a high school diploma or equivalent.

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[2] Please note that Nebraska is not included in this summary report as initial outreach to the state uncovered that it does not have a state-level CTE evaluation or program review process.

- ***Postsecondary preparation:*** Students earning dual credit and/or enrolling in postsecondary education after graduation.

- ***Connections with business and industry***: Involvement of local businesses in programs, including advisory boards, internships, and curriculum review.

- ***Curriculum and program design:*** Program alignment with state standards and industry needs.

As documented in the TA to States module, these categories provide a starting point for targeted conversations to identify the specific measures and data sources of highest priority for states.

Additional Research Conducted

RTI researchers applied the lessons learned from the previous state research to their inquiries into states' programs that were of specific interest and relevance to WDE. In February and March 2016, RTI reviewed state materials and conducted phone interviews with state staff members to understand their CTE review processes and identify evaluation metrics used by the states. Table 1 shows how the program review measures from Colorado, Montana, North Dakota, and South Dakota map to the originally identified categories.

Table 1. State measures by category

Category	Colorado	Montana	North Dakota	South Dakota
Student Engagement	X	X	X	X
Facilities/Equipment	X		X	X
Technical Skills Assessment				X
Career Development		X	X	X
High School Completion				X
Postsecondary Preparation				X
Connections with Business and Industry	X	X	X	X
Curriculum and Program Design	X	X	X	X

Additionally, these four states offered new categories of measures for consideration, including course sequencing, teacher preparation, student-teacher ratio, and engagement in a program improvement process.

Table 2 provides additional summary details on the evaluation systems in the four states requested by Wyoming. This information was presented to WDE staff in March 2016 (see Appendix A).

Table 2. Summary of career and technical education program review processes in four states

	Timeline	Purpose	Content Addressed
Colorado	Every five years, with a sample of districts randomly selected for audits on off years	Compliance with *Perkins IV* requirements and state CTE program requirements	Based on the Colorado state plan, content includes the following: • Work-based learning • Advisory committees • Program equity • Curriculum alignment • Plan for continuous improvement • Articulation agreements • Career and technical student organization (CTSO) participation • Instructor qualifications
Montana	Annual	Program approval; extracted from data entered into state data system	Alignment to state and/or national standards; instructor qualifications; appropriate course sequencing; career pathways and postsecondary partnerships; CTSO options
North Dakota	Conducted in person every five years	Program improvement and compliance with state/federal policy	Based on the state's Standards of Quality, which are adapted by program focus (e.g., career cluster). Standards broadly focus on the following: • Instructional planning and organization • Instructional materials utilization • Instructional personnel • Enrollment and student-teacher ratio • Equipment and supplies • Instructional facilities • Safety and sanitation training and practices
South Dakota	Annual	Program approval for funding, official credit, and continuous improvement	Enrollment and program concentration; technical skill attainment; dual credit; CTSO participation; curriculum and program design; collaboration with community and industry; alignment to state standards and high-wage, high-demand career opportunities; career guidance; innovation in curriculum and equipment

Stakeholder Feedback

Based on the state review, RTI developed an expanded set of measures that incorporated findings from the previous research and additional state research conducted for Wyoming (see Appendix B). RTI discussed these measures with WDE staff in May 2016 and led a feedback gathering session at the June 2016 meeting of the Wyoming Career Readiness Council.

Wyoming Department of Education

During the conversation with WDE, RTI discussed the implications of the state research for Wyoming's CTE evaluation system. In particular, WDE highlighted the following considerations:

- The need to balance the state's desire for a centralized evaluation process with the flexibility afforded to districts as a locally controlled state.

- The interest in creating an evaluation system that could be administered and validated electronically, rather than on-site.

- Possibilities for aligning the state's evaluation process with other state accountability and funding systems.

- Understanding how other states use program review processes to emphasize programs that support regional and state economic development priorities.

These considerations provide an important framework for pursing a revised CTE program evaluation process in Wyoming.

Wyoming Career Readiness Council

The Wyoming Career Readiness Council's retreat enabled RTI researchers to gather broad stakeholder feedback on the draft list of CTE evaluation metrics. Council members included representatives from state and regional employers and industry associations, postsecondary education, workforce development, and others, whose roles are to inform the state's vision for integrating and strengthening career readiness opportunities in K–12 education.

At the retreat, RTI briefly presented on its TA work and findings to date and facilitated a feedback session with council members (see Appendix C). Council members participated in a brainstorming session to share their definitions of what would make a quality CTE pathway in Wyoming. They then held targeted conversations to review the list of candidate metrics and identify those categories of measures of highest priority to the council.

Discussions about quality CTE programs centered on the need for close connections with business and industry and the ability to be responsive to the labor market. Council members cited the importance of integrating employability skills into curriculum and program development, as well as the need to contextualize academic and technical skill instruction. Other topics were raised related to student engagement and advising, especially in order to match students' interests to programs and vice versa. As noted by RTI staff, all of these topics map closely to the categories identified in the candidate list of metrics, though the integration of employability, academic, and technical skills could be more strongly emphasized. Feedback from the council related to specific candidate metrics is summarized below.

Student Engagement

- Concentrator status is preferable to participant status as it indicates students' ongoing interest and commitment to a program of study. However, the timeline for achieving concentrator status might be challenging for some high school students who want to explore multiple career interests.

- The state should recognize the importance of exposing students to pathways in general, whether or not students actually pursue a specific program of study or complete a pathway.

Facilities/Equipment

- Safety is very important.

Technical Skills Assessment

- The state might want to look at other forms of assessing technical skills besides traditional tests.

Career Development

- In addition to career guidance and counseling, programs should provide students with wraparound services to address their other (nonacademic) needs. Such services might be available through workforce programs that work with at-risk youth.

High School Completion

- The state wants to look at an expanded definition for high school completion in general, not just for CTE students. Such a definition might address participation in accelerated pathways and online learning that would have implications for the current funding formula that is based on average daily membership counts.

Postsecondary Preparation

- Articulation with postsecondary programs is important, as are partnerships with Boards of Cooperative Educational Services.

Curriculum and Program Design

- Academic and technical skill instruction should be integrated, not offered separately.

- The diversity and flexibility of program offerings should be considered.

Next Steps

While the input from the Wyoming Career Readiness Council provided helpful direction for refining a set of measures to be included in Wyoming's CTE program evaluation process, RTI suggests that additional input is warranted to refine specific metrics and identify available data sources. Likewise, in light of the council's charge to integrate career readiness strategies into the overall K–12 system, WDE might benefit from expanding, or reframing, the current list of candidate metrics to include and align with other state accountability systems. Therefore, specific next steps might include the following:

- ***Gathering additional feedback from local CTE stakeholders on the list of candidate metrics for program evaluation***. The results of this feedback session could be compared to the recommendations from the council to identify a comprehensive set of priority measures that has been vetted by internal and external stakeholders.

- ***Conducting an internal alignment review to see how the metrics compare to other accountability processes in the state***. The TA research offered a comprehensive understanding of other state review processes and metrics. However, the state's own accountability and funding systems provide other important sources for possible review metrics, as do other state and national initiatives like the Hathaway Scholarships and New Skills for Youth grant program.

- ***Identifying data sources and establishing review processes/procedures***. The metrics so far have been reviewed for their content and not necessarily for their ability to be measured consistently and reliably across CTE programs. Therefore, an important next step is to review the priority measures and consider the availability of data and possible data sources for each one. This should result in a list of vetted and plausible metrics for constructing a program review process.

- ***Considering the capabilities of WDE's new data system for CTE to support an electronic review***. During initial TA conversations, WDE mentioned the forthcoming adoption of a new CTE data system that could be leveraged for the program review process. The results of the preceding three steps should be compared to the variables in the data system to understand the state's capacity for collecting the necessary data and structuring an electronic review process.

Appendix A: March Presentation to Wyoming Department of Education

Review of State Candidate Measures for CTE Program Evaluation in Wyoming

TA Assistance to States

RTI International

March 10, 2016

Agenda

- Overview of findings from initial review of state candidate measures
- Summary of additional state research
- Next steps

Process

- Identification of CTE program topic areas and candidate metrics
- Small-group review of candidate metrics by state and regional CTE administrators
- Large-group review of candidate metrics by state CTE administrators, instructors, and other relevant stakeholders
- Development of a draft rubric for the candidate metrics for use in pilot testing

Measures

- Process measures: "Conduct ongoing analysis of economic and workforce trends to identify regional POS to be created, expanded, or discontinued."
- Qualitative measures: "How do teachers involve business and industry in your program (provide examples)?"
- Quantitative measures: "Proportion of students participating in experiential learning opportunities (lab work, co-ops, simulated workplace, mentorships, internships, pre-apprenticeships, apprenticeships)."

Questions for the Candidate Measures

- Is the measure **of interest**? Does it provide useful information for understanding and improving programs?
- **What data** might be used for this measure?
- Are these **data accessible** for CTE program evaluation activities?
- **How often** should information and data be collected?

Categories of Measures

- Student engagement (e.g., enrollment, WBL and CTSO participation)
- Facilities and equipment
- Technical skill assessments
- Career development (e.g., mentoring, career plans)
- High school completion
- Postsecondary preparation (e.g., dual enrollment, transitions)
- Connections with business and industry
- Curriculum and program design (e.g., industry alignment, POS)

Additional State Research (Feb/March 2016)

- Colorado – TBD
- Montana – self-evaluation for annual program approval
- Nebraska – N/A
- North Dakota – on-site program evaluation every 5 years
- South Dakota – annual program review as part of continuous improvement process

Cross-State Findings: Initial Measures

Area	MT	ND	SD	CO
Student Engagement	X	X	X	
Facilities/Equipment		X		
Technical Skills Assessment			X	
Career Development	X	X	X	
HS Completion			X	
PS Preparation				
Connections w/Biz and Industry	X	X	X	
Curr and Prog Design	X	X	X	

Additional Areas Identified in State Research

- Course sequencing (MT, ND, SD)
- Teacher preparation (MT, ND, SD)
- Student-teacher ratio (ND)
- Engagement in continuous program improvement process (SD)

MT Review Process

- Extracted from data entered into state's MIS on student enrollment, teacher preparation, and course information
- Data specialists review annually to confirm:
  - Alignment of courses to state and/or national standards
  - Courses taught by instructors with endorsement in relevant area(s)
  - Courses offered in a sequence that educates students about the program area and prepares them for employment and/or further education
  - Program has an approved Big Sky Pathway in place with partnering PS institution
  - Program has an active CTSO

ND Review Process

- Conducted on-site, every 5 years
- Based on Standards of Quality
  – Instructional planning and organization
  – Instructional materials utilization
  – Instructional personnel
  – Enrollment and student-teacher ratio
  – Equipment and supplies
  – Instructional facilities
  – Safety and sanitation training and practices
- Adapted for program type (e.g., Health Careers, IT)
- Used to identify need for program improvement and compliance with state/federal policy

SD Review Process

- School districts submit an application for each of their CTE programs annually
- Regional career development specialists review the application and determine if the program is fully approved, conditionally approved, or not approved
  – Conditionally approved programs are provided with corrective actions and a timeline within which to achieve them.
- The state also hosts in-person program improvement meetings in which district and state staff review program data and determine goals for improvement

Alignment of CTE Funding with Labor Market Data

State	Approach	Labor Market Alignment
Indiana	Weighted FTE formula based on credit hours and enrollment in state-approved CTE programs.	Programs are differentially weighted based on labor market demand and wages (high demand and high wages receive largest weight)
Kentucky	Student FTE weighted according to program type and cost: career orientation and exploration; technical skill program; and high cost technical skill.	High cost technical skill programs defined by state and weighted at 1.5 (vs. 1.0 for technical skill programs)
Michigan	60% of state funds are targeted to programs on the state's ranked list.	State rankings take into account project job openings, wages, and placement of CTE students into jobs in their field of study.

Next Steps

- Create candidate measures handout for stakeholder review
- Collect stakeholder feedback
- Finalize list of measures/rubric

APPENDIX

Student Engagement

- Number of program enrollees
- Number of concentrators
- Proportion of CTE enrollments from underrepresented groups (nontraditional by gender, race/ethnicity)
- Proportion of CTE enrollments participating in CTSOs
- Proportion of CTE enrollments engaging in work-based learning opportunities

Facilities and Equipment

- Equipment meets state-level CTE program guidelines
- Equipment is up to date and relevant to current industry standards
- Equipment is in good working order and meets safety requirements
- Adequate classroom and/or workshop space is available

Technical Skills Assessment

- Proportion of concentrators attempting an industry recognized credential
- Proportion of CTE concentrators earning an industry-recognized credential

Career Development

- Proportion of CTE concentrators participating in mentoring
- Proportion of CTE concentrators participating in employer visits and/or career fairs
- Proportion of CTE concentrators with completed career plans

High School Completion

- Proportion of concentrators earning a high school diploma in 4 years ("on time" graduation)
- Proportion of concentrators earning a supplemental career endorsement
- Proportion of concentrators earning a supplemental college endorsement
- Proportion of CTE concentrators earning both career and college endorsements

Postsecondary Preparation

- Proportion of concentrators enrolling in courses that offer postsecondary credit
- Proportion of concentrators earning postsecondary credit
- Proportion of concentrators earning postsecondary credits in CTE fields

Postsecondary Preparation (continued)

- Proportion of concentrators who enroll in a postsecondary institution within a year of high school graduation

- Proportion of the above who require developmental/remedial education

Connections with Business and Industry

- Advisory council members represent employers in state or regional "hot jobs" fields
- Program is aligned with state or regional "hot jobs" fields (e.g., courses and topics reflect employer needs in these fields)
- Student recruitment efforts include information about state or regional "hot jobs" fields

Connections with Business and Industry (continued)

- Student recruitment efforts include information about state or regional economic priority/high-demand fields
- CTE concentrator graduates are hired by local or state employers in their CTE field

Curriculum and Program Design

- Local courses are aligned with the knowledge and skills needed by industry

- Program has a documented grades 9–14 pathway or program of study that can be shared with students and parents

Appendix B: List of Candidate Measures

Area	Sample Measures/Indicators for CTE Program Review and Evaluation
Student Engagement	1. Number of program participants
	2. Number of program concentrators
	3. Proportion of participants/concentrators
	4. Proportion of underrepresented students (nontraditional by gender, underrepresented racial/ethnic groups)
	5. Proportion of CTE concentrators participating in career and technical student organizations
	6. Proportion of CTE concentrators participating in work-based learning
	7. Program has strategies in place for recruiting and retaining nontraditional students
	8. Program maintains a minimum/maximum student-teacher ratio
	9. Program meets the needs of special population students
Facilities and Equipment	10. Program equipment is up to date and meets current industry standards
	11. Equipment is in good working order and meets safety requirements
	12. Adequate classroom and/or workshop space is available
	13. Program conducts appropriate safety training
Student Assessment	14. Proportion of CTE concentrators earning the National Career Readiness Certification
	15. Proportion of concentrators in each program attempting a credential
	16. Of those who attempted, proportion who earned a credential
	17. Student performance on end-of-course examinations
Counseling and Guidance	18. Student participation in guidance activities (creation of graduation plan, etc.)
Curriculum and Program Design	19. Program has evidence that course standards are aligned with the knowledge and skills needed by industry and/or state CTE standards
	20. Program has a documented pathway or program of study that can be shared with students and parents
	21. Program has a true sequence of courses that moves from introductory to higher levels
	22. Courses are designed to attract a full representation of students in the school or district
	23. Program includes foundational, academic, and capstone courses
	24. Program offers opportunities for students to obtain industry certifications
	25. Program has articulation agreements with postsecondary institutions
High School Completion	26. Proportion of concentrators earning a high school diploma in four years ("on time" graduation)
	27. Proportion of concentrators earning a high school diploma Career Endorsement
	28. Proportion of concentrators earning a high school diploma College Endorsement or Academic Endorsement
Instructors	29. Proportion of instructors certified in their teaching fields
	30. Proportion of instructors with industry certification/credentials relevant to the subject they teach
	31. Instructors participate in CTE conferences, professional development, or other trainings
	32. New teachers complete specialized CTE professional development programs
Postsecondary Preparation	33. Proportion of CTE concentrators attempting to earn postsecondary credits in CTE (or other) fields
	34. Proportion of students earning any postsecondary credits in high school

Area	Sample Measures/Indicators for CTE Program Review and Evaluation
	35. Proportion of students earning postsecondary credits in high school in CTE fields
	36. Proportion of students/concentrators earning community college certificates in their career fields
	37. Proportion of program concentrators who enroll in a public institution of higher education who require developmental education
	38. Proportion of CTE concentrators who enroll in postsecondary education within a year of high school graduation
Connections with Business and Industry	39. Advisory council members represent employers in state or regional in-demand fields
	40. Advisory committee meets two or more times per year
	41. Program is aligned with in-demand fields (e.g., courses and topics reflect employer needs in these fields)
	42. Student recruitment efforts include information about in-demand fields
	43. Program partners with employers to design work-based learning opportunities
Other	44. Program administrators have access to and know how to review program and student data to identify trends and areas needing improvement

Appendix C: June Presentation to Wyoming Career Readiness Council

Identifying CTE Pathway Evaluation Metrics

Technical Assistance for Wyoming

Laura Rasmussen Foster and Kevin Jordan
June 20, 2016

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Objectives

- Share findings from RTI's technical assistance project with Wyoming

- Gather input from the Career Readiness Council on evaluation metrics for CTE pathways

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Background: TA to States

- Technical assistance sponsored by the Office of Career, Technical, and Adult Education, U.S. Department of Education, to help states improve quality of Perkins IV accountability systems
  – States submitted applications in Fall 2015
  – RTI International held conference calls with selected states to develop TA plans in December 2015
  – TA provided January - June 2016

- WY requested support in developing an effective system to improve the quality of its state evaluation of CTE programs

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TA Strategy for WY

1. Research existing CTE pathway evaluation models (building on work done for North Carolina)

2. Review potential pathway evaluation models with key stakeholders

3. Prepare a draft set of recommendations and policy options

4

Process—Steps 1 and 2

- Held initial conference call to discuss Wyoming's CTE program review process

- Reviewed findings from North Carolina's project based on CTE program evaluation materials from fifteen states

- Selected additional examples from five states most relevant to Wyoming

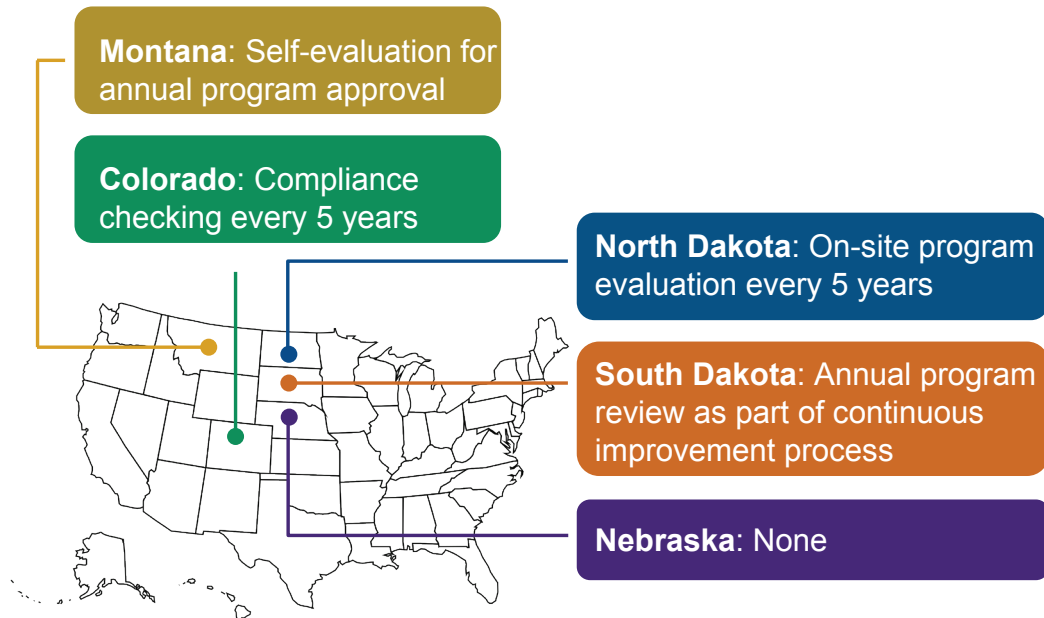- Initial list of candidate measures reviewed by CTE staff at the Wyoming Department of Education

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Group Discussion

Brainstorm: What do you think makes a "quality" CTE pathway in Wyoming?

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Other State Review Processes

Montana: Self-evaluation for annual program approval

Colorado: Compliance checking every 5 years

North Dakota: On-site program evaluation every 5 years

South Dakota: Annual program review as part of continuous improvement process

Nebraska: None

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Measures

- **Process measures**: "Conduct ongoing analysis of economic and workforce trends to identify regional POS to be created, expanded, or discontinued."

- **Qualitative measures**: "How do teachers involve business and industry in your program (provide examples)?"

- **Quantitative measures**: "Proportion of students participating in experiential learning opportunities (lab work, co-ops, simulated workplace, mentorships, internships, pre-apprenticeships, apprenticeships)."

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Categories of Measures

Student engagement
(e.g., enrollment, WBL and CTSO participation)

Facilities and equipment

Technical skill assessments

Career development
(e.g., mentoring, career plans)

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Categories of Measures (Continued)

High school completion

Postsecondary preparation
(e.g., dual enrollment, transitions)

Connections with business and industry

Curriculum and program design
(e.g., industry alignment, POS)

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Additional Areas Identified in State Research for WY

- Course sequencing (MT, ND, SD)

- Teacher preparation (MT, ND, SD)

- Student-teacher ratio (ND)

- Engagement in continuous program improvement process (SD, CO)

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Small Group Discussions: Metric Handout

1. To what extent are the quality factors reflected in the handout with compiled metrics?

2. What other metrics should be added?

3. Which measures are of most interest to the Council? Which are less relevant?

4. Of the measures of interest, what data might be used to evaluate pathway quality?

Report Out and Discussion

1. Which 3–5 measures are most important for WY to consider in evaluating local CTE pathways?

2. What other considerations should the WY Department of Education keep in mind in designing a pathways evaluation process?

Discussion/Wrap Up