2016–17 OCTAE Customized Technical Assistance to States
Final Summary Report for Alabama

Prepared under contract to
U.S. Department of Education

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Contents

Introduction .......................................................................................................................... 1

The Strategic Plan ............................................................................................................. 2

  Phase 1: Identify Common Questions and Data Needs ................................................. 2
  Phase 2: Develop a Handbook of CTE Data Elements ............................................. 2
  Phase 3: Create a CTE Reporting Process .................................................................. 2
  Phase 4: Develop Outreach and Communications Materials .................................... 3

Summary ............................................................................................................................ 3

Appendix A: Alabama CTE Data Strategic Plan .......................................................... A-1
Introduction

The U.S. Department of Education sponsors customized technical assistance (TA) to states each year through its Office of Career, Technical, and Adult Education (OCTAE), Division of Adult and Technical Education. This assistance is intended to help states improve 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 State of Alabama requested TA to improve the reliability of its CTE data collection processes used for accountability and stakeholder outreach. During initial consultations, it was determined that the state would benefit from refinements to its CTE data collection strategy. In consultation with Mary Simon, Education Administrator in the Career & Technical Education division at the Alabama Department of Education (ADE), a strategic plan was developed to direct efforts to improve the state’s CTE data collection process. The plan included four phases designed to be iterative, meaning that the state may perform many of the actions repeatedly and independently, as needed, to facilitate improvements in CTE data collection, reporting, and stakeholder outreach. The four phases of the strategic plan are as follows:

- Identify common questions and data needs
- Develop a handbook of CTE data elements
- Create a CTE data reporting process
- Develop outreach materials

Three overarching considerations guided the development of the strategic plan: First, ADE underscored the importance of stakeholder input to serve the needs of state legislators and policymakers, district and school administrators and teachers, and CTE students and their parents. Second, the state requested a plan in which the overall goal and objectives of the project could be broken down into discrete and manageable tasks with clearly identified outcomes. Finally, the state asked that the plan provide for the creation of materials that could be used to publicize the benefits of CTE programs to stakeholders across Alabama.
The Strategic Plan

The strategic plan is included in its entirety in appendix A. The following section offers a summary of each phase of the plan and the considerations that guided the development of recommendations.

**Phase 1: Identify Common Questions and Data Needs**

ADE staff routinely field questions from state legislators and education policymakers seeking information on various aspects of CTE programming (e.g., cost, program efficacy, relevance). The first phase of the strategic plan provides for the identification of questions commonly asked by both “internal” stakeholders (e.g., state executive or agency staff) and “external” stakeholders (e.g., business leaders, parents, educators, students). These questions are to be identified by ADE staff through the review of prior year data requests and consultation with identified data users. Once compiled, the list will be cataloged and prioritized based on the

- degree to which questions are common to multiple stakeholder groups;
- extent to which they align with annual state and federal CTE reporting requirements; and
- availability of data.

**Phase 2: Develop a Handbook of CTE Data Elements**

Development work is intended to produce a list of data elements (i.e., variables) required to answer the prioritized questions identified in Phase 1. Efforts also are intended to establish a common vocabulary for describing CTE data so that state analysts can quickly and easily respond to information requests.

**Phase 3: Create a CTE Reporting Process**

The state will formalize the CTE reporting process during Phase 3. This reporting process will include the creation of three components: a relational database of CTE data elements, a set of “business rules” that govern CTE data collection and handling, and a set of tables to support core CTE reporting requirements.

The first of these components—the relational database—will offer authorized users a stable platform for conducting interactive analyses and building reports based on CTE data. The software used to query the database will be designed to empower those with questions about CTE to find the answers they seek.
The second component—the development of CTE data “business rules”—is an extension of Phase 2 efforts to develop a common vocabulary around CTE data. A consistent set of practices governing data access can also ensure that stakeholders arrive at definitive answers to their questions on CTE-related topics. These rules will also serve as the basis for SQL queries that data analysts can use to build interactive and Web-based reporting tools and support routine and ad hoc CTE data reporting.

The third component is to develop a set of tables and data queries (using SQL or a similar programming language) to support core CTE reporting requirements, allowing states to quickly access data relevant to the needs of CTE programs, local education agencies and postsecondary institutions, and stakeholders. CTE tabulations may initially be designed to support routine CTE program and funding requirements, including populating the Consolidated Annual Report to comply with Perkins IV reporting requirements. Analyses can also be expanded to include additional tabulations responsive to the needs and questions of CTE stakeholders throughout the state.

**Phase 4: Develop Outreach and Communications Materials**

In the final phase of the strategic plan, ADE will develop a CTE outreach and communications plan based on the common CTE questions and data needs compiled in Phase 1 of the project. The plan will be built around a clear, cohesive, and consistent messaging strategy answering to the needs of different stakeholder groups, with content that targets each of these groups through multiple channels (e.g., state websites and social media, searchable and customizable datasets, and print materials).

**Summary**

While the emphasis of the TA to States project for Alabama shifted over time (from development of outreach and communications tools to improvements in state CTE data collection), the long-term goal remained the same: Promote effective communication with CTE stakeholders on topics that are relevant to them. To serve this goal, the TA team and ADE collaborated to produce a strategic plan to improve CTE data collection and reporting and develop a process that is purposefully built around the needs of CTE stakeholders. Project work will culminate in the development of a data collection and reporting system that promotes continuous improvement and lays a foundation for a flexible and adaptive communications strategy.
Appendix A: Alabama CTE Data Strategic Plan

CTE DATA STRATEGIC PLAN

**PHASE 1**
Identify common questions and data needs
The State will consult with CTE stakeholders to catalog and prioritize the state’s information needs
Outcome: Prioritized list of frequently asked questions (FAQs) relating to CTE services and programming

**PHASE 2**
Develop a handbook of CTE data elements
The State will specify the data elements needed to answer questions raised about CTE programming
Outcome: CTE data dictionary

**PHASE 3**
Create a CTE data reporting process
The State will use a relational database management system to store and analyze CTE data
Outcome: CTE database, business rules, and programming instructions

**PHASE 4**
Develop marketing materials
The State will develop marketing materials that document CTE’s economic and educational contribution
Outcome: Marketing materials tailored to the diverse needs of CTE stakeholders
1. QUESTIONS + DATA NEEDS

**PHASE 1**
Identify common questions and data needs

The State will consult with CTE stakeholders to catalog and prioritize the state's information needs

**OUTCOME**
Prioritized list of frequently asked questions (FAQs) relating to CTE services and programming

**STEP 1.1**
Identify stakeholder groups and common data needs

Identify stakeholder groups with a legislative, policy, or other interest in CTE data. This may include:

- INTERNAL STAKEHOLDERS, such as state executive or agency staff (within education or other departments) requiring data to comply with legislative, policy, or accountability requirements; and
- EXTERNAL STAKEHOLDERS, such as business leaders, educators, parents, or students, seeking data to inform their understanding of CTE programming and outcomes.

**DELIVERABLE 1.1**
List of internal and external stakeholder groups that make requests of state CTE agency staff on a regular or annual basis
1. QUESTIONS + DATA NEEDS

PHASE 1
Identify common questions and data needs

The State will consult with CTE stakeholders to catalog and prioritize the state’s information needs

Prioritized list of frequently asked questions (FAQs) relating to CTE services and programming

STEP 1.2
Gather information from stakeholder groups

Contact stakeholder representatives to determine their ongoing or annual information needs and the uses of these data. Options for gathering information could include:

- INTERNAL STAKEHOLDERS: Review annual reporting requirements associated with federal accountability reporting and state legislative or policy needs. Activities may include cataloging requests made to state CTE agency staff, supplemented by consultations with executive and legislative personnel or staff in other agencies.

- EXTERNAL STAKEHOLDERS: Consult with representatives of state business, educational professional associations, and representative parent and student groups. Outreach may include interviews with stakeholder leads, listening sessions at annual conferences, or solicitation of input using online or other survey tools.

DELIVERABLE 1.2
List of key questions for which information is needed, along with an identification of the stakeholders for which questions apply and their uses of information
1. QUESTIONS + DATA NEEDS

PHASE 1
Identify common questions and data needs

The State will consult with CTE stakeholders to catalog and prioritize the state’s information needs

OUTCOME
Prioritized list of frequently asked questions (FAQs) relating to CTE services and programming

STEP 1.3
Rank and prioritize common CTE data questions

Classify and rank groups’ information needs based on:

- annual reporting requirements to comply with federal or state legislative regulations or state and local administrative purposes (e.g., to address financing or program administration)
- degree to which identified questions are requested by multiple stakeholder groups
- extent to which data are available to answer questions.

DELIVERABLE 1.3
Prioritized list of questions for which information is needed on an annual basis
2. HANDBOOK + DATA ELEMENTS

**PHASE 2**
Develop a handbook of CTE data elements

**ACTIVITY**
The State will specify the data elements needed to answer questions raised about CTE programming

**OUTCOME**
CTE data dictionary

**STEP 2.1**
Specify data elements
Review the questions identified in Phase 1 and specify the data elements necessary to answer each. This may require the identification of multiple elements for each question (e.g., CTE populations, student characteristics, educational measures).

**DELIVERABLE 2.1**
A comprehensive listing of essential data elements
2. HANDBOOK + DATA ELEMENTS

**PHASE 2**

Develop a handbook of CTE data elements

The State will specify the data elements needed to answer questions raised about CTE programming

**STEP 2.2**

Conduct a content analysis of district and institutional data elements and collection strategies

Compile information on provider approaches for collecting and administering student and program data for identified elements (e.g., from student registration forms or local management information system handbooks). Conduct a cross-site content analysis to identify whether a common set of data elements and coding approaches can be identified. Where possible, build off local practices to minimize change to local systems.

**DELIVERABLE 2.2**

Content-analysis of local data elements with cross-referencing to state-identified data elements
Develop a handbook of CTE data elements

The State will specify the data elements needed to answer questions raised about CTE programming

STEP 2.3

Locate and catalog essential data elements

Identify state databases that contain the essential CTE data elements. This may include looking within existing state education datasets maintained by department staff, as well as networking with state agency staff in other departments (e.g., workforce) to identify longitudinal outcome data associated with assessing CTE programs. Assemble metadata for each data element (integrating information gathered in step 2.2), including:

- **Element Name** – concise description of the data element
- **Definition** – detailed description of the element
- **Variable codes and labels** – categorization of the different values the data element may take and a description of each (including criteria for coding missing variables)
- **Type** – alphanumeric description
- **Length** – number of characters used to specify the variable
- **Academic year** – description of the academic year for which the element is identified
- **Year implemented** – year (typically academic) the variable was introduced
- **Year decommissioned** – year the variable was decommissioned, as applicable
- **Source** – database from which variable is drawn
- **Uses and authority** – application of the variable for federal, state, or other reporting purposes, as well as the authority to collect the item, where applicable
- **Changes over time** – identification of changes made to variable and dates when applied
2. HANDBOOK + DATA ELEMENTS

PHASE 2

Develop a handbook of CTE data elements

The State will specify the data elements needed to answer questions raised about CTE programming

OUTCOME

CTE data dictionary

STEP 2.3 continued

DELIVERABLE 2.3

A data dictionary defining all available and relevant CTE data elements

Note: States typically develop criteria to assist local education administrators in submitting CTE data. These instructions may be consulted in formulating the state’s data dictionary. See for example the Student Templates Instruction Manual, which provides guidelines for how local data are to be reported to the state. Similarly, Florida has constructed a CTE database handbook that school district staff use when reporting information on CTE students. State administrators also may wish to consult the Common Education Data Standards (CEDS) project, which has specified a set of CTE data elements and coding procedures to standardize data formats across states.

Given the needs for and uses of longitudinal data, it is assumed that the state will use existing or develop new unique student identifiers that can be used to track student data across education agency (i.e., K-12 and postsecondary) and other agency databases as warranted (i.e., workforce, corrections, social services, etc.).

The state may wish to consider a timeline for updating data elements to ensure the data dictionary remains current.
3. REPORTING PROCESS

**PHASE 3**
Create a CTE data reporting process

**ACTIVITY**
The State will use a relational database management system to store and analyze CTE data elements

**OUTCOME**
CTE database, business rules, and programming instructions

**STEP 3.1**
Build a relational database of CTE data elements

**ACTIVITY**
Design and build a relational database (using SQL Server or similar) for use in storing and analyzing CTE data elements. This will entail compiling data used for annual reports in a centralized database or providing a means of accessing data housed in different databases, as well as establishing protocols to ensure that personally identifiable information is protected.

**DELIVERABLE 3.1**
A relational database containing CTE data elements used to respond to state CTE data requests or to produce annual federal and/or state reports
3. REPORTING PROCESS

PHASE 3
Create a CTE data reporting process

ACTIVITY
The State will use a relational database management system to store and analyze CTE data elements

OUTCOME
CTE database, business rules, and programming instructions

STEP 3.2
Develop business rules for CTE data analysis

Develop business rules that define how data elements will be queried and analyzed to answer the frequently-asked questions (FAQs) identified in Phase 1. Business rules should identify:

- INDICATOR CONSTRUCTION – specification of the data elements to be used to identify measurement populations and construct indicators (i.e., identification of numerators and denominators)
- PROGRAMMING GUIDANCE – instructions on how composite variables are to be created and how missing variables or other data limitations should be resolved

DELIVERABLE 3.2
Set of business rules that define how data elements will be analyzed to produce information

Note: For an example of CTE business rules, see Florida’s 2014-15 Perkins Accountability Measure Business Rules Secondary S-Measures.
3. REPORTING PROCESS

**PHASE 3**
Create a CTE data reporting process

**ACTIVITY**
The State will use a relational database management system to store and analyze CTE data elements

**OUTCOME**
CTE database, business rules, and programming instructions

**STEP 3.3**
Create analysis tables to support annual reporting

Create standardized analysis tables that may be used by state CTE education agency personnel or local program staff to produce data on an annual or *ad hoc* basis.

**DELIVERABLE 3.3**
A set of analysis tables detailing the data elements to be used to produce data needed to answer questions identified in Phase 1

**Note:** Access to the analysis tables developed by state CTE education agency staff may be limited to state staff; however, some states have pre-programmed software to allow local education staff to run their own analyses of data. See for example the Delaware Guide to DOE Reports for Perkins Grant Reporting and Data Reports which provides information to support local CTE providers in accessing data contained within the state information system to conduct their own program analyses.

State staff may wish to consider holding a request for information (RFI) process from third-party vendors to assess potential avenues and tools for disseminating CTE data.
3. REPORTING PROCESS

PHASE 3

Create a CTE data reporting process

ACTIVITY

The State will use a relational database management system to store and analyze CTE data elements

OUTCOME

CTE database, business rules, and programming instructions

STEP 3.4

Test CTE reporting process and revise as needed

Analyses conducted by state CTE education agency personnel should produce consistent information irrespective of who queries the data. Once tables are developed, the system should be tested by state staff to assess the reporting process in terms of its ease of use and reliability of results. This can help to ensure that state reporting will be accurate overtime and will not be affected by staff turnover.

DELIVERABLE 3.4

Assessments of the CTE reporting process and revisions to the reporting process, as necessary
4. MARKETING MATERIALS

**PHASE 4**

**Develop marketing materials**

The State will develop marketing materials that document CTE's economic and educational contribution.

**STEP 4.1**

**Develop a marketing and communications plan**

Based on frequently asked questions compiled in Phase 1 (and on an ongoing basis), as well as the evolving needs of CTE programming and stakeholders:

- Develop cohesive and consistent messaging strategy
- Develop content
- Execute and implement communication channels

**DELIVERABLE 4.1**

Comprehensive Alabama CTE marketing communications plan
4. MARKETING MATERIALS

**PHASE 4**

**Develop marketing materials**

*ACTIVITY*

The State will develop marketing materials that document CTE's economic and educational contribution

*OUTCOME*

Marketing materials tailored to the diverse needs of CTE stakeholders

**STEP 4.2**

**Develop cohesive and consistent messaging strategy**

Establish a clear vision and mission statement that encapsulates the messaging and communications to various CTE stakeholders. Identify the unifying messages and top priority pieces of information for CTE users.

Differing users and stakeholders have different information, communication needs, and messaging channels. Determine the channels most appropriate for each audience and map accessible communication.

**DELIVERABLE 4.2**

Audience and needs segmentation map of information needs for different CTE stakeholders and identification of optimal communication channels
4. MARKETING MATERIALS

**PHASE 4**

Develop marketing materials

The State will develop marketing materials that document CTE's economic and educational contribution

**STEP 4.3**

Develop content

Craft stories and narratives that engage the audiences to educate, inform, and incite action. Synthesize data into usable insights – data analytics should tell meaningful stories that engage and educate users. Users should easily be able to find what they need. Content should:

- offer actionable information
- be optimized for search engines
- develop trust and credibility for Alabama CTE
- deliver sustainable results for the long term
- establish Alabama as a thought leader in the CTE space

**DELIVERABLE 4.3**

Valuable, relevant, and consistent content that maps to diverse audiences
4. MARKETING MATERIALS

PHASE 4

Develop marketing materials

The State will develop marketing materials that document CTE’s economic and educational contribution

STEP 4.4

Execute and implement communication channels

Develop site, social media campaign, searchable and customizable data sets, printed materials, presentations, advertisements, and similar marketing materials. Explore two-way communications to deepen the relationship between Alabama CTE and its audiences.

DELIVERABLE 4.4

Suite of well-executed communication channels that are consistent, cohesive, and complementary in their messaging and information to reach diverse audiences and drive action