Career and Technical Education Program Evaluation: Why It Matters to Practitioners
Training Module Series #3

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Mission

To expand the evidence base on the impact of career and technical education (CTE) programs on student outcomes by:

- Increasing the number of CTE impact studies performed.
- Strengthening field capacity to conduct and use rigorous CTE research.
Practitioner Training Modules

This series of six modules is designed to support CTE educators in learning more about data and research.

1. Understanding CTE data and why it matters
2. Using data and research to improve CTE programs
3. **CTE program evaluation: Why it matters to practitioners**
4. Using state data to partner with researchers
5. Using research to design your CTE program for equity
6. How to communicate about your CTE program using research

Module Contents

- Defining Key Terminology
- Program Evaluation
  - Types
  - Value
  - Best practices
  - Activity: Who benefits from program evaluation?
- Logic Models
  - Defining terms
  - Assessing outcomes
  - Activity: Applying modeling
- Closing Reflection and Resources
Objectives

After viewing this module, you will be able to:

- Define impact and what it means to have an impact.
- Explain the difference between performance measures and program evaluation.
- Explain why program evaluation is valuable for CTE programs.
- Understand the different types of evaluation and their purpose.
- Identify best practices in program evaluation.
- Learn what a logic model is and how to use one to assess program outcomes.

Module Instructions

This module includes processes, activities, and tools you can use to drive change at your site.

Before you begin, we recommend downloading and printing the activity worksheets to help contextualize your viewing.
Activity 1: Opening Self-Reflection

What do you hope to learn in undertaking a program evaluation at your site?

- Answer the questions included in Self-Reflection Activity Worksheet 1.
- Restart the module when you have completed the worksheet.

Defining Key Terminology
Impact

Impact is used to describe the effectiveness of a program or intervention in achieving a desired result.

https://www.merriam-webster.com/dictionary/impact
Causality

Causality describes a relationship between cause and effect, meaning that the results of an intervention can be directly attributed to the actions taken.
Performance Measurement

Performance measures provide information on a program’s progress in meeting identified goals, using indicators that:

- Provide a quantifiable measure of a discrete program component.
- Are typically expressed as a number or percentage.
- Follow clearly defined collection methodologies to produce accurate data.

*WBL = work-based learning

**Diagram**

- **Inputs**
  - Program funding
  - Staff skill set

- **Outputs**
  - CTE concentrators
  - WBL participation

- **Activities**
  - Training sessions
  - WBL* employer recruitment

- **Outcomes**
  - Graduation
  - Employment
Program Evaluation

Program evaluation describes a systematic approach for collecting and analyzing data to make informed conclusions that entails:

- Specifying a logic model describing how a program operates and what it will produce.
- Defining processes and methods guiding data collection and analysis.
- Describing how the program is achieving or falling short of its intended objectives.
## Logic Model

<table>
<thead>
<tr>
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*Describes the steps you will take to launch and deliver services, and assess your results*
Evaluation Types

**Process Evaluation**
Examination of implementation efforts to assess whether an intervention is operating as intended

**Outcome Evaluation**
Analysis of the results associated with an intervention without attributing a cause-and-effect relationship

**Impact Evaluation**
Analysis of the results associated with an intervention that allows for a causal link to be made between actions and results
Evaluating CTE Programs
The Value of Evaluating CTE Programs

- Document outcomes
- Assess goal attainment
- Improve program effectiveness
- Inform program planning
- Communicate results to stakeholders

https://cdn.pixabay.com/photo/2015/05/18/14/22/microscope-772297_960_720.jpg
### Performance Measures Versus Program Evaluation

<table>
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<tr>
<th>Similarities</th>
<th>Differences</th>
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<tr>
<td>Use data to assess results</td>
<td>Provides information on overall program impact</td>
</tr>
<tr>
<td>Employ formal procedures for the collection of data</td>
<td>Entails the use of multiple measures</td>
</tr>
<tr>
<td>Provide information to be used as basis for improving outcomes</td>
<td>In the case of an <em>impact</em> evaluation, performed at specific times to assess results</td>
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#### Performance Measures
- Assess a discrete result
- Provide data on a given program input, activity, output, or outcome
- Used to collect data on an ongoing basis

#### Program Evaluation
- Provides information on overall program impact
- Entails the use of multiple measures
- In the case of an *impact* evaluation, performed at specific times to assess results
Evaluation Types and Components of Focus

Process
- Inputs/Activities ➔ Outputs

Outcome
- Inputs/Activities ➔ Outputs ➔ Outcomes

Impact
- Inputs/Activities ➔ Outputs ➔ Outcomes
- Inputs/Activities ➔ Outputs ➔ Outcomes

Experimental Group
Control Group
Assessing Impact

Impact evaluations use specialized methodologies and statistical methods to ensure that any measured outcomes are due to the program or initiative under study, and not other factors.

https://cdn.pixabay.com/photo/2019/12/14/07/22/bowling-4694355_960_720.png
An impact evaluation is a systematic approach to assessing the results of an intervention.

- Employs a comparison population to serve as a control group.
- Used to assess the net effect of a program versus it never occurring.
- Usually focused on longer term outcomes.
- Supports drawing cause-and-effect conclusions.

Typical Evaluation Designs

Randomized controlled trials:
- Are considered the “gold standard” for evaluation.
- Entail random assignment of participating units.
- Control for systematic differences that may exist among participants.

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<th>Posttest</th>
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<td><strong>Intervention Group</strong> (Randomly Assigned)</td>
<td>O</td>
<td>X</td>
<td>O</td>
</tr>
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<td>O</td>
<td></td>
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X = intervention is administered
O = measurement is taken
Typical Evaluation Designs

Quasi-experimental designs:
- Provide for intervention and comparison groups.
- May involve self-selection into groups.
- Attempt to control statistically for systematic differences that may exist among groups.

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X = intervention is administered
O = measurement is taken
Assessing Impact in CTE: Secondary

New York City’s Pathways in Technology (P-TECH) model uses a lottery selection process to approximate a random assignment study. Interim findings indicate that:

- P-TECH students earn more total credits than students in other schools, with CTE and other nonacademic credits driving credit accumulation.
- At the end of 2 years of high school, 42% of P-TECH students had passed the English language arts (ELA) Regents exam compared with 25% of comparison students.

Assessing Impact in CTE: Postsecondary

Washington state’s Integrated Basic Education and Skills Training (I-BEST) program integrates occupational training and basic skills instruction in structured career pathways for learners with basic skills too low for college entry.

- I-BEST positively impacted credential completion, with 44% of participants earning a certificate or degree within 24 months compared with 12% in the comparison group.
- I-BEST positively impacted college course enrollment, with nearly 90% of participants enrolling compared with 68% of the comparison group.

Best Practices in Evaluation

Educators can take several steps to ensure they are conducting a quality program evaluation. These include:

- Engaging researchers prior to launching an intervention.
- Formulating a logic model to describe the intervention’s action.
- Establishing a rigorous research design before implementation.
- Collecting accurate and timely data.
- Incorporating initial findings to strengthen program services.

https://cdn.pixabay.com/photo/2019/03/09/16/40/hands-4044426_960_720.jpg
Activity 2: Program Evaluation Benefits

Who might benefit from knowing the positive impact your CTE program is having on learners?

- Answer the questions included in the Self-Reflection Activity 2 Worksheet.
- Restart the module when you have completed the worksheet.

Logic Models

Understanding the logic in logic models
The Logic Behind Logic Models

- Visual representation of idealized if–then relationships
- Lays out a theory of action or change driving a program or policy
- Access to and application of resources leads to programs that reach targeted participants
- When these populations are reached, unmet needs are met and circumstances improve
- Changes are intended to solve the problem that initiated this work

Source: Shamand & Rodriguez (2015)
Logic Model

- Inputs
  - Description of supports for the intervention
  - May include fiscal, human, or material investments
  - Used to provide support for the work you will undertake
Logic Model

- **Activities**
  - Actions taken to launch an intervention
  - May include curricular adoption, professional development, or events with parents or students

- **Outputs**
  - Immediate results
  - May include participation in professional development offerings or events with parents or students
Logic Model

- Outcomes
  - Capture the impact of your intervention
  - Can be changes in quantity or quality
  - May be disaggregated to account for time
  - May be disaggregated by subgroups when possible
Types of Outcomes

- Program level
  - New programs of study offered
  - New curricular offerings in place
- Student level
  - Secondary achievement
  - Employability skill gains
  - Postsecondary enrollment, persistence, and credential/degree attainment
  - Employment and wages

https://cdn.pixabay.com/photo/2015/12/16/11/28/technology-1095751_960_720.jpg
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**Note:**
- Immediate
- 1–3 years
- 4+ years

**CTE Career & Technical Education Research Network**
### Logic Model: Postsecondary Example

**Pasadena City College: Guided Pathways**


<table>
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<tr>
<th>Inputs</th>
<th>Activities</th>
<th>Outputs</th>
<th>Participation: Who We Reach</th>
<th>Short Term Impact (1-3 years)</th>
<th>Long Term Impact (7-10 years)</th>
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<tr>
<td>Management</td>
<td>1. Leadership from all areas of the college</td>
<td>All campus groups</td>
<td>1. All students</td>
<td>1. Degree and certificate completion rates have increased by X%</td>
<td>1. Transfer readiness rate has increased by X%</td>
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<td>2. Participation from diverse groups, including students</td>
<td>2. Collaboration between Instruction and Student Services</td>
<td>2. Community partners and members</td>
<td>2. Access to a Success Team of counselors and coaches</td>
<td>2. Total units accumulated have increased by X%</td>
<td>2. Average time to academic goal completion has decreased by X years</td>
</tr>
<tr>
<td>3. Partnerships with community members, including high school districts and local industries</td>
<td>3. Commitment to integrate and direct District’s current and future grant resources</td>
<td>3. Information</td>
<td>3. Completed a comprehensive Ed Plan</td>
<td>3. Equity gaps for all students in all areas have decreased by X%</td>
<td>3. Registered for a transfer-level math and English in their first year of college</td>
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#### Student-centered suite of supports to increase college completion
- Leverages multiple resources to offer a range of activities

#### Logic model
- Documents college investments and results
- Focuses on short-term and long-term impacts

Logic Model: Secondary Example

Implementing the Linked Learning Initiative

- Evaluation of a districtwide adoption of Linked Learning
  - Impact evaluation to assess pathways implementation, student experiences, and educational outcomes
- Logic model
  - Documents inputs, actions, and outcomes

Activity 3: Using Logic Models

Building a logic model to address a pressing problem at your own site:

- Follow the instructions included in the Activity 3 Worksheet.
- Restart the module when you have completed the worksheet.

Closing Reflection and Resources
Activity 4: Closing Self-Reflection

Questions to ask about your program evaluation efforts:

- Answer the questions included in the Self-Reflection Activity 4 Worksheet provided.
- Restart the module when you have completed the worksheet.

References and Resources

Activity Handouts 1–4


References and Resources


Contact Information

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