Logic Model Guide for ATE Projects

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This document provides an overview of logic model components to assist grant seekers or grantees of the National Science Foundation's Advanced Technological Education (ATE) program in developing a logic model.

Why use a logic model?

Developing a logic model is an important first step for project design and evaluation planning. *A logic model is a visual depiction of what a project does and the changes it is expected to bring about.* Logic models can be presented in various formats such as flowcharts, tables, and diagrams. Logic models help you succinctly communicate what your project does or plans to do. Logic models can be used as a reference to identify evaluation questions and which data should be collected to answer those questions.

Basic logic models include some variation of inputs, activities, outputs, outcomes, and impacts. These linear logic models often oversimplify reality. They may overstate the causal links between the components and de-emphasize the importance of contextual factors, which could impact successful project replication in a different context. Some people add components to their logic model to acknowledge contextual and systematic factors, such as community needs, assumptions, and external factors.

How to assess the quality of a logic model?

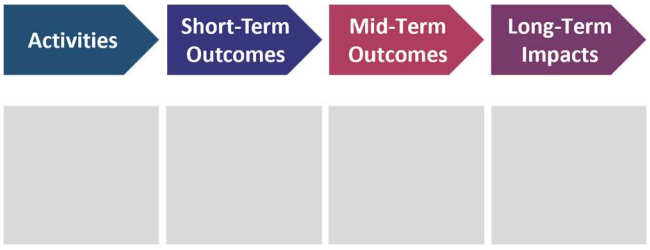
- ☐ Is there a logical connection between the activities and outcomes listed (i.e., a chain of reasoning that could be read as "If ____, then ____").
- ☐ Do the long-term impacts address the identified community needs?
- ☐ Are the outcomes focused on changes in participants or those external to the project?
- ☐ Are the outcomes specific and measurable?
- ☐ Is the information included in the logic model succinct and necessary to bring about the long-term impact?

What are the components of a logic model?

The components (i.e., column headings) used across logic models vary. ***There is no one right way to make a logic model.*** Choose a format that best describes your project and meets the audience's information needs.

Core components

To communicate what a project does and the change it intends to bring about, ***all logic models should include project activities, outcomes, and impact.***



Activities

Key project activities intended to bring about intended change (e.g., actions, processes, and events).

Answers the questions: *What are the main things the project will do to bring about change? What do we plan to do?*

ATE examples:

- Develop curriculum
- Conduct workshops
- Provide field experiences
- Establish articulation agreement
- Hold summer transition program for high school students

Short-Term Outcomes

Changes in the intended participants that result from outputs or activities (e.g., knowledge, skills, or attitudes).

Answers the questions: *What will occur as a result of the activities and outputs? What will the intended participants know or be able to do because of the projects?*

ATE examples:

- Faculty learn to use virtual reality technology
- Students' interest in technical careers increases
- High school students' awareness of STEM pathways increases
- Increased diversity of students enrolled in STEM program

Mid-Term Outcomes

Changes in the intended participants that result from short-term outcomes (e.g., behavior, policies, or practice).

Answers the questions: *What results should follow from the initial outcomes?*

ATE examples:

- Students gain technical and employability skills
- Students persist in their programs
- Faculty improve instruction
- Increased diversity of STEM program graduates
- Increased number of technicians in the workforce

Long-Term Impact

Broader changes from outcomes that get at the need for the project (i.e., individual, organizational, community, or systems level).

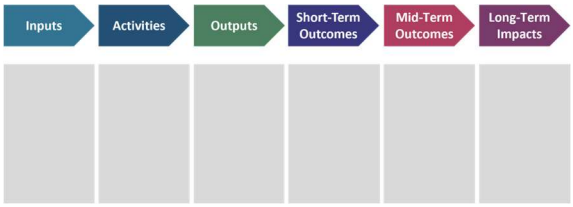
Answers the questions: *What is the larger impact of the project?*

ATE examples:

- Increased diversity in the technical workforce
- A more highly skilled and adaptable workforce
- STEM pathways are sustained at two- and four-year colleges
- Program able to be replicated on a national scale

Additional components

A basic logic model, includes some variation of inputs, activities, outputs, outcomes, and impacts. The following are other components you may want to consider including in your logic model.



Inputs

Resources that are needed to implement project activities (e.g., equipment, space, services, staffing, funding).

Answers the questions: *What resources are essential for the project's success? What resources would be needed to recreate the project?*

ATE examples:

- NSF funding
- Faculty
- Advisory panel
- Industry partners
- In-kind contributions
- Existing college or university infrastructure or technology

Outputs

Direct and immediate results from activities that can be counted. Usually describes the amount and reach of the services or deliverables.

Answers the questions: *What products will be created? How many of each product will be created?*

ATE examples:

- # of curriculum materials
- # of revised institutional policies to promote equity
- # of new certificate program
- # of tools/resources
- # of students enrolled in STEM pathway
- # of articulation and dual-enrollment agreements executed

Interested in more logic model resources?

W. K. Kellogg Foundation's Logic Model Development Guide: Refer to this guide for how to build various logic models for different purposes. bit.ly/kellogglm

University of Wisconsin-Madison Extension Office's Logic Model Resources: This collection of resources guide development of logic models that factor in assumptions need for program success. bit.ly/uwm-lm

Examples of ATE specific logic models: See ATE logic models in the following award-winning evaluation reports created by Magnolia Consulting, The Rucks Group, and The Allison Group and MUME Collective. bit.ly/ate-examples

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