

# Logic models: A tool for effective program planning, collaboration, and monitoring

**Wendy Kekahio**

*Mid-continent Research for Education and Learning*

**Louis Cicchinelli**

*Mid-continent Research for Education and Learning*

**Brian Lawton**

*University of Hawaii at Mānoa*

**Paul R. Brandon**

*University of Hawaii at Mānoa*

---

This guide, an installment in a four-part series on logic models, describes the role of logic models in effective program planning, collaboration, and monitoring. It defines the four components of these models—resources, activities, outputs, and outcomes—and explains how they connect. Using logic models can help practitioners and evaluators better understand a program’s mechanics and structure and chart a course toward improved policy and practice.

---

A logic model is a visual representation of the assumptions and theory of action that underlie the structure of an education program. A program can be a strategy for instruction in a classroom, a training session for a group of teachers, a grade-level curriculum, a building-level intervention, or a district- or statewide initiative.

Developing a logic model at the beginning of program planning gives you a framework for charting the links between your program’s resources, activities, and outputs and its intended outcomes. It enables you to evaluate your program once it begins. And it helps you communicate to your stakeholders what you want to accomplish, how you intend to reach your goals, and how you will track your progress.

Planning a program requires time, effort, participation, and collaboration of stakeholders, including students, teachers, administrators, community members, policymakers, and program evaluators. Using logic models in this process can help practitioners and evaluators better understand a program’s mechanics and structure and chart a course toward improved policy and practice.

This guide is an installment in a four-part series on logic models and program planning and monitoring.<sup>1</sup> The four guides introduce logic models to educators new to the concept and provide a refresher for educators who are familiar with logic models but who have not recently developed one.

## Defining the logic model components

---

Logic models connect your work to your expected outcomes—often expressed in changes in student performance and achievement. Included in most logic models are four components: resources, activities, outputs, and outcomes.

- *Resources* are the raw materials needed to create the program, implement its activities, and attain the desired outputs and outcomes. Sometimes called *inputs*, resources include both material items (such as curricula, instruction materials, facilities, and funding) and nonmaterial items (such as time, community support, and specialized knowledge and skills).
- *Activities* are the processes, actions, and events through which the program resources achieve the intended outcomes; they are the steps in implementing a program. Examples include collaborating with partners, developing training or curriculum materials, conducting training sessions or workshops, and collecting and analyzing student performance data.
- *Outputs* are tangible, often process-oriented results or products typically expressed in numbers, such as number of students tested, number of teachers trained, and number of books read. While outputs provide information derived from the completion of program activities, they cannot indicate whether a change has occurred. For example, an output can tell you how many teachers attended training but not whether the training increased the teachers' knowledge of the training topic.
- *Short- and mid-term outcomes* are the changes in program participants' knowledge, beliefs, and behavior due to their involvement in the program. Outcomes can also be quick adjustments in organizational practices or system design. Short-term outcomes are observable almost immediately after participation; mid-term outcomes can take months or years to emerge and typically build toward long-term outcomes.
- *Long-term outcomes*, sometimes called *impacts*, are a program's lasting influences. Like short- and mid-term outcomes, long-term outcomes can be changes in knowledge, beliefs, and behavior. Examples include higher student achievement scores, increased high school graduation rates, and greater college acceptance rates.

Outcomes are required to demonstrate a program's success. Which outcomes are included in a logic model depends on the program's goals. Some programs have only short-term goals and outcomes, while others have only long-term ones. And not all programs differentiate among short, mid-, and long term. For example, a logic model for a program that offers class field trips to local institutions, such as art galleries or museums, might have the outcome of increasing student awareness of and interest in local cultural, artistic, or historical sites, without specifying whether the outcome will occur during, on completion of, or sometime after the field trip.

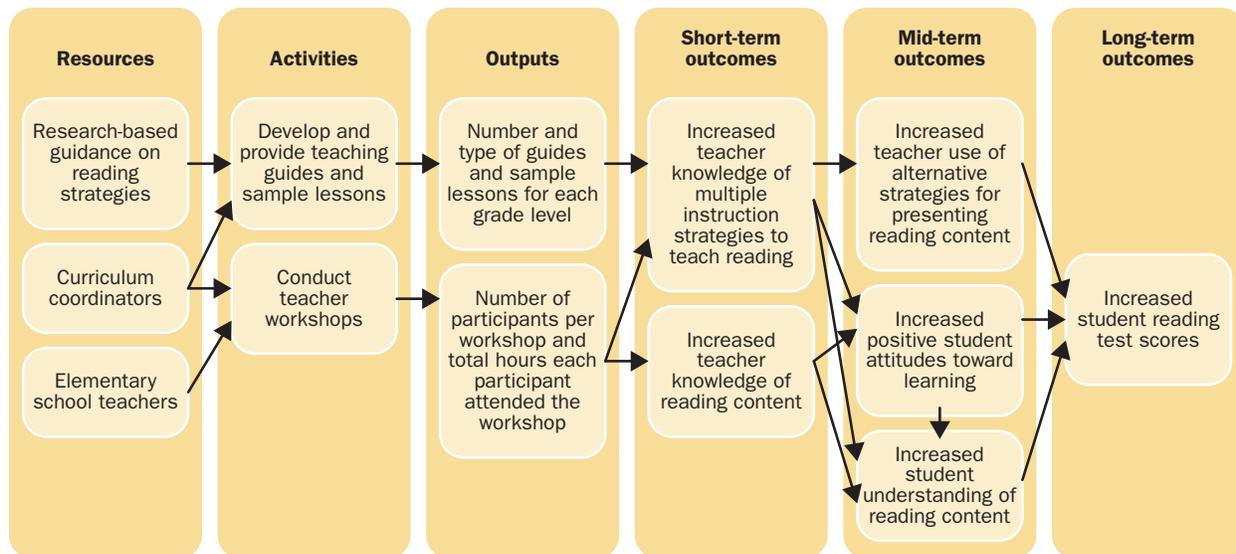
Developing your program's logic model components will take practice and collaboration. Some programs will involve only a few resources, activities, outputs, and outcomes; others will involve many. The number of each should match your program's complexity, and the specificity of each can vary. Important resources, activities, outputs, and outcomes might be identified separately (for example, for a program to conduct a workshop), and less important or similar ones might be clustered and displayed together (for example, "conduct interviews" and "administer a survey" might be grouped as "collect data on program satisfaction").

## Connecting the logic model components

---

Logic models show the connections linking a program's resources, activities, outputs, and outcomes (figure 1). These connections depict how the program is expected to operate—how each component will influence another to attain the intended outcomes. The connections can guide your program from start

**Figure 1. Sample logic model for a teacher training program on alternative reading strategies**



Source: Authors.

to finish. For example, an activity can influence an output, and that output can influence a short-term outcome. Making these connections can help you anticipate your program’s flow and can illustrate the interdependencies across components.

In figure 1, research-based guidance, curriculum coordinators, and elementary school teachers are the resources required to implement a teacher training program on alternative reading strategies. Research-based guidance and curriculum coordinators are necessary for developing and providing teaching guides and sample lessons. Curriculum coordinators and elementary school teachers are needed to conduct the teacher workshops. The outputs of these two activities are the number and type of teaching materials distributed for each grade level and the number of participants per workshop and the number of hours each participant attended the workshops. These outputs connect to two short-term outcomes: increased teacher knowledge of instruction strategies to teach reading and increased teacher knowledge of reading content. The short-term outcomes support the mid- and long-term outcomes: increased teacher use of alternative strategies for presenting reading content, increased positive student attitudes toward learning, increased student understanding of reading content, and finally increased student reading test scores.

When properly constructed, logic models reflect the elements of a program and convey the underlying theory of action—how the program’s resources, activities, and outputs lead to desired outcomes.

## Note

1. This guide serves as a companion to the Education Logic Model computer-based application developed by Regional Educational Laboratory (REL) Pacific administered by Mid-continent Research for Education and Learning. The application is an interactive, computer-based tool designed to help educators develop logic models.

This guide, and others on logic models and program planning, are available for download from the REL Pacific website (<http://relpacific.mcrel.org>) or by emailing REL Pacific at [relpacific@mcrel.org](mailto:relpacific@mcrel.org). The Education Logic Model application can be accessed from the REL Pacific website.

REL 2014–025

The National Center for Education Evaluation and Regional Assistance (NCEE) conducts unbiased large-scale evaluations of education programs and practices supported by federal funds; provides research-based technical assistance to educators and policymakers; and supports the synthesis and the widespread dissemination of the results of research and evaluation throughout the United States.

March 2014

This report was prepared for the Institute of Education Sciences (IES) under Contract ED-IES-C-12-0010 by Regional Educational Laboratory Pacific administered by Mid-continent Research for Education and Learning. The content of the publication does not necessarily reflect the views or policies of IES or the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

This REL report is in the public domain. While permission to reprint this publication is not necessary, it should be cited as:

Kekahio, W., Cicchinelli, L., Lawton, B., & Brandon, P. R. (2014). *Logic models: A tool for effective program planning, collaboration, and monitoring*. (REL 2014–025). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Pacific. Retrieved from <http://ies.ed.gov/ncee/edlabs>.

This report is available on the Regional Educational Laboratory website at <http://ies.ed.gov/ncee/edlabs>.