because the program's theory of change was sound, logical, and well supported by research, and if the program had been fully implemented, would likely have produced results for students.

The staff developer in this district worked with the school planning team to redesign the evaluation. Instead of determining how teaming affected student achievement, he helped them think about evaluating the components that they had implemented—the degree to which teachers understood teaming and were able to implement it on each of their teams, students' sense of belonging and knowledge about how to get help, and needs for additional organizational support and staff development to support ongoing implementation and improvement of teaming.

Program developers do not always clarify or articulate their assumptions about how their programs should work. In many cases, they focus their attention on just one aspect of the program, such as the training aspect, and neglect the many other essential components that ensure that new learning is transferred to the classroom. Some of these other components include changes in the organizational context, leadership development, and providing essential resources. Results-based accountability to produce initial, intermediate, and intended outcomes requires evaluators to establish their theory of change and identify indicators or benchmarks of progress throughout the intended sequence of events.

EXAMINE THE PROGRAM'S LOGIC MODEL

Sometimes the terms *theory of change* and *logic model* are used interchangeably. Other times, their definitions overlap. For example, Wholey (1987) states, "A program's theory of change identifies program resources, program activities, and intended program outcomes and specifies a chain of causal assumptions linking program resources, activities, intermediate outcomes, and ultimate goals" (p. 78). Patton (1997) also blends the two: "The full chain of objectives that links inputs to activities, activities to immediate outcomes, immediate outcomes to intermediate outcomes, and intermediate outcomes to results constitutes a program's theory of change" (p. 218).

In this book, a theory of change is distinguished from a logic model. A *theory of change* identifies the chain of causal actions that will lead to the intended results. It is a strategic picture of how the program actions will produce results. A *logic model* includes the theory of change and outlines the program resources or inputs and the actions or strategies program designers plan to use to produce the results (theory of change), and the outputs each action produces. A logic model serves to guide the evaluation design and particularly the formative evaluation because it identifies both the initial and intermediate outcomes of the action contained in the theory of change. These initial and intermediate outcomes serve as benchmarks of the program's progress toward its goals. A logic model is a tactical explanation of the process of producing results (Shapiro, 2005).

A logic model is one way to expand a program's theory of change (see examples in Figure 4E and in Table 4.4). A logic model is a flowchart that sequences the critical components of a program.

**Table 4.3** A Logic Model for a Staff Development Initiative in Reading

GOAL: Students will become proficient lifelong readers who read both for learning and enjoyment.				
Inputs	*Activities*	*Initial Outcomes*	*Intermediate Outcomes*	*Intended Results*
Full-time literacy coaches for each low-performing school and half-time coaches for middle- and high-performing schools.	Principals hire literacy coaches. Central office staff develops and implements professional development for coaches.	Coaches develop knowledge and skills for coaching teachers.	Coaches conduct regularly scheduled professional development and coaching sessions with new teachers.	Year 1: 60% of the students score proficient or above on the state reading test in Grades 3-8. Students read at least 30 minutes a week for pleasure.
Human and fiscal resources to provide teacher professional development and follow-up support.	Central office staff develops and implements professional development for all classroom teachers. Literacy coaches provide bi-weekly coaching to all teachers.	Teacher knowledge and skills for teaching reading to all students increases.	Teachers apply strategies in their classrooms on regular basis with support from coaches. Teachers have monthly study groups to refine their understanding of the reading process.	Year 2: 80% of the students score proficient or above on the state reading test in Grades 3-8. Students read at least 60 minutes a week for pleasure.
Ongoing assessment of student progress.	Teachers collect and report student progress data every six weeks.	Teachers, principals, and literacy coaches use student progress data to identify students needing extra assistance.	Teachers and coaches use student data to design instructional interventions for those students who need extra assistance.	
Human and fiscal resources to provide principal professional development in observation and coaching.	Central office staff designs and implements professional development for principals. Principals conduct monthly walk-throughs in each classroom.	Principals develop knowledge and skills for conducting walk-throughs and coaching teachers. Principals gain familiarity with new instructional strategies.	Principals provide support and monitor teachers' use of instructional strategies and review student progress data. Uninterrupted blocks of time for reading are created.	Year 3: 100% of the students score proficient or above on the state reading test in Grades 3-8. Students view reading as a life-long tool for learning and enjoyment.
Additional reading materials for all schools.	Reading materials are selected and purchased.	Students and teachers use new reading materials.	New reading materials are used in classrooms.	

(Continued)

Table 4.3   (Continued)

Inputs	Activities	Initial Outcomes	Intermediate Outcomes	INTENDED RESULTS
High-quality instruction for students.	Teachers apply reading strategies they learned in their classrooms.	Students learn strategies for improving their reading performance.	Students apply the new strategies in reading for both learning and pleasure.	

Figure 4E   An Example Logic Model
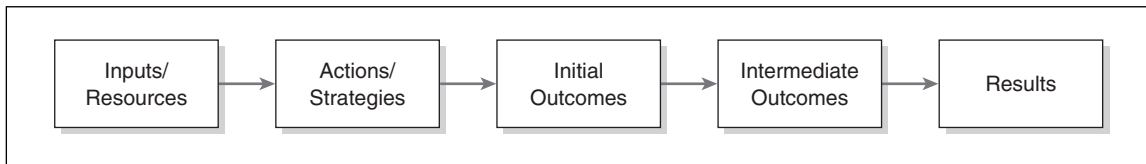
The components of a logic model

Inputs

The resources, personnel, facilities, equipment, etcetera used to accomplish the program's activities. Inputs are essential to consider early in the program's design because program activities may be limited by available resources. One common reason staff development interventions fail to produce results for students is that they have inadequate resources to deliver what is necessary to promote educator learning and support the implementation of that learning.

Activities

The services a program provides to accomplish its goals; activities may be the focus of formative or process evaluations. After implementation, some program activities may be found to be more beneficial than others, and program developers may alter their theory of change to reflect that. Activities may appear to be discrete events, but they are not. They are implemented with coherence with the intention of working together to produce results for adults and students.

Initial Outcomes

Products of a program's activities or services; they include changes in participants' knowledge, attitudes, and skills. These changes have little inherent value in themselves yet are important because they lead to the desired results.

Intermediate Outcomes

Benefits to participants during or after their involvement with the program; these benefits can be defined in terms of changes in aspirations or behaviors that result from the changes in knowledge, attitudes, and skills.

Results (Goals)

Intended, desired impact on students' learning; the ultimate goals of the program.

Context

The conditions under which the program is operational, including the external factors that might influence its success; characteristics of the program participants or staff; or other social, economic, or political factors that may intentionally or unintentionally influence the program's results.

Developing a Theory of Change and Logic Model

This information is adapted from "Logic Models: A Tool for Telling Your Program's Performance Story" (McLaughlin & Jordan, 1999). Developing a program theory of change is a collaborative effort that is best done by a representative group of stakeholders. Including multiple perspectives and ideas is beneficial and enriches the outcome.

Determine the Program Needs and Context

A design team that typically includes the program director, representative stakeholders, and the evaluator begins with a clear understanding of the program needs and the problem to be addressed by the program. Clarifying the problem, the context, and the limitations will help the design team be more focused and realistic in the design of the program.

Determine the Type of Theory of Change

Sometimes a program director, together with a stakeholder team and the evaluator, will develop a tentative theory of change they want to assess and modify as the program is implemented. Other times, a firm theory of change will depict the entire operation of a program and be used as a monitoring vehicle. Other times, the assumptions on which a program is based will be delineated and examined throughout the program for their correctness.

Determine What Is Known

One way to develop a theory of change and logic model for a program is to begin with what exists and what is known about the resources, activities, initial and intermediate outcomes, and results. By sketching those out first on a large piece of chart paper, the design team will see the gaps.