LOGIC MODELS IN OUT-OF-SCHOOL TIME PROGRAMS: WHAT ARE THEY AND WHY ARE THEY IMPORTANT?

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BACKGROUND

Logic models are powerful tools for designing, planning, implementing, and evaluating out-of-school time programs. This brief describes the key components of a logic model, identifies why logic models are useful, discusses different types of logic models, the formats that they take, and the resources available to programs for creating them. Logic models also are called conceptual models and theory-of-change models.

WHAT IS A LOGIC MODEL?

A logic model is a visual representation of how a program is expected to "work". It relates resources, activities, and the intended changes or impacts that a program is expected to create.[1] Typically, logic models are diagrams or flow charts with illustrations, text, and arrows that indicate how planned work is expected to benefit program participants.[1] Logic models describe the cause-and-effect processes through which an intervention is expected to work and how these activities flow together to achieve program outcomes.
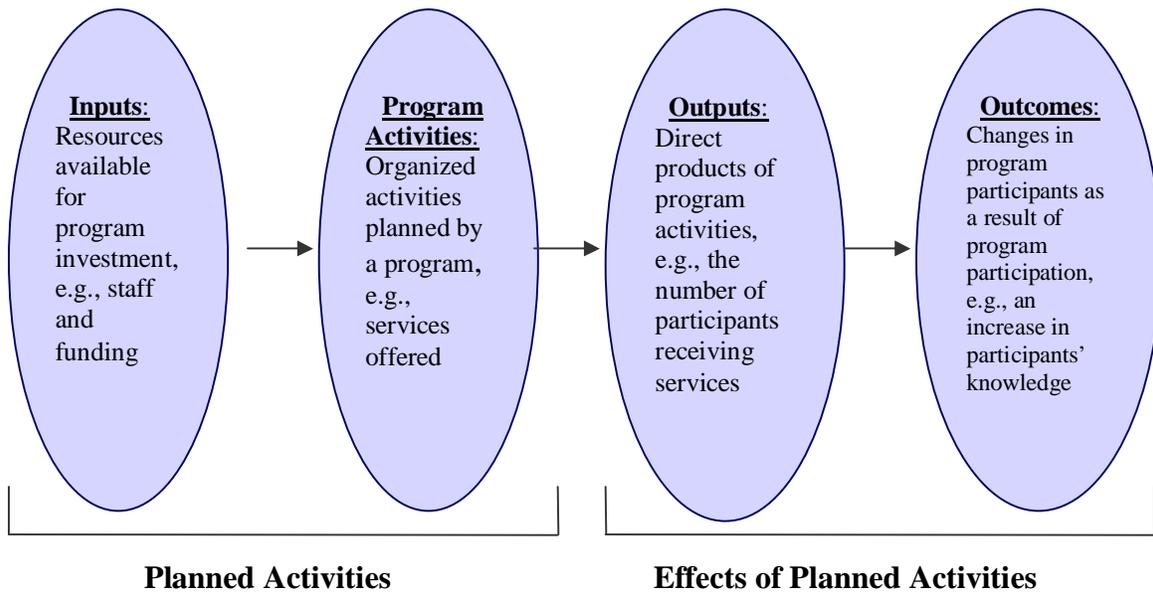
The most basic components of a logic model include **inputs**, **program activities**, **outputs,** and **outcomes**.[1] **Inputs** refer to the resources that a program uses to achieve program goals. Some examples include staff, funding, and equipment.[2] **Program activities** are the organized events and activities that the program provides using program inputs, such as after-school tutoring sessions and providing adult mentors for children. **Outputs** are the products of a program's activities.[2] Examples of outputs include the number of classes taught or the number of students receiving free lunches. **Outcomes** are the benefits that program participants are expected to receive during or after their involvement with a program. Outcomes may relate to knowledge, skills, attitudes, values, behavior, or status. Examples of outcomes include employment or improved reading skills.[2] Figure 1, on the next page, illustrates the basic concepts and components that are associated with a logic model.

WHY CREATE A LOGIC MODEL?

While logic models often are developed for evaluation purposes, they also are excellent tools that program practitioners can use to illustrate how a program is intended to work. There are many benefits to creating a logic model.

1. **Logic models set up a path to success.** Much of the value of a logic model comes from the process of creating it.[1] By identifying inputs, activities, outputs, and outcomes, formulating a logic model helps to make expectations clear and to identify potential program challenges. The process of creating such a model allows the planner to highlight the resources available, time frames, and other important considerations for program development, implementation, and management.

Figure 1: The Concepts and Components in a Logic Model

Inputs: Resources available for program investment, e.g., staff and funding → **Program Activities**: Organized activities planned by a program, e.g., services offered → **Outputs**: Direct products of program activities, e.g., the number of participants receiving services → **Outcomes**: Changes in program participants as a result of program participation, e.g., an increase in participants' knowledge

Planned Activities   **Effects of Planned Activities**

Read a logic model in the direction of the arrows, with one component leading to the next. This layout describes a sequence of actions that, taken together, shows how planned activities are expected to lead to desired results.[1]

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2. **Logic models provide a map of how to achieve program goals.** With a clear map in hand, a logic model facilitates program planning and design, development, implementation, communication, evaluation, and reporting. By explicitly stating how resources and inputs are expected to lead to desired outputs and outcomes, programs can be implemented with greater confidence that efforts will lead to desired outcomes.[1]

3. **Logic models assist in planning a program evaluation.** Once program processes and outcomes are identified, evaluators can anticipate how and when to evaluate a program and how to use evaluation resources most effectively.[3] Evaluation is valuable for determining if the program produces the intended effects for its participants. In essence, evaluation helps determine if a program is actually doing what it is intended to do. Logic models help to identify the program processes and outcomes that evaluators will want to test.

4. **Logic models stimulate clear thinking, preparation, and organization.** Logic models can assist in developing and justifying budgets and in writing proposals. These models can strengthen the case for program investment by clearly stating necessary inputs and activities to achieve program goals.[1]

5. **Logic models facilitate collaboration.** Logic models can be developed collaboratively by including input from staff, participants, outside stakeholders (e.g., parents and board members), and evaluators, so that ideas drawn from different perspectives are woven into the planning process.[1] Logic models can be used to support the practitioner's voice during development, implementation, and evaluation by identifying inputs and activities that the practitioner feels are necessary to achieve program objectives and by setting realistic outcomes.[1] Logic models also are effective tools for communicating program

goals with audiences of diverse backgrounds. Logic models use graphics to convey program goals succinctly, and they do not require a research background to read or contribute to them.[1]

6. **Logic models help assure that everyone is "on the same page."** Because logic models clarify assumptions and processes, staff, funders, evaluators, and participants are more likely to have the same understanding of the program's vision, activities, and goals. While logic models can change over time as program resources, expectations, and other circumstances change, having a written logic model helps prevent program "drift" by providing an overall picture of program components and a clear plan of action. [1]

WHAT ARE THE DIFFERENT TYPES OF LOGIC MODELS?

There is no one way or best approach to creating a logic model. Models may be based on research theory, may be centered around what program activities are provided, or may be focused on program outcomes.[1] Three common approaches are described below, but there is no reason a program needs to be limited to one.

Theory approach logic model.   The theory approach involves detailed explanation of a program concept. It helps to answer the questions: What is the aim of the program? How and why will the program achieve objectives? The theory approach describes solution strategies, why activities are selected, and it tightly connects potential program activities to proven program strategies.[1] The theory approach logic model is often research-based and is commonly used for persuading funders about a program's potential.

Outcomes approach logic model. The outcomes approach emphasizes what the program is intended to accomplish for participants. Outcomes often are divided into immediate, mid-term, and long-term to show how, over time, participants will benefit from the program.[1] The outcomes approach logic model is commonly used for program evaluation and defining program outcomes.

Activities approach logic model. The activities approach highlights program activities and management. It focuses mainly on what activities the program has planned and what services it will provide for the community.[1] The activities approach logic model is commonly used for program management.

WHAT FORMATS DO LOGIC MODELS TAKE?

The format of a logic model should reflect the flow of logic behind a program.[3] Logic models can take as many different shapes as there are program philosophies. The amount of detail in a model may vary depending on how the logic model will be used. For example, logic models often are very detailed when created for program development or management. Including more detailed information on connections, resources, and assumptions, helps developers and managers explore challenges, identify potential gaps in logic, identify where more planning is needed, and weigh risks and other considerations.[3] If the aim is to simplify program logic, the model might contain less detail and show only the key points of the program. Realistically, the amount of detail is limited to what can be presented comprehensibly on a single page.[3] The following are examples of the various formats that logic models can take.

Example 1.

Inputs	Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes
1.	1.	1.	1.	1.
2.	2.	2.	2.	2.
3.	3.	3.	3.	
4.	4.	4.	4.	
5.	5.	5.		
	6.			

Some logic models itemize inputs, activities, outputs, and outcomes.[3] (See page 5 for a completed logic model that uses this format.)

Example 2.

Inputs	Activities	Outputs	Outcomes
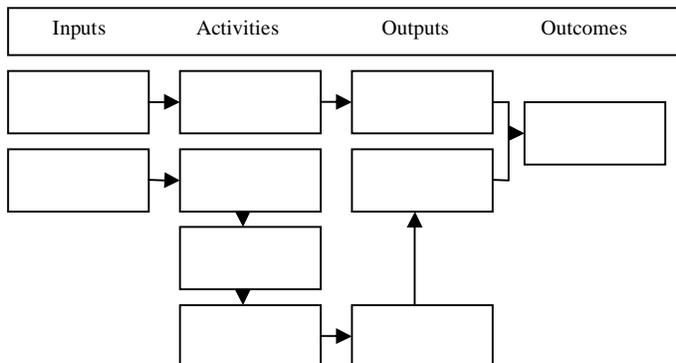
Other logic models use arrows to show detailed progression of logic.[3] Boxes or other shapes can be used to separate different concepts within categories.

Example 3.
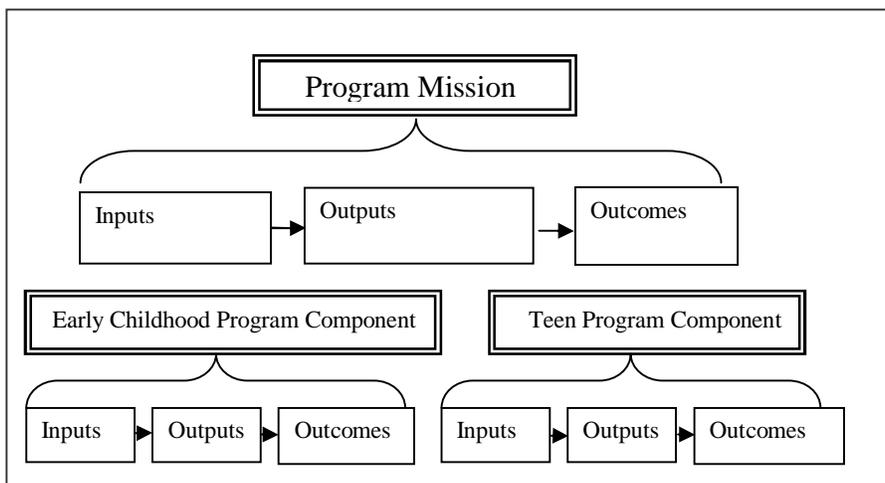
Diagrams may focus on only a few components of a logic model or may nest logic models within logic models. Here, the logic models of two components are nested within the overall program logic model.

IN THE SPOTLIGHT
Program: Entering the College Zone (ECZ)
Location: Greensboro, North Carolina

Program Overview*:* The Entering the College Zone (ECZ) Program developed a logic model to guide evaluation of its program. ECZ empowers disadvantaged middle school students and their parents by equipping them with the skills and resources that will allow them to navigate the college application process. The program was founded on the premise that access to information is key to opening the door of opportunity and closing the achievement gap between students of various races, ethnicity and socioeconomic backgrounds. The program used an outcomes approach logic model to help evaluate the program's impact on participants. For more information, visit http://www.nbcdi.org/programs/ecz/ecz2.asp.

Entering the College Zone: Program Design Logic Model

Assumptions

Target population (first generation college students from economically disadvantaged backgrounds) does not have equal access to information on what is required to attend an institution of higher education

After students and their parents receive information about what course work and activities are required for college enrollment, students will have:
• Better academic preparedness
• Positive peer and social relationships
• More social resources to prepare them for school success

Inputs

Participants:
Outreach and recruitment of **8th grade** students and their parents from public middle schools serving economically disadvantaged populations in Greensboro, NC.

Funding:
Initial and ongoing grant and other resources for programming and evaluation

Human Capital/ Staffing:
Establishment of extensive network of partnerships between families, the public schools, colleges, and universities over 15 cities; Project staff from middle schools, affiliate NBCDI chapters, and certified teachers from the National Board for Professional Teaching Standards

Facilities/ Infrastructure:
Gain access to facilities for workshop events and follow-up programming and meetings

Assessment:
Set up system for data collection (program collects records of attendance; measure adherence to program goals and outputs)

Activities

Workshop Event with Students and Parents
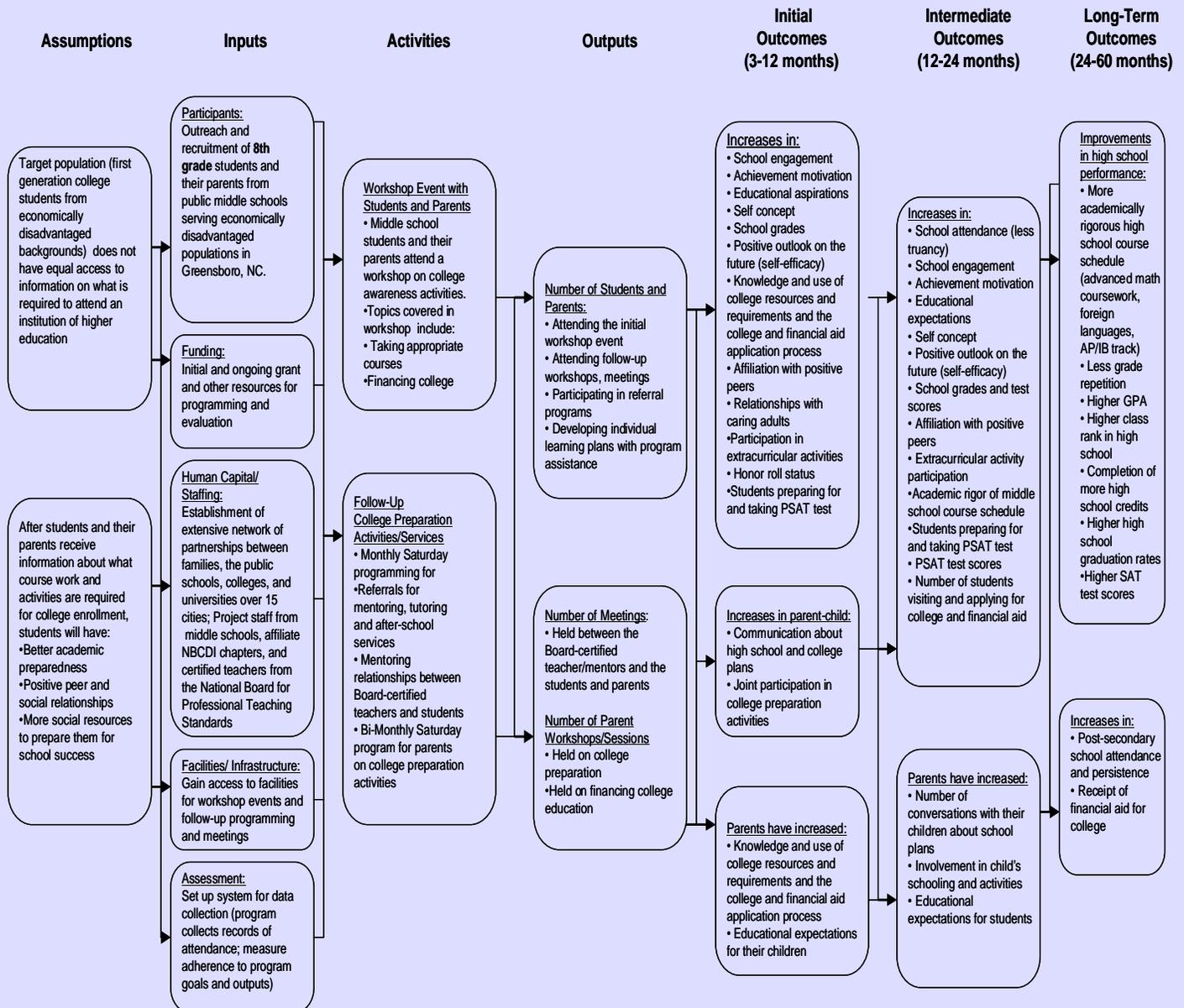• Middle school students and their parents attend a workshop on college awareness activities.
• Topics covered in workshop include:
• Taking appropriate courses
• Financing college

Follow-Up College Preparation Activities/Services
• Monthly Saturday programming for
• Referrals for mentoring, tutoring and after-school services
• Mentoring relationships between Board-certified teachers and students
• Bi-Monthly Saturday program for parents on college preparation activities

Outputs

Number of Students and Parents:
• Attending the initial workshop event
• Attending follow-up workshops, meetings
• Participating in referral programs
• Developing individual learning plans with program assistance

Number of Meetings:
• Held between the Board-certified teacher/mentors and the students and parents

Number of Parent Workshops/Sessions
• Held on college preparation
• Held on financing college education

Initial Outcomes (3-12 months)

Increases in:
• School engagement
• Achievement motivation
• Educational aspirations
• Self concept
• School grades
• Positive outlook on the future (self-efficacy)
• Knowledge and use of college resources and requirements and the college and financial aid application process
• Affiliation with positive peers
• Relationships with caring adults
• Participation in extracurricular activities
• Honor roll status
• Students preparing for and taking PSAT test

Increases in parent-child:
• Communication about high school and college plans
• Joint participation in college preparation activities

Parents have increased:
• Knowledge and use of college resources and requirements and the college and financial aid application process
• Educational expectations for their children

Intermediate Outcomes (12-24 months)

Increases in:
• School attendance (less truancy)
• School engagement
• Achievement motivation
• Educational expectations
• Self concept
• Positive outlook on the future (self-efficacy)
• School grades and test scores
• Affiliation with positive peers
• Extracurricular activity participation
• Academic rigor of middle school course schedule
• Students preparing for and taking PSAT test
• PSAT test scores
• Number of students visiting and applying for college and financial aid

Parents have increased:
• Number of conversations with their children about school plans
• Involvement in child's schooling and activities
• Educational expectations for students

Long-Term Outcomes (24-60 months)

Improvements in high school performance:
• More academically rigorous high school course schedule (advanced math coursework, foreign languages, AP/IB track)
• Less grade repetition
• Higher GPA
• Higher class rank in high school
• Completion of more high school credits
• Higher high school graduation rates
• Higher SAT test scores

Increases in:
• Post-secondary school attendance and persistence
• Receipt of financial aid for college

NEXT STEPS: RESOURCES FOR CREATING A LOGIC MODEL

The following resources may be useful in planning your program's logic model(s).

- **Taylor-Powell, E., Jones, L., & Henert, E. (2002)** *Enhancing Program Performance with Logic Models*.
  The University of Wisconsin-Extension Web site offers a free online course on creating and designing logic models at http://www1.uwex.edu/ces/lmcourse/.

- **Centers for Disease Control**
  The Centers for Disease Control offers links to creating logic models for evaluation purposes at http://www.cdc.gov/eval/resources.htm.

- **United Way of America.** *Measuring Program Outcomes: A Practical Approach*. **1996. Item # 0989.**
  This manual describes how and why program evaluation is important for human, health, family, and child service agencies. Information on this manual may be found on the United Way of America Web site at http://national.unitedway.org/outcomes/resources/mpo/.

- **W.K. Kellogg Foundation.** *Logic Model Development Guide*. **Battle Creek: MI. October 2000. Item #1209.**
  The Logic Model Development Guide provides information on logic models, how to develop program logic models, how to use logic models for evaluation, and other resources and planning materials. It is available online at http://www.wkkf.org/Pubs/Tools/Evaluation/Pub3669.pdf.
  Additionally, the Foundation provides free logic model planning resources at http://www.wkkf.org.

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[1] W.K. Kellogg Foundation. Logic Model Development Guide. October, 2000. Battle Creek, MI.
[2] United Way of America. (1996). Measuring Program Outcomes: A Practical Approach.
[3] Taylor-Powell, E., Jones, L., & Henert, E. (2002) *Enhancing Program Performance with Logic Models*. Retrieved from the University of Wisconsin-Extension web site http://www1.uwex.edu/ces/lmcourse/