Logic Models and Theory of Change Models: Defining and Telling Apart
Logic Versus Theory of Change

• Often (and erroneously) used interchangeably
  – Unfortunately, neither clearly defined in the literature
• Confusion by funders and grantees about what to expect
  – Grantees penalized for confusion
• Limited knowledge about how to design and use
• Funders almost always demand one or the other
How Are They Different

- **Logic Models (LM)** graphically illustrate program components, helps clearly identify outcomes, inputs and activities in program
  - Tactical explanation of the *process* of producing a desired outcome

- **Theory of Change Models (TOC).** Link outcomes and activities to explain HOW and WHY the desired change is expected to come about (Casual in nature)
Logic Models (LM)

• A graphic way to organize information and display thinking at a *single point in time*.

• Depicts relationship between activities and outcomes

• A series of “if-then” relationships that, if implemented as intended, lead to the desired outcomes
Many people say a logic model is a road map.
Logic model may also be called...

- Program action
- Model of change
- Conceptual map
- Outcome map
- Program logic
What logic model is not...

- A theory
- Reality

It is a framework for describing the relationships between investments, activities, and results. It provides a common approach for integrating planning, implementation, evaluation and reporting.
Simplest form of logic model

INPUTS  →  OUTPUTS  →  OUTCOMES
Logical chain of connections showing what the program is to accomplish

**INPUTS**
- Program investments
- What we invest

**OUTPUTS**
- Activities
- What we do
- Participation
- Who we reach

**OUTCOMES**
- Short
- Medium
- Long-term
- What results
How will activities lead to desired outcomes?
A series of if-then relationships

**Tutoring Program Example**

<table>
<thead>
<tr>
<th>IF</th>
<th>then</th>
</tr>
</thead>
<tbody>
<tr>
<td>We invest time and money</td>
<td>We can provide tutoring 3 hrs/week for 1 school year to 50 children</td>
</tr>
<tr>
<td>Students struggling academically can be tutored</td>
<td>They will learn and improve their skills</td>
</tr>
<tr>
<td>They will get better grades</td>
<td>They will move to next grade level on time</td>
</tr>
</tbody>
</table>
**Parent Education Program – Logic model**

**SITUATION:** During a county needs assessment, majority of parents reported that they were having difficulty parenting and felt stressed as a result.

**INPUTS**
- Staff
- Money
- Partners
- Research

**OUTPUTS**
- Assess parent ed programs
- Design-deliver evidence-based program of 8 sessions
- Facilitate support groups
- Parents of 3-10 year olds attend

**OUTCOMES**
- Parents increase knowledge of child dev
- Parents identify appropriate actions to take
- Parents better understanding their own parenting style
- Parents use effective parenting practices
- Parents gain skills in new ways to parent
- Parents gain confidence in their abilities
- Reduced stress
- Improved child-parent relations

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**Situation:** During a county needs assessment, majority of parents reported that they were having difficulty parenting and felt stressed as a result.
A common problem is that activities and strategies often do not lead to the desired outcomes. Check your ‘if-then’ statements and ensure that they make sense and lead to the outcomes you want to achieve. A logic model makes the connections EXPLICIT.

“I think you should be more explicit here in Step Two.”
Inputs

What we invest
Staff
Volunteers
Time
Money
Research base
Materials
Equipment
Technology
Partners
### OUTPUTS

<table>
<thead>
<tr>
<th>What we do</th>
<th>Who we reach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACTIVITIES</strong></td>
<td><strong>PARTICIPATION</strong></td>
</tr>
<tr>
<td>• Train, teach</td>
<td>• Participants</td>
</tr>
<tr>
<td>• Deliver services</td>
<td>• Clients</td>
</tr>
<tr>
<td>• Develop products and resources</td>
<td>• Customers</td>
</tr>
<tr>
<td>• Network with others</td>
<td>• Agencies</td>
</tr>
<tr>
<td>• Build partnerships</td>
<td>• Decision makers</td>
</tr>
<tr>
<td>• Assess</td>
<td>• Policy makers</td>
</tr>
<tr>
<td>• Facilitate</td>
<td></td>
</tr>
<tr>
<td>• Work with the media</td>
<td></td>
</tr>
<tr>
<td>• ...</td>
<td></td>
</tr>
</tbody>
</table>
### OUTCOMES

What results for individuals, families, communities....

<table>
<thead>
<tr>
<th>SHORT</th>
<th>MEDIUM</th>
<th>LONG-TERM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning</strong></td>
<td><strong>Action</strong></td>
<td><strong>Conditions</strong></td>
</tr>
<tr>
<td>Changes in</td>
<td>Changes in</td>
<td>Changes in</td>
</tr>
<tr>
<td>• Awareness</td>
<td>• Behavior</td>
<td>Conditions</td>
</tr>
<tr>
<td>• Knowledge</td>
<td>• Decision-making</td>
<td>Social (well-being)</td>
</tr>
<tr>
<td>• Attitudes</td>
<td>• Policies</td>
<td>Health</td>
</tr>
<tr>
<td>• Skills</td>
<td>• Social action</td>
<td>Economic</td>
</tr>
<tr>
<td>• Opinion</td>
<td></td>
<td>Civic</td>
</tr>
<tr>
<td>• Aspirations</td>
<td></td>
<td>Environmental</td>
</tr>
<tr>
<td>• Motivation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Behavioral intent</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**CHAIN OF OUTCOMES**
Fully detailed logic model

**Situation**
- Needs and assets
- Symptoms versus problems
- Stakeholder engagement

**Priorities**
- Consider:
  - Mission
  - Vision
  - Values
  - Mandates
  - Resources
  - Local dynamics
  - Collaborators
  - Competitors
  - Intended outcomes

**What we invest**
- Staff
- Volunteers
- Time
- Money
- Research base
- Materials
- Equipment
- Technology
- Partners

**What we do**
- Conduct workshops, meetings
- Deliver services
- Develop products, curriculum, resources
- Train
- Provide counseling
- Assess
- Facilitate
- Partner
- Work with media

**Who we reach**
- Participants
- Clients
- Agencies
- Decision-makers
- Customers
- Satisfaction

**What the short term results are**
- Learning
- Awareness
- Knowledge
- Attitudes
- Skills
- Opinions
- Aspirations
- Motivations

**What the medium term results are**
- Action
- Behavior
- Practice
- Decision-making
- Policies
- Social Action

**What the ultimate impact(s) is**
- Conditions
- Social
- Economic
- Civic
- Environmental

**Evaluation**
- Focus - Collect Data - Analyze and Interpret - Report

**Inputs**
- Activities

**Outputs**
- Participation

**Outcomes - Impact**
- Short Term
- Medium Term
- Long Term
Testing Logic Models

• SMART
  – **Specific**: What to do is clear enough to act on and is connected to outcomes
  – **Measurable**: the content can be both quantified and qualified
  – **Action oriented**: the content is selected to provoke change in awareness, knowledge, skill, and/or behavior.
  – **Realistic**: the content is both plausible and feasible.
  – **Timed**: 
Limitations

Logic Model...

• Represents intention, is not reality
  — Logic models often display a logical sequence of chain of events, but this is NOT the same as feasibility.

• Focuses on expected outcomes

• Challenge of causal attribution
  ✓ Many factors influence process and outcomes

• Doesn’t address:
  Are we doing the right thing?
Theory of Change Models (TOC)

- Differ from logic models because they require articulation of underlying assumptions which can be tested and measured.
- Also differs because TOC show a causal pathway from here to there by specifying what is needed for goals to be achieved.
- A well specified and plausible TOC describes steps toward an anticipated change in important outcomes.
- Most powerful contribution is its emphasis on understanding not only *whether* activities produce effects but *how* and *why*. 
Theory of Change

• A theory of “how” and “why” an initiative works (or should work)
  – Can sharpen the planning and implementation of an initiative
  – Identification of what to measure and data collection elements facilitated
  – Can minimize, though not eliminate, problems associated with causal attribution impact
    • Through “backward” mapping
What is a Good Theory of Change

- Should be *Plausible*
  - Do evidence and common sense suggest that activities, if implemented, will lead to desired outcomes?

- Should be *Doable*
  - Will the economic, technical, political, institutional, and human resources be available to carry out the initiative?

- Should be *Testable*
  - Is the theory of change specific and complete enough for reviewers to track its progress?
Appendix A
(1) Theory of Change Figure

Theory & Knowledge
(a) Carrol's model of school learning
(b) Engelmann & Carnine's theory of instructional design
(c) Vygotsky's Social Constructivist perspective on learning and cognition
(d) Bos & Ander's Knowledge Hypothesis

Assumptions
#1 The interaction of opportunity to learn and quality of instruction has direct relevance for efforts to optimize learning among children at risk of language difficulties.

#2 The primary variable in the instructional environment is the curriculum and materials that largely influence what is taught and learned.

#3 Social interaction with adults permits children to learn by participating in activities extending just beyond their independent abilities

#4 To acquire the very basic foundations for later learning, children must develop a coherent understanding of knowledge and concepts.

Instructional Principles
#1 Big Ideas
#2 Conspicuous strategies
#3 Mediated scaffolding
#4 Strategic integration
#5 Judicious review
#6 Primed background knowledge
#7 Intentional opportunities for language interaction

WORLD Shared Reading Intervention Features
1. Focused themes; lexical sets,
2. Inside/outside the book vocabulary examples
3. Scaffolded child friendly vocabulary definitions with fade out support.
4. Duel text structures associated with themes/topics
5. Multiple exposures to vocabulary in variety of context and activities
6. Background knowledge built by strengthening conceptual frameworks
7. Range of language opportunities

Short Term Outcome
Learned Content-Related Vocabulary

Mid-term Outcome
Improved General Vocabulary

Long-term Outcome
Improved Listening and Reading Comprehension