Supporting CSMP Inquiry: Following a cycle of investigation

SRI International
January 2012
Cycle of Investigation

- Logic Model
- Formulate research questions
- Exploratory research
- Reflection
- Rigorous research on impacts
Logic Model

- General CSMP Logic Model
  - High quality professional development for educators will lead to improved instruction and ultimately to better student outcomes

- Specify logic model around particular programs of interest by identifying:
  - Nature of particular program
  - Mechanisms by which the program is thought to work,
  - Desired outcomes
  - Mediating factors
Variety of audiences
  ◦ External
  ◦ Internal

Possible questions
  ◦ Who participates? Who do participants serve?
  ◦ What do participants receive? (treatment)
  ◦ What is the quality of the treatment?
  ◦ How does the treatment effect teachers?
  ◦ What is the impact of participation?
  ◦ How can the CSMP improve its practice?
**Exploratory Research**

- **Variety of methodologies**
  - Interview, observation, survey

- **Variety of types of data**
  - Quantitative vs. qualitative
  - Breadth of coverage vs. depth

- **Various topics**
  - Basic descriptives (database/survey/interview)
  - What is the treatment (survey/interview/observation)
  - Participants perception (interview/survey)
Assessing program impact: Using rigorous designs

- Research design specifies comparison group
  - Randomized Control Trial (RCT)
  - Regression Discontinuity (RD)

- Researcher chooses best possible comparison group: Difference–in–Differences (DiD)
  - Interrupted Time Series (ITS) (The Cadillac version of DiD)
  - Pre–Post with comparison (The sedan version of DiD—quality varies based on quality of comparison)

- Research that does not allow estimate of impact:
  - Pre–post without comparison
Other factors

- Study implementation
- Instrument development and data collection
- Appropriate sample sizes
# Pairing research questions and corresponding approaches

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Research Approach/Design</th>
</tr>
</thead>
</table>
| Who participates in the CSMP?  
Who do participants serve? | Database  
Annual or biennial survey |
| What do participants receive (i.e., what is the treatment)?  
What is theory of change (i.e., how would the treatment effect student learning)? | Specification by site directors  
Analysis of research findings  
Exploratory cases  
Evaluability assessments |
| What is the quality of the treatment? | Survey  
Exploratory cases  
Exploratory joint research for instrument development  
Studies of program effects |
| What is the impact of the treatment (on teacher knowledge, teacher practice, and student achievement)? | Studies of program effects: RCT, RD, ITS, Pre-test—Post-test |
| How can the CSMP improve its practice? | Iterative reflection on research findings |
Cycle of Investigation

- Logic Model
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- Exploratory research
- Reflection
- Rigorous research on impacts
Supporting CSMP Inquiry: Developing logic models

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January 2012
A logic model is

... a visual representation of your program.
Inputs ---- Outputs ---- Outcomes
# Logic Model Template (HFRP)

(Theory of Action)  (Theory of Change)

<table>
<thead>
<tr>
<th>Goals</th>
<th>Inputs (resources)</th>
<th>Outputs (activities)</th>
<th>Outcomes (impacts)</th>
<th>Performance Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are you trying to achieve?</td>
<td>What resources do you have available? (e.g., Staff? Funding? Partners?)</td>
<td>What are the activities that your program does? (e.g., serving who?)</td>
<td>What are the impacts you hope to have? (e.g., Short-Term, Intermediate, and Long-Term?)</td>
<td>How are you measuring both what you do (measures of effort) and the impact you are having (measures of effect)?</td>
</tr>
</tbody>
</table>
What does a logic model look like?

- Graphic display of boxes and arrows; vertical or horizontal
  - Relationships, linkages
- Any shape possible
  - Circular, dynamic
  - Cultural adaptations; storyboards
- Level of detail
  - Simple
  - Complex
- Multiple models
  - Multi-level programs
  - Multi-component programs
Feedback loops and multi-dimensions

INPUTS
- Program investments
- What we invest

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

OUTCOMES
- Short
- Medium
- Long-term
- What results

Feedback loops and multi-dimensions

University of Wisconsin - Extension, Cooperative Extension, Program Development and Evaluation
“I think you should be more explicit here in Step Two.”
Logic Model worksheet – example

Goal:

<table>
<thead>
<tr>
<th>INPUTS</th>
<th>OUTPUTS</th>
<th>OUTCOMES</th>
</tr>
</thead>
</table>


Defining our Goals

What are we trying to achieve with our program?
Identifying our Outcomes

What are the impacts we hope to have?

Short term

Intermediate

Long Term
Describing our Inputs and Outputs

What are our activities?

What resources do we have available to conduct the activities?
Exploring a draft logic model
So … what now?
## Identify your research questions

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>What amount of $ and time were invested?</td>
<td>What did the program actually consist of?</td>
<td>Who actually participated in what? Did this meet our target?</td>
</tr>
<tr>
<td>To what extent did knowledge and skills increase?</td>
<td>To what extent did practices change?</td>
<td>To what extent did phosphorus reduce? Savings accrue to farmers?</td>
</tr>
</tbody>
</table>
Logic model and common types of evaluation

**Needs/asset assessment:**
What are the characteristics, needs, priorities of target population?
What are potential barriers/facilitators?
What is most appropriate to do?

**Process evaluation:**
How is program implemented?
Are activities delivered as intended? Fidelity of implementation?
Are participants being reached as intended?
What are participant reactions?

**Outcome evaluation:**
To what extent are desired changes occurring? Goals met?
Who is benefiting/not benefiting? How?
What seems to work? Not work?
What are unintended outcomes?

**Impact evaluation:**
To what extent can changes be attributed to the program?
What are the net effects?
What are final consequences?
Is program worth resources it costs?
Develop Performance Measures

- Measures of effort
  - Assess what did
    - Who did we serve?
    - What were the activities done?
    - Were participants satisfied?

- Measures of effect
  - Assess expected changes
    - How will we know that our target population is better off?
    - What changes do we expect to see as a result of program?
Parent Education Example: Evaluation questions, indicators

**EVALUATION QUESTIONS**

- What amount of $ and time were invested?
- How many sessions were held? How effectively? #, quality of support groups?
- Who/how many attended/did not attend? Did they attend all sessions? Supports groups? Were they satisfied – why/why not?
- To what extent did knowledge and skills increase? For whom? Why? What else happened?
- To what extent did behaviors change? For whom? Why? What else happened?
- To what extent is stress reduced? To what extent are relations improved?

**INDICATORS**

<table>
<thead>
<tr>
<th># Staff</th>
<th>Money</th>
<th>Partners</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td># used</td>
<td>$ used</td>
<td># partners</td>
<td></td>
</tr>
<tr>
<td># Sessions held</td>
<td># Sessions held</td>
<td>Quality criteria</td>
<td>#,% attended per session</td>
</tr>
<tr>
<td>Certificate of completion</td>
<td>Additional outcomes</td>
<td>Types of changes</td>
<td>Types of improvements</td>
</tr>
</tbody>
</table>
So now what …
Why do I need to evaluate my project?
What is a logic model?
How can a logic model help me?
How do I write good, researchable questions?
Are there any ethical issues related to conducting evaluation?
What is Human Subjects Approval?
Do I need to use consent forms?
How do I recruit participants?
How do we collect participant data?
What types of data should I be collecting?
How do I manage the data once I get it?
Toolkit – Possible categories

- **Evaluation Design** (e.g., Articles on developing logic models, designing studies such as the HFRP, W.J. Kellogg, PSA, University of Wisconsin)

- **Data Collection** (e.g., sample surveys, sample consent forms)

- **Research studies** (e.g., CSMP focused, PD generally focused)

- Other?