Research Methods and Strategies

Evaluating the Impact of Educational Programs

Jennifer Anderson, Ph.D., R.D.
Professor and Extension Specialist
Colorado State University

Food Safety Education Conference
September 28, 2006
Denver, Colorado
What is Evaluation?

• The word *value* is in the word as it is the process of assessing value or worth of an educational endeavor.

• Did the program achieve the stated objectives?

• Did it serve some larger specified goals?

• Was it worth the cost?

• Did it influence the knowledge, attitude and behavior of target audience?

• What was the value to participants?
Why Evaluate?

- Evaluations can serve research purposes, program evaluation purposes or both.
- In research we investigate whether and how interventions work or not work.
- In practice settings it helps a person be accountable for programs they conduct.
- It may also be used to allocate resources.
- It may provide support to the program and/or gain visibility to a program. This could include policy efforts.
- And it can serve psychological purposes as it can be motivating to learn what has been effective.
# Comparison of Evaluation Terms

<table>
<thead>
<tr>
<th>Planning</th>
<th>Start of implementation</th>
<th>End of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative</td>
<td>Summative</td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td>Impact</td>
<td>Outcome</td>
</tr>
</tbody>
</table>
Outcome Evaluation

- Focuses on an ultimate goal or product of a program
- Generally measured by symptoms, signs, or physiological indicators on individuals
- Long-term in nature and takes more time and resources to conduct than impact evaluation.
- The *logic model* is an example and used to see if the evidence is a result of intervention. To conclude that outcomes are a result of an intervention an impact evaluation must be done.

Green & Lewis, 1986, p. 366
Logic Model Example

**INPUTS**

- Staff
- Money
- Partners

**OUTPUTS**

- Design parent ed curriculum
- Provide 6 training sessions
- Targeted parents attend

**OUTCOMES**

- Parents increase knowledge of child development
- Parents learn new ways to discipline
- Parents use improved parenting skills
- Reduced rates of child abuse and neglect

**Conditions**

- Learning
- Action
The Community Nutrition Education (CNE) Logic Model – Overview

**Inputs**

- Financial resources
- Planning process/Methods of needs assessment
- Materials
- People - State-level relationships (Responsibility and accountability)
- Integrated efforts (State Nutrition Action Plan - SNAP)

**Outputs**

- Activities
- Participation

**Activities**

- Individual, family, household level
  - Core area interventions
  - Direct: Active learning process with an educator or interactive media
  - Indirect: Distribution of information or resources to increase public awareness or knowledge
- Social Marketing Campaign
  - Disciplined, consumer-focused, research-based process via multiple communication channels designed to influence voluntary behavior
- Institution, Organization, Community level
  - Strategies used to develop local partnerships, identify opportunities, and eliminate barriers to nutrition education within/exchange local organizations
- Social Structures, Policies and/or Practices level
  - Efforts to create/review social systems and public policies related to core areas

**Participation**

- Core area interventions
- People involved

**Outcomes - Impact**

- Short Term
  - Individuals:
    - Gain awareness, knowledge and skills
  - Dietary Quality Indicator Examples
    - Plan menu/choose foods using Food Guidance System
    - Eat nearer to Food Guidance System recommendations
- Medium Term
  - Individuals:
    - Incorporate skills, change behaviors.
  - Food Safety Indicator Examples
    - Identify emergency food sources
    - Enroll in non-emergency food programs
- Long Term
  - Individuals:
    - Experience decreased risk factors for health problems
  - Food Security Indicator Examples
    - Able to practice personal hygiene, such as hand washing
    - Increased practice of personal hygiene, such as hand washing
  - Decreased illness due to food contamination

**Assumptions**

- Universality, government or non-profit agencies, private sector, and governing/licensing boards involved in efforts to effect change

**External Factors**

The goal of community nutrition education is to provide educational programs and social marketing activities that increase the likelihood of people making healthy food choices consistent with the most recent dietary advice as reflected in the Dietary Guidelines for Americans and the Food Guidance System, with special attention to people with limited budgets.

---

The Community Nutrition Education (CNE) Logic Model – REVISED DRAFT, March 2005; Helen Chipman and CNE Logic Model Workgroup
Impact Evaluation

- Systematic design or plan used to eliminate alternative explanations for observed differences
- Focuses on “immediate observable effects of a program, leading to the intended outcomes of a program”
- Measures of awareness, knowledge, attitudes, skills, and behaviors yield impact evaluation data

Green & Lewis, 1986, p. 363
Formative Evaluation

- Any combination of measurements obtained and judgments made before or during the implementation of materials, methods, activities or programs
- Used to control, assure or improve the quality of performance or delivery
- Includes, but not limited to, a needs assessment or pilot testing a program

Green & Lewis, 1986, p. 362
Summative Evaluation

- Summative evaluations provide overall effects and program accountability
- They include any combination of measurements and judgments
- Allow conclusions to be drawn about impact, outcome, or benefits of a program or method
- A good summative evaluation should report why or why not was the education effective...thus even summative evaluation may have formative implications
Framework for Designing Theory-based Interventions

1. Assessment of needs/assets using theory
2. Preliminary planning
   • Theory
   • Channel(s)
3. Determining theory-based goals & objectives
4. Design of theory-based education interventions
5. Implementation
6. Evaluation

© Contenko, 1997
Designing the Evaluation

- Process evaluation occurs during program and is a form of formative evaluation.

- Impact and outcome evaluation occur at the completion of the program and are considered forms of summative evaluation.

- Both sets of evaluation (process, impact, and outcome; formative and summative) take into account the need to conduct evaluation before and/or during the program and at the end of the program.

- Plans for all types of evaluation should be in place before and planned at the same time as program implementation.
Indicators and Measures

- Indicators need to be appropriate for your program

- Indicators could include
  - Increased knowledge about food safety
  - Changes in attitudes regarding food safety
  - Improved food safety practices

- Indicators need to be measurable
Factors to Consider When Choosing a Data Collection Method

- Exact indicators or measures of effectiveness
- Size of target audience
- Level of accuracy desired
- Purpose of evaluation
- How will the findings be used
- Resources available
- Qualitative vs. quantitative or both?
Types of Data Collection Methods

• Formative evaluation
  – In-depth interviews
  – Focus groups
  – Surveys (mail, telephone, Internet/web)

• Summative evaluation
  – Surveys (mail, telephone, Internet/web)
  – Observation
  – Diaries
Other Considerations

- Type of experimental design
- Use of Control Groups
- Determine adequate numbers to study
- Representative sample
Lessons Learned

• Lesson 1 - Plan carefully

• Lesson 2 - Budget carefully for time and resources

• Lesson 3 - Evaluation is not easy but necessary!

• Lesson 4 - Evaluation is a learning experience
Suggested Resources


### Comparison of Evaluation Terms

**Planning** → **Start of implementation** → **End of implementation**

<table>
<thead>
<tr>
<th>Planning</th>
<th>Start of implementation</th>
<th>End of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Formative</strong></td>
<td><strong>Summative</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td><strong>Impact</strong></td>
<td><strong>Outcome</strong></td>
</tr>
</tbody>
</table>
Framework for Designing Theory-based Food Safety Education Interventions

1. Assessment of needs/assets using theory
2. Preliminary planning
   - Theory
   - Channel(s)
3. Determining theory-based goals & objectives
4. Design of theory-based education interventions
5. Implementation
6. Evaluation

© Contento, 1997