MAKE YOUR PROGRAM EVALUATION SMART BY ALIGNING OBJECTIVES AND MEASURES OF SUCCESS

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GOALS FOR THIS SESSION

Participants will be able to

- Describe and write action-oriented program outcomes or objectives;
- Develop a logic model to guide program evaluation;
- Plan or refine evaluation strategies for their own projects.
WHAT IS ACHIEVED THROUGH EVALUATION?

- Worth or value
- Improvement
- Informed decision-making
- Effectiveness
- Collaboration
- Outcomes
- Sustainability
- Funding
TODAY’S OUTLINE AND TOPICS

• Principles of program evaluation
• Using SMART objectives or outcomes to drive program evaluation
  ▪ Building your project backwards from intended outcomes
  ▪ Using a logic model to develop an evaluation plan
  ▪ Applying effective evaluation strategies and tips
Evaluation is a journey!

- Your program exists within one or more systems.
- Workforce development is related to national and local priorities.
- There often is a long period of time between your intervention(s) and the intended outcome(s).
- As a project leader, evaluation can be your best friend!
Does a survey of satisfaction help determine whether…

• A learning event is appropriate or needs to be revised?
• Learners are gaining knowledge, attitudes or skills?
• A project is making progress toward meeting its goals?

These types of questions can be answered by a high quality evaluation plan.

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What is program evaluation?

Systematic investigation of the worth or merit of...

Related to project goals and objectives/outcomes

- Goals: Major aims *(Increase diversity within the biomedical research workforce to reflect demographics of the overall population.)*

- Objectives (Specific Aims): Indicators that progress is being made toward achieving goals

Not the same as research (hypothesis-driven) or assessment (collection of information to inform decision-making).

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EVALUATION IS DIRECTLY ALIGNED WITH PROJECT GOALS

• Formative or process evaluation
  • *Are we moving toward achieving project goals and objectives or outcomes?*
  • *How can we use evaluation data to improve?*

• Documentation (implementation evaluation)
  • *Did we do what we said we would do?*

• Summative evaluation
  • *To what extent did we meet project goals and objectives? Have the intended objectives for our audience been realized? Why or why not? What else did we learn?*


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A soup is made.

The cook tastes the soup in the kitchen and adjusts the seasoning.

The guests taste the soup.

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GUIDING PRINCIPLES FOR EVALUATORS

Systematic Inquiry
Evaluators conduct systematic, data-based inquiries.

Competence
Evaluators provide competent performance to stakeholders.

Integrity/Honesty
Evaluators display honesty and integrity in their own behavior, and attempt to ensure the honesty and integrity of the entire evaluation process.

Respect for People
Evaluators respect the security, dignity and self-worth of respondents, program participants, clients, and other evaluation stakeholders.

Responsibilities for General and Public Welfare
Evaluators articulate and take into account the diversity of general and public interests and values that may be related to the evaluation.

Setting Priorities

• You can’t measure everything!
• Evaluation strategies should be related to goals and objectives.
  • Are you collecting evidence related to each goal and objective?
  • Does the evidence tell you what you need to know?
  • Are you collecting data that is not (or no longer) needed?

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**Program Plan**
What is the program? What do you hope to accomplish? What is the theory of action? What are the goals and objectives?

**Logic Model**
How do strategies relate to goals? What are the resources, outputs and short or long term outcomes? How do resources, strategies and outcomes align?

**Design**
What questions should the evaluation answer? Which indicators are aligned with objectives? Which methods are useful and feasible?

**Collect and Analyze**
How should data be collected, organized and analyzed to answer evaluation questions?

**Results**
How should data be interpreted? How can the program be improved? To what extent did the program achieve outcomes? How should results be communicated?

**Implement**

**Plan**

**Interpret**

**Define**

**Inform**


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Most educational projects seek to create change.
• Learners who achieve a particular outcome.
• Learners who develop and act on career interests.
• Faculty who are more effective teachers.

Project staff, faculty mentors or consultants might be the agents of change—by providing research experiences, professional development, school activities, etc.

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RESOURCES AS AGENTS OF CHANGE

- Agents of Change = Resources or curriculum developed or implemented!
- Lead to learner knowledge gains, attitudinal or behavioral change, etc.
- The evaluation of these projects has a slightly different focus—but the same principles apply.

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If we “input” mentor training, authentic research experiences and online resources—to support high quality learning experiences

Learners will demonstrate increased biosciences knowledge and skills

Greater numbers of learners will be prepared to enter into roles as research professionals

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Even when your project already has specific aims from the funded proposal, it may be necessary to refine these statements to make them measurable.

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Objective—statement of what the project is going to achieve.

- Answers the question, “Why are you conducting this program?”
- Usually starts with “to…”
- *To prepare students to enter into the workforce.*

Outcomes—benefits or endpoints that will result from the program.

- Statement of the intended future state.
- *Students have knowledge and skills that enable entry into the workforce.*
TIPS FOR WRITING SMART OBJECTIVES AND OUTCOMES TO GUIDE YOUR EVALUATION

- SMART outcomes avoid vague or overly ambitious statements.
- Outcomes and objectives relate to intended future conditions not processes.
  - Thus, an objective is not “to provide information on how to prepare for a qualifying exam” but rather to improve the performance of learners during their exam or enhance the numbers of learners prepared to enter the next phase of their training.
- Based on formative evaluations, your objectives or outcomes may change over the life of a program.
- Your funder and other stakeholders will want to know about progress toward achieving your intended outputs and outcomes.

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**EMBED EVALUATION THROUGHOUT THE DESIGN AND CONDUCT OF THE PROGRAM**


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WHAT IS A LOGIC MODEL?

A systematic and visual way to present and share your understanding of the relationships among the resources you have to operate your program, the activities you plan to do, and the changes or results you hope to achieve.

Elements of a Logic Model

Resources or Inputs
Resources necessary for supporting a program; e.g., money, time, expertise, experience, leverage, facilities, technology.

Strategies
Activities, interventions, services or programs that serve a particular target audience or purpose; e.g., facilitator workshop, mentor training, project planning session.

Outputs (services or products)
Short-term measure of program strategy implementation; e.g., number of workshops delivered, number of networking sessions, numbers of participants, etc.

Outcomes (short-term outcomes)
Short- and longer-term effects of program strategies on behaviors, attitudes, knowledge, or skills; e.g., improved learner communication skills, enhanced biosciences content knowledge, positive change in attitudes toward science careers.

Impact (long-term outcomes)
Long-term and aggregate effect of a sustained program, service or intervention on the overall target population, such as increase in numbers of students prepared to enter into research careers, improved retention rates, achievement of a more diverse biomedical research workforce.

If you have the necessary resources, then you can use them to implement the strategies. If your strategies are fully implemented and of high quality, then the amount of service/product will be produced. If you accomplish your planned strategies, then clients will benefit in certain ways. If these benefits to clients are achieved, then certain changes in organizations, communities or systems will occur.

Typical Logic Model

Resources or Inputs — Strategies — Outputs — Outcomes — Impact

Your Planned Work — Your Intended Results

# Logic Model Template

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Strategies</th>
<th>Outputs</th>
<th>Short-Term Outcomes</th>
<th>Long-Term Outcomes or Impact</th>
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Start Here
Select a project idea from one of the programs in your group OR brainstorm an outline for a new workforce development project.

Identify one or two long-term outcomes or impacts.

Determine realistic and achievable short term outcomes.
- Specific
- Measurable
- Achievable
- Realistic
- Time-bound

Plan activities that will lead to the expected outcomes.
CONNECT THE BOXES IN YOUR MODEL

Are there any boxes that are not logically connected?

Where will you invest your evaluation efforts in the model?
Program Plan
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Embed evaluation throughout the design and conduct of the program

Effective Evaluation Designs

- Are guided by questions derived from the logic model.
- Relate directly to project goals and objectives.
- Use mixed methods.
  - Quasi-experimental design usually is suitable.
- Focus on intermediate and end populations—and processes.
  - Effects on instructors and students.
- Measure learning in ways other than self-reporting.
- Do not rely solely on changes in attitudes or beliefs.
- Protect human subjects.
- Fit available time and resources
- Rely on credible and sufficient data
Given that you can’t measure everything, what questions will you ask?

What? (program and purpose)
- Numbers of trainees who placed into postdoctoral or industry positions
- Number of undergraduates who entered PhD programs
- Cohort of effective faculty mentors
- Trainees skilled in biomedical research methods

How? (alignment of strategies, outputs and outcomes)
- Are trainees achieving intended knowledge and skills?
- Are faculty members participating in mentor training programs?

Why—So what? (outcomes and impact)
- Did student participation as members of cohorts contribute to retention and program completion?
- Did recruitment strategies attract a diverse population of students?
DATA TO ANSWER YOUR EVALUATION QUESTIONS

Quantitative
• Counts and other metrics
• Assessments (knowledge or skills—tests or observation; scores are better than grades)
• Surveys and questionnaires
• Rubrics (observation or ratings instrument)

Qualitative
• Open-ended responses on tests and surveys
• Focus groups
• Structured interviews
• Document reviews
• Portfolios
SURVEY CONSIDERATIONS

Reliability
- Consistency of the data produced (responses, test-retest scores, or inter-rater reliability).

Validity
- How well an instrument measures what is intended.
- Content validity = questions are relevant.
- Construct validity = the measure accurately represents the theoretical construct it is intended to measure.

Must be carefully designed and piloted
- Has someone already create a tool?

Statistical power is important
- Use paired comparisons if sample size is sufficient.
- Examine effect sizes.

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YOUR EVALUATION REPORT

• Intended use and users
• Program description (logic model, current stage of implementation)
• Evaluation focus (key questions)
• Data sources and methods (indicators, data sources)
• Results and analysis
• Dissemination and sharing plan
• Changes to program as a result of formative evaluation
HOW WILL YOU USE YOUR EVALUATION DATA?

Continuous quality improvement

Demonstrate results

Build awareness through communication and dissemination

Develop new programs

Generate scholarly products or research questions

Funder

Institution

Advisors

Individual participants

Community

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Effective evaluations are guided by SMART goals and alignment of outcomes, strategies and inputs in the form of a logic model. Inform project improvement. Communicate outcomes. Build capacity.


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