

Evaluating and Assessing Grant Education Programs

Gwen Nugent

*Nebraska Center for Research on
Children, Youth, Families and Schools*

September 2010

1. Include evaluation as part of project from beginning

- ▶ Project planning
- ▶ Needs assessment
- ▶ Collection of baseline data
- ▶ Testing of prototypes and pilots [formative]
- ▶ Evaluation of project effectiveness [summative]

2. Determine purpose of evaluation

Formative

- ▶ Purpose: guiding developmental process; making improvements
- ▶ Data for program improvement, modification, and management
- ▶ “What is working and what is not?” “What needs to be changed?”

Summative

- ▶ Purpose: making overall assessment or decision
- ▶ Data to determine effectiveness of program, product, organization
- ▶ “Are intended results of program achieved?” “Are there unintended results?”

2. Determine purpose of evaluation

Formative

- ▶ Often conducted by internal evaluator
- ▶ Item data often more important than overall scores
- ▶ Testing segments, prototypes

Summative

- ▶ Use of external evaluator
- ▶ More global data
- ▶ Testing final products

3. Develop specific, measurable evaluation questions

- ▶ Based on
 - Program components with measurable outcomes
 - Original objectives of project
 - What stakeholders want: funding agency, program coordinators, administrators, policy makers, participants
- ▶ Can be descriptive (what is happening? is the program delivering what is promised? on time), relational (is there a relationship?) causal (does the program/intervention cause an outcome?)

3. Develop specific, measurable evaluation questions

- ▶ What is the effectiveness of the IT curriculum?

versus

- ▶ What is the impact of the IT curriculum in increasing 4-H members': (a) STEM literacy, (b) critical STEM workforce skills, and (c) interest in mathematics, science, and technology (IT) careers.

3. Develop specific, measurable evaluation questions

- ▶ Is there a relationship between teacher knowledge of scientific inquiry and student performance on an inquiry assessment? [relationship]
- ▶ What are the characteristics (i.e. content/topics, frequency, delivery format, training strategies) of teacher professional development in scientific inquiry in Nebraska? [descriptive]

4. Match the evaluation design to the questions

- ▶ Is your evaluation question descriptive, relational, or causal?
- ▶ What comparisons do you want to make? (pre-post-followup, treatment-control)



5. Develop a data collection plan

- ▶ Who will you collect data from?
 - Students, teachers, parents, project leaders, program coordinators, administrators, stakeholders
- ▶ What data will you collect?
 - Attitudes /perceptions, knowledge, skills, behaviors, products (e.g. lesson plans, journals, student work)
- ▶ When will the data be collected?
- ▶ How will the data be collected?

Methods of data collection

Qualitative

- ▶ Interviews
- ▶ Photo-elicitation
- ▶ Focus groups
- ▶ Observation – written narrative either subjective or guided
- ▶ Videotape/audiotape – develop categories and themes from information

Quantitative

- ▶ Assessments
- ▶ Inventories, Questionnaires, Surveys
- ▶ Observation – record frequency, duration, or intensity of prescribed/ predetermined behaviors (can be done while event is occurring or coded from video/ audio tape)

6. Use reliable and valid instruments

- ▶ Assessment Tools in Informal Science
www.pearweb.org/atis
- ▶ FLAG
www.flaguide.org/tools/newsearch.php
- ▶ Online Evaluation Resource Library
oerl.sri.com
- ▶ Program-related databases (NSF ITEST, etc)



7. Analyze data

- ▶ Show increases, progress, and change relative to earlier state (% increase, statistically significant increase)
- ▶ Show perceptions of progress from stakeholders
- ▶ Descriptive analysis – frequencies and %s
- ▶ Relationship analysis – correlations
- ▶ Causal – comparisons between means



8. Provide information to relevant audiences

- ▶ Use executive summaries
- ▶ Use face-to-face briefings, phone conversations
- ▶ Provide continuous updates
- ▶ Establish culture of collaboration

Other Questions

- ▶ How much of the budget should go to evaluation?

Rule of thumb is 10% of direct costs



Other Questions

- ▶ How can I find an evaluator?

<http://ec.wmich.edu/evaldir/index.html>

http://www.eval.org/find_an_evaluator/evaluator_search.asp

Other Questions

- ▶ Are evaluation and research the same thing?



Comparison

Experimental Research

- ▶ Problem selected by researcher; driven by the current research/literature
- ▶ Use instruments with sound psychometrics
- ▶ Must use hypothesis testing and statistical methods of analyses

Evaluation

- ▶ Problem determined by situation and constituents
- ▶ Use reliable and valid instruments when available; modify to fit unique project aspects
- ▶ Sometimes uses hypotheses and statistical methods of analyses

Comparison, cont

Experimental Research

- ▶ Objectivity; pre-determined method that does not deviate during experiment
- ▶ Examines cause-effect relationships
- ▶ Controlled environments
- ▶ Generalizability to population of interest
- ▶ Conclusions

Evaluation

- ▶ Value judgments; method should change if problems arise (use of formative evaluation)
- ▶ Determines worth; guides improvement
- ▶ Naturalistic environments
- ▶ Project or program specific
- ▶ Decisions

Evaluation Resources

- ▶ Fitzpatrick, J. L., Sanders, J.R., & Worthen, B.R. (2004). *Program evaluation: Alternative Approaches and practical guidelines* (3rd ed.). Boston: Pearson Education, Inc.
A thorough, comprehensive text ; a very good reference.
- ▶ Penna, R. M., Phillips, W. J. (2004). *Outcome frameworks: An overview for practitioners*. Rensselaerville, NewYork: The Rensselaerville Institute.
(<http://www.rinstitute.org>)
This entire reference focuses on outcomes.
- ▶ Gredler, M. E. (1996). *Program evaluation*. Englewood cliffs NJ: Merrill, an imprint of Prentice Hall –
For novices, this is a much more user–friendly text than the Fitzpatrick, et.al. text.
- ▶ Kirkpatrick, D. & Kirkpatrick, D. *Implementing the Four Levels: A Practical Guide for Effective Evaluation of Training Programs*. San Francisco: Berrett–Koehler.
- ▶ Patton, M. (2008). *Utilization Focused Evaluation*. Thousand Oaks, CA: Sage.
- ▶ NSF Program Evaluation Guide. <http://www.nsf-proj-eval-guide.org/html/home.htm>
- ▶ American Evaluation Association. <http://eval.org>