SI 623 - Outcome-Based Evaluation of Programs and Services, Winter 2009

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Experimental Design & Outcomes

• Very influential in many evaluation circles.
• The Rand Corp suggests that a tight experimental design is

  *The only way you can prove that your program is responsible for the outcomes*
Experimental Design

- Methodologists: Donald Campbell & Julian Stanley (1966) followed by many others
- EXPERIMENTAL DESIGNS
- QUASI-EXPERIMENTAL DESIGNS
- Rand: Federal contractor on outcome evaluation
- High/Scope Longitudinal Studies
The Evaluation Theory Tree can be found on page 13 of “An Evaluation Theory Tree” by Marvin C. Alkin and Christina A. Christie (Chapter 2 of *Evaluation Roots Tracing Theorists Views and Influences*) at [http://www.sagepub.com/upm-data/5074_Alkin_Chapter_2.pdf](http://www.sagepub.com/upm-data/5074_Alkin_Chapter_2.pdf).
Experimental Design
Randomized

GRP 1: \( R \ X \ O \)

GRP 2: \( R \ O \ O \)

R=RANDOM
X=TREATMENT (program)
O=MEASUREMENT
QUASI-EXP. DESIGN (Non-Randomized)

N   O   X   O

N   O   O   O

(pre & post measurement; plus control group)

N-non-random
O-observation
X-treatment
EXP. DESIGN
With More than one ‘Treatment’

O       X(1)       O
O       X(2)       O

(pre-test—post-test)
Rand: Getting to Outcomes

- Funded by U.S. Centers for Disease Control and Prevention-CDC
- Focus on programs such as community drug prevention & treatment programs
Definition of an Outcome Evaluation

An outcome evaluation attempts to document whether or not the program caused an improvement among the participants on certain areas of interest (e.g., drug use, risk and protective factors) and by how much.

<table>
<thead>
<tr>
<th>Randomly assign (e.g., flip a coin) people from the same target population to → OR →</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROGRAM Group</td>
</tr>
<tr>
<td>CONTROL Group</td>
</tr>
</tbody>
</table>

## Process Evaluation

<table>
<thead>
<tr>
<th>The process evaluation showed:</th>
<th>and the outcome evaluation showed:</th>
<th>Then it is likely that staff chose the:</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-quality implementation</td>
<td>Positive outcomes</td>
<td>Appropriate program and program theory</td>
</tr>
<tr>
<td>High-quality implementation</td>
<td>Negative outcomes</td>
<td>Inappropriate program and program theory</td>
</tr>
<tr>
<td>Poor-quality implementation</td>
<td>Negative outcomes</td>
<td>Appropriate OR Inappropriate program and program theory</td>
</tr>
</tbody>
</table>
## Sample Outcome Evaluation Results and Interpretations

<table>
<thead>
<tr>
<th>If the process evaluation showed:</th>
<th>and the outcome evaluation showed:</th>
<th>A likely interpretation is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very low attendance or “dose” for all participants</td>
<td>Positive outcomes</td>
<td>Participants changed on their own NOT due to the program</td>
</tr>
<tr>
<td>Very low attendance or “dose” for all participants</td>
<td>Negative outcomes</td>
<td>Participants did not get enough of the program</td>
</tr>
<tr>
<td>Very high attendance or “dose” for all participants</td>
<td>Negative outcomes</td>
<td>The program chosen might not be the right one for this target group</td>
</tr>
</tbody>
</table>

to just assess change in the target population or see if your target group met criteria for your program, then a Pre-Post (explained below) may be all that is needed. The “strength” of your evaluation design will impact your confidence that the program caused the change (cause and effect relationship).
## Comparisons of the Common Evaluation Designs

<table>
<thead>
<tr>
<th>Methods</th>
<th>Pros</th>
<th>Cons</th>
<th>Costs</th>
<th>Expertise Needed to Gather and Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Only</td>
<td>Easy to do, provides some information</td>
<td>Cannot measure change</td>
<td>Inexpensive</td>
<td>Low</td>
</tr>
<tr>
<td>Pre-Post</td>
<td>An easy way to measure change</td>
<td>Only moderate confidence that your program caused the change</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Retrospective Pre-Post</td>
<td>Easier than the standard Pre-Post</td>
<td>Only moderate confidence that your program caused the change AND it may be hard for participants to recall how they were at the start</td>
<td>Inexpensive</td>
<td>Low</td>
</tr>
<tr>
<td>Pre-Post with Comparison Group</td>
<td>Provides good level of confidence that your program caused the change</td>
<td>Can be hard to find group that is similar to program group</td>
<td>High; doubles the cost of the evaluation</td>
<td>Moderate to high</td>
</tr>
<tr>
<td>Pre-Post with Control Group</td>
<td>Provides excellent level of confidence that your program caused the change</td>
<td>Hard to find group willing to be randomly assigned; ethical issues of withholding beneficial program from control participants</td>
<td>High; doubles the cost of the evaluation</td>
<td>High</td>
</tr>
</tbody>
</table>

**OUR RECOMMENDATION**

Strive to do the Pre-Post with Comparison Group. If that is not possible, than at least do a Pre-Post.

Quantitative methods answer who, what, where, and how much. Emphasizing numbers, they target larger groups of people and are more structured and standardized (this means the same exact procedure is used with each person) than qualitative methods.

Qualitative methods answer why and how and usually involve talking to or observing people. Emphasizing words instead of numbers, qualitative methods present the challenge of organizing the thoughts and beliefs of those who participate into themes. Qualitative evaluations usually target fewer people than quantitative methods.
High/Scope Perry Preschool Study

See [http://highscope.org/Content.asp?ContentId=219](http://highscope.org/Content.asp?ContentId=219) for a full description of the study.
High/Scope Goal & Design

For more about the High/Scope Experiment Goal & Design see the “Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40” at

http://www.strategiesforchildren.org/eea/6research_summaries/05_HighScope.pdf
Major Findings: High/Scope Perry Preschool Study at 40

<table>
<thead>
<tr>
<th>Metric</th>
<th>Program Group</th>
<th>No-program Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrested 5+ times by 40</td>
<td>36%</td>
<td>55%</td>
</tr>
<tr>
<td>Earned $20K+ at 40</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Graduated regular high school</td>
<td>45%</td>
<td>65%</td>
</tr>
<tr>
<td>Basic achievement at 14</td>
<td>15%</td>
<td>49%</td>
</tr>
<tr>
<td>Homework at 15</td>
<td>38%</td>
<td>61%</td>
</tr>
<tr>
<td>IQ 90+ at 5</td>
<td>28%</td>
<td>67%</td>
</tr>
</tbody>
</table>
Figure 2
High/Scope Perry Preschool Program Public Costs and Benefits

Education savings  Taxes on earnings  Welfare savings  Crime savings

Benefits

Costs

$15,166

$2,768

$14,078

$7,303

$171,473

Total Public Benefit $195,621

$12.90 return per dollar invested.

(Constant 2,000 dollars, 3% discount rate)

Source: http://www.highscope.org/file/Research/PerryProject/3_specialsummary%20col%202006%202007.pdf
Patton Ch 10

• Conceptualizing the Intervention: Alternatives for Evaluating Theories of Change
Outcome Study Examples

- Washtenaw Literacy: Ripples of Impact HLLH Ch 9
- Empowering Youth: PL youth technology HLLH 10
- Community Info Services: HLLH Ch 11
- Senior Book Deposit Program HLLH Ch 12
- C-Tools Sample Final Reports
  - LBPD Report
  - OSLIS (Oregon School Library Info System)
  - A2-Ypsi Community Read Partnerships
623 Projects: Design & Data Collection Plan

- Ann Arbor District Library Programming Partnerships
- Ypsilanti District Library Public Programs
- Chelsea Programming Partnerships
- Canton PL Books by Mail Service
- Canton PL Teen Programs
- CEW Women of Color TF Annual Career Conference
- Eastern Michigan University Academic Projects Center
- EMU Information Literacy Project
- Lakewood Elementary School Media Center
- Chelsea DL 6-11 Club after school program
- Community Action Network Homework Help Programs