## The Best Design for the Question

<table>
<thead>
<tr>
<th>Study Type</th>
<th>Design</th>
<th>Representation (X = treatment; O = measures/effects; R = random assignment)</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative Case Study</td>
<td>One-shot Post-test only Design</td>
<td>X O</td>
<td>Takes fewer resources, can present a “snapshot” of a point in time</td>
<td>Doesn’t look at change</td>
</tr>
<tr>
<td>Quasi-experimental Study</td>
<td>One-shot Pre-test-Post-test Design</td>
<td>O\textsubscript{a} X O\textsubscript{b}</td>
<td>Looks at change over time</td>
<td>Other things besides treatment could be causing change</td>
</tr>
<tr>
<td>Quasi-experimental Study</td>
<td>Post-test Only Intact Group Design</td>
<td>X O</td>
<td>Compares to another group</td>
<td>Doesn’t control for any initial differences in groups</td>
</tr>
<tr>
<td>Quasi-experimental Study</td>
<td>Pre-test-Post-test Intact Group Design</td>
<td>O\textsubscript{a} X O\textsubscript{b} O\textsubscript{a} O\textsubscript{b}</td>
<td>Allows statistical control for possible extraneous variables</td>
<td>Doesn’t control for any effect of testing</td>
</tr>
<tr>
<td>Experimental Study</td>
<td>Post-test Only Design With Random Assignment</td>
<td>X O R O</td>
<td>Controls for pre test effects, random assignment reduces the chances of extraneous group differences</td>
<td>Random assignment is often not possible in evaluation, doesn’t control for extraneous variables</td>
</tr>
<tr>
<td>Experimental Study</td>
<td>Pre-test-Post-test Design With Random Assignment</td>
<td>O\textsubscript{a} X O\textsubscript{b} R O\textsubscript{a} O\textsubscript{b}</td>
<td>Allows statistical control for possible extraneous variables</td>
<td>Random assignment is often not possible in evaluation, doesn’t control for any effect of testing</td>
</tr>
<tr>
<td>Experimental Study</td>
<td>Solomon Four Group Design</td>
<td>O\textsubscript{a} X O\textsubscript{b} R X O\textsubscript{b} O\textsubscript{a} O\textsubscript{b}</td>
<td>Strongest quantitative design controls for all possible extraneous variable</td>
<td>Random assignment is often not possible in evaluation, very resource intensive</td>
</tr>
<tr>
<td>Quasi-experimental Study</td>
<td>Time Series Design</td>
<td>O\textsubscript{a} O\textsubscript{b} X O\textsubscript{c} O\textsubscript{d}</td>
<td>Looks at longer term change</td>
<td>Doesn’t control for extraneous variables</td>
</tr>
<tr>
<td>Methodology</td>
<td>Description</td>
<td>Advantages</td>
<td>Disadvantages</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>Ethnography</td>
<td>Participant observer examination of group behaviors and patterns</td>
<td>Explores complex effects over time</td>
<td>Resource intensive</td>
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<td></td>
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<td>Story telling approach may limit audience</td>
<td></td>
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<tr>
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<td>Potential observer bias</td>
<td></td>
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<tr>
<td>Case Study</td>
<td>Exploration of a case (or multiple cases) over time</td>
<td>Provides an in-depth view</td>
<td>Limited generalizability</td>
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<td></td>
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<td>Elaborates on quantitative data</td>
<td></td>
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<tr>
<td>Content Analysis</td>
<td>Systematic identification of properties of large amounts of textual</td>
<td>Looks directly at communication</td>
<td>Tends too often to simply consist of word counts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>information</td>
<td>Allows for quantitative and qualitative analysis</td>
<td>Can disregard the context that produced the text</td>
<td></td>
</tr>
<tr>
<td>Mixed Methods Study</td>
<td>Use of more than one of the above designs</td>
<td>Can counteract the disadvantages of any one design</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from:
- *Lydia’s Tutorial Qualitative Research Methods*
- Writing@CSU  http://writing.colostate.edu/index.cfm Accessed April 15, 2007.

**Resources on Design**

**Research Methods Knowledge Base: Design**
http://www.socialresearchmethods.net/kb/design.php
A short, but comprehensive, on-line overview of quantitative designs covering the following areas:

- Introduction to Design
- Experimental Design
- Relationships Among Pre-Post Designs
- Advances in Quasi-Experimentation
- Types of Designs
- Quasi-Experimental Design
- Designing Designs for Research

**Research Methods Knowledge Base: Types/Traditions of Qualitative Research**
http://www.socialresearchmethods.net/tutorial/Mensah/default.htm
A short, but comprehensive, on-line overview of quantitative designs covering the following areas:

- Biography
- Grounded Theory
- Case Study
- Phenomenology
- Ethnography

**Protection of Human Subjects**
http://ohsr.od.nih.gov/cbt/cbt.html
Short computer-based training, from the National Institutes of Health, on protecting human subjects, one for people who are doing research and/or evaluation and one for people who are members of institutional review boards.
Some Web-based Sources of Resources

User Friendly Guide to Program Evaluation

- Introduction
  - Section I - Evaluation and Types of Evaluation
  - Section II - The Steps in Doing an Evaluation
  - Section III - An Overview of Quantitative and Qualitative Data Collection Methods
  - Section IV - Strategies That Address Culturally Responsive Evaluations
  - Other Recommending Reading, Glossary, and Appendix A: Finding An Evaluator

OERL, the Online Evaluation Resource Library.
http://oerl.sri.com/home.html

Includes NSF project evaluation plans, instruments, reports and professional development modules on
- Designing an Evaluation
- Developing Written Questionnaires
- Developing Interviews
- Developing Observation Instruments
- Data Collection
- Instrument Triangulation and Adaptation.

Sample Under-represented Student Instruments From OERL include:
- Attitude Surveys
- Content Assessments
- Course Evaluations
- Focus Groups
- Interviews
- Journal/Log Entries
- Project Evaluations
- Surveys
- Workshop Evaluations

AGEP Collecting, Analyzing and Displaying Data

- I. Make Your Message Clear
- II. Use Pictures, Where Appropriate
- III. Use Statistics and Stories
- IV. Be Responsive to Your Audience.
- V. Make Comparisons
- VI. Find Ways To Deal With Volatile Data
- VII. Use the Results

ETS Test Link (a library of more than 25,000 measures).
http://www.ets.org/portal/site/ets/menuitem.1488512eefd5b8849a77b13bc3921509/?vgnextoid=ed462d31df4010VgnVCM10000022f95190RCRD&vgnextchannel=85af197a484f4010VgnVCM10000022f95190RCRD