



NYU Steinhardt

Field Experiments Training

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The Importance of Mixed Methods in Field Experiments

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Motivation

Proliferation of randomized controlled trials in domestic education, other fields, but only recently among international education programs sponsored by international aid agencies

Spurred huge debates, continuation of the “paradigm wars”—criticism from qualitative methodologists (and others)

Education Research on Trial (Walters, Lareau, Ranis 2009)

Importance of mixed methods to overcome weaknesses in studying cause and effect relationships

Overview this Session

Review the debate as it relates to criticisms that you may hear of RCTs

Discuss key elements of qualitative methods

Examine an RCT that incorporates mixed methods to show how it does so and why incorporating both methodological traditions is important

Introduction

- RCTs are often considered the most powerful form of research design to answer questions about **cause and effect relationships**;
- Endorsed in legislation by the U.S. Dept. of Education;
- Many qualitative critics are concerned about priority placed on questions that relate to utility, difficulty getting funding, culture of “science” (Burde 2012)

Critiques of RCTs

NOTE first that these critiques typically assume that RCTs are strictly quantitative approaches

(These critiques listed below are taken from Burde 2012)

- Design

(a) Narrow focus on measurable variables – randomized trials ask small or useless questions and overlook significant questions.

E.g., an experimental study in Mongolia that tested whether “children’s books” and teachers trained in using them increased students’ reading skills— questions to which most educators believed they already knew the answers and deemed irrelevant to policy (Steiner-Khamsi 2009 cited in Burde 2012)

Critiques of RCTs

(1) Design

(b) Results of RCTs may inaccurately report the strength of the treatment effects because problems often emerge in carrying out treatment and maintaining control (Lareau 2009; Deaton 2010)

Critiques of RCTs

(2) Ethics

(a) Concerns regarding denying an intervention to one group while providing it to another (Borman 2002; Lareau 2009; Steiner-Khamsi 2009)

Proponents justify denial of treatment by a risk-to-benefit trade off; that is, the level of risk involved in carrying out the study versus the benefits if it is completed successfully;

Tension between **individual rights and the public good**: Ethical guidelines oblige researchers to protect individual study participants from harm, but researchers in fields like education and public health, particularly in aid work, often seek interventions that will maximize public benefits (Osrin et al. 2009)

Critiques of RCTs

(3) Culture of Science

Emphasis on evidence-based policy privileges a single definition of scientific rigor and evidence.

Powerful institutions present randomized trials as the infallible solution to problems in education research.

U.S. Department of Education Strategic Plan for 2002-2007 describes its objective to “transform education into an evidence based field” like medicine and agriculture

Not just a theoretical argument, lots of \$\$ at stake

Argument

Mixed methods bridge many of these divides.

In assessing program impact, mixed methods approaches can produce more robust evidence than either type of method working independently

Complementary qualitative case study and ethnographic methods provide **more confidence** in quantitative data analysis and interpretation, as well as additional **contextual detail** to explain findings that randomized trials cannot (Burde 2012)

Qualitative Methods

Explore social science questions by collecting in-depth details regarding *how and why* something happens.

Two common designs use case studies or ethnographies (possible also to combine these two approaches)

In contrast to quantitative standardized interview research, qualitative research uses, for example:

- Open or semi-structured interviews;
- Document analysis;
- Descriptive observations;

Semi-Structured Interviewing

- Access: Cultivating contacts (entrée, logistics, information, lists of additional contacts, key informants)

In creating semi-structured interviews, questions should elicit the following (Rubin & Rubin Ch 7):

- Depth: Answers should be more than superficial. Depth adds meaning and understanding.
- Detail: Answers should provide descriptive characteristics, or particular details. These add evidence and clarity to the answer.
- Vividness: Answers should provide anecdotes or examples, when it makes sense to do so.
- Nuance: Answers should underscore variation in meaning.

Mixed Methods

Mixed methods studies usually employ a variant of two types of approaches—sequential or simultaneous data collection.

Key decisions relate to **timing** (at which point each approach is used), **weight** (does one approach garner more analytical weight than the other), and **integration** (where the mixing occurs, for example, at the data gathering, interpretation, or analysis stage)

Study in Afghanistan

Our study in Afghanistan (Burde and Linden 2013) employed qualitative and quantitative methods to assess the impact of **community-based schools** started and supported by Catholic Relief Services (CRS).

Consisted of three main components:

- (1) pilot study;
- (2) randomized trial;
- (3) qualitative case studies using semi-structured interviews

AFGHANISTAN



- Major Town
- UNICEF Country Office
- ★ UNICEF Zone Office
- ★ UNICEF Outposts Office

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations

Pilot Study in Panjshir with CRS

Qualitative pilot studies used in a sequential mixed methods design establish the **relevance and significance of a research question**, in addition to **developing measures to understand the phenomenon** under study (Brady and Collier 2005)

My **pilot study** examined the differences in 49 adolescents' outcomes (protection and life chances) across two NGO (CRS) schools, one government school, one religious school, and a group of unenrolled children.

Testing measures was critical for the large scale study, but **ethnographic qualitative data about the conflict and culture** was critical for research in Afghanistan

Mixed Methods RCT

Remember.....our overarching questions:

How does the availability of community-based schools affect girls' and boys' educational enrollment and achievement?

How does the program affect parents, adults in the villages? (changed attitudes, increased civic participation)

The **research protocol had five stages**, including quantitative and qualitative data collection:

- (1) preparation, staff training, and randomization;
- (2) spring 2007 baseline survey; simultaneous **program case study**
- (3) fall 2007 mid-term survey;
- (4) spring 2008 final survey; and
- (5) summer 2008 one round of qualitative data collection (semi-structured interviews with teachers, village leaders, and school management committee members).

Quantitative Data Collection

- Qualitative case studies complemented the quantitative data

Two survey and testing rounds:

- Fall 2007 and Spring 2008

Qualitative Data

Two types of case studies:

(1) CRS community-based schools program:

Carried out first qualitative case study of the program concurrent with the quantitative data collection—it informed our understanding of the way the program was implemented and allowed us to trace key events over the life of the program that could explain some quantitative findings which may not have been clear otherwise.

E.g., *when* teachers received training, complaints about the training, etc.

Qualitative Data

(2) Case studies of individual villages

After preliminary look at the quantitative results, selected treatment and control villages from both districts, providing a geographically representative sample.

Identified leaders within these villages—headmen (*arbabs*), religious leaders (*mullahs*), teachers, parents, and school management committee (SMC) members—and conducted **semi-structured individual interviews**.

Interview content corresponded to the categories of questions in our quantitative questionnaires in order to understand the randomized results in more detail

Qualitative Data

Semi-structured interviews with leaders within these villages

5-6 Question categories:

- State of education in the village (educational level of respondent, ed. history)
- Demographics: Relations in the village (family and clan ties)
- Attitudes toward girls' and boys' education
- Conditions before/after conflict
- Etc.

Discussion

- Qualitative pilot studies were an essential first step to lay the foundations for on-going research —provided:
 - Contextual understanding to evaluate research questions, revise questionnaires, and test field procedures amid shifting political circumstances.
 - Extensive knowledge of the local context was critical to identify and build the relationship with the NGO partner (CRS), understand logistics, and modify the intervention appropriately to create the RCT.

Discussion

Combining qualitative and quantitative methods was particularly important to:

- triangulate the findings,
- reinforce causal explanations, and
- provide a more nuanced understanding of the results

Discussion

In Afghanistan, for example, our quantitative data showed that CRS' s community-based schools increased boys' and girls' school attendance and achievement dramatically.

Qualitative methods (in-depth interviews with community leaders) reinforced the results and suggested **inductive** explanations for the findings:

E.g., that parents' concerns for propriety do not preclude girls' education as long as schooling takes place inside the village

Employing qualitative methods to such an extent allowed the researchers to “see inside the black box” that randomized trials usually create

Discussion

Qualitative methods are essential for designing experimental studies and understanding quantitative data once collected, but they are also vital to **executing** these studies.

- Ethnographic, case-based knowledge that accompanies qualitative research is integral to identifying the possibilities for field experiments, and “the **social and networking skills** often associated with qualitative fieldwork appear to be the *sine qua non* of many field experiments, as well” (Dunning 2008, 19).

Conclusion

Had we relied exclusively on quantitative methods, the study would not have fared as well in explaining *why* these programs had the impact they had.

Mixed methods enhance explanatory power for studies that explore impact and cause and effect questions.

In the cases presented here, using a mixed methods approach held an advantage not only in implementing the study and analyzing the data, but also in presenting findings later to key stake holders.

Exercise

Using your case study, how would you add a qualitative approach to study the impact of the program?