

# How to get children into school? Evaluating different Policy Options

14.73 Challenges of World Poverty

Esther Duflo and David Donaldson

# What potential policies would help increase participation in school

---

- You have seen last time some of the reasons why parents may send their children to school, and some of the barriers
- What are potential ways to improve
  - Enrollment in school
  - Regular presence (which is often more of a constraint than enrollment itself)

# Evaluating these policies

---

- Suppose that you are given full freedom to pick the best one (or may be a combinations of the best ones) to scale up in the entire country. You have some time, (let's say 3 or 4 years) to come up with the best plan, and money to try things out
- What questions to do you need to answer about each of these policies to know whether to recommend them or not?
- For example if we chose the example of providing free school meals to poor kids

# Evaluating school meals: the questions

---

- Are the school meals served regularly?
- Is there wastage?
- Do kids eat them?
- Are the kids better nourished?
- Are kids more likely to come to school now?
- Are the poor kids the ones who are really getting the meals?
- Do the kids learn more in school?

# Organizing these questions

---

Needs  
Assessment

Process  
Evaluation

Impact  
Evaluation

# Needs Evaluation

---

- Who is the targeted population?
  - All children? The poor ones?
  - Why do we need to answer this question?
- What's the nature of the problem being solved?
  - How will school meals solve it
  - Why do we need to answer this question?
- How does the service fit the environment?
  - Do teachers feel comfortable cooking?

# Process Evaluation

---

- Are the services being delivered?
  - Money is being spent
  - School meals are delivered, children are eating them
- Are there ways of improving cost effectiveness?
  - Substituting expensive inputs with less costly alternatives, substituting costly inputs with labor, delivery methods
  - Are children spending all day at school eating instead of studying?
- Are the services reaching the right population?
  - Schools with large absence problem
- Are the clients satisfied with service?
  - Teachers', students' response to meals

# Impact Evaluation

---

- Key question: Did school meals cause students to attend school more?
- Auxiliary questions:
  - What was the effect on enrollment?
  - What was the effect on attendance?
  - What was the effect on learning?
  - Did some types of people benefit more than others?
    - Students who were doing worse, poorer students, etc.



# Why impact evaluation?

---

- Surprisingly little hard evidence on what works, and evidence is often not based on data analysis, more on general impression.
- Central issue in the debate on aid
  - Do we know that anything is working?
  - How do we identify what works?
  - Pick what really works
- Evaluating programs forces us to zero in on the details of a particular idea (“empowerment”, “decentralization”)

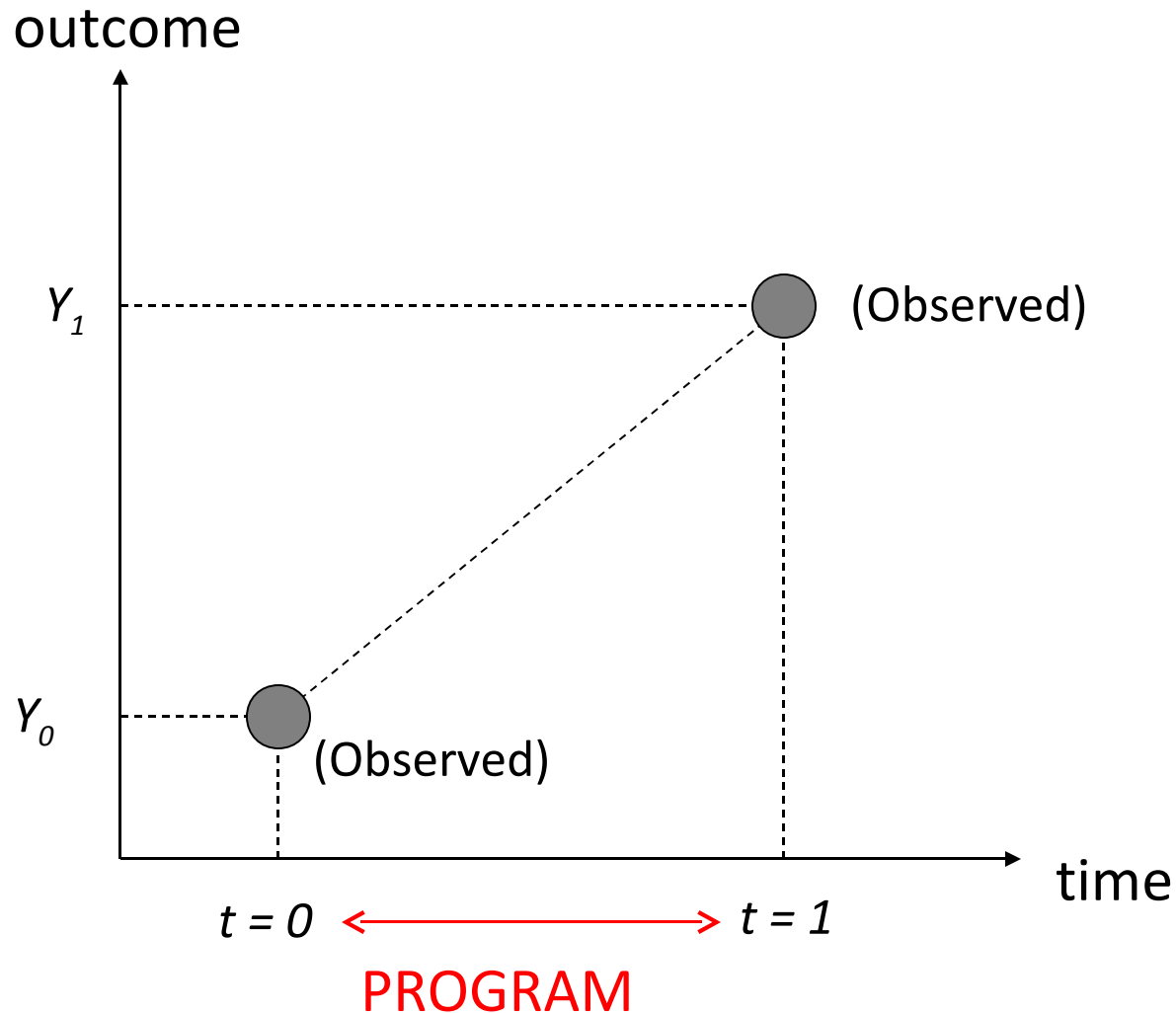
# Why is impact evaluation difficult?

---

- When we answer a process question, we need to describe **what happened**.
  - This can be done from reading documents, interviewing people etc.
- To determine the **impact** of the program we need knowledge of **counterfactuals**, that is, what would have happened in the absence of the program?
- Problem: The true counterfactual is **not observable**
  - The fundamental problem of impact evaluation is thus a problem of **missing data**
  - We don't know what would have happened in the absence of the program (the counterfactual)
- The key goal of all program/impact evaluation methods is to **construct** or “mimic” the counterfactual **as best as possible**.

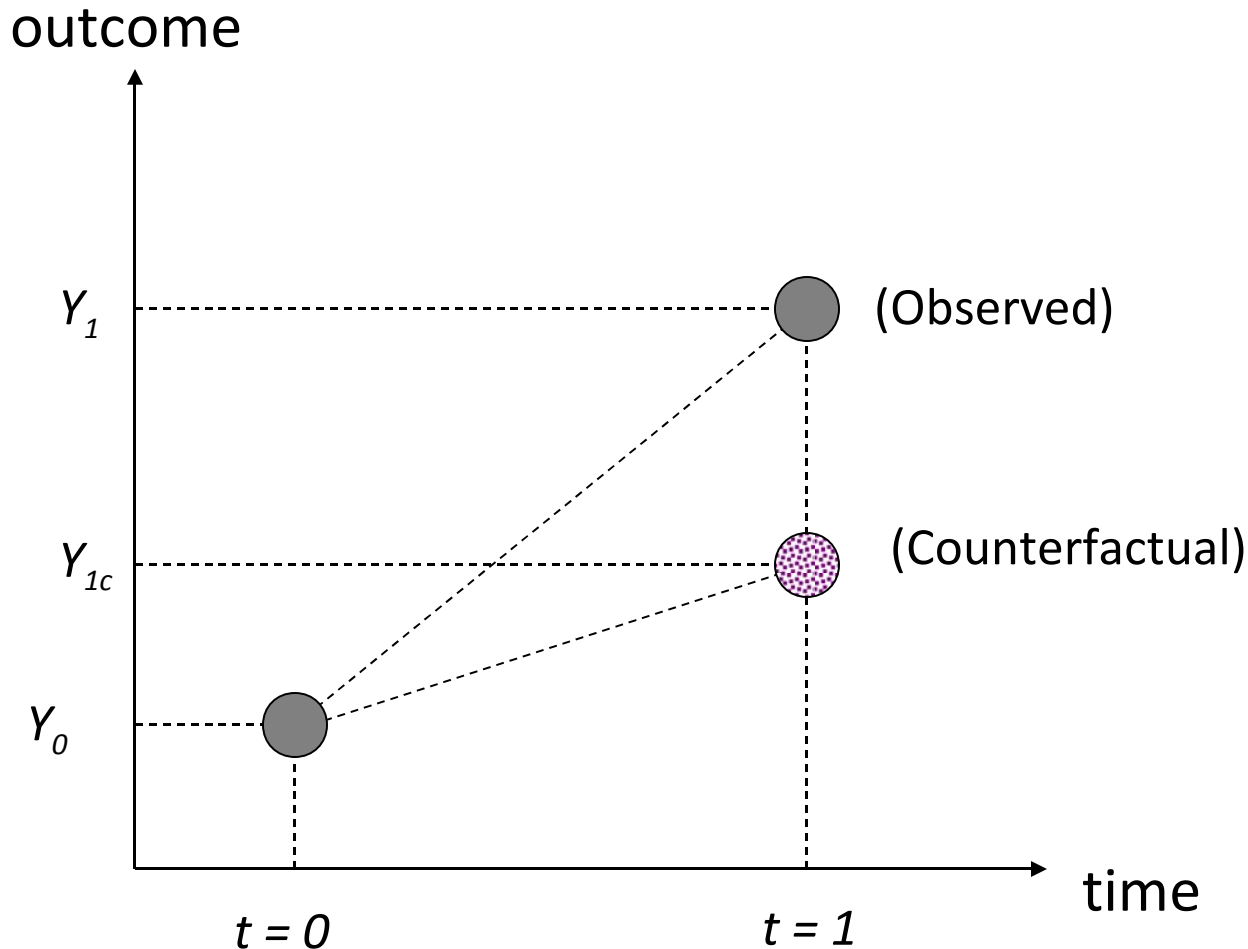
# We observe an outcome ...

---



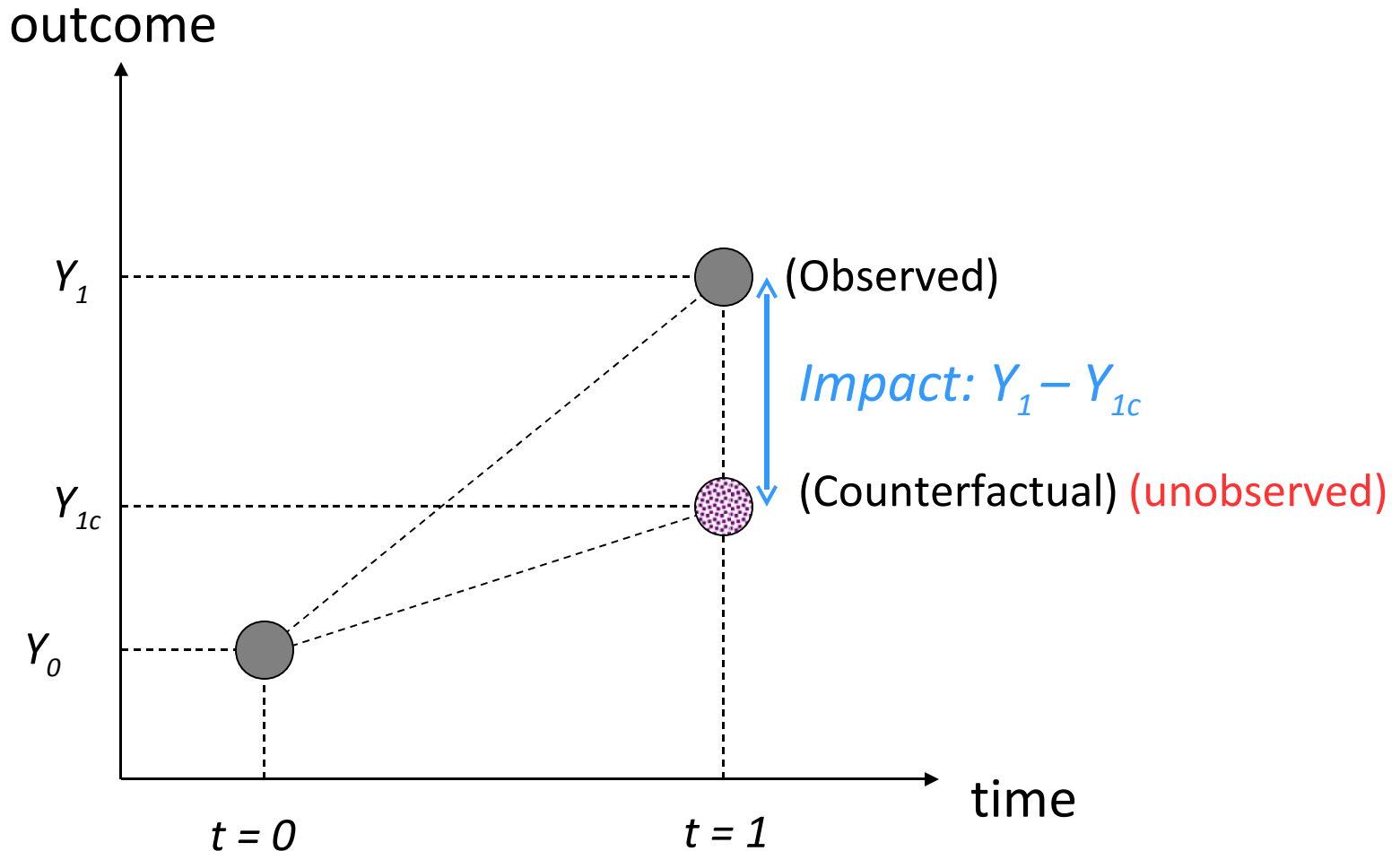
We need to identify the counterfactual:  
what would have happened in the absence of the program

---



We need to identify the counterfactual:  
what would have happened in the absence of the program

---

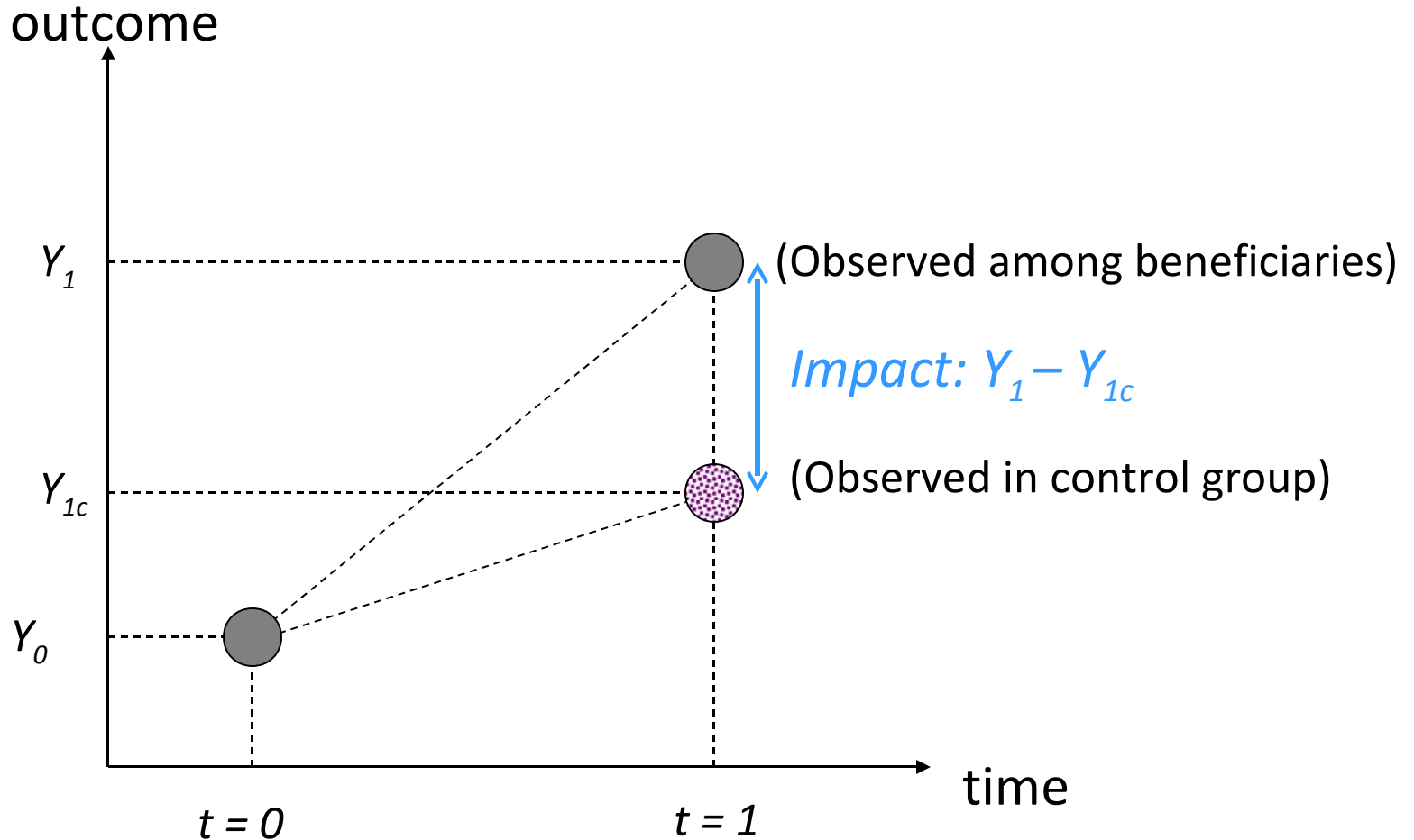


# But the problem is...

---

- We will never have a child both with and without a bednet at the same time ...
- So the counterfactual is not observed
- Solution:
  - Use non-participants as point of comparison  
= “Control” Group
  - E.g.: use kids who did not

# Simple Difference



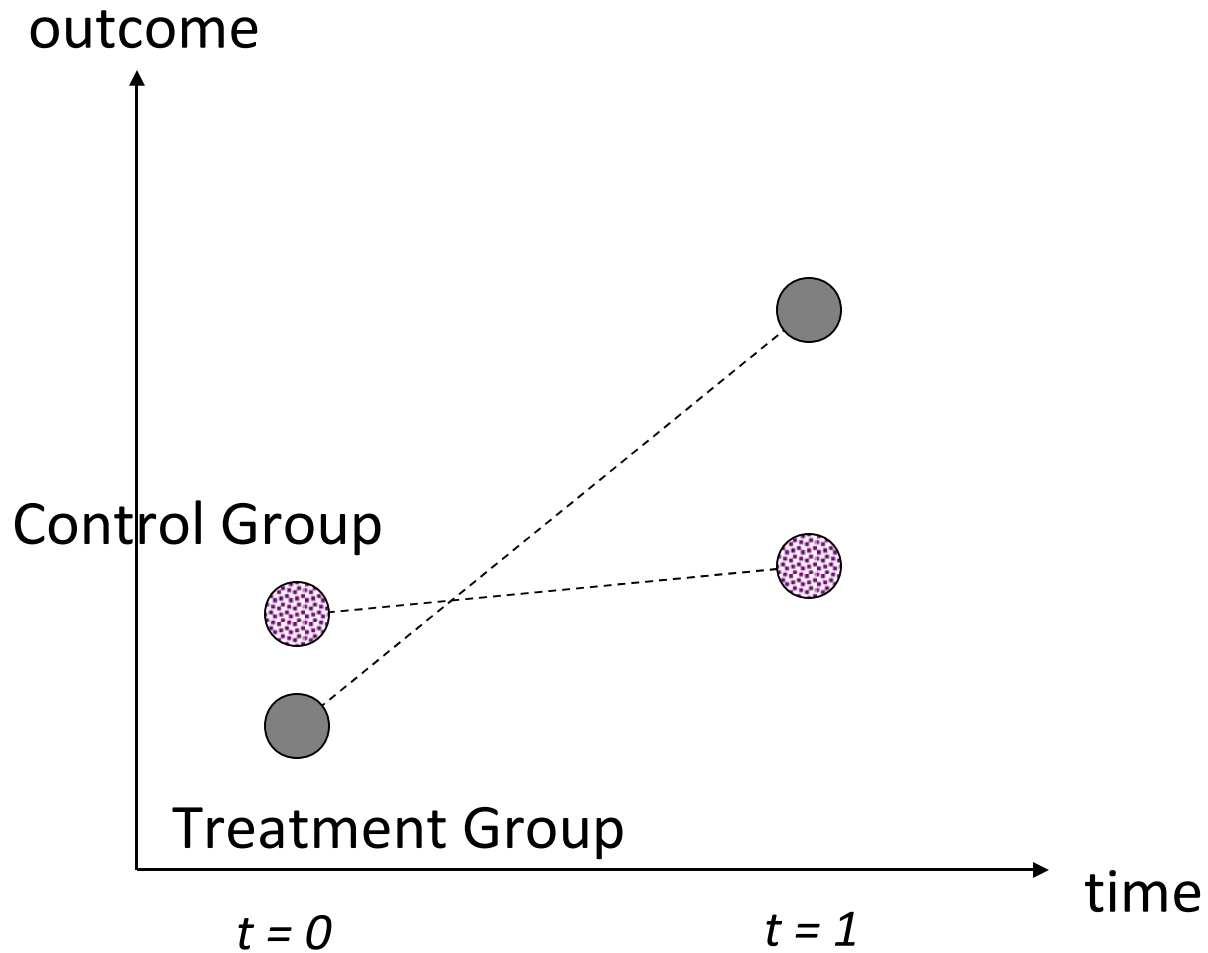
# But still...a few problems

---

- If there are differences in background characteristics between the group of participants and the non-participants
  - E.g., if only kids who are very poor are offered a school lunch
- ➔ This will bias the comparison ...
- ➔ This biased is called “selection bias”



# Selection Bias



# How to get rid of all possible selection biases?

---

- Random assignment of program to treatment and control group
- This creates a comparison group that is not systematically different from the participants
- *i.e.*, one that is not subject to any selection bias
- Why?

# Why does Random assignment work

---

- Because of the law of large numbers...
  - Take 200 villages and randomly split them into two groups of 100
  - The average participation
  - Note: not true if you have only 10 villages to split into 2 groups
- Suppose 50% of a group of individuals are randomly 'treated' to a program (without regard to their characteristics).
  - If successfully randomized, individuals assigned to the treatment and control groups differ only in their exposure to the treatment.
  - Implies that the distribution of both observable and unobservable characteristics in the treatment and control groups are statistically identical.
- Any difference between treatment and control can be attributed to the treatment

# Participation in education

---

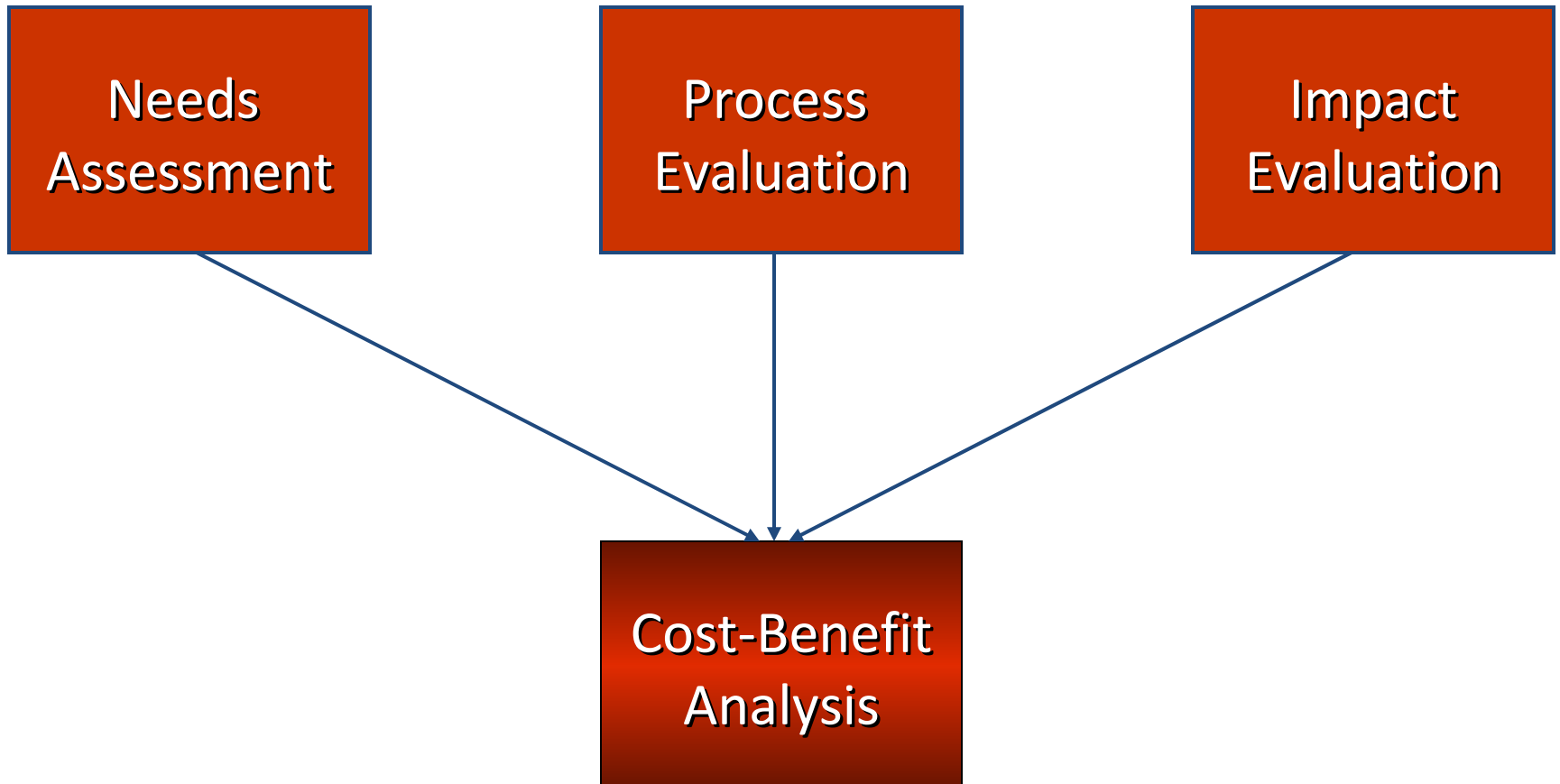
- Reducing the cost of education:
  - Conditional Cash Transfers: PROGRESA in Mexico
    - 3.4% increase in enrollment on average. Larger impact at the secondary school levels.
  - School Uniforms in Kenya
    - School Uniforms distributed to 10,000 students in grade 6, and then 7 in 163 randomly selected schools
    - Drop out fell from 18% to 12% for girls, 13% to 9% for boys
- School meals
  - Evaluation for Pre-schools in Kenya: participation was 30% higher in schools where free breakfast was given

# Participation in education

---

- School health
  - Deworming in Kenya: 0.15 years of extra education (25% increase in presence)
  - Replicated in India (pre-school).
- Incentives for Students
  - Girls scholarship program based on good performance on tests scores in Kenya
- Informing parents about the returns to education
  - Madagascar: increase participation

# Cost Benefit Analysis



# Evaluation and cost-benefit analysis

---

- Needs assessment gives you the metric for defining the cost/benefit ratio
- Process evaluation gives you the costs of all the inputs
- Impact evaluation gives you the quantified benefits
- Identifying alternatives allows for comparative cost benefit

# Cost benefit analysis

---

- Use the cost of the program to calculate how much it would have cost you to do this program for X children (e.g. 1000).
- Then use the program impact to calculate how many extra year of education you got for this 1000 children, thanks to the program.
- Deworming example:
  - Cost per child: 0.5 dollars per year
  - Increase in year of education: 0.15 years
- Deworming cost 3 dollars per **extra year of education induced**. This is different from the usual price per program that the so called “rating agencies” give you for NGOs, because now the price is put in perspective with the benefits.



# Cost Per Extra Year of Education Induced

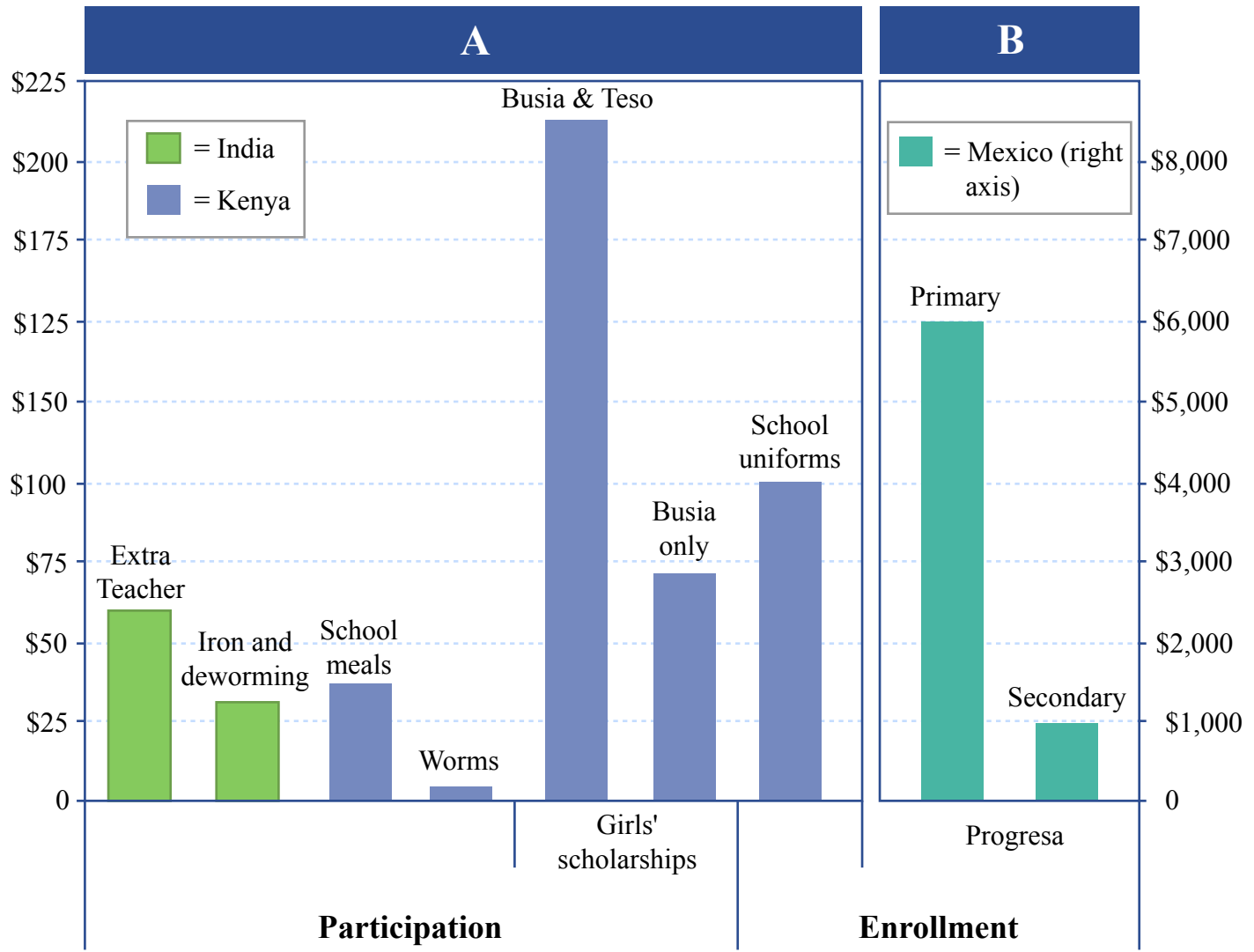


Figure by MIT OpenCourseWare.

MIT OpenCourseWare  
<http://ocw.mit.edu>

14.73 The Challenge of World Poverty  
Fall 2009

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.