

Theory of Change and Measurement

J-PAL North America

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Workshop learning objectives

- Develop an understanding of how to apply a Theory of Change framework to your work
- Create data strategies by mapping measurement concepts and data sources onto a Theory of Change framework
- Review examples of program Theories of Change to illustrate concepts
- Develop an understanding of evaluation strategies
- Apply concepts learned to your own Theory of Change and measurement plan

Agenda

- I. Who we are
- II. Impact Evaluation
- III. Theory of Change
- IV. Measurement
- V. Group work
- VI. Q&A
- VII. LEVER opportunity

Who we are

J-PAL's mission is to reduce poverty by ensuring that policy is informed by scientific evidence



Research

We fund and run randomized evaluations across major policy areas to identify effective ways to help people experiencing poverty.



Policy outreach

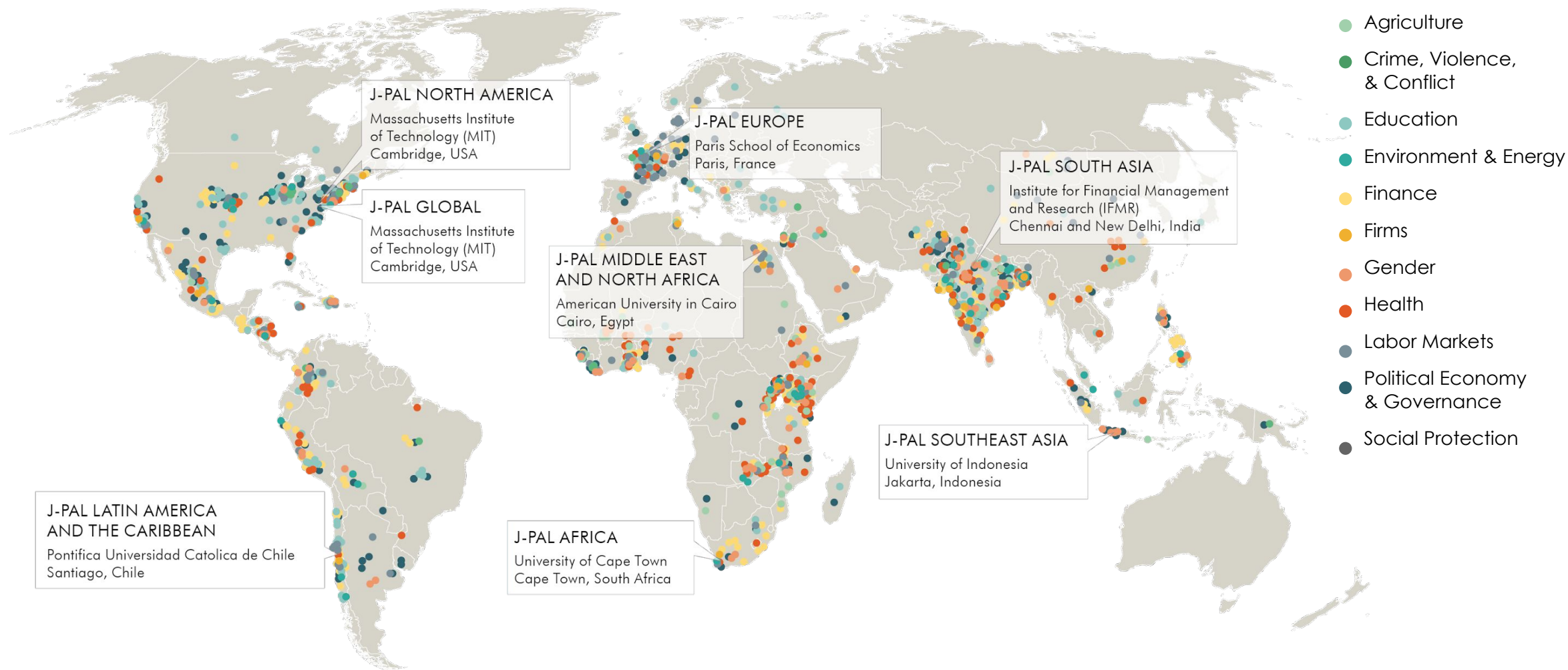
We synthesize research results and build partnerships to inform decision-making and scale-up of proven programs.



Capacity building

We lead evaluation trainings to build the capacity of organizations to generate and use evidence.

Our evaluations



Trainers



Kim Dadisman
Associate Director of
Policy



Sara van Nes
Policy & Training
Associate



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Senior Policy & Training
Associate

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Summer Youth Employment



Photo: University of Chicago Crime Lab

Do we need to evaluate summer jobs programs? Why or why not?

Chicago's One Summer Plus

- In 2012, Chicago had a \$36 million budget for after-school and summer programs
- Some funds were allocated to One Summer Plus, a summer jobs program
- The program gave 8th through 12th graders:
 - Government and non-profit minimum-wage jobs
 - 25 hours/week of work
 - Adult job mentor
 - 1-day training

What can summer jobs do?

Through a randomized evaluation, researchers wanted to answer the questions:

1. Can we help more youth get summer jobs?
2. Does having a job now help teens/young adults in the future? Are they more likely to find employment later? Do they have higher wages later?
3. Can summer jobs help keep youth safe?

Summer Jobs: Unexpected results

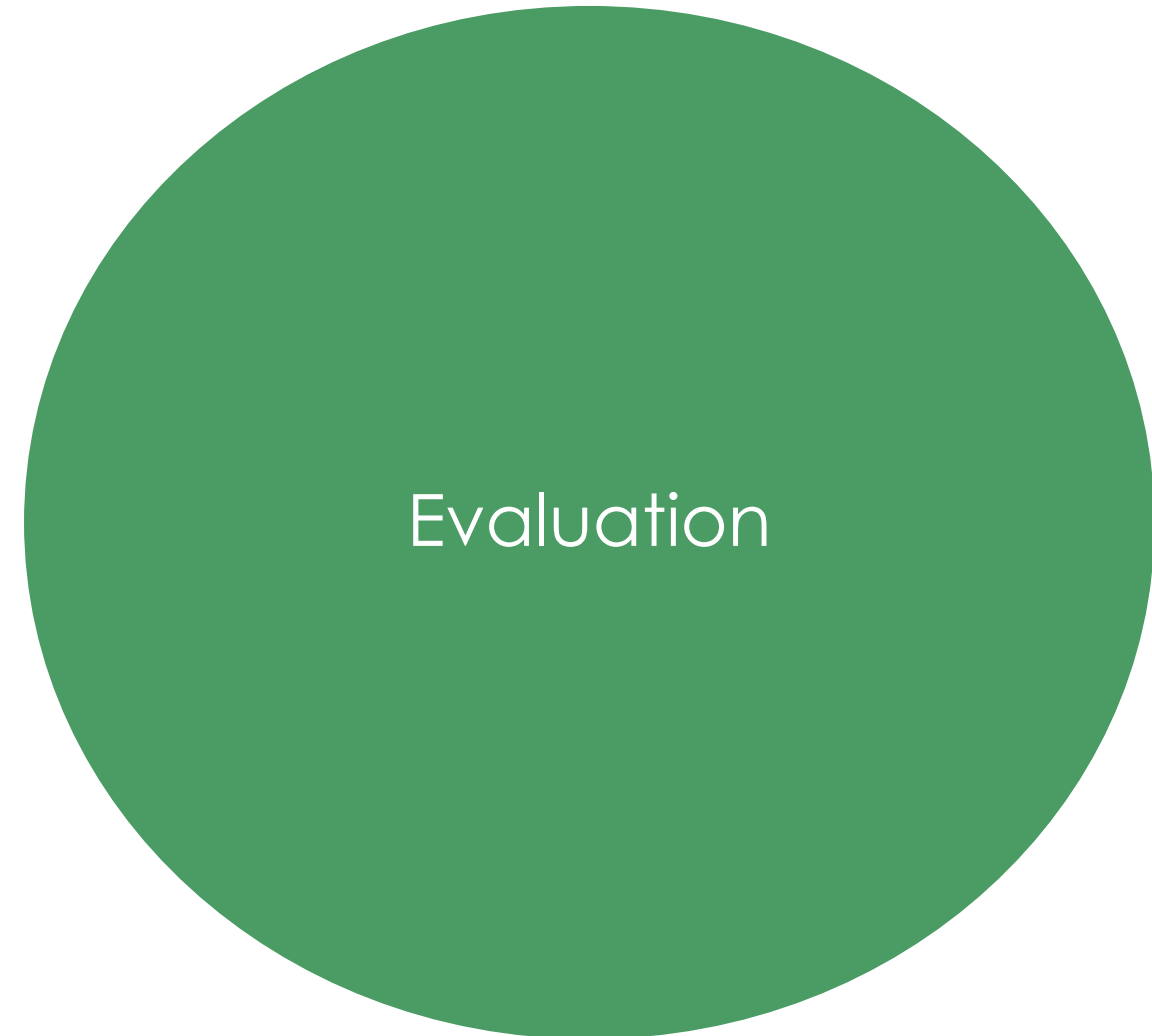


Photo: Getty Images/Jessica Rinaldi/Boston Globe; [Full article](#)

- Summer jobs programs **provided employment** to youth who would otherwise have had difficulty finding a job.
- Youth who participated in summer jobs programs **did not have higher employment or earnings after the program year.**
- Summer jobs programs **reduced arrests for violent crimes among program participants** – these results were observed beyond the program summer.

Evaluation

Making a judgment about the amount, number, or value of something; **assessment**



Evaluation



What is program evaluation?

Program Evaluation

Process Evaluation

Assess if program was implemented as designed

Impact Evaluation

Assess if program achieved desired goals

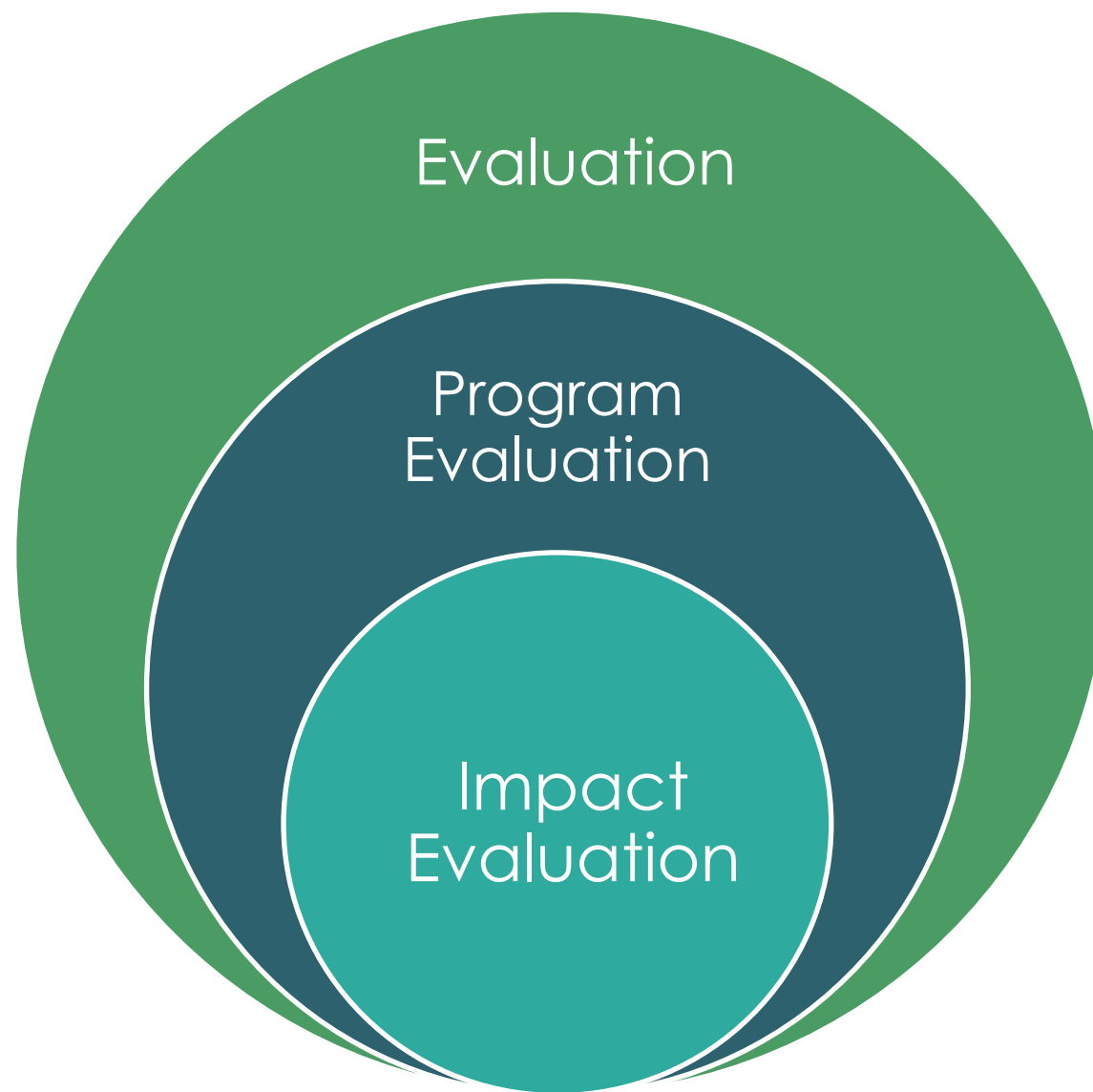
Cost Effectiveness Analysis

Compare program's cost to impact of a given program or policy

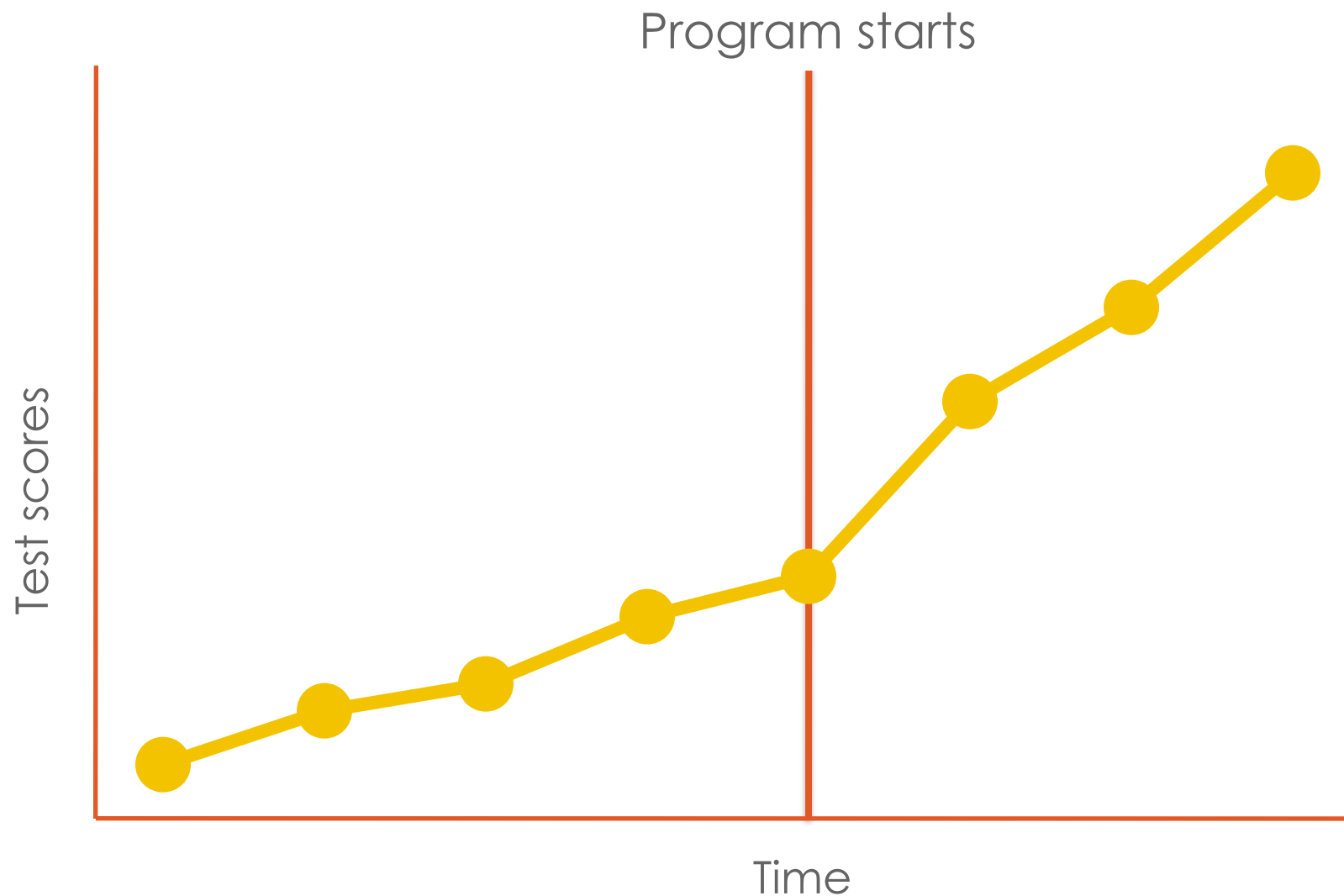


This is where we will focus when we talk about theory of change!

Evaluation

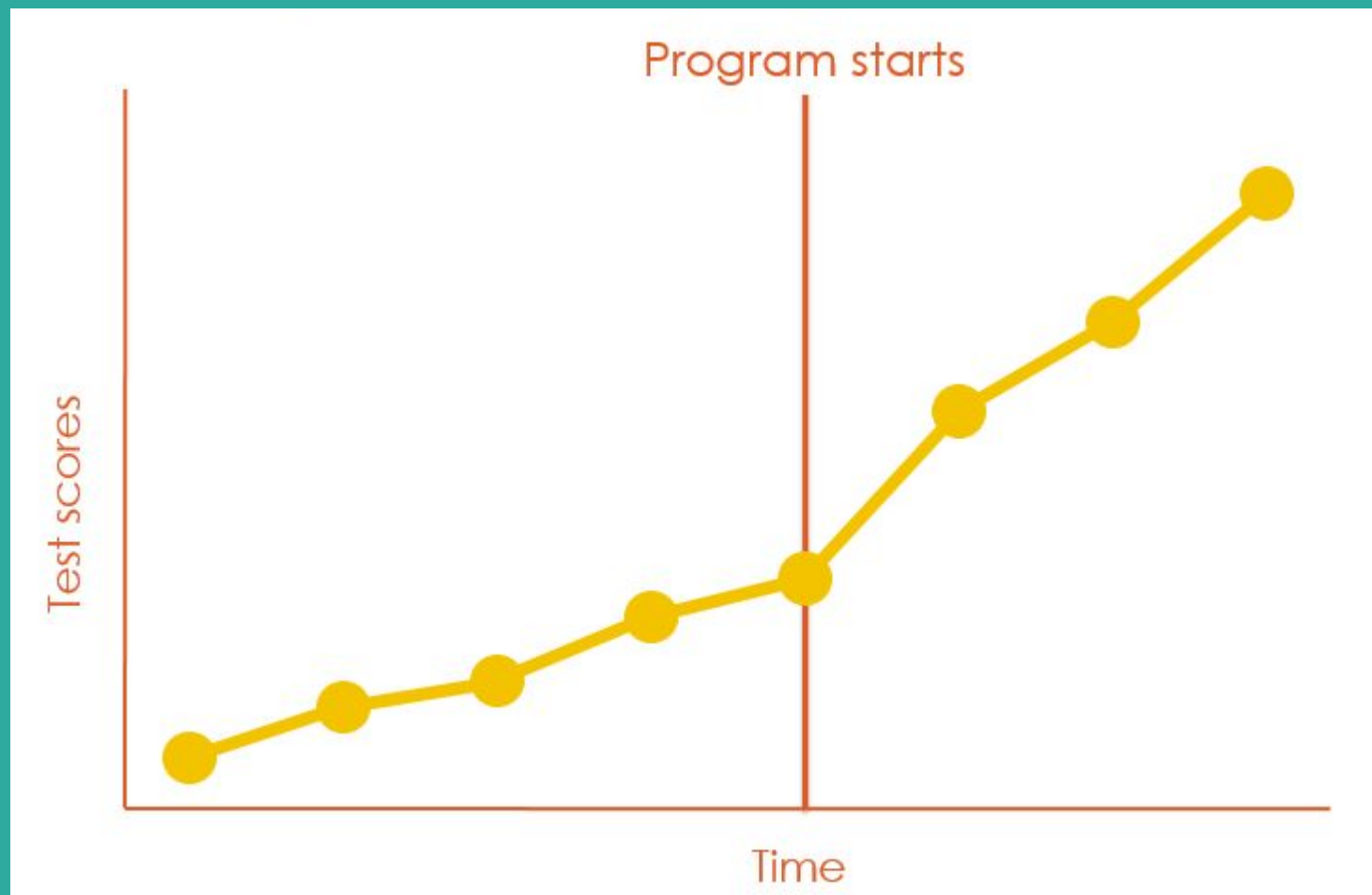


What is the impact of this program?



What is the impact of this program?

- Positive
- Negative
- Zero
- Not enough info



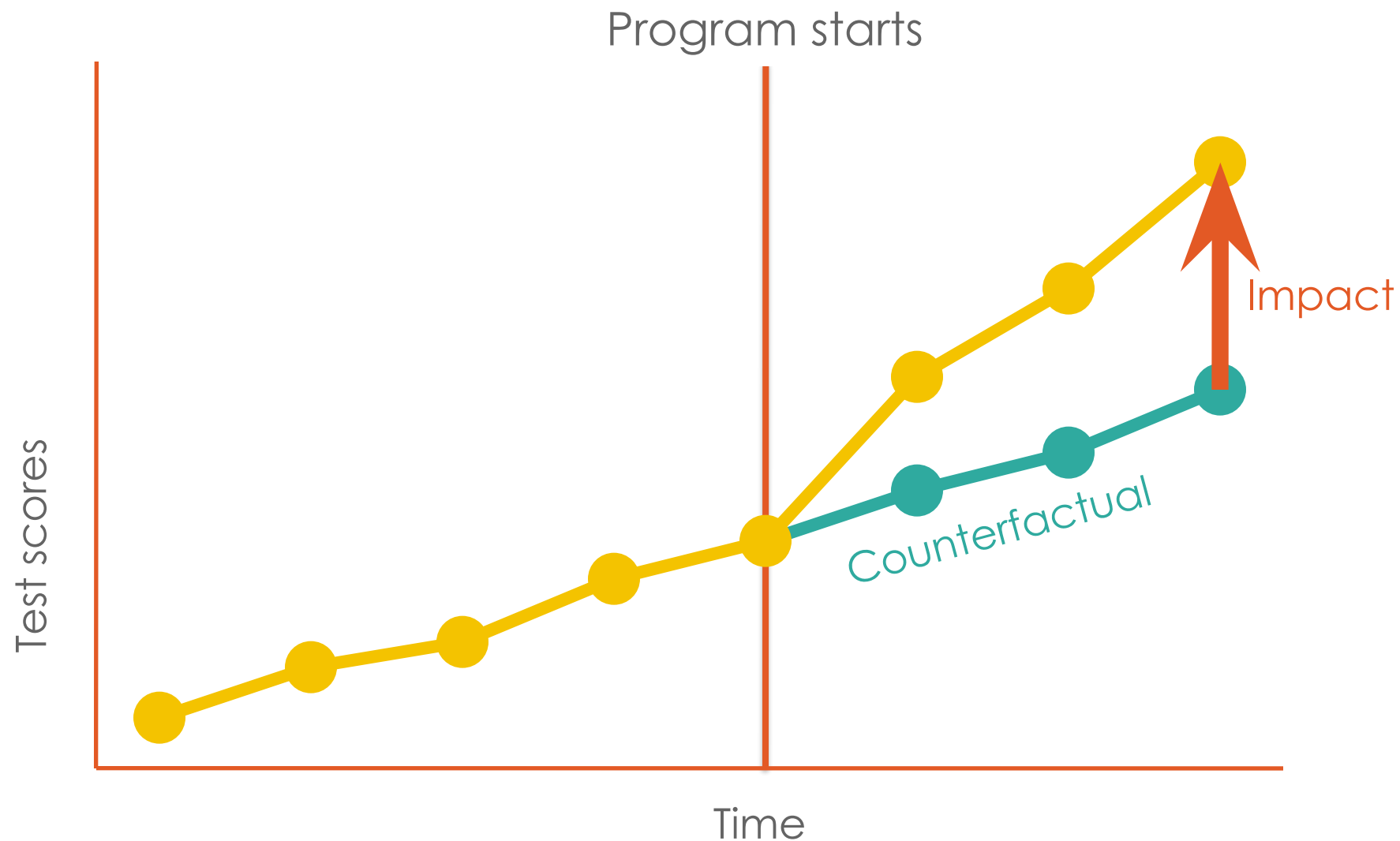
How to measure impact?

Impact is defined as a comparison between:

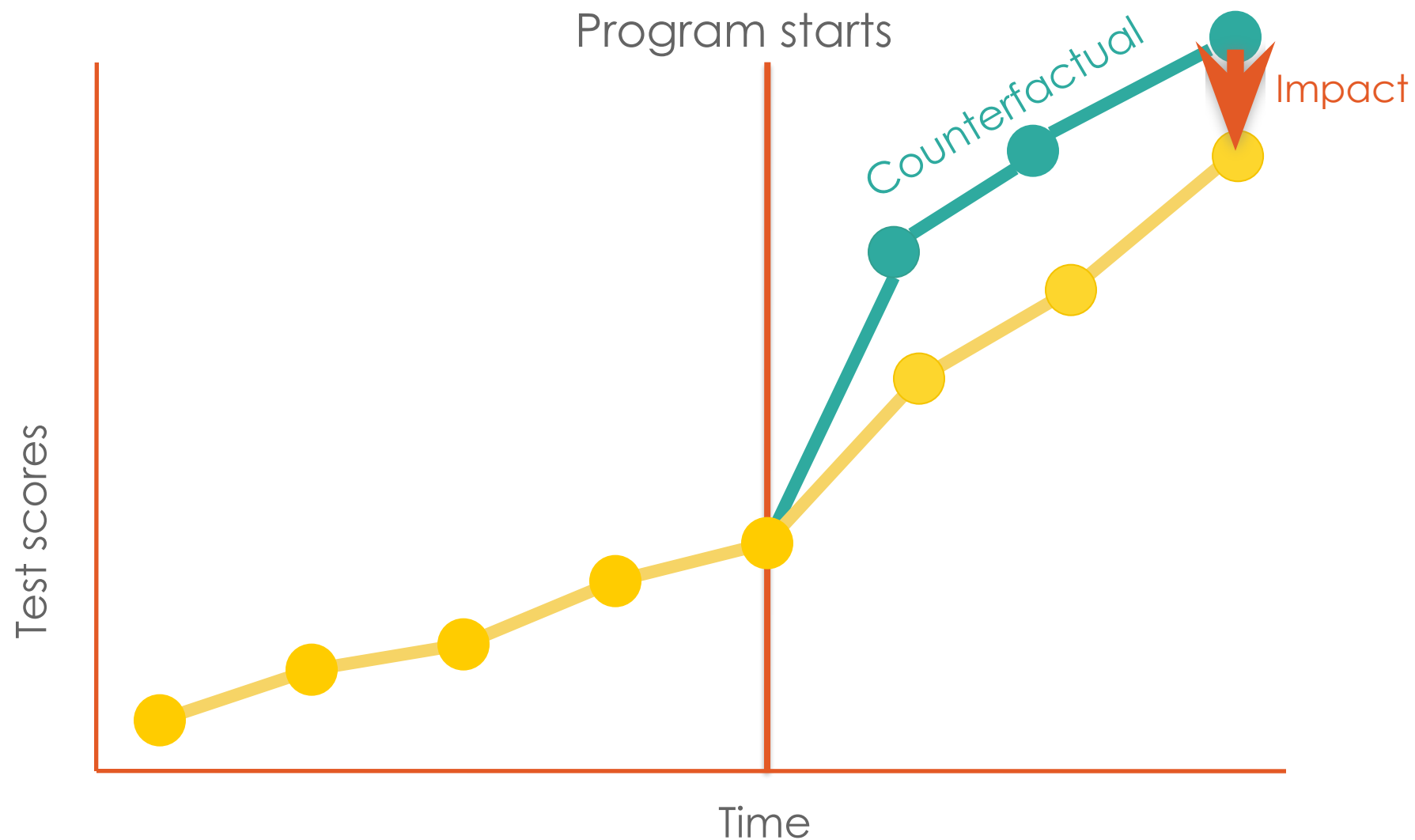
What actually happened and

What would have happened, had the program not been introduced (i.e., the “counterfactual”)

What is the impact of this program?



What is the impact of this program?



Counterfactual

The **counterfactual** represents the state of the world that program participants would have experienced in the absence of the program

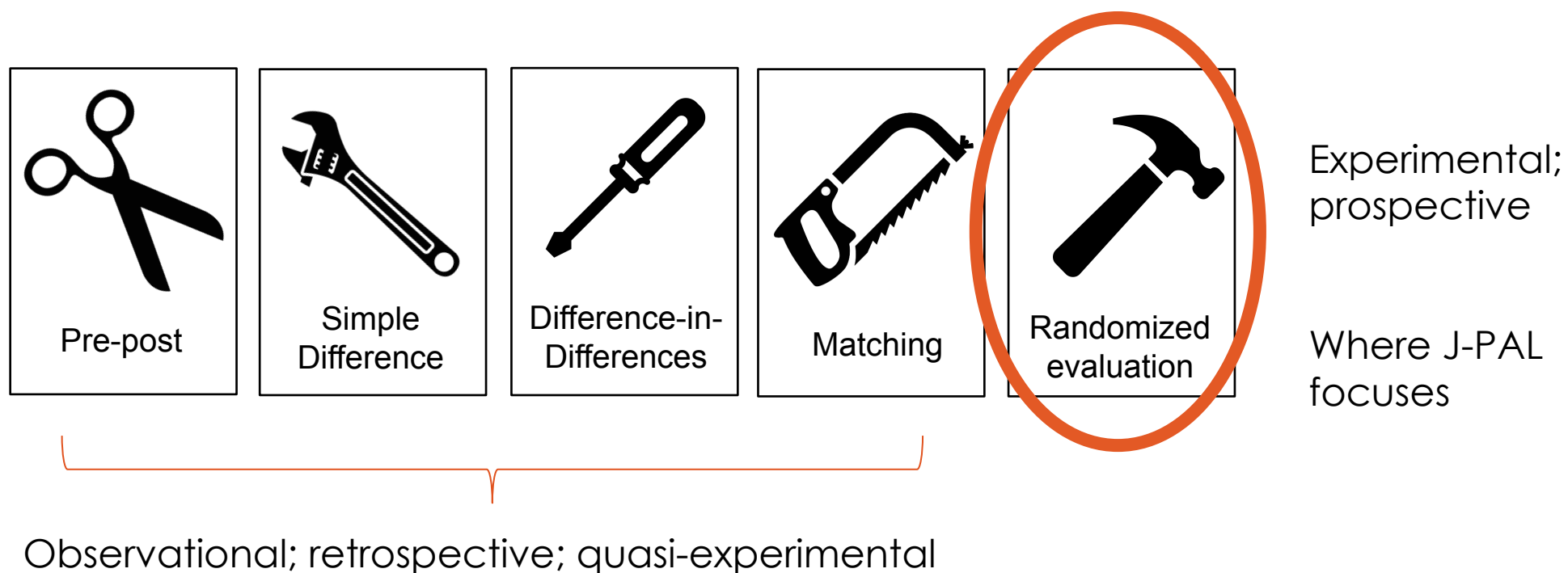
Problem?

Counterfactual cannot be observed

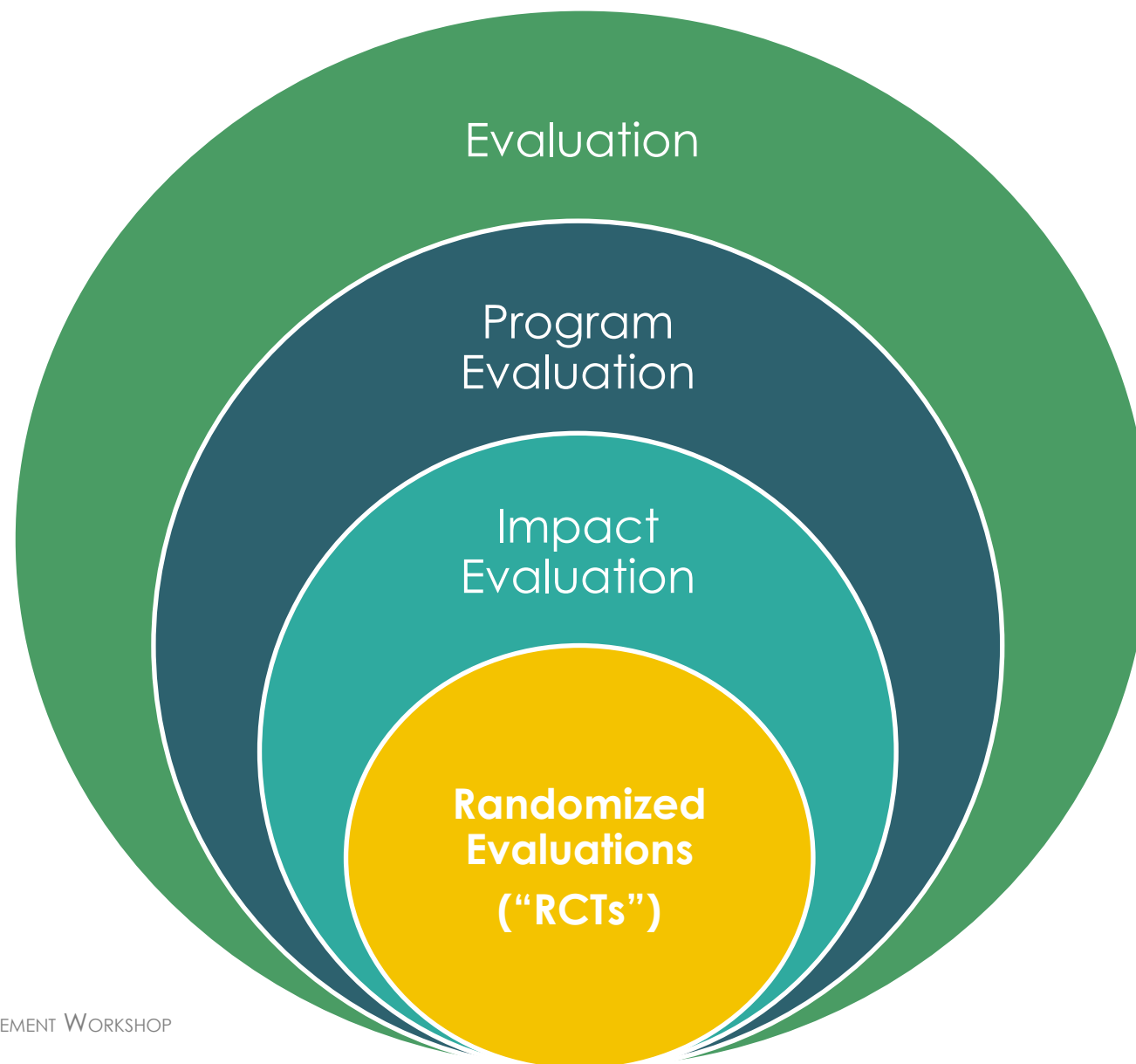
Solution?

We need to “mimic” or construct the counterfactual

Methods as tools



Impact Evaluation



The basics of an RCT

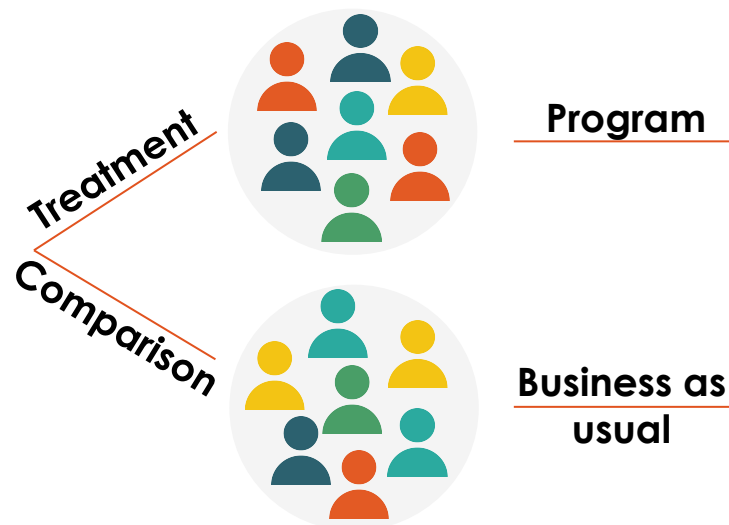
A simple case:

- Take a sample of program applicants
- **Randomly** assign them to either:
 - **Treatment Group** – offered treatment
 - **Comparison Group** – not offered the treatment (during the evaluation period)

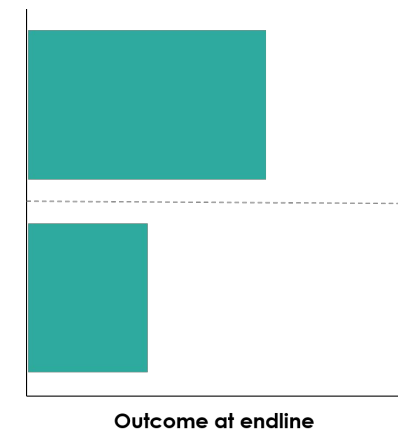
1. Identify eligible participants



2. Random lottery



3. Measure and compare outcomes to estimate impact



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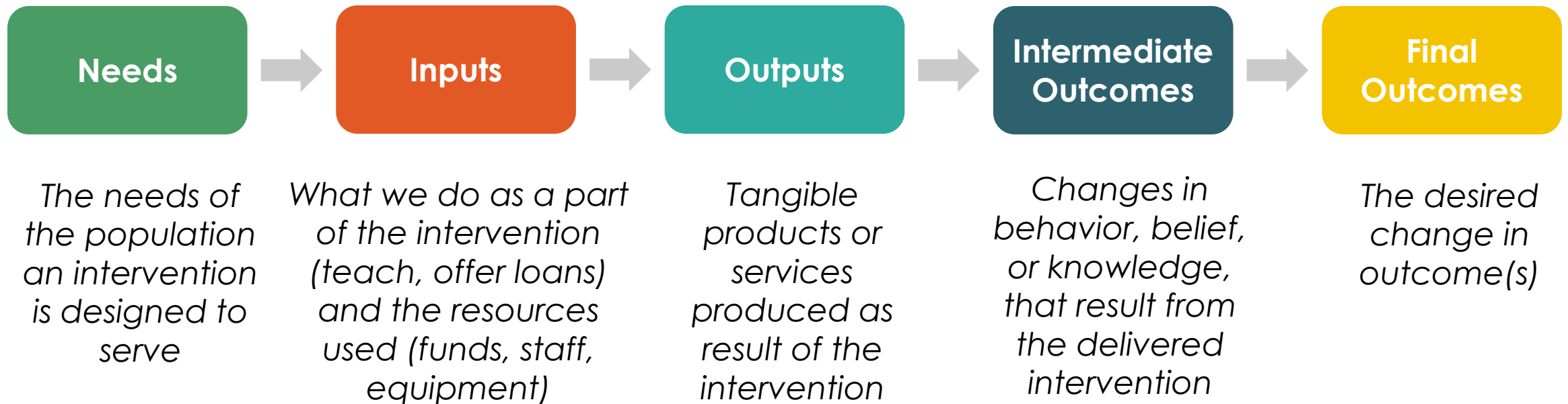
Key Vocabulary

Hypothesis	A proposed explanation for the effects of a given intervention. We can think of this as a claim to be tested . Hypotheses are intended to be made prior to the implementation of the intervention. E.g., participating in a Summer Youth Employment Program (SYEP) will improve educational outcomes
Theory of Change	A comprehensive description of the pathways through which the intervention(s) could lead to an impact . A theory of change is a structured approach used in the design and evaluation of social programs. It maps the logical chain of how program inputs achieve changes in outcomes through activities and outputs.

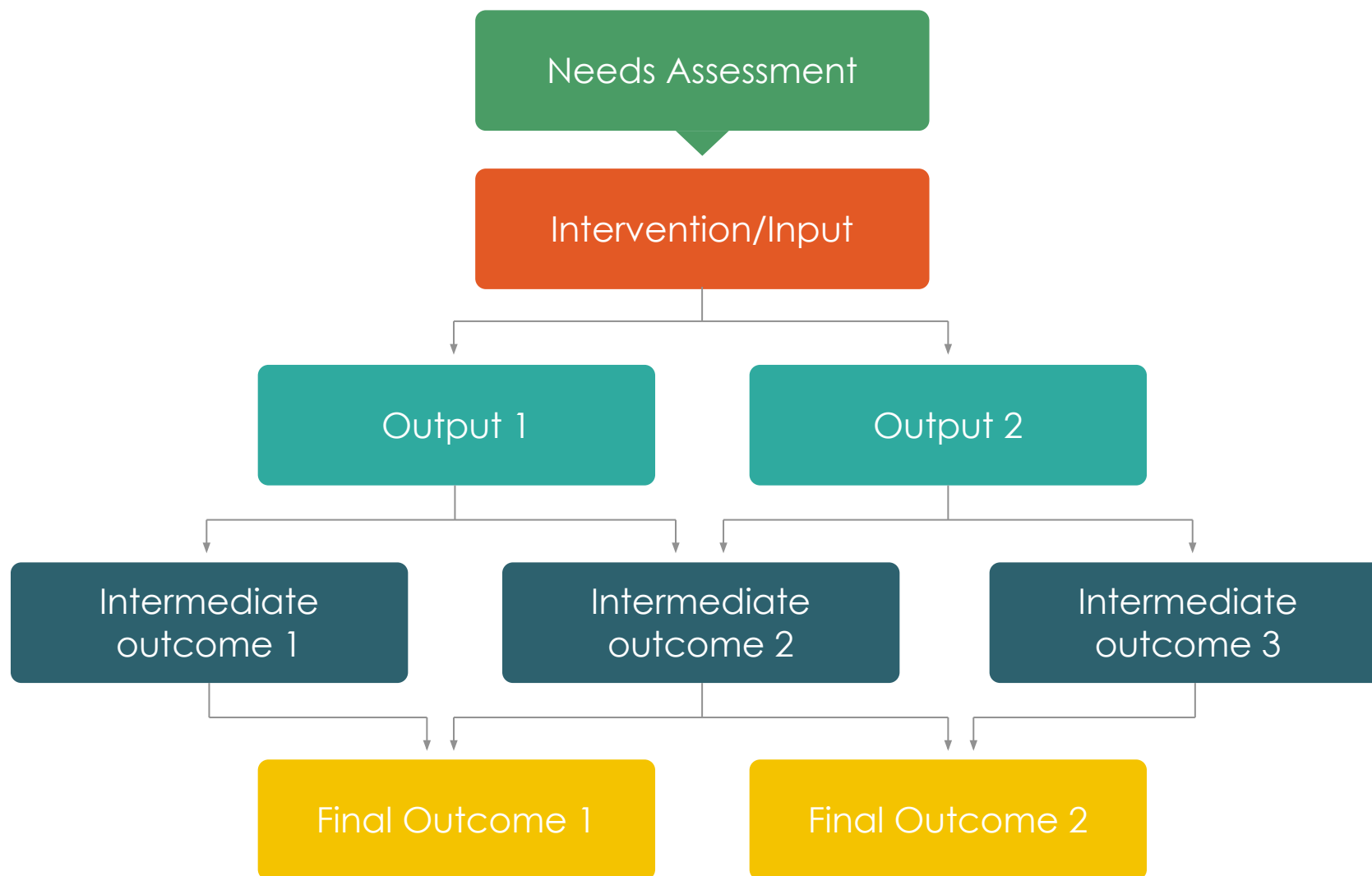
What is a theory of change?

A theory of change is a comprehensive description of how and why desired change is expected to happen in a particular context

Simply put, it is a road-map for your program



What is a theory of change?

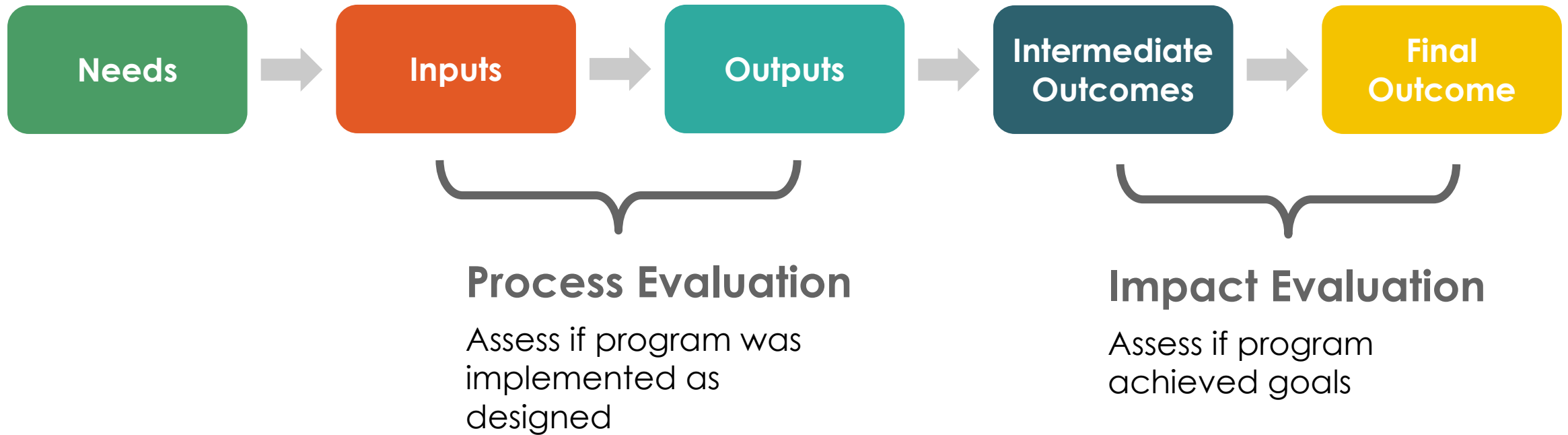


When do we need a theory of change?

1. Helpful in designing an **intervention**
 - Often easiest to work backwards
 - Ask: is each arrow really credible?
2. Helpful in designing an **evaluation**
 - Generating research questions
 - Deciding which data to collect

Theory of Change

A theory of change (ToC) identifies the causal link between the intervention and the final outcome.



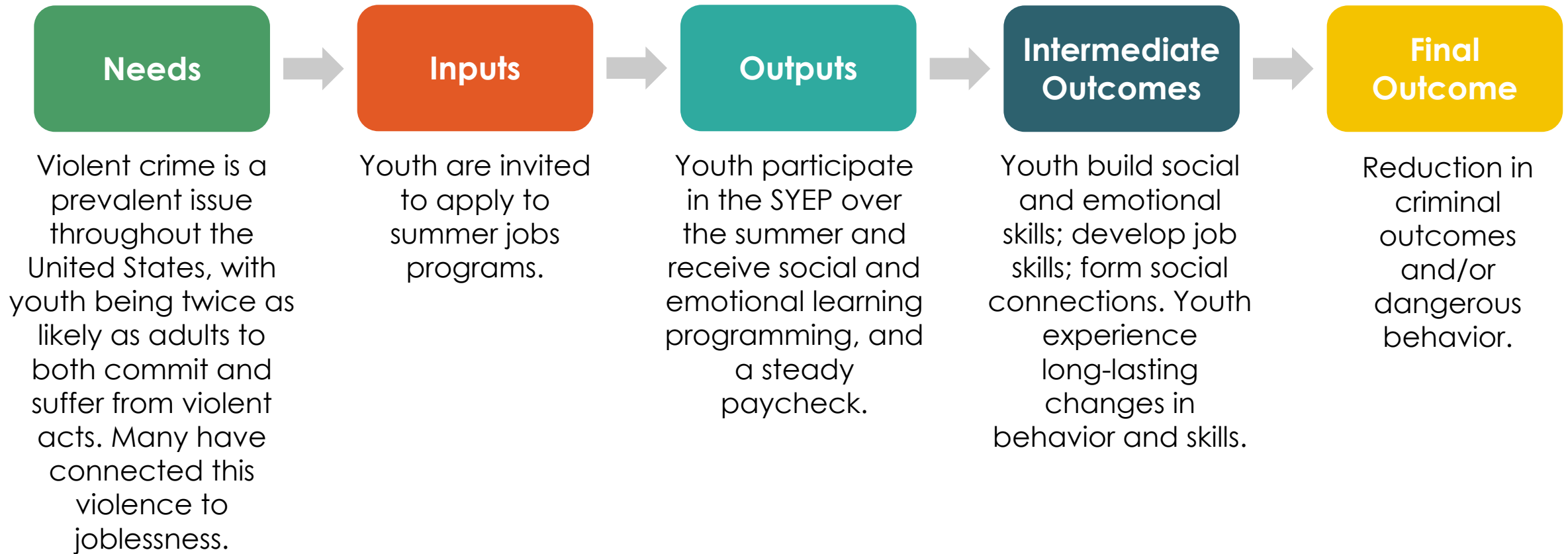
Summer Youth Employment Programs (SYEP)



Photo: University of Chicago Crime Lab

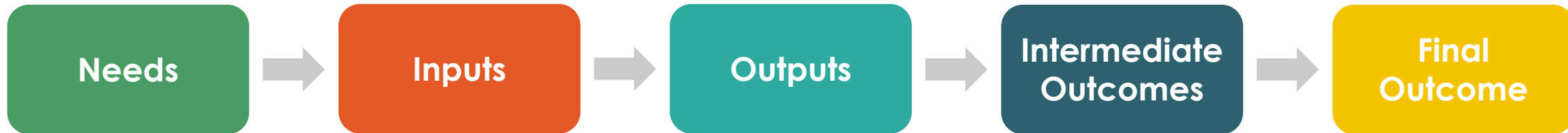
Based on "Summer Jobs Reduce Violence among Disadvantaged Youth" by Sara B. Heller (2014), Science; Stopping a Bullet With a Summer Job, J-PAL; and J-PAL Voices: The Impact and Promise of Summer Jobs in the United States, J-PAL.

Theory of Change behind the Summer Youth Employment Programs (SYEP)



[J-PAL Voices: The Impact and Promise of Summer Jobs in the United States](#)

Theory of Change behind the Summer Youth Employment Programs (SYEP)



Theory of Change

Violent crime is a prevalent issue throughout the United States, with youth being twice as likely as adults to both commit and suffer from violent acts. Many have connected this violence to joblessness.

Youth are invited to apply to summer jobs programs.

Youth participate in the SYEP over the summer, some with social and emotional learning programming attached, and receive a steady paycheck.

Youth build social and emotional skills; develop job skills; form social connections. Youth experience long-lasting changes in behavior and skills.

Reduction in criminal outcomes and/or dangerous behavior.

Underlying Assumptions

The problem we are working to solve is one that actually exists, and our understanding of its causes is accurate

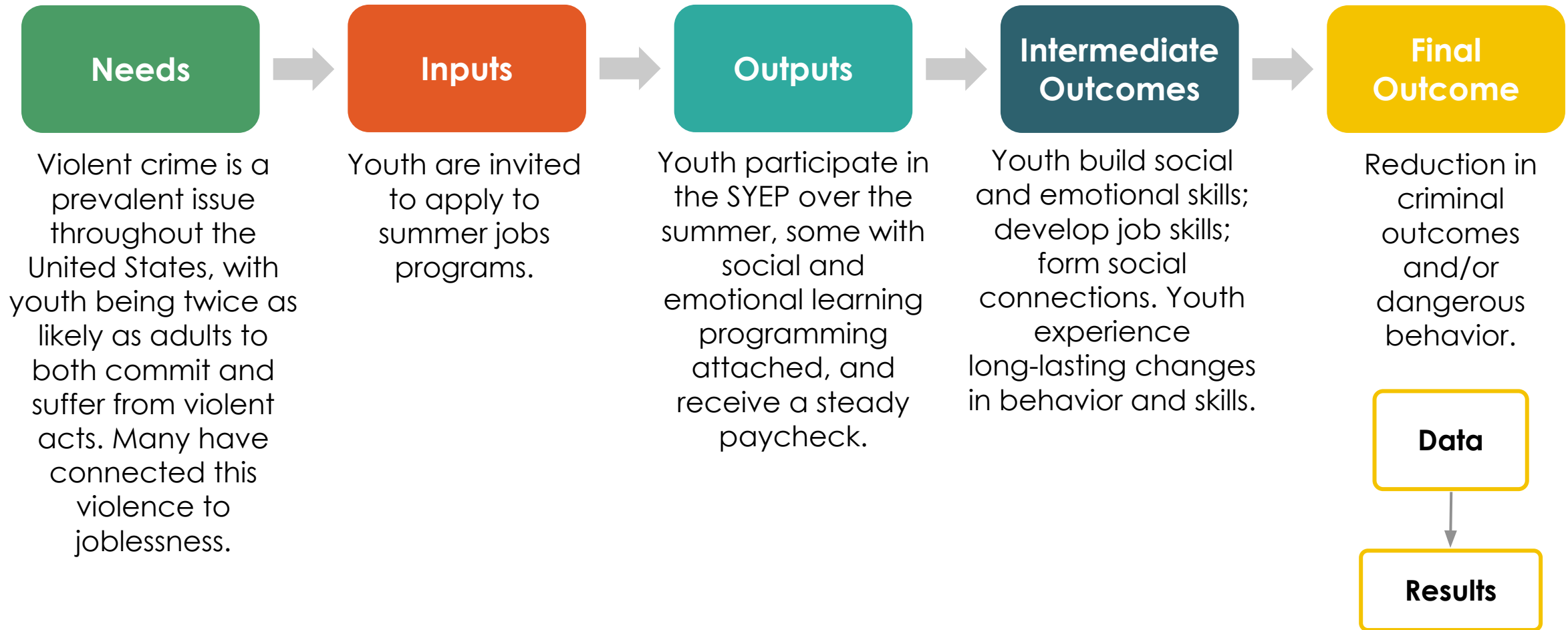
The inputs we provide are enough to successfully implement our intervention

The intervention is successfully implemented as planned and produces the expected outputs

The intervention outputs prompt the expected change in behavior, belief, or knowledge

The change in behavior, belief, or knowledge creates the desired impact

Theory of Change behind the Summer Youth Employment Programs (SYEP)

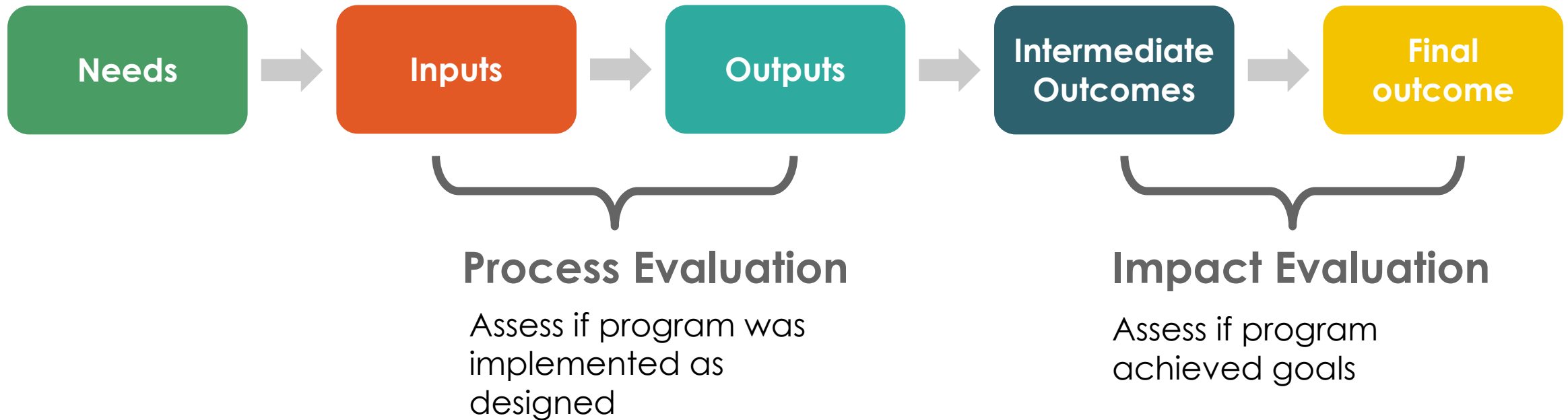


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Measurement along a theory of change

- We use a theory of change to guide **process evaluations** to make sure the program is implemented as planned
- We also use a theory of change to identify the research question(s) for an **impact evaluation**



Example: Parental notification text messages

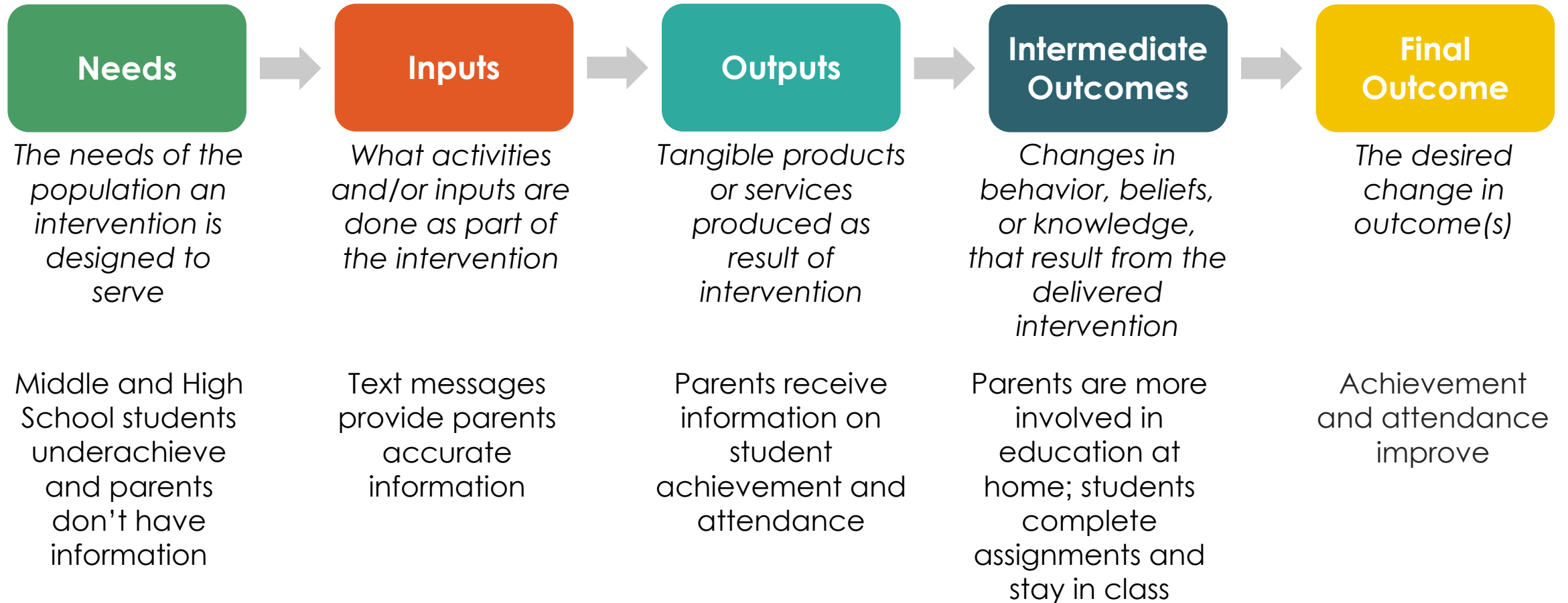
- Study by Peter Bergman and Eric Chan ([published in the Journal of Human Resources](#))
- Location: Kanawha County, West Virginia
- 1,137 parents of students in 22 middle and high schools
- The researchers sent parents information about their child's class absences, missed assignments, and grades via automated text message to assess the impact of providing information to parents on student achievement
 - Provided **information** to correct parents' beliefs about their child's academic behaviors and performance
 - Empowered parents to **take action** to monitor and improve their child's academic behaviors and performance

Example: Parental notification text messages

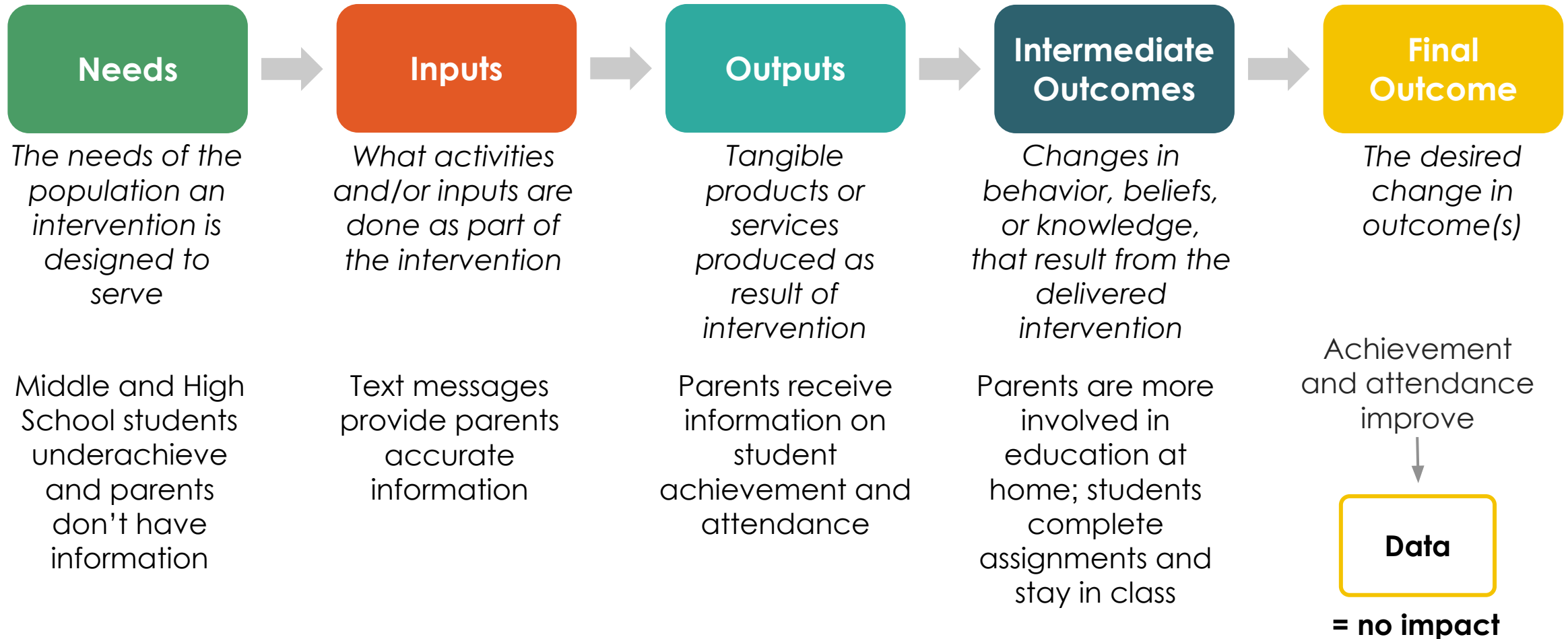
Parent alert: Jaden has 5 missing assignments in science class.
For more information log online.

Bergman & Chan 2019

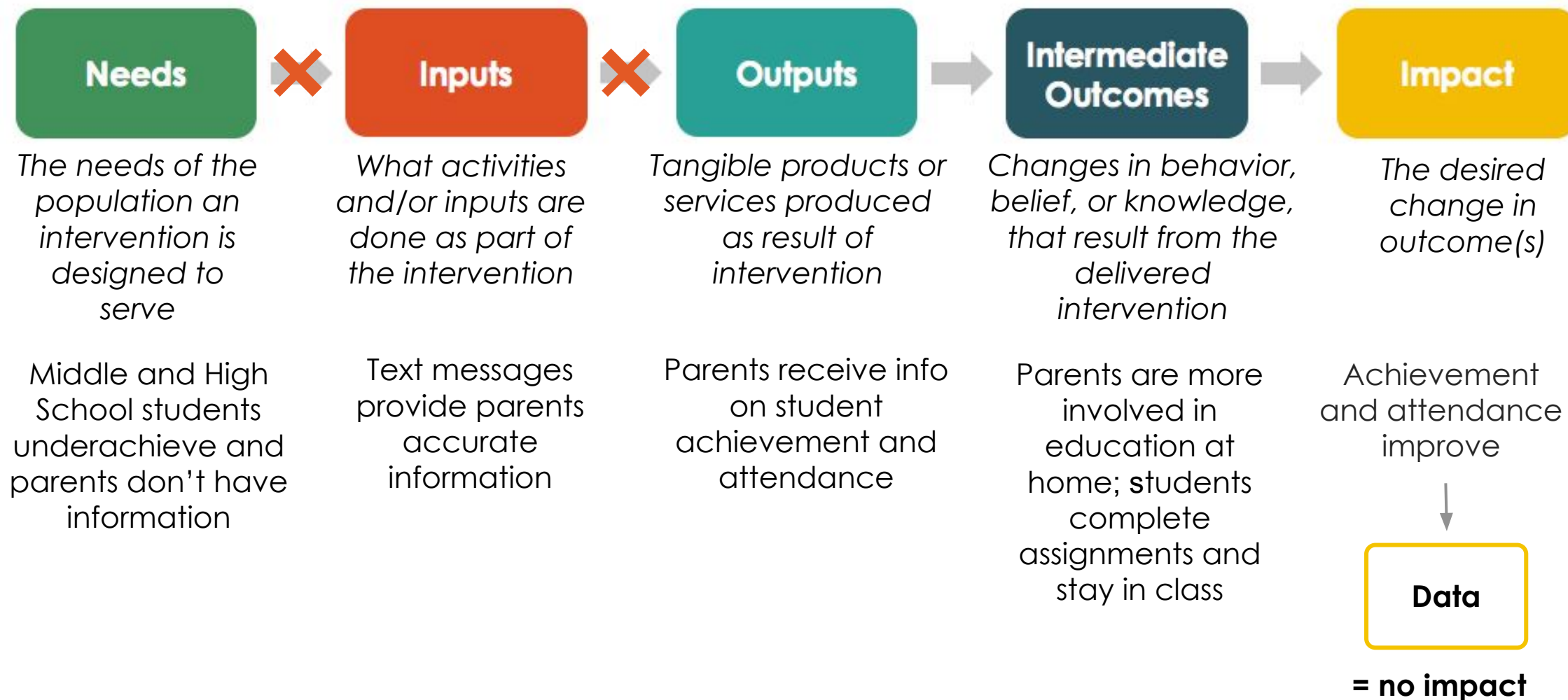
Theory of Change for an intervention that texts parents to improve student achievement



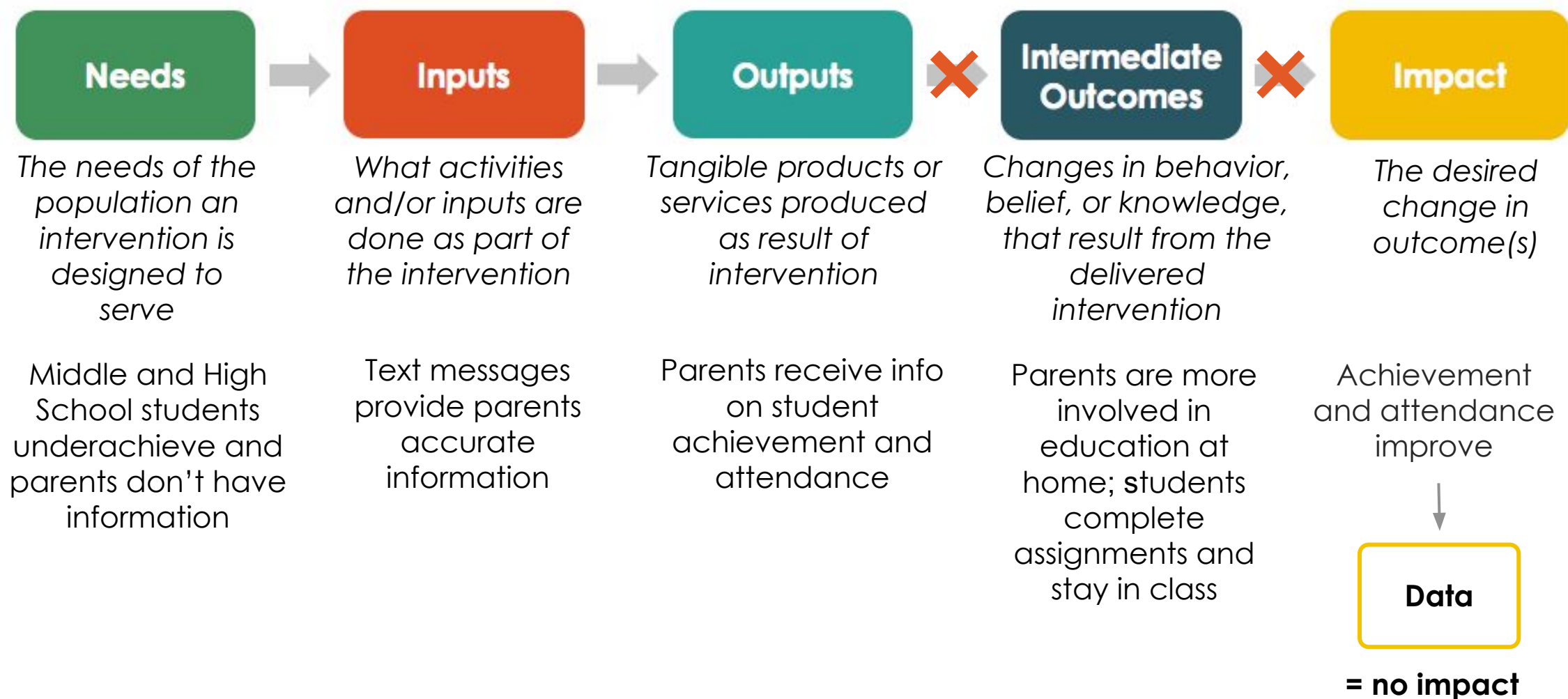
Theory of Change for an intervention that texts parents to improve student achievement



Implementation failure

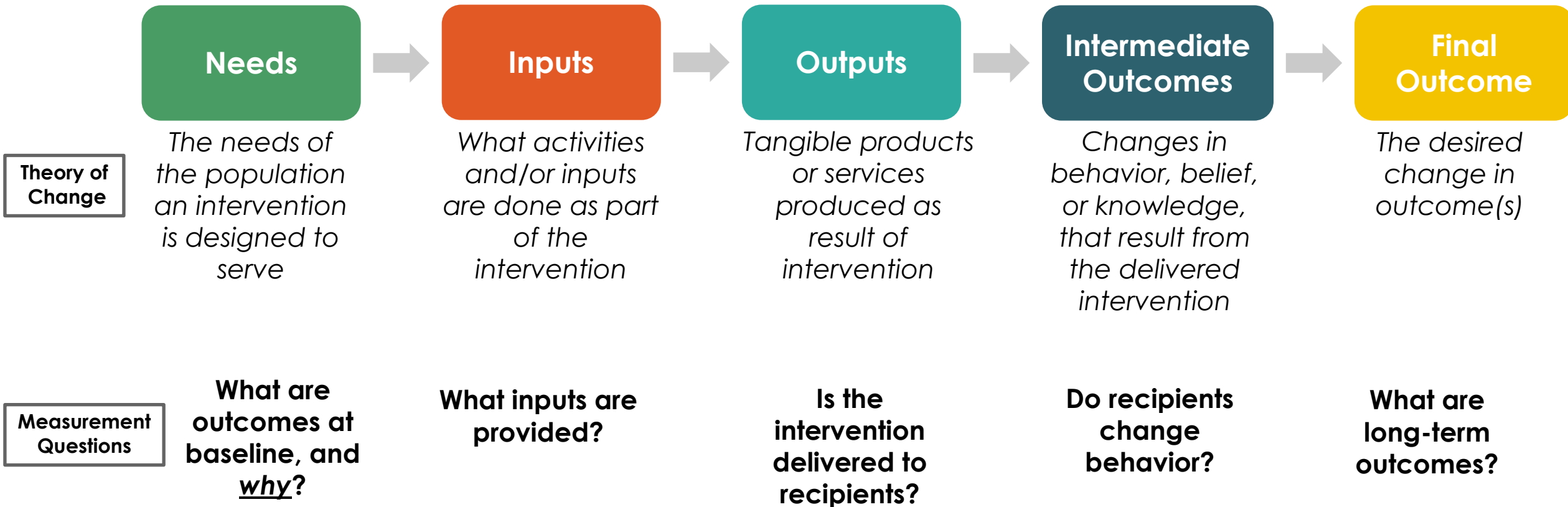


Theory failure



Purpose of measurement

Gathering information along the Theory of Change



Constructs, indicators, and data

Construct

The main concept being investigated. A construct is sometimes abstract and can have multiple definitions.
(E.g., earnings, voice & representation, safety and security)



Indicator

A way to measure a given construct.
(E.g. salary provides living wage)



Data Collection



Decisions about collection method



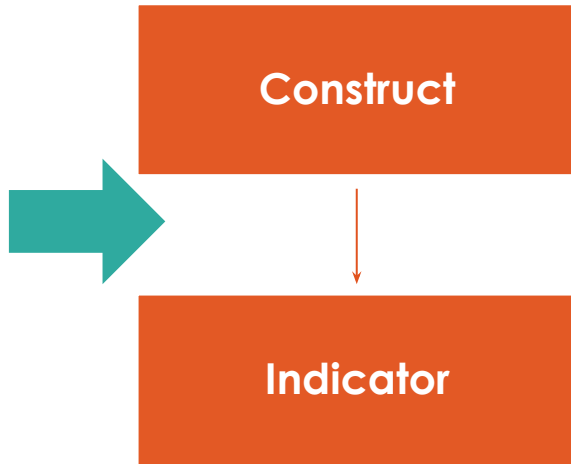
Data

What we use to measure our indicators.

Measurement criteria

- Validity – measuring the right thing
- Reliability – measuring the thing precisely

Validity



How well does the indicator map to the construct we are trying to measure?

Reliability

Construct



Indicator



Data Collection

Is the indicator measured in a way that is consistent and precise?

Would we get the same data if we measured several times?

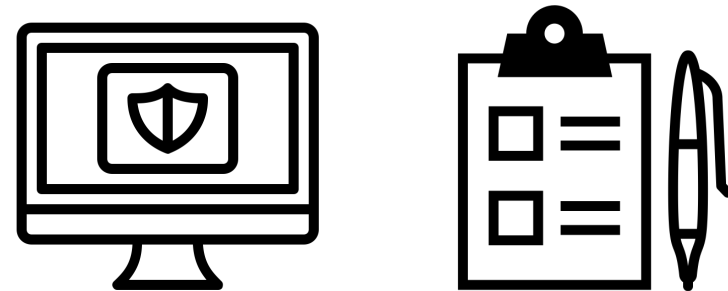
Where can we get data?

Administrative Data (from existing sources)

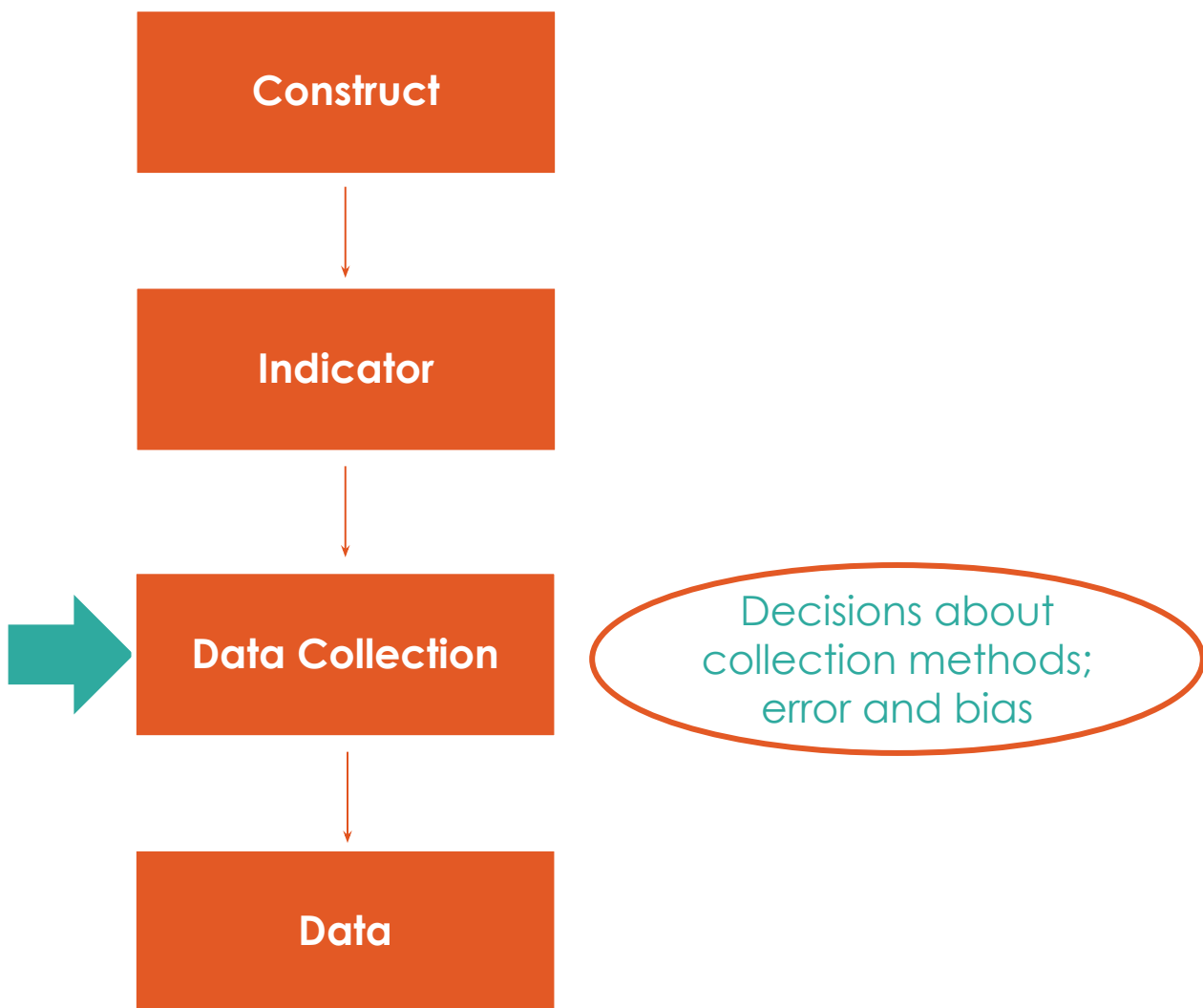
- Already exists; may exist retrospectively and prospectively
 - Enables long-term follow-up
- May include near census of relevant population
- Low logistical burden on researchers
- Lower burden on research participants
- Relatively inexpensive (typically)
- May reduce bias and error

Primary Data (collected for a study)

- You have control: can tailor questions to your outcomes of interest
- Can ask about opinions, beliefs, and other subjective questions
- May be able to reach populations untracked in administrative data
- May reduce bias and error



Response process



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Group assignment

Group 1 - TA Andrea

AZ
CO - Denver
DC
IA
IL - Chicago
OH - ODJFS
VA

Group 2 - TA Sara

CO - Pikes Peak
CO - CDLE
OH - Cincinnati
OH - WDBCO
PA
TX

Group 3 - TA Kim

CA - SDWP
IL - Cook County
OR/WA
WI

Share out something you learned mapping your theory of change and measurement strategy

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Q&A

Main takeaways

- **Outputs versus intermediate outcomes versus final outcomes**
 - Outputs are the tangible "products or services"
 - Intermediate outcomes are expected changes (behavior, belief, knowledge) that are not the ultimate outcome of interest, but are along the way to achieving the final outcome.
 - Final outcomes are the overall goals of a program
- **Assumptions** are the conditions that have to hold throughout the Theory of Change for our program to work as expected.
- **Measuring indicators** are established along a Theory of Change and help us to answer WHY and HOW a program did or did not lead to the desired results.
- **Interpreting results**
 - Finding no impact in an evaluation does not necessarily mean that the program is ineffective. It's possible there were problems related to the implementation, assumptions not holding, or the Theory of Change was not right.

LEVER: Leveraging Evaluation and Evidence for Equitable Recovery



LEVER provides a suite of critical resources and training for government jurisdictions to use and build evidence



**Workshops and
training to build
evaluation capacity**



**Evaluation
incubators to help
design and launch
new evaluations**



**Virtual convenings
and connections
with leading
academic
researchers**



**Coaching and
support from
expert staff**

Upcoming LEVER offering: Starting your Evidence and Evaluation Journey Workshop

Two-part virtual workshop

May 16 & 23, 2023

2:00-3:30 pm EST

What will be covered?

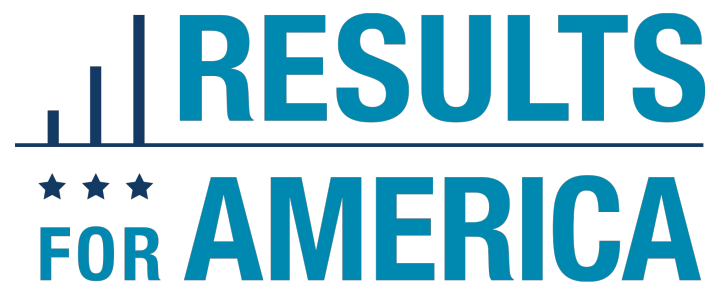
Evidence and Evaluation Foundations. Identify strengths and opportunities to use evidence and evaluation, connect with peers from other government organizations, and develop action plans for building evaluation capacity.

Who should join?

All government leaders and staff are welcome. Particularly valuable for those with limited experience with evaluation.



LEVER draws on the expertise of two leading organizations in evidence-based policymaking



Interested in learning more? Visit our website to see how LEVER can best support you!

povertyactionlab.org/lever

Fill out our interest form at the above website to receive additional information about LEVER and/or to sign up for our open programming.

Thank you!

Acknowledgements

This case study is based on “Summer Jobs Reduce Violence among Disadvantaged Youth” by Sara B. Heller (2014), *Science*; *Stopping a Bullet With a Summer Job*, J-PAL; *J-PAL Voices: The Impact and Promise of Summer Jobs in the United States*, J-PAL; and *The Promises of Summer Youth Employment Programs: Lessons from Randomized Evaluations*, J-PAL.

J-PAL would like to thank the authors who have allowed us to use their papers, policy insights, and episodes as teaching tools.

Further reading and resources

- J-PAL's [Introduction to Randomized Evaluations](#) Research Resource
- J-PAL's [Teaching resources on randomized evaluations](#)
- IPA's [Goldilocks Toolkit on Theory of Change: Laying the Foundation for Right-Fit Data Collection](#)
- J-PAL's [Measurement & Data Collection](#) Research Resource
- J-PAL's [Survey Design](#) Research Resource
- J-PAL's [Repository of Measurement and Survey Design Resources](#)