

# The Evidence Base

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# Learning Objectives

- Identify a continuum of evidence, including ***“evidence-based”*** and ***“evidence-informed”***
- Appreciate the ***value*** and ***limitations*** of Randomized Controlled Trials
- Reflect on the evidence you have for your program

Why do you think your program activities will lead to the outcomes you want?

What evidence do you have to support your logic model?

# Dictionary

Search for a word



## ev·i·dence

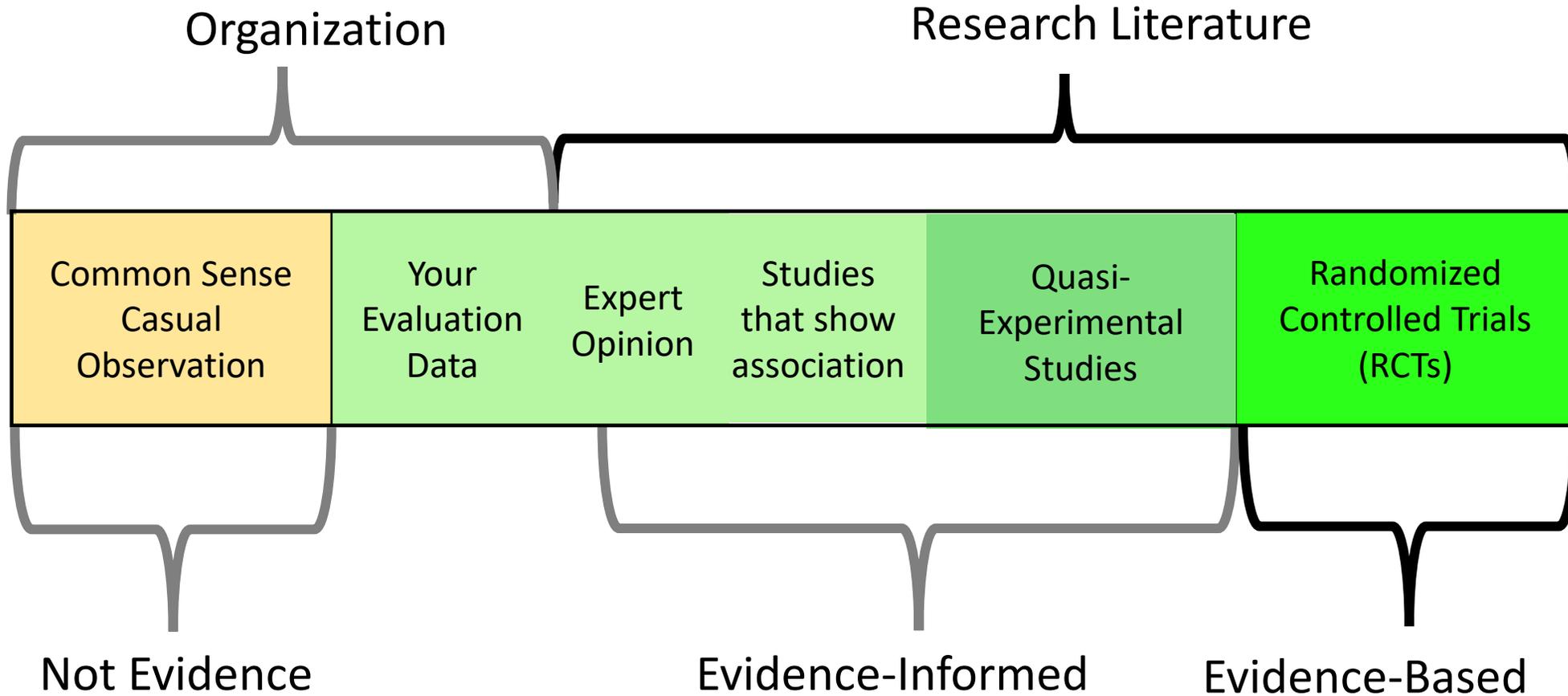
*/ˈevədəns/*

*noun*

noun: **evidence**

1. the available body of facts or information indicating whether a belief or proposition is true or valid.  
"the study finds little evidence of overt discrimination"  
*synonyms:* [proof](#), [confirmation](#), [verification](#), substantiation, [corroboration](#), [affirmation](#), [authentication](#),  
[attestation](#), [documentation](#); [More](#)

# Continuum of Evidence



# Common sense is not evidence

- Your common sense can be wrong
- Examples?

# Casual observation

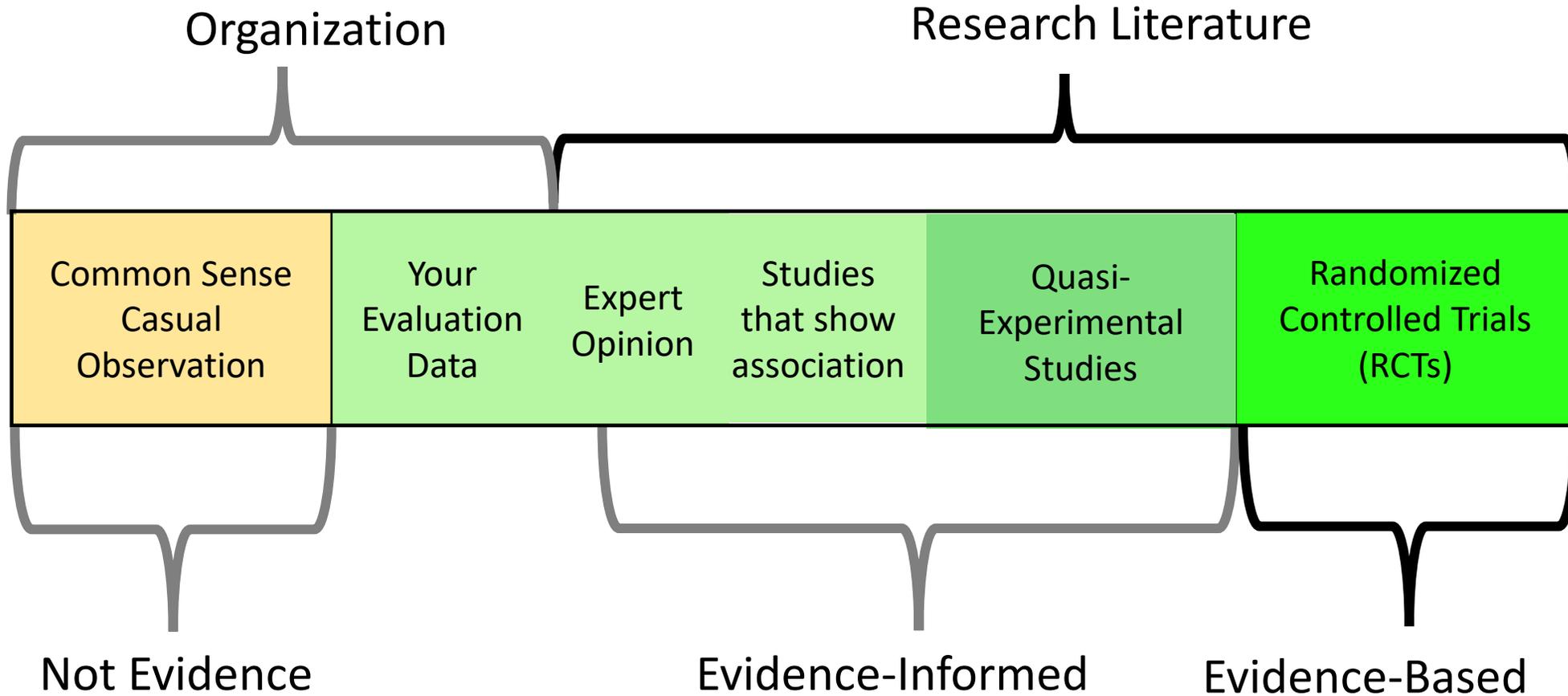
- Casual observation can be wrong, because people tend to remember what stands out, which can be the exception

# Evidence based on academic research

. . . is the most convincing kind of evidence

- Systematic
- Produced by scientific method
- Peer reviewed

# Continuum of Evidence

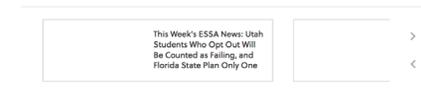


# Best evidence comes from RCTs

- Study subjects are randomly assigned to participate in a program
  - A flip of a coin (or randomized number generator) determines whether subject gets treatment or not
  - The program effect will be the difference in outcome between the Program (or Treatment) group and the Control group
- True experiment
- Shows causal relationship: program caused changes

# Why *not* having random assignment is problematic

- volunteers are likely to be atypical
- Ex: voluntary busing –
- News reports can be very misleading



## News For 50 Years, This Voluntary Busing Program Has Desegregated Schools 1 Family — and 1 District — at a Time



Photo: Getty Images

July 31, 2017

by KATHERINE STEWART  
contributor@the74million.org

### TALKING POINTS

- For 50 years, METCO

Just after 5:00 every weekday morning, while most of his schoolmates are sleeping, Collin Dillon joins his mother, Monique, at the kitchen table for a hot breakfast. An honor student with a gentle yet sunny disposition, Collin loves manga and drawing, and he hopes to work as a filmmaker someday. His parents are immensely proud of his achievements and ambitions.

The Dillons live in a three-story, early 20th century home in the historic, largely working-class, predominantly black neighborhood of Dorchester in south Boston. His father owns an auto repair shop, and his mother is a grant specialist; both grew up in the neighborhood. The nearest public school is just a few blocks away. But every morning, the Dillons put Collin on a bus that takes him 90 minutes or more out of the city to a public elementary school in the coastal community of Marblehead.

Collin participates in Metropolitan Council for Educational Opportunity — METCO — the nation's longest continuously running voluntary school desegregation program. METCO, which just celebrated its 50th year, is implemented in 37 school districts around Boston and Springfield, Massachusetts, and is one of only a handful of such programs

has quietly based urban Massachusetts kids to suburban schools happy to have them



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### MOST READ

Chavous: For Kids in Traditional Schools, Testing Can Be a Challenge. For Some Kids, Parents & Teachers in Online Schools, It's a Nightmare

Janus v. AFSCME: 5 Things to Know About the Latest Union Dues Case Headed to the High Court

6 Reasons Why Singapore

see <https://www.the74million.org/article/for-50-years-this-voluntary-busing-program-has-desegregated-schools-1-family-and-1-district-at-a-time/>

Programs that produce positive outcomes in RCTs meet the technical definition for “evidence-based”

# What Works Clearinghouse

The screenshot shows the homepage of the IES WWC What Works Clearinghouse. At the top, the logo 'IES WWC What Works Clearinghouse' is on the left, a 'MENU' button is in the center, and a search bar with a 'Go' button is on the right. Below the header is a green banner with the text 'Select topics to Find What Works based on the evidence'. Underneath the banner is a grid of 12 topic icons: Literacy (book icon), Mathematics (math symbols), Science (flask icon), Behavior (person icon), Children and Youth with Disabilities (hand icon), English Learners (globe with 'EL' icon), Teacher Excellence (teacher icon), Charter Schools (school icon), Early Childhood (Pre-K) (ABC blocks icon), K-12 Kindergarten to 12th Grade (text icon), Path to Graduation (graduation cap icon), and Postsecondary (classroom icon). Below the grid are two main sections: 'WELCOME TO THE WHAT WORKS CLEARINGHOUSE' and 'HIGHLIGHTS'. The 'WELCOME' section contains a paragraph about the clearinghouse's mission. The 'HIGHLIGHTS' section features a 'New Certification Exam' box with a document icon and the text 'WWC Standards and Procedures, Version 4.1', followed by two lines of text encouraging users to visit the training page to complete the updated group design certification exam. A progress indicator with four circles is at the bottom of the highlights section.

IES WWC What Works Clearinghouse

Search Go

Select topics to **Find What Works** based on the evidence

Literacy Mathematics Science Behavior

Children and Youth with Disabilities English Learners Teacher Excellence Charter Schools

Early Childhood (Pre-K) K-12 Kindergarten to 12th Grade Path to Graduation Postsecondary

### WELCOME TO THE WHAT WORKS CLEARINGHOUSE

The What Works Clearinghouse (WWC) reviews the existing research on different *programs, products, practices, and policies* in education. *Our goal* is to provide educators with the information they need to make evidence-based decisions. We focus on the results from *high-quality research* to answer the question "What works in education?" Find more information **about the WWC.**

### HIGHLIGHTS

**New Certification Exam**  
WWC Standards and Procedures, Version 4.1

**Visit the WWC training page to complete the updated group design certification exam**

Visit the WWC training page to complete the updated group design certification exam.

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# Realistic expectations of what a program can do

They *do* help some people do better. Good programs will move 10% - 34% of people above the average of where they would have been without the program.\*

\*Corresponds to effect sizes between .3 and 1.

# Washington State Institute for Public Policy

## Program inventories for:

- children's mental health
- child welfare
- juvenile justice
- adult criminal justice
- adult behavioral health
- K–12 learning assistance

<http://www.wsipp.wa.gov>

➔ Publications ➔ Filter by Topic – Choose “Inventories”

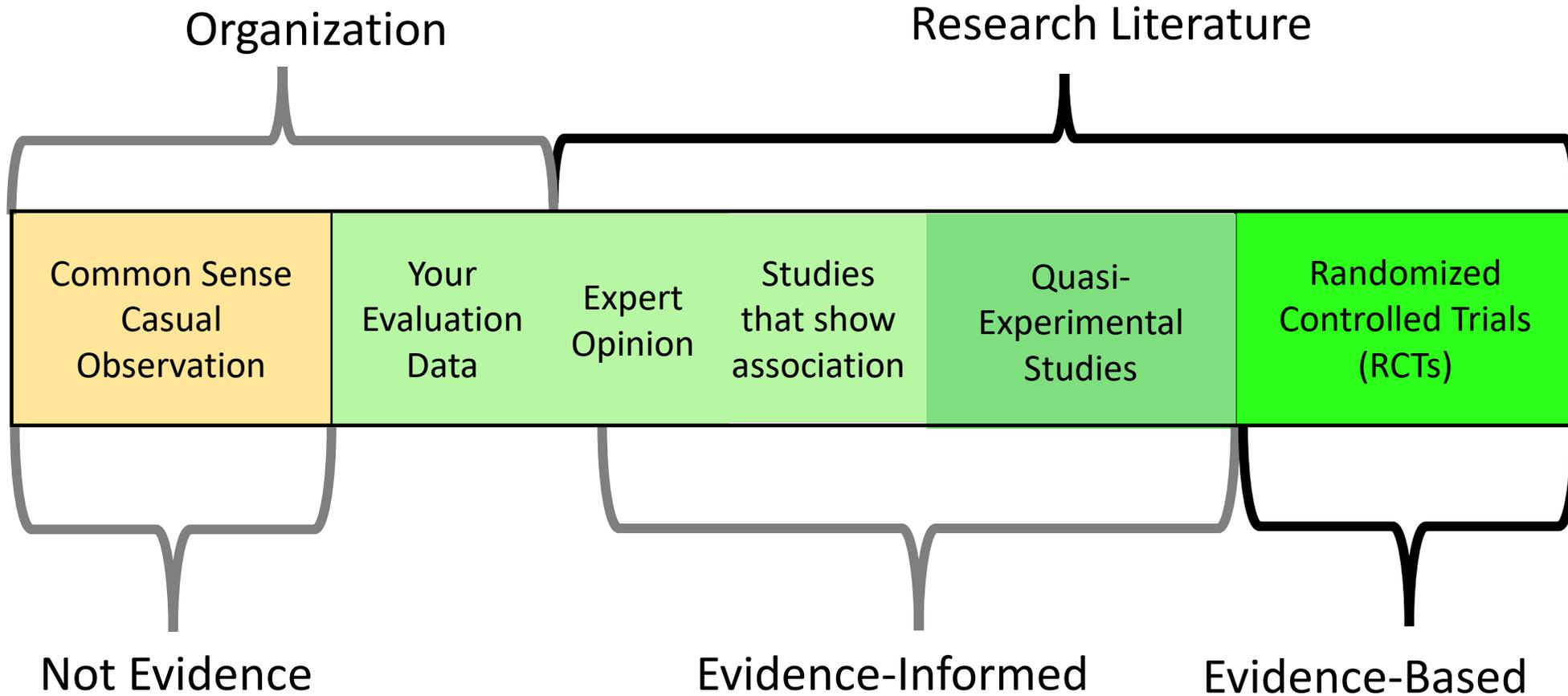
Some programs that claim to be evidence-based

aren't

# RCT's are not perfect

- Many programs and approaches have no RCT
- Results may vary with different populations
  - Don't guarantee external validity
- Fidelity
  - Maybe it's too expensive to do all of the elements
- "Black box"
  - We don't know what parts of a complex program made it work
  - What if it was the relationship between the facilitator and the participants, and not the program per se?

# Continuum of Evidence



# Observational

ACES study: adults who experienced more adverse childhood events have worse emotional and physical health.

See Felitti et al. 1998.

Felitti VJ, Anda RF, Nordenberg D., Williamson DF, Spitz AM, Edwards V., Koss MP, and Marks JS. 1998. "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. The Adverse Childhood Experiences (ACE) Study." *American Journal of Preventive Medicine* 14 (4): 245-58.

# Expert Opinion / State of the Art

- An expert in the field provides an overview of current understanding of the issue
- Example: Harvard Center for the Developing Child report makes the case that childhood trauma affects executive function in adults . . . suggesting that programs need to help these adults manage complex tasks.

See Center on the Developing Child at Harvard University. 2016. *Applying the Science of Child Development in Child Welfare Systems*. <https://developingchild.harvard.edu/resources/child-welfare-systems/>

# What evidence supports your logic model?

- Are there any RCT's?
- Are there experts you rely on?
- Are there key studies that people talk about?
  - Good idea to read them if you haven't already
  - Good to know level of evidence
  - Good to know if effects are modest
- Is your evidence based on experience?
  - Are you responding to clients' expressed needs?
  - Have you tried different approaches and found one that is good? If so, think about how you know it is good.

# Your questions and ideas