



Understanding How the WWC Prioritizes Study Findings: Implications for Designing EIR Evaluations

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Today's Topics

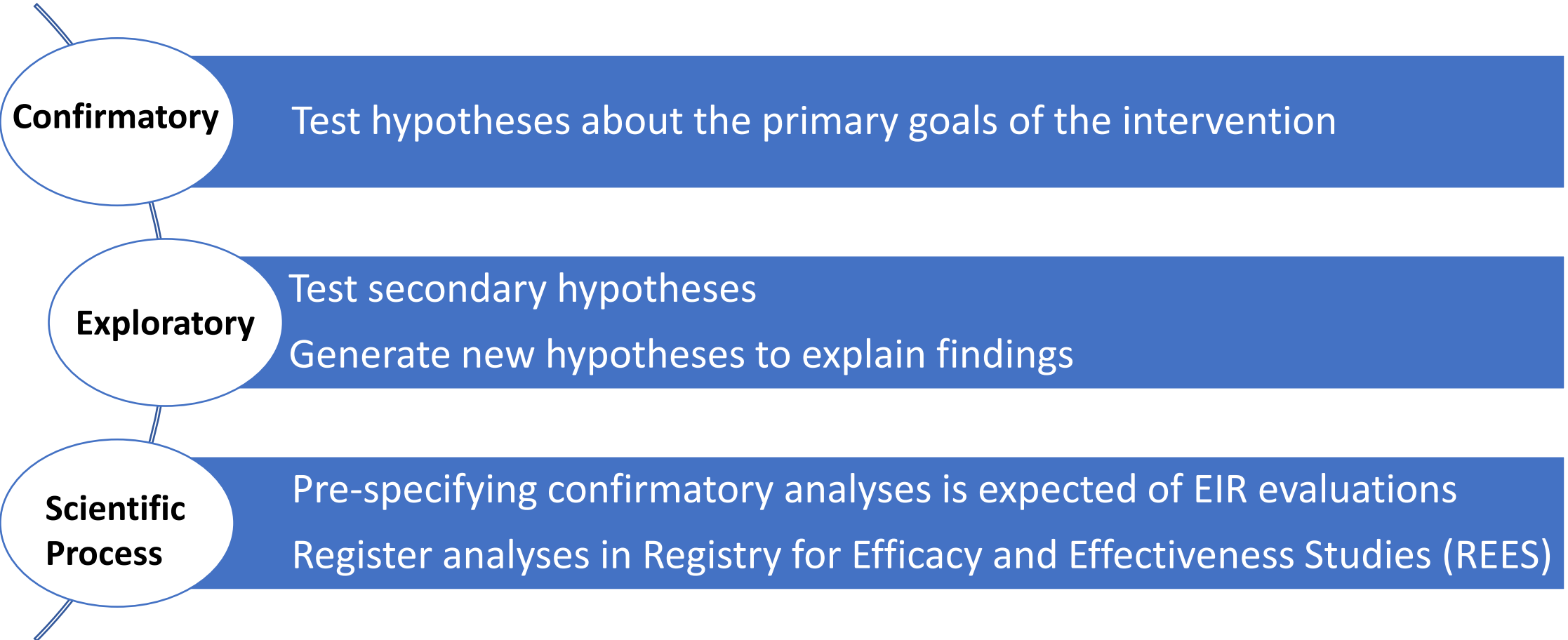
- Confirmatory and Exploratory Analyses in EIR
- How the WWC Prioritizes Findings
 - Hint: It might differ from your priorities
- Implications of Differences Between WWC and Study on Prioritizing Findings
- Key Takeaways





EIR Evaluators Designate Analyses as Confirmatory or Exploratory

Confirmatory Analyses Focus on the Most Important Questions



Example: Evaluating a School Turnaround Intervention



Designed for Rural Schools

Sample is almost all rural schools

- Confirmatory:
 - Impacts in rural schools
- Exploratory:
 - Impacts in all schools, including non-rural schools

Designed for All Schools

Sample includes equal numbers of rural & non-rural schools

- Confirmatory:
 - Impacts in all schools
- Exploratory:
 - Impacts in rural schools
 - Impacts in non-rural

Best Practices for Defining Confirmatory & Exploratory Analyses



- Define confirmatory and exploratory analyses at the start
 - Based on the intervention logic model
- Work jointly with grantee to determine:
 - The primary hypotheses to be tested
 - The analyses that are most important to test those hypotheses
 - Any exploratory analyses that are important for understanding the intervention's effects on the primary outcomes



WWC Designates Findings as Main or Supplemental

Might Not Align with Study's Confirmatory and
Exploratory Analyses

Studies with Multiple Findings: WWC Defines Each as “Main” or “Supplemental”



WWC defines each eligible finding as:

Main Finding

WWC uses to determine if the intervention is effective

Supplemental Finding

WWC does not use to determine if effective

WWC's "Main Finding" May Not Align with Confirmatory Analyses



EIR-Defined

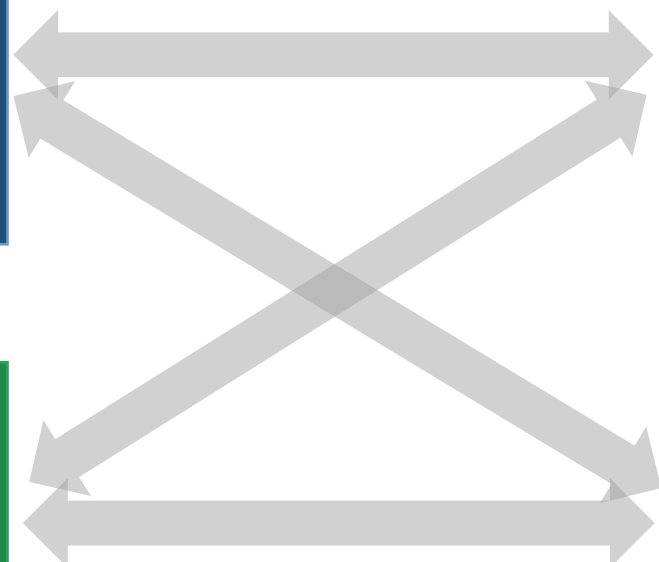
WWC-Defined

Confirmatory

Main

Exploratory

Supplemental



WWC Criteria for “Main” vs. “Supplemental” Findings



WWC Criteria for Main Findings	WWC Criteria for Supplemental Findings
Full analytic sample	Subgroups
Composite (or total score)	Subscale
Time period closest to end of intervention*	Other time periods, such as interim or follow-up*
Independent measures (not researcher developed) – <i>literacy or math domains only</i>	Non-independent measures (researcher developed) – <i>literacy or math domains only</i>
Continuous scale – <i>if there are both continuous and dichotomized versions</i>	Dichotomous scale – <i>if there are both continuous and dichotomized versions</i>
Effect size can be calculated	Effect size cannot be calculated

**Time point closest to the end of the intervention is prioritized for all outcome domains, except for earnings, employment, college degree attainment, and industry-recognized credential. For those outcomes, the WWC prioritizes the latest time point measured.*



Why Do “Main” Findings Matter?

- WWC uses main findings to rate if an intervention is effective
- WWC rating of effectiveness is:
 - Visible to the field of potential adopters considering whether to use the intervention
 - Can affect future evidence-based funding opportunities
 - For example, evidence of effectiveness in prior research can qualify the intervention for the next EIR tier
- Might not align with what you think is most important for determining if the intervention is effective



Implications of Differences Between WWC and Study Priorities



Example 1: Turnaround Schools vs. BAU

- **Intervention:** Turnaround Schools is a 3-year school leadership program designed primarily for rural schools.

- **Research Questions**

- *Confirmatory*

- What is the impact of on Turnaround Schools on the math achievement of 9th-12th grade students **in rural schools** in the third year of the program?

- *Exploratory*

- What is the impact of on Turnaround Schools on the math achievement of 9th-12th grade students **in all schools** in the third year of the program?



What Would the WWC Prioritize as the Main Finding?

Research Question / Study Analysis	Main or Supplemental?	Why?
What is the impact of on Turnaround Schools on the math achievement of 9 th -12 th grade students in rural schools in the third year of the program?	Supplemental	Subgroup
What is the impact of on Turnaround Schools on the math achievement of 9 th -12 th grade students in all schools in the third year of the program?	Main	Full sample



Considerations for the Study's Planned Analyses

Option 1:
Do all
analyses, as
planned

- Rationale: Intervention designed to benefit all schools, but especially rural schools.
- WWC effectiveness rating will be based on all schools (rural and non-rural)

Main finding =
Exploratory
analysis

Option 2:
Do analysis
of rural
schools
only

- Rationale: Intervention designed to benefit rural schools only
- WWC effectiveness rating will be based on rural school findings

Main finding =
Confirmatory
analysis



Example 2: ACME Program vs. BAU

- **Intervention:** ACME Program is a one-year program for students in 6th grade. It is designed to improve social-emotional skills to help students to succeed in middle school.

- **Research Questions**

- *Confirmatory*

- What is the impact of one year of ACME on 6th grade students' learning strategies, classroom effort, and self-management (**subscales**)?

- *Exploratory*

- What is the impact of ACME on 6th grade students' skills and competencies for school success (**composite**)?



What Would the WWC Prioritize as the Main Finding?₂

Research Question / Study Analysis	Main or Supplemental?	Why?
What is the impact of ACME on 6 th grade students' <u>learning strategies</u> , as measured by a subscale of the Student Skills and Competencies survey?	Supplemental	Outcome is subscale
What is the impact of ACME on 6 th grade students' <u>classroom effort</u> , as measured by a subscale of the Student Skills and Competencies survey?	Supplemental	Outcome is subscale
What is the impact of ACME on 6 th grade students' <u>self-management</u> , as measured by a subscale of the Student Skills and Competencies survey?	Supplemental	Outcome is subscale
What is the impact of ACME on 6 th grade students' skills and competencies for school success, as measured by the composite score on the Student Skills and Competencies survey?	Main	Outcome is composite

Considerations for the Study's Planned Analyses₂

Option 1: Do all analyses

- Rationale: Intervention designed to affect subscale constructs differently and have an overall effect on domain
- WWC effectiveness rating will be based on **composite finding**

Main finding =
Exploratory
analysis

Option 2: Do only subscale analyses

- Rationale: Intervention affects subscale constructs differently and might not have an effect on the entire domain
- WWC effectiveness rating will be based on **average of subscale findings**

Main finding =
Average of 3
confirmatory
analyses

Little difference between the options



Example 3: MATH+ vs. BAU

- **Intervention:** MATH+ is a one-year program for students in grade 10.
- **Research Questions**

Confirmatory

- What is the impact of MATH+ on 10th grade students' algebra achievement as measured by an author-developed measure of algebra achievement?

Exploratory

- What is the impact of MATH+ on 10th grade students' algebra achievement as measured by the Iowa Algebra Aptitude Test?



What Would the WWC Prioritize as the Main Finding?₃

Research Question / Study Analysis	Main or Supplemental?	Why?
What is the impact of MATH+ on 10th grade students' algebra achievement as measured by an author-developed measure of algebra achievement ?	Supplemental	Non-independent measure
What is the impact of MATH+ on 10 th grade students' algebra achievement as measured by the Iowa Algebra Aptitude Test ?	Main	Independent measure



Considerations for the Study's Planned Analyses₃

Option 1:
Do all
analyses, as
planned

- Rationale: Intervention designed to improve algebra achievement, especially specific algebra skills measured by author developed test.
- WWC effectiveness rating will be based on independent assessment

Main finding =
Exploratory
analysis

Option 2:
Analyze
author-
developed
test only

- Rationale: Intervention designed to improve only the specific algebra skills measured by author developed test.
- Study will not receive a WWC effectiveness rating, because no main finding.

No main finding →
No effectiveness
rating



Example 4: Let's Read! vs. BAU

- **Intervention:** Let's Read! is an ongoing schoolwide literacy program for all grades in elementary school. It will be implemented in three cohorts of schools, beginning in fall 2023, fall 2024, and fall 2025, respectively

- **Research Questions**

- *Confirmatory*

- What is the impact of Let's Read! on students' literacy achievement in **the first year** of the program?
 - What is the impact of Let's Read! on students' literacy achievement in **the second year** of the program?
 - What is the impact of Let's Read! on students' literacy achievement in **the third year** of the program?

School Cohorts Implement Let's Read! for Different Numbers of Years



	School Year 2023-24	School Year 2024-25	School Year 2025-26
Cohort 1 schools	Year 1	Year 2	Year 3
Cohort 2 schools		Year 1	Year 2
Cohort 3 schools			Year 1

Year 3 impact estimate includes
ONLY one cohort



What Would the WWC Prioritize as the Main Finding?₄

Research Question / Study Analysis	Main or Supplemental?	Why?
What is the impact of Let's Read! on students' literacy achievement in the first year of the program for three cohorts of schools?	Main	Not "end" of intervention Full sample – all cohorts
What is the impact of Let's Read! on students' literacy achievement in the second year of the program for two cohorts of schools?	Supplemental	Not "end" of intervention Not full sample
What is the impact of Let's Read! on students' literacy achievement in the third year of the program for one cohort of schools?	Supplemental	Closest to "end" of intervention Not full sample

Considerations for the Study's Planned Analyses₄



Option 1:

Do all analyses, as planned

- Rationale: Measure effects for the largest possible sample each year, and have the most statistical power for each year.
- WWC effectiveness rating will be based on the sample with all cohorts

Main finding =
Year 1
(Largest sample)

Option 2:

Analyze cohort 1 schools only

- Rationale: Effects after three years are prioritized, when effect might be largest.
- WWC effectiveness rating will be based on effects after three years

Main finding =
Year 3
(closest to end of intervention)

Omitting 2 of 3 cohorts of schools is NOT RECOMMENDED

Example 5: Understanding Science vs. BAU



- **Intervention:** Understanding Science is an intervention for students in grade 5.
- **Research Questions**

Confirmatory

- What is the impact of *Understanding Science* on the state science assessment in grade 5?

Exploratory

- What is the impact of *Understanding Science* on the district benchmark science test in grade 5?



What Would the WWC Prioritize as the Main Finding?₅

Research Question / Study Analysis	Main or Supplemental?	Why?
What is the impact of Understanding Science on the state science assessment in grade 5?	Main	Full sample & composite measure
What is the impact of Understanding Science on the district benchmark science test in grade 5?	Main	Full sample & composite measure

When there are two main findings in the same domain, the WWC will average the two effects and conduct a hypothesis test to determine if the average effect is statistically significant.



Considerations for the Study's Planned Analyses₅

Option 1:
Do all
analyses, as
planned

- Rationale: Measure effects on different science tests to determine if the effect is robust across tests.
- WWC effectiveness rating will be based on the WWC-calculated average of the two effects

Main finding =
Both confirmatory
& exploratory.
WWC will average
them

Option 2:
Analyze state
science test
only

- Rationale: Effects on the state test are more policy relevant. Also, all students in this study take the same state test but different benchmark tests
- WWC effectiveness rating will be based on effects on the state science test.

Main finding =
Confirmatory

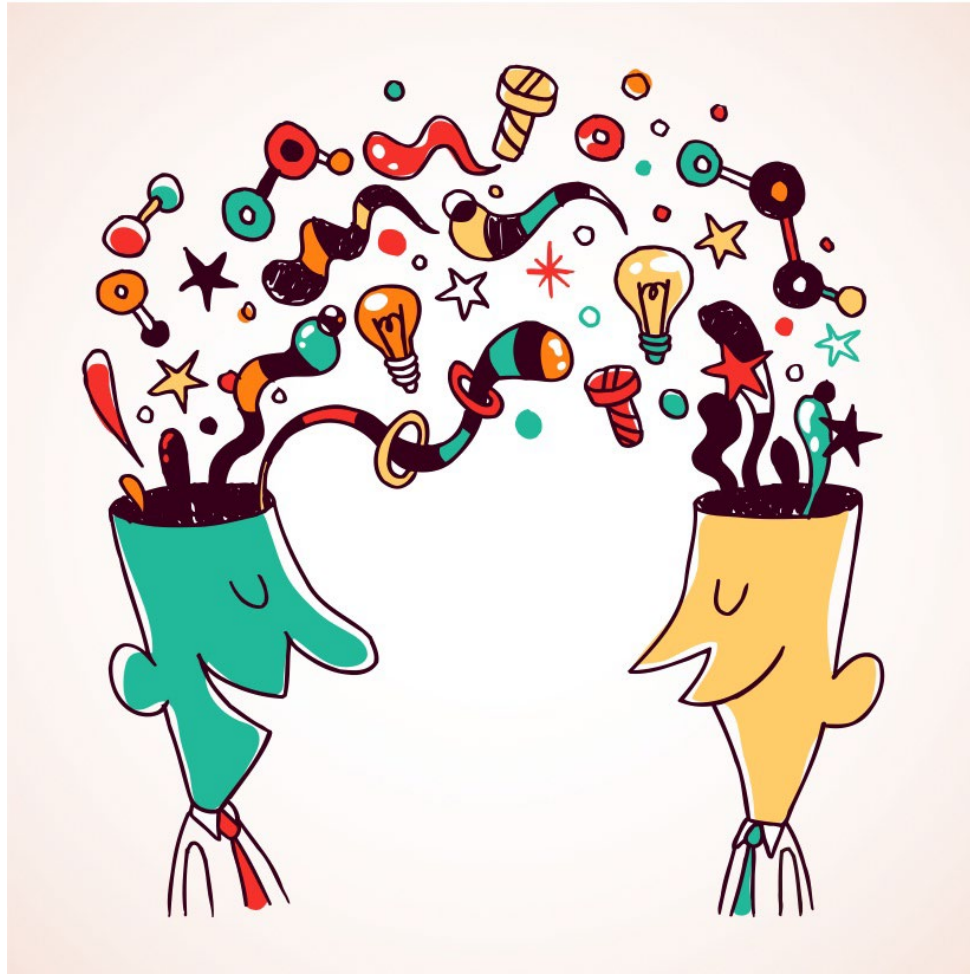


Recommendations & Key Takeaways



Recommendations for EIR Evaluations

- Focus on the intervention logic model or theory of change
 - Prioritize analyses that reflect the strongest hypotheses about the intervention's effects
- Be aware of how the WWC will prioritize analyses, especially if it will focus on exploratory & not confirmatory analyses
- Decide whether or how to consider the WWC's priorities in your study's planned analyses
- Don't do exploratory analyses that are not well aligned with the program model – especially if the WWC will prioritize them.



Your TA Liaison is here to help!

Questions?





Contact

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