

CIMA EVIDENCE

Latin America and the Caribbean

Understanding Evidence Maps and Evidence Gap Maps: What They Are and Why They Matter

by Harold Villalba

This brief is the first in a series that explores the rigorous global evidence available across a range of education topics. The briefs are intended for policymakers, researchers, and practitioners seeking to better understand how systematic reviews, evidence maps, and evidence gap maps can support evidence-informed decision-making in education and other social sectors. These tools help synthesize and organize large bodies of research by identifying where evidence is concentrated, where important gaps remain, and which interventions or outcomes have been most rigorously studied. Both evidence maps and evidence gap maps are typically visualized as bubbles plotted across matrixes, allowing readers to quickly identify patterns in the available evidence before exploring the findings in greater detail.



What is an Evidence Map (EM) and an Evidence Gap Map (EGM)?

Evidence mapping tools provide a structured way to organize and interpret large bodies of research. In CIMA, two complementary approaches are used: Evidence Maps (EMs) and Evidence Gap Maps (EGMs).

- EMs synthesize findings across studies to show what the evidence says about effectiveness, summarizing the magnitude and direction of impacts and the rigor of the underlying evidence, and enabling users to quickly assess and compare which interventions work best, for whom, and under what conditions.
- An EGM is a visual, structured tool that systematically maps research evidence across interventions and outcomes, making explicit where evidence exists and where gaps remain; rather than synthesizing effects, it organizes studies to highlight concentrations of evidence and inform future research and evaluation priorities.

Used together, EMs and EGMs provide a picture of the evidence landscape: EMs help interpret effectiveness and credibility to guide policy choices, while EGMs help identify knowledge gaps to guide future research.



EMs, EGMs, and Systematic Reviews (SR): What Do They Show and How Do They Differ?

EMs and EGMs are built on systematic reviews, drawing on rigorously curated evidence to synthesize and visualize findings in ways that support comparison, interpretation, and decision-making.

- **Evidence Map:** Goes beyond counting studies to visualize the magnitude and direction of effects, showing whether interventions yield positive, negative, or mixed results.
- **Evidence Gap Map:** Maps the availability and quality of evidence based on frequency counts, highlighting where studies exist and where there are gaps.

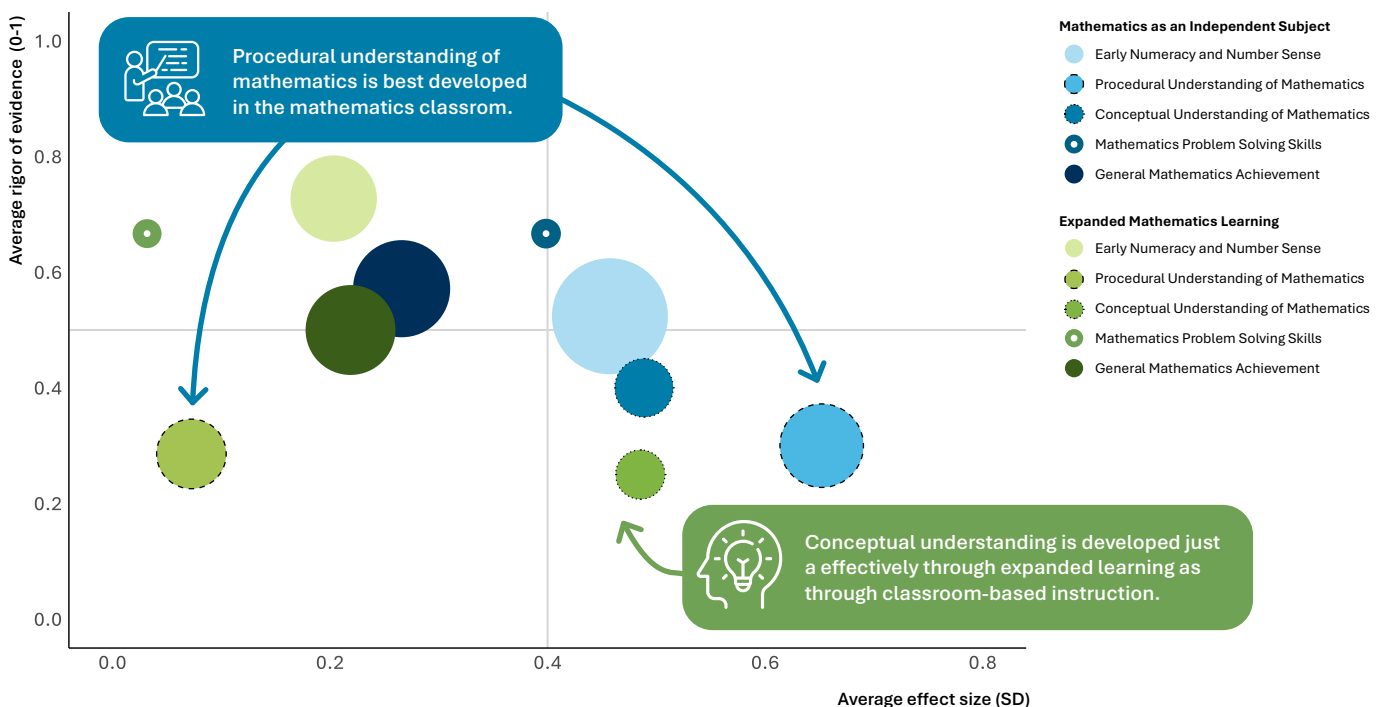
- **Systematic Review:** Synthesizes the results of existing studies to answer specific questions about an intervention's effectiveness.
- **Key distinction:** EGMs show where evidence exists (or doesn't) and its quality, while EMs synthesize findings to reflect direction and magnitude of effects. Both are grounded in systematic reviews, which provide the rigorously curated evidence base.



How to Read and Interpret an EM?

- **COLORED BUBBLE:** Each bubble represents a group of studies that share a common characteristic, such as an intervention approach, outcome domain, target population, or delivery modality (e.g. Evidence from 102 controlled studies about math learning suggests that traditional classroom instruction and expanded learning opportunities, such as extended school days, are complementary: classroom-based instruction tends to be more effective overall, particularly for procedural skills, while expanded learning can support the development of other competencies, such as conceptual understanding). See Figure 1 below for reference.
- **BUBBLE SIZE:** reflects the number of studies included in that group. Larger bubbles indicate a larger body of evidence, while smaller bubbles indicate more limited evidence.
- **BUBBLE POSITION:** reflects both the average magnitude of impacts and the average rigor of the evidence. One axis represents the size of effects (X axis), measured using standardized effect sizes such as Standardized Mean Differences (SMD), while the other axis represents the average confidence or rigor associated with the evaluation methods used (Y axis).
- By displaying effect size and rigor together, EMs allow users to distinguish between interventions that show large impacts supported by strong evidence and those where results are weaker or based on less robust studies.

Figure 1: EM example





How to Read and Interpret an EGM?

The visual matrix of an EGM facilitates quick interpretation through the characteristics of its bubbles, which communicate the quantity and quality of the evidence. See Figure 2 below for reference.

- **COLORED BUBBLE:** Represents the methodological rigor of the evaluation approaches used in the studies.
- **NUMBER IN BUBBLE:** The number inside each bubble indicates the number of studies that make up the evidence base.
- **EMPTY CELLS:** Represent the “evidence gaps” - areas where no causal evidence was found or mapped, pointing to clear priorities for future research.

Figure 2: EGM example

Dimension	Education Strategy					Instruction Modality		
	Integrated across Subjects	Independent Subject	Extracurricular Activity	Whole-School Climate	Other/Combination	Virtual	Face-To-Face	Hybrid
STUDENT OUTCOMES								
Social Emotional Learning Competencies	1 1 1	2 4	1	1	1 1	1	1 5 4	2
Violence Againsts Girls	4 10	2 16 18	1 14 8	1 5 9	1 4 8	2 7	3 37 38	2 6 6
Gender Identity, Norms, and Attitudes	2 6	5 3	3	1 4	2 3	2	12 11	1 3
Diversity and Inclusion Attitudes	1	1		1			1 2	
Wellbeing Indicators	1	3 2	1	1 1	1		1 4 5	
Sexual and Reproductive Health	3 3	1 2	2 3	1 3	2 1		1 8 10	2
Problematic Behaviors	1 1	3 2	1 1	1 1	1 2		1 6 7	
Student Education Related Outcomes		1 2	2	1 1			2 4	
Students Total Effects	35	67	37	34	28	13	166	22

Key: Low Confidence Interventions Medium Confidence Interventions High Confidence Interventions Evidence Gaps



Key Questions EMs and EGMs Help Answer

Synthesizing evidence helps turn a vast and scattered body of research into a clear, structured overview that is directly useful for policy and research.

Together, EMs and EGMs help answer key questions such as:

1. Which intervention approaches are effective, for which outcomes, and how strong and credible is the evidence? (EMs)
2. Where does evidence exist across intervention types and outcomes, and where are the critical gaps? (EGM)
3. How should policymakers, practitioners, and researchers prioritize investments, learning, and future evaluation efforts? (EM and EGMs combined)



Key Considerations

- **CONNECTING EVIDENCE TO OPERATIONAL PRIORITIES:** EMs and EGMs are only as valuable as the decisions they inform. Their impact depends on active integration into policy design, decision-making, and education practice.
- **MAINTAINING RELEVANCE REQUIRES PERIODIC UPDATES:** As the evidence base evolves, maps should be updated periodically to remain informative for policy and operational decision-making.

The goal is to ensure that decisions about education policy, investment, and research are grounded in the best available evidence, and that critical gaps are clearly identified and systematically addressed

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