Measurement and Evaluation Checklist

As the evaluation technical assistance partner for two portfolios of investments in Middle Years Math and Secondary Writing—funded by the Bill & Melinda Gates Foundation—Mathematica developed a set of tools to support grantees through a measurement and evaluation (M&E) process. The goal of these portfolios is to develop, refine, and scale evidence-based solutions (programs, products, or practices) that demonstrate success in improving educational outcomes for students who are Black, Latino, and/or experiencing poverty (the priority communities for the grants).

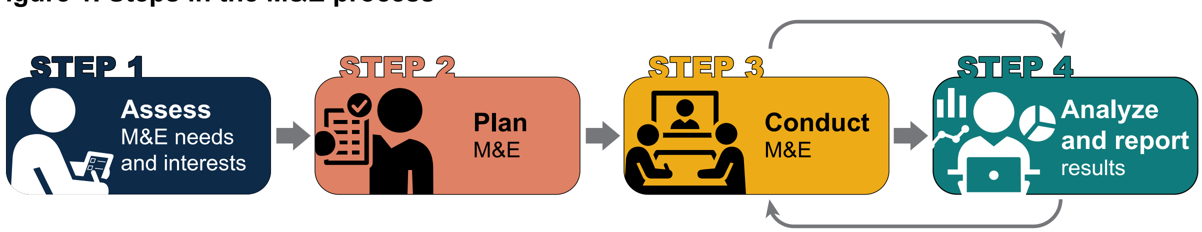
To expand the reach of this work and promote the adoption of evidence-based solutions more broadly, Mathematica has adapted the suite of M&E tools for a broader set of users—organizations implementing solutions, funders, research partners, and other stakeholders. The tools are designed to help users implement the M&E process in their own work. Organizations or individuals may choose to use one tool or the full set and can adapt the tools to their needs.

What is the M&E process?

The M&E process is designed to promote rapid innovation and scaling of promising solutions through generating timely and actionable evidence about what works for whom, and in what context. It uses an iterative approach to evidence building, in which the focus and design of the research is aligned to the solution's phase of development. Checkpoints are built in throughout to encourage users to pause and reflect on what has been learned so far and to refine the solution and the M&E plan as needed. More information on this iterative approach to evidence building and the phases of development is available **here**.

In each evidence-building phase, the M&E process has four key steps (Figure 1). In Step 1, organizations articulate their M&E goals, interests, and needs. In Step 2, they develop a plan—including research questions—to guide the M&E work. In Step 3, they execute the M&E plan designed in Step 3, including collecting the data needed to address each research question. Finally, in Step 4, organizations analyze the data they collected in Step 3, determine next steps, and report the findings.

Figure 1. Steps in the M&E process



The M&E process centers on equity and community voice as a core principle. Across all steps, organizations are encouraged to meaningfully engage community stakeholders to ensure the solution builds on the strengths and assets and meets the needs of the community it is intended to serve.

Who should use the Measurement and Evaluation Checklist?

Funders and organizations, with support from a research partner, can use or adapt the checklist.

What is the Measurement and Evaluation Checklist?

The M&E Checklist is a resource that guides users through an evidence-building process as they design, refine, and test a solution in collaboration with stakeholders from the priority community. The M&E Checklist includes four documents—one for each of the evidence-building phases: Design the Solution (Phase 1), Refine the Solution (Phase 2), Assess for Early Evidence of Success (Phase 3), and Validate Effectiveness (Phase 4). The checklist activities focus on iterative learning, which may mean completing a phase multiple times, moving backwards to a previous phase, or abandoning a solution altogether. The checklist serves several purposes:

- ✓ **Design and evaluation planning.** Organizations designing and implementing solutions can use the M&E Checklist with support from a research partner during Step 2, Plan M&E, as a guide to develop a detailed M&E Plan—or road map—to address key research questions for a given phase of the solution's development.
- ✓ **Reporting.** Organizations—and funders, where relevant—can also use the M&E Checklist during Step 4, Analyze and Report Results, to assess the extent to which the plan was executed as intended and the extent to which the targets for a given phase of the development were met (as reported in the M&E Reporting Template).
- ✓ **Organizational or grantee alignment.** The M&E Checklist can also be used to align goals and objectives for the M&E work across an organization and its funder, when applicable. For funders working with multiple organizations, the M&E Checklist also promotes continuity across M&E Plans, allowing for streamlined review, improved understanding, and cross-solution comparisons.

In each phase, the checklist includes the following:

- **Key assumptions.** The activities organizations should have completed or targets they should have achieved before entering the current phase. If your organization did not complete the activities described in the key assumptions, consider starting at an earlier phase.
- **Reflection questions.** The questions that organizations can ask themselves to help them revisit their assumptions, center equity in their work, and plan next steps.
- **Principles.** Focus areas that guide the work across all phases. The principles include equity and community voice, program articulation, implementation, outcomes, scalability, and knowledge sharing.
- **Planning and execution activities.** The activities organizations should plan for and then complete before exiting the phase. Although organizations may plan for and execute *some* activities within a phase at first, all activities should be completed before exiting the phase.
- **Checkpoints.** Prompts for organizations to pause and reflect on learnings to-date to inform improvements to the solution design and updates to the M&E Plan. At each checkpoint, organizations can review the findings to determine whether to advance to the next phase, continue iterating in the same phase, or return to an earlier phase.

Phase 4: Validate Effectiveness

The goal of Phase 4 is to conduct a large pilot study and demonstrate with a high degree of confidence[1] that your solution leads to improved outcomes for students in the priority community. Phase 4 requires successfully implementing solutions in two or more school districts, which involves adapting the solution to replicate it in a new context.

Before entering Phase 4, you should have confirmed your solution's core components, implemented the solution with adherence to the program model in the priority community, have met or exceeded your targets for outcomes. During Phase 4, organizations collaborate and partner with stakeholders from the priority community to conduct a large pilot study to validate that the solution, when implemented with adherence to the program model, leads to improved outcomes. By the end of Phase 4, your solution should be implemented successfully in multiple contexts, and you should have generated causal evidence demonstrating that your solution leads to improved outcomes. If it is the first time implementing the solution with a defined priority community, organizations should enter at Phase 2 to adapt the solution for the priority community.

Key Assumptions. Before beginning activities in Phase 4, organizations should have completed the following activities (Please see Phase 2 and Phase 3 activities for more guidance):

- ✓ Solution met or exceeded "good" targets for implementation in the priority community, including identifying the program core components and implementing the solution with adherence to the program model
- ✓ Solution met or exceeded "good" targets for outcomes in the priority community, and organization is confident the solution is at least associated with improved outcomes

[1] In each phase, you are building evidence that your solution improves outcomes for students or teachers. In phase 4, the goal is to generate causal evidence that your solution leads to improved outcomes for students in the priority community. A randomized study is preferred, but a quasi-experimental design, such as a matched student comparison group design, is also acceptable.

As a fictitious illustrative example, in the previous phase, a small pilot study with 50 students was conducted, with half the students randomly selected to use the mobile application. Students were in 9th grade in a Baltimore high school, and most are Black. The organization and priority community confirmed the program core components **and** successfully implemented the solution with adherence to the program model. They learned that attendance rates were higher among students who used the app than those who did not, but the differences were not statistically significant. In Phase 4, the solution was replicated to include 9th-grade students, most who were Black, in Philadelphia high schools and the study compared differences in outcomes between 300 students who used the solution and 300 students who did not use the solution across Baltimore and Philadelphia schools.

Equity and community voice activities are central to the evidence-building process and are integrated throughout this checklist.

When organizations partner with communities and include the voices and interests of the community in designing the solution and planning and executing the evaluation, both the solution and the evaluation will be more relevant and meaningful to the priority community and are more likely to be successful. Activities associated with equity and community voice focus on identifying stakeholders from the priority community who will collaborate and partner with your organization to plan and execute all activities in each phase. Stakeholders can also help organizations identify the best ways to engage and learn from the priority community in each phase.

How are you planning to use this checklist?

Select one:

- ☐ **Planning.** Make a plan for how you will complete these activities.
- ☐ **Execution.** Confirm that the activities were completed.

☐ Planning ☐ Execution

Principle: Equity and Community Voice

Solutions are designed, improved, and tested in collaboration with stakeholders from the priority community.

Planning and execution activities

Organizations should plan for and complete the following tasks in Phase 4.

- ☐ Clearly and narrowly define the priority communities in which the study will occur and specify the solution users.
- ☐ Identify stakeholders in the priority community and partner with them to develop the evaluation plan and execute checklist activities, including interpreting findings.
- ☐ Define and share the purpose of the study with additional members of the priority communities before the study begins and receive their support to conduct the study.
- ☐ Describe how you plan to collaborate and partner with stakeholders in the priority community to incorporate their perspectives throughout evaluation planning and execution to design, refine, and test the solution.

Notes

Reflection questions

1. Before entering Phase 4, did you implement the solution in the same priority community that is included in this study?
2. How will you form partnerships with the new school districts participating in this study?
3. Do stakeholders have similar or competing priorities across districts?
4. How can you include stakeholders in the priority community from all school districts in the evaluation planning process? In the evaluation execution?

Checkpoint

Organizations should routinely pause and reflect on the perspectives of the priority community and ensure evaluation activities and solution improvements align with those perspectives. Review the Culturally Responsive Evaluation Resource Guide for additional resources and guidance on how to engage stakeholders throughout solution design, refinement, and testing.

☐ Planning ☐ Execution

Principle: **Program Articulation**

Solutions are well-articulated and continuously refined.

Planning and execution activities

- ☐ Refine the solution and theory of change and explain rationale for those updates based on evidence generated in Phase 4.
- ☐ Descr

Facts, information, or indicators that can be used to inform decisions or determine the impact of implemented activities and strategies, and might include insights from the priority community. The type of evidence organizations aim to generate might vary depending on the phase of the solution and evaluation goals (Click here for source).

Notes

Organizations and research partners should collaborate and partner with stakeholders from the priority community to plan and execute all activities.

Reflection questions

1. What evidence from this study will you use to update the solution and theory of change? Who is making this determination?
2. What is the rationale for the updates made to the theory of change?

Checkpoint

Organization should update the theory of change based on evidence generated during the study before exiting this phase.

☐ Planning ☐ Execution

Principle: Implementation

Solutions account for implementation context and are successfully implemented in the priority community.

Planning and execution activities	Notes
☐ Adapt variable components of the solution (not the core components) based on the implementation context of the new site before implementing the solution. ☐ Identify the context conditions you need to successfully implement the solution by identifying the observed implementation facilitators and barriers. ☐ Monitor implementation of the solution to confirm it was implemented as intended including any adaptations of the variable components you made to the solution. Review the “3Us – Usability, Usefulness, Utilization” document for more information, including establishing measurable implementation thresholds. ☐ Meet or exceed “good” targets for implementation if using quantitative measures and describes how process targets for qualitative measures informed solution refinement.	

Organizations and research partners should collaborate and partner with stakeholders from the priority community to plan and execute all activities.

Reflection questions

1. How are you scaling the solution for this study? Are you expanding, replicating, or adapting the solution?
2. How will you account for differences in the context as you implement your solution in new contexts? What solution adaptations will you make while ensuring the core components do not change across contexts?

Checkpoint

Organization should confirm the solution was implemented as intended before assessing outcomes.

Principle: **Outcomes**

Solutions generate evidence of improving outcomes for students and their teachers.

Planning and execution activities

- ☐ Analyze at least one short-term or long-term outcome to show that the solution as implemented improves outcomes and is aligned with the solution's theory of change, such as:
  - ☐ Student math knowledge or writing proficiency (required)
  - ☐ Student enjoyment, mindsets, and engagement
- ☐ Identify, develop, or select measures with input from the priority community. Review the math and writing menu of measures for a list of recommended measures, if needed.
- ☐ Define the research design and methods you will use to conduct the study
  - ☐ Randomized controlled trial
  - ☐ Quasi-experimental design (e.g. matched comparison design)
- ☐ Define the planned number of solution users and non-users and the planned number of school districts. Please review the Sample Size Guidance for more information on the recommended sample size for the study.
- ☐ Confirm whether evaluation partner or independent third party will conduct the study. Note: A third party evaluator who is independent of the solution may help provide credibility to the evidence generated.
- ☐ Understand and systematically document the business-as-usual condition or another comparison.
- ☐ Describe differences in outcomes across student groups or intersections of student groups or across different implementation contexts.
- ☐ Meet or exceed "good" targets for outcomes and describe rationale as to why "good" targets are ambitious.

Notes

Organizations and research partners should collaborate and partner with stakeholders from the priority community to plan and execute all activities.

Reflection questions

1. How do you know if targets are ambitious? Do stakeholders agree on what are ambitious, yet attainable targets?
2. Are there any threats to the implementation plans that might affect your ability to achieve outcomes?
3. Are there any threats to the study design that might affect your ability to measure outcomes or make causal claims?
4. How can treatment and comparison groups be constructed in ways that respect both the values and cultural context of the priority community?

Checkpoint

Organizations should meet or exceed "good" targets for outcomes before exiting this phase.

☐ Planning ☐ Execution

Principle: **Scalability**

Solutions can be expanded, replicated, and adapted to improve outcomes for more students.

Planning and execution activities

- ☐ Document the quantity and types of resources needed to implement the solution, as well as costs per student and per site.
- ☐ Collect information to assess if the solution is affordable and competitive with alternative solutions accessible to the priority community.
- ☐ Compare resource requirements and implementation burdens associated with the solution to those associated with the comparison condition.
- ☐ Describe adaptations that you could make to the solution to promote scalability; confirm the resources need to make adaptations are available.

Notes

Organizations and research partners should collaborate and partner with stakeholders from the priority community to plan and execute all activities.

Reflection questions

1. What adaptations to the solution can you make to make it more affordable and suitable for a broader set of contexts?
2. Are there difference in the cost of the solution across sites? Why do those differences exist?

☐ Planning ☐ Execution

Principle: **Knowledge Sharing**

Presentation of research findings is easy to understand and is shared with others including the priority community.

Planning and execution activities

- ☐ Co-interpret study findings with stakeholders before they are finalized and shared.
- ☐ Share findings by facilitating a two-way discussion with the priority community. Use nontechnical language to describe key takeaways from Phase 4 and ways you will use the findings to refine and improve the solution.
- ☐ Share findings with the education field, such as practitioners, school and district leaders, researchers, and other funders.

Notes

Organizations and research partners should collaborate and partner with stakeholders from the priority community to plan and execute all activities.

Reflection questions

1. What did you learn from this study that will be valuable to others? How will you tailor your messaging to different audiences?
2. Who will be interested in the research findings? How can you use existing structures to share the findings with them?

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In addition, we also consulted the following resources and standards to inform the development of this checklist:

- Loper, A., Woo, B., & Metz, A. (2021). **Equity is fundamental to implementation science**. *Stanford Social Innovation Review*, *19*(3), A3–A5.
- Regional Educational Laboratory Midwest at American Institutes for Research. (2018). **Aligning evidence-based clearinghouses with the ESSA tiers of evidence**.
- Richman, S., Maxwell, N., Needels, K., & Anderson, M. A. (2020). **Scaling Checklists: Assessing Your Level of Evidence and Readiness (SCALER). A guide for practitioners** (Final report submitted to the Corporation for National and Community Service). Mathematica.
- U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, What Works Clearinghouse. **(Click here to reference the WWC Handbook** and **click here to reference Common Guidelines for Education Research and Development**).
- Woodson, T. (2020). **Using a Culturally Responsive and Equitable Evaluation Approach to Guide Research and Evaluation**. Mathematica.

Checklist Authors: Ryan Ruggiero, Mikia Manley, Virginia Knechtel, Kate Place, and Megan Shoji

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