Measurement and Evaluation Plan Template

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](https://vimeo.com/528938353/76f1ece58b).

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 M&E Plan Template?**

The M&E Plan Template is designed to be used or adapted by funders or organizations implementing solutions, with support from a research partner. A research partner could be staff within the organization who have expertise in evaluation, or an external organization, technical assistance provider, or consultant.

**What is the M&E Plan Template?**

Organizations implementing solutions can use the M&E Plan Template 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 the key research questions for a given phase of their solution’s development. A complete M&E plan includes a description of the solution and theory of change, information on prior research conducted on the solution, detail on how the priority communities were and will be involved in the design of the solution and the evaluation, the study research questions, the measures and approach that will be used to answer the research questions, ambitious targets (or goals) for each intended outcome, and a timeline to carry out the work. We recommend that the implementing organization and research partner work together to co-develop the M&E plan, in partnership with representatives from the priority communities.

For funders working with multiple organizations, the M&E Plan Template also promotes continuity across plans, allowing for streamlined review, improved understanding, and cross-solution comparisons.

This resource was prepared for the Bill & Melinda Gates Foundation. Views expressed here do not necessarily reflect positions or policies of the foundation.

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The solution

In this section, provide an overview of the solution that is being evaluated (in three or four paragraphs) and include a model that illustrates the theory of change for the solution (Figure 1). In the narrative portion, include the following information:

* Describe what the solution is, the **priority communities** the solution is designed for, and the **purpose or goal** of the solution (in one introductory paragraph).
* List the solution’s **key activities** or components (using three to five bullet points).
* Describe how the solution components are expected to work to **achieve** the intended outputs and outcomes in the **theory of change** (refer to Figure 1).
* Outline **relevant implementation details** about when and how the solution will be offered, who will be involved (institutions, staff, participants), and any planned variations.

Figure 1. Theory of change (guidance)

**Activities and strategies**

**Outputs**

**Outcomes**

**Short-term**

**What will the implementing organization do, and what resources will the implementing organization use?**

Include a description of the components and resources of the solution. List all the components that are essential to produce the outputs and achieve the outcomes that are included in the next two boxes.

**What will be produced as a direct result of the solution?**

Outputs are tangible, that is, things that are produced as a result of the activities and strategies. These may include products, trainings, people served, and so on. These are like prerequisites for the outcomes. If the outputs are not produced, outcomes are not likely to occur. Where possible, organize the activities and strategies as well as the outputs into categories, and align the outputs with the activities and strategies that produce them, for easier reading.

**Long-term**

**What will success look like in the short term?**

Outcomes should be specific and measurable. The implementing organization should consider including short-term (intermediate) outcomes, as well as long-term outcomes or goals for the solution. If an outcome is important to the solution but will not be achieved during the study period, include the outcome in *italics*.

**What will success look like in the medium and long term?**

Prior research about the solution

In this section, describe any prior research on the specific solution’s implementation, usability, usefulness, utilization, outcomes, efficacy, and cost, including key takeaways from the research. Include any research that is in progress. Note what type of design the researchers used, and provide a brief assessment of the rigor of the research.

Equity and community voice in solution and evaluation design

In this section, describe any efforts made to incorporate equitable design principles into the development of the solution or design of the evaluation. If the implementing organization has completed specific steps to engage with solution users or stakeholders, document those in Table 1.

* Define as specifically as possible the intended users and the community or communities they are a part of, with attention to the identities of intended users, as well as geographic, socioeconomic, and linguistic characteristics.
* Describe steps the organization took while designing this M&E plan to incorporate user or stakeholder perspectives into the selection of research questions, measures, or other aspects of the M&E plan.

Note: the gray text included in this document denotes example responses. Delete this text before populating the table below.

Table 1. Activities and findings from the design of the M&E plan that incorporated equity and community voice (example)

| Aspect of research to inform  | Activity  | Details on stakeholder engagement  | Key findings and influence on M&E plan  |
| --- | --- | --- | --- |
| Solution design and theory of change  | Reviewed the theory of change with stakeholders in the priority communities to assess and improve alignment with stakeholders’ understanding of how the solution might improve student outcomes  | Conducted four review sessions with a total of four teachers, one instructional lead, and two administrators at schools primarily serving the priority communities. Visually reviewed the theory of change and used structured brainstorming to surface areas of alignment and areas for refinement. The study team compensated each participant with $50 for the hour they contributed to this activity.  | Respondents generally agreed that student knowledge, confidence, and engagement are critically important outcomes to measure. Multiple respondents noted that less-engaged students will require tutoring features that build trust and buy-in to support initial and continued use of the solution. The stakeholders suggested the following approaches to build buy-in: small-group sessions of two or three students and team-building activities to foster community. Sessions confirmed the alignment of the theory of change with stakeholder views and prompted the implementation team to consider how to incorporate suggestions on building student buy-in and information sharing with teachers as refinements to the solution moving forward. |
| Research questions  | Asked stakeholders who were familiar with the theory of change to suggest research questions or learning objectives and requested input on questions we had developed  | We conducted follow-up meetings with two teachers, one instructional lead, and one administrator to learn which research questions they suggested pursuing and to learn their assessment of the value and appropriateness of research questions we drafted before the session. The study team compensated each participant with $50 for the hour they contributed to this activity.  | We asked stakeholders for their suggested research questions before sharing ours to assess alignment between their suggestions and our proposed research questions. Our questions on math knowledge, confidence, and engagement aligned with stakeholder interests, and they endorsed the value of questions on utilization and solution cost after seeing those questions. Stakeholders suggested adding a question exploring parent perceptions of the solution. They also noted the risk that a teacher survey or focus group on practices to promote the solution could be compromised if teachers felt pressure from administrators to use these practices; a suggested alternative was to use professional development sessions to build trust with teachers, which could carry over into trusting the confidentiality of data collection. We plan on interviewing teachers in a 1:1 setting to avoid potential pressure from administrators or other teachers to respond in a certain way. Stakeholders suggested learning about approaches to build student buy-in to tutoring. We plan on interviewing students so that we can understand which strategies will help improve initial participation in the solution.  |
| Measure selection  | Asked stakeholders which information sources they recommend using  | While soliciting stakeholder input on research questions, we also asked about the information sources that stakeholders would prioritize for each of the questions they suggested.  | One respondent noted the importance of using a math knowledge assessment broad enough to capture improvements in understanding of pre–grade level concepts and skills. The district currently uses a formative math assessment that has this feature.  |

Research questions and approach

In this section, outline the research questions you will answer in your study and describe the methods or approaches to answering the research questions.

* First, list the research questions the study will address, grouping them by category (see sample categories below).
* After the list of research questions, provide a brief narrative description of the study design, beginning with the goals. Include a summary of the types of analyses you will use to answer the questions. Describe how you will conduct each type of analysis in one or two sentences.
* Next, populate Table 2 to detail the approach used to address the research questions. For each research question in your evaluation, use this table to note the design type, the comparison that will be the focus of the analysis, the measure and the associated outcome or construct, the target, the date the findings will be available, and how the information will be used. In additional rows in the table, include the checkpoints that your team has built into the M&E processes, so that if targets are not being met, the evaluation team can adjust before moving on to additional research questions.

**Categories of research questions:**

1. **Understanding the solution:** questions that will help the implementing organization define the solution
2. **Usability:** questions that will help the implementing organization determine whether users find the solution easy to use; these may relate to the usability of the solution itself (such as whether an interface was easy to navigate) as well as ease of implementation in a specific context
3. **Usefulness:** questions that will help the implementing organization determine whether users find the solution useful for improving outcomes in their context
4. **Utilization:** questions that will help the implementing organization understand whether the solution is being implemented with sufficient intensity to drive outcomes
5. **Intermediate outcomes:** questions that will help the implementing organization assess whether intermediate outcomes, such as teacher knowledge or behavior, are changing
6. **[Outcome domains]:** questions that will help the implementing organization assess progress on identified student or teacher outcomes
7. **Cost:** questions that will help the implementing organization understand the solution’s cost per student participant
8. **Scalability:** questions that will help the implementing organization understand key facilitators and barriers to scaling the solution and identify resources or adaptations that could facilitate replication

Table 2. Approach to address research questions (guidance and example)

| **Research question** | **Design type and comparison** | **Measure and construct** | **Target** | **Date findings to be reported** | **How information will be used** |
| --- | --- | --- | --- | --- | --- |
| Instructions |
| Include one research question in each row. | Include the study design [e.g., descriptive, pre/post, matched comparison, randomized controlled trial] and what is being compared [e.g., no comparison, pre-solution versus solution, students receiving solution versus students not receiving solution, etc.]. | Include the measure (instrument) and the outcome of interest. | For each research question, set a target with a numerical threshold for what would be considered an ‘OK’, ‘good’, and ‘great’ result. Some research questions may not lend themselves to predetermined quantitative targets. In these cases, describe instead concrete actions the implementing organization will take based on the findings. The targets should be ambitious and, where possible, based on prior evidence from the implementing organization or the broader field. | Include the month and year that the report will be shared. | Outline plans for how the implementing organization, funders, or the broader field will use the information from each research question. |
| EXAMPLE  |
| What components of the solution do teachers report are the most difficult to implement?  | Design Type: DescriptiveComparison: No comparison | Measure: Teacher surveyConstruct: Implementation barriers | Good: Implementing organization develops a plan to modify the solution, address implementation difficulties, and/or provide support for implementation  | April 2023 | Implementing organization: To identify which components are more difficult to implement and modify those components or develop supports to help implement them.Funder (if relevant): To understand potential barriers to scalability and areas where the organization may need to make adjustments.  |
| EXAMPLE  |
| Among students enrolled in the solution, what is the average attendance rate? | Design Type: DescriptiveComparison: No comparison | Measure: Program attendance recordsConstruct: Student participation rate | OK: At least 75% daily attendance, on average Good: At least 85% daily attendance rate, on average Great: At least 95% daily attendance rate, on average  | February 2023, July 2023 | Implementing organization: To identify possible implementation challenges related to attendance. In instances of low attendance, more support or targeted interventions may be provided.Funder (if relevant): To monitor ongoing implementation success and potential challenges that have broader implications for scalability and demand. |
| **CHECKPOINT 1**: If implementation, usefulness/usability, and utilization targets are not met, organization will attempt to address these issues before moving on to additional research questions. |
| EXAMPLE  |
| Do students who participate in the solution perform better in math than similar students who do not participate? | Design Type: Matched comparison designComparison: Students in solution versus similar students who do not participate in solution | Measure: State standardized testsConstruct: Student math knowledge | OK: On average, solution students perform at least 0.10 standard deviation higher on state standardized test than similar students who do not participate in the solution.Good: On average, solution students perform at least 0.20 standard deviation higher on state standardized test than similar students who do not participate in the solution.Great: On average, solution students perform at least 0.30 standard deviation higher on state standardized test than similar students who do not participate in the solution. | December 2023 | Implementing organization: To determine whether the solution is having the intended effect on students’ math knowledge. If the solution is not having the intended effect, the implementing organization will examine implementation data to identify potential areas that need to be improved.Funder (if relevant): To determine whether the solution is meeting investment goals. This will inform future investment decisions about the solution.The field: To understand the potential effect of the solution, which could generate demand or inform development of similar solutions. |
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Measures

In this section, list and describe the measures you will use to assess changes in your outcomes.

Populate the measures table (Table 3) to detail all tools or measures that will be used to collect data and answer the research questions identified above, with outcome measures listed in the top rows, and any other measures (such as those that collect participant demographics) listed in the lower rows of the table.

Use the first column to provide the name of the measure (and a brief description if it is not a standardized measure) and the construct that it intends to measure (e.g., math knowledge, student growth mindset, math enjoyment). For each measure that your evaluation will use, list the associated research questions and note whether the tool has already been developed or still needs to be created. Include any published information about the measure’s reliability or validity, as well as any information from the implementing organization’s prior use; for example, if a survey had previously been field tested. Reliability refers to how consistently the instrument measures the construct of interest; validity indicates whether the instrument measures what it is supposed to measure.

Include in the last column any concerns or limitations that the team expects might surface.

Table 3. Measures (example)

| Measure and construct | Research question(s) addressed | Developed or to be developed | Reliability/validity | Concerns or challenges |
| --- | --- | --- | --- | --- |
| Measure: Math and Me SurveyConstruct: Student math confidence  | 5 | Developed | The Math and Me math confidence subscale has a Cronbach’s alpha of 0.87 (Adelson & McCoach 2011). | There is a potential concern about reference bias in students’ responses if students with different characteristics or experiences interpret the questions differently in a systematic way.  |
| Measure: Smarter Balanced Assessment Consortium (SBAC)Construct: Student math knowledge | 6 | Developed | Common Core–aligned standardized test. Reliability of the total score from item response theory–based models is between 0.927 and 0.948 for grades 3 to 8. | States may modify test administration or cancel testing during the pandemic. |
| Measure: Student-level demographic data Construct: Student demographic characteristics | 5, 6 | Developed (to be requested from partner districts) | Not applicable | This request will be limited to essential data to minimize district burden. |
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|  |  |  |  |  |

Equity and community voice in solution refinements and evaluation

In this section, use Table 4 to present the key activities planned to ensure that there are opportunities for members of the priority community to engage in an equitable approach to refining and evaluating the solution. These activities may include data collection, co-interpretation of data, refinement of the solution, and sharing findings.

Table 4. Plans for incorporating equity and community voice in solution refinements and reporting (example)

| Aspect of research to inform | Activity | Description of plan or logistics | How information will be used |
| --- | --- | --- | --- |
| Reporting content and method | Present results to districts, schools, and community members | The research partner and implementing organization will prepare a one-page, plain language summary of the results to distribute to district and school leaders, teachers, and parents. The implementing organization will conduct a meeting with district and school staff and host an open community forum at the school to share the results and gather feedback.  | Members of the districts, schools, and community will understand the findings from the research. The findings will inform parents about educational options for their children. The implementing organization will also seek feedback from community members on their interpretation of the findings and potential ways to improve the program. |

Timeline

Use Table 5 to outline the key M&E activities (that is, activities related to developing instruments, collecting data, and analyzing data), the timeline for each activity, and the party responsible for the task. The table should also include checkpoints, where appropriate, as rows underneath the key activities. To the extent possible, activities should be listed in chronological order. In the responsibility column, list the entity responsible for the activity; if multiple entities are responsible, designate one as the lead.

**Table 5. Milestones and timeline (example)**

|  |  |  |
| --- | --- | --- |
| **Activity** | **Timeline**  | **Responsibility** |
| Complete institutional review board approval process | May 2022 | Research partner (lead), with support from implementing organization |
| Complete memoranda of understanding and data use agreements with partner districts | August 2022 | Implementing organization (lead), with support from research partner |
| Administer baseline student survey  | September 2022 | Implementing organization |
| Collect student program attendance data | Weekly, September 2022-June 2023 | Implementing organization |
| Administer mid-year student survey  | January 2023 | Implementing organization |
| Conduct preliminary analysis of student attendance and survey responses | February 2023 | Research partner (lead), with support from implementing organization |
| CHECKPOINT 1: If utilization targets are not met, the implementing organization will attempt to address these issues before moving on to additional research questions. |
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References