

Reclaiming Logic Modeling for Evaluation: A Theory of Action Framework

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Abstract

Logic modeling, the process that explicates how programs are constructed and theorized to bring about change, is considered to be standard evaluation practice. However, logic modeling is often experienced as a transactional, jargon-laden, discrete task undertaken to produce a document to comply with the expectations of an external entity, the consequences of which have minimal or even negative influence on the quality of program evaluation. This article presents the Logic Modeling Theory of Action Framework (LMTAF) which elucidates needs, resources, and central activities of logic modeling, and describes its potential evaluation-related benefits. The LMTAF situates evaluators as the primary intended users of logic modeling, and logic modeling as a fundamental element of each stage of a program evaluation life cycle. We aim to reassert the value of logic modeling for evaluation and provide evaluation practitioners a useful touchstone for reflective practice and future action.

Keywords

logic modeling, theory of action, evaluation practice, program theory

Introduction

In her influential essay, Carol Weiss (1995) asserted that all social programming is based on “theories of change,” the tacit and explicit ideas about how and why a program will have its intended effects. She urged evaluators to shift their focus from solely measuring outcomes to surfacing program assumptions and logic and the intermediate consequences of these ideas. Her propositions sparked a wave of interest in and writing about the use of program theory for evaluation, along with an ever-increasing lexicon of associated terms (e.g., logic models, causal loop diagrams, concept maps, theories of action). And as noted by Lemire et al. (2023), “though important distinctions exist among these labels, their specific uses and interpretation have not been consistent in practice, often reflecting personal preferences, training, source references, or even just plain old habits” (p. 1). In this article, we attend to the purpose and practice of *logic modeling*, which refers to the process through which

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evaluators discern, represent and utilize program theory to design and implement each stage of evaluation. Logic modeling is considered to be a “core evaluation activity” (Patton, 2008, p. 223).

Despite its ubiquity in the profession, ample stories from the field suggest that logic modeling in practice can be experienced by evaluation stakeholders (including evaluators) as a transactional, jargon-laden, discrete task undertaken (endured) to produce a document (most often a spreadsheet) intended to satisfy the expectation of an external entity. Evaluators are not uniformly, or even widely, acculturated into the history, merit, value, and worth of logic modeling, nor prepared and equipped to facilitate a logic modeling process. As Renger and Titcomb (2002) signaled years ago, “there is little guidance to teach students [of evaluation] how to develop a logic model that is true to its intended purpose” (p. 493).

In our professional development (PD) offerings for the American Evaluation Association over the past ten years (i.e., summer institute workshops, webinars, and annual conference workshops), the majority of participants express confusion and frustration with logic modeling. Workshop participants are active evaluators, most of whom have received some training—and in many cases advanced training—in evaluation, and all of whom are tasked with facilitating the creation of one or more logic models in their spheres of influence. Nonetheless, the vast majority exhibit uncertainty about some of the most fundamental aspects of logic modeling. One of the launching activities in our PD sessions asks participants to create a model or narrative of program logic for their own project, their own program, or their own fictional intervention of interest. Questions arise almost immediately: *What is the difference between inputs and outputs? Is this the same as a theory of change or theory of action? Do we have to include needs? Are impacts the same as outcomes? Does it have to be in columns? Is it okay if I use the word services instead of activities? What if I do not know how to do this?* Evaluators may feel unable and ill-equipped to craft a logic model for their own work yet are responsible for facilitating the development and documentation of program theory for the work of others.

The evaluators who attend our AEA sessions are not necessarily representative of the profession as a whole and may participate in a workshop on logic modeling *because* they recognize a lack of earlier preparation and a need for additional training. Yet they are not the only groups who express hesitation about logic modeling. In the course of our work as evaluation practitioners we notice a general trend: while uninitiated program staff and internal evaluators are usually enthusiastic about the prospect of logic modeling, those accustomed to logic modeling are often resistant or suspicious, and tell stories of unsatisfying or frustrating experiences with the practice.

The goal of this article is to offer evaluators, whether novice or experienced, new ways of thinking about the purposes and processes of logic modeling. We begin by addressing three pervasive presumptions about logic modeling that deserve greater scrutiny: (1) that logic modeling is primarily for program planning and development; (2) that logic models cannot be created without substantial stakeholder involvement, and (3) logic models should be created as 4–6 column spreadsheets. We then present the Logic Modeling Theory of Action Framework (LMTAF) which describes the needs and opportunities that might compel and inspire us as evaluators to engage in logic modeling, the key resources and supports that are necessary for evaluators to carry out useful logic modeling in their own contexts, and the primary logic modeling activities that evaluators should consider undertaking at each stage of the cycle of evaluation. In addition, the LMTAF puts forth the immediate benefits to evaluation that result from logic modeling activities, as well as envisions what would happen in the long-term for the field of evaluation if evaluators *en masse* competently and confidently carried out logic modeling throughout the life cycle of program evaluation. Ultimately, we believe that if program evaluation were predicated on the continuous examination, explication, analysis, interpretation, and use of program logic, “evaluation practices will improve, evaluation use will increase, evaluation as a profession will be promoted, and evaluation generally will be more likely to contribute to the generation of theory and knowledge about effective human action” (AEA Mission).

Logic Modeling Presumptions

As evaluation practitioners and educators, we have experienced three dominant presumptions about logic modeling that muddle the value of the undertaking.

Presumption #1: Logic Modeling Is Primarily for Program Planning and Development

A key intent of this article is to recast logic modeling for evaluation. A primary purpose of logic modeling is to enable evaluators to conduct their work in a way that is feasible, ethical, accurate, and useful. Overwhelmingly, however, logic modeling (including the development of logic models) is envisaged and undertaken as something that evaluators do on behalf of program personnel *in the service of program planning and development*. It is not difficult to understand why this may be. Funders rightly and accurately promote the benefits of logic modeling for program development and management. For example, W. K. Kelloggs's Logic Model Development Guide (2004) asserts logic models as tools for learning that "serve to increase the practitioner's voice in the domains of [program] planning, design, implementation, analysis, and knowledge generation" (p. iii). Alongside funders, highly regarded organizations also couple logic modeling with program planning and implementation. For example, Creative Research Solutions (Robinson, 2018) provides resources for "Using Logic Models for Program Planning and Evaluation," the Department of Health and Human Services introduces logic models as "effective tools to assist in program planning, implementation, management, evaluation, and reporting," (*Logic Model Tip Sheet*, n.d.) and even Wikipedia notes that logic models are presented as those tools "used by planners, funders, managers and evaluators of programs and interventions to plan, communicate, implement and evaluate them" ("Logic Model", 2023). Logic modeling is championed as a powerful mechanism of contemporary program planning and program administration, and a high-value undertaking in any organizational setting. The dominant narrative about logic modeling appears to be that it benefits *programs and organizations*—not that it is fundamental to *evaluation*.

This dominant narrative may, at least in part, account for our experience of hearing practicing evaluators whom we teach, train, and/or work alongside assert that they are responsible for logic modeling as a means of supporting program development. They typically cite one or both of the following justifications: the need to help program personnel comply with outside expectations (from funders or organizational higher-ups); and/or the democratic instinct to help bring intersubjectivity to a group where important assumptions about program logic remain tacit and unarticulated. While these justifications make sense, they lie outside of an evaluator's core mission; indeed, in their definitive work on program theory and program modeling, Funnell and Rogers identified "not using the program theory for *evaluation*" as one of the possible "traps" of logic modeling (2011, p. 50). Michael Scriven put it another way when he warned the profession against being seduced into the "luxury" of elucidating program theory, and doing what he surmises amounts to unpaid "professional development work" at the expense of "evaluators answering straightforward formative questions or making summative judgments" (Scriven, 1991, p. 360).

The costs of this labor may go beyond the pecuniary; when evaluators engage in logic modeling for program development purposes, they run the very real risk of harming the evaluative process. They may inadvertently step into the role of surrogate program leader or project manager, and more gravely, the evaluator risks becoming an advocate for the program at the expense of taking responsibility for its systemic, methodical, critical examination. In this way, evaluation may become a process of *program confirmation and endorsement* rather than a *process of critical inquiry*.

We are not suggesting that logic modeling should not be used for program advancement. As Jennifer Greene (2018) notes, there are a number of contributions to program development, including "stronger program designs", "meaningful participation by diverse constituencies" and "contributions

to organizational capacity” (pp. 991–992). However, logic modeling originated in the field of evaluation, and is a “standard practice” (p. 990) of the profession, and our purpose here is to encourage evaluators to scrutinize the presumption that logic models must primarily and predominantly serve the purpose of program development. We encourage the evaluation field to reclaim logic modeling—as Weiss intended—to satisfy and navigate the demands of high-quality program evaluation.

Presumption #2: Logic Models Cannot Be Created without Substantial Stakeholder Involvement

Whether exclusively for program evaluation, or for program planning and development, there is a pervasive belief that logic modeling is essentially the set of actions an evaluator takes to get someone to complete, to create, complete, “fill-in,” or otherwise produce a logic model. The reality is that many evaluators and evaluation stakeholders see the production of a logic model as a one-time, stand-alone compliance activity—an “eat your veggies” situation. It is too often communicated as something that needs to happen in a delimited period of time (i.e., typically earlier in the contract or in the beginning of the program evaluation planning process), spearheaded by an evaluator, that requires extensive involvement with and input from program personnel.

We can understand the origins of these ideas. Developing a logic model is widely asserted as “an essential first step in program evaluation” (Renger & Titcomb, 2002), which appears to foreclose the need to extend logic modeling throughout the evaluative cycle. Moreover, our field has a strong ethos of stakeholder engagement and the expectation that good and ethical evaluation is participatory and highly collaborative. Evaluators understandably assume that the creation of a logic model must also be a highly collaborative, engaging undertaking, yet wrestle with the balance between being collaborative and just getting it done. In pre-workshop assessments participants in our PD sessions routinely express “I know I have to use program logic and do logic modeling,” but “I can’t get stakeholders to understand the terminology or to fill out the template that I provide.” They express having a hard time “convincing program managers to buy in and engage in the process” and wrestle with how to “make the model a living document that can be changed throughout time to accurately reflect what is happening and why.” A common lament of these evaluators is “feeling weary of feeling forced to make program folks create logic models and then never using them.”

There are good intentions behind an evaluator’s desire to “get program personnel to care about and make a logic model” that connect with a desire to allow logic models to serve the needs of program development and advancement (see the section above). However, logic modeling for evaluation does not imply or require that program personnel must put together “their” logic model. Rather logic modeling entails evaluators deciphering, testing, interrogating, measuring, communicating, and questioning program logic throughout the cycle of program evaluation. We logic model when we engage stakeholders, describe the program, focus our evaluation design, gather credible evidence, present our findings and justify our conclusions, and when we work to ensure use. Inherent to an evaluator’s job is to understand and interrogate the logic of the evaluand at every step and stage of evaluation, but it is not a requirement to facilitate stakeholder creation of its representation. An evaluator or evaluation team can produce a model of program logic, particularly an initial version of program logic, *without direct stakeholder input*. Indeed, doing so may mitigate one of the field’s strongest concerns about logic modeling, namely that “when theory is turned into a rigid process, an algorithm, or a forced consensus...the danger is that the program or project becomes enmeshed in an analysis that may not coincide with how program people think about it” (Kushner, 2017, p. 234).

Renger (2010) offers a methodology for evaluators to use documentation to explicate program logic using four steps: (1) gather relevant documentation; (2) identify the range of “antecedent conditions” that the program is aiming to change; (3) posit the relationships among the conditions as a

visual representation of program theory; (4) verify with program stakeholders. To this approach, we suggest that evaluators should, as feasible and appropriate,¹ search for literature that may have been used to develop or justify the program, and locate any published studies that directly relate to program activities, components, and/or intended outcomes. Through a source documentation methodology, the evaluator can distill program logic from a synthesis of documents and artifacts, and create a model and/or narrative of logic using the terminology and language of stakeholders largely without needing their direct or immediate participation.

In this approach, the evaluator documents and models their interpretation of a program's espoused logic (including potential gaps and missing information) based on their analysis of the artifactual data and research. Then, the evaluator can *and should* engage in an iterative process to seek and integrate feedback from a range of stakeholder groups, and procure insights that help fill the gaps in logic that may exist. As Renger (2022) notes, it may be of particular importance in the iterative feedback process for evaluators to seek out those at the "operational level" who are likely aware of program details and practices that people at the leadership level are not (p. 134). An evaluator created logic model puts the technical and temporal load in the place where it rightly belongs, in the hands of skilled professional evaluators. It also may preclude a range of tensions, including the struggle to "get non-evaluators to understand the difference between outputs and outcomes, and the importance of that difference," and the need to ensure their stakeholders "remember the terminology and definitions of each component of a logic model and use those terms to shape what they do." In this way, the evaluator is responsible for understanding the lexicon of logic modeling, not program personnel or participants.

Presumption #3: Logic Models Should Be Created as 4-6 Column Spreadsheets

The vast majority of tip sheets, checklists, guidelines and other "how-to" documents of logic modeling showcase and advocate for the left-to-right column approach to depicting program logic. For example, consider the four most commonly mentioned resources identified by participants in our AEA PD workshops for guidance about how to facilitate logic modeling as an evaluator: (1) the CDC's Guide to Developing and Using a Logic Model (CDC Division for Heart Disease and Stroke Prevention, n.d.); (2) the W.K. Kellogg Foundation Logic Model Development Guide (2004); (3) the Department of Health and Human Service Logic Model Tip Sheet (Logic Model Tip Sheet, n.d.); and (4) the University of Wisconsin-Madison's Program Development and Evaluation Logic Model examples (Enhancing Program Performance with Logic Models, 2023). These resources are very helpful, and quite specific—they all promote and support the creation of the linear column-based logic model headed by a standard set of terms (i.e., inputs, outputs, outcomes, impacts) as the sole or central undertaking of logic modeling.

However, while column-based logic models with standard terms are the most common, there is no one ideal way to model program logic. Depending on need and context, program logic can be depicted in any number of formats such as pipeline, outcomes chains, and systems diagrams. Yes, Logic models are representations of program theories, usually in the form of a diagram (Funnell & Rogers, 2011), but they do not have to be.

In a given evaluation context, there could be multiple models of program logic at play, a version that the evaluator/evaluation team uses to communicate with one another to make internal decisions about methods, data analysis, interpretation of findings, and reporting; another version that the evaluator uses when engaging and communicating with stakeholders, and perhaps another—the one that stakeholders have made for their own purposes such as program development, marketing and communicating with funders. Evaluators can ask themselves whether it would suffice to simply describe a program's seemingly logical sequence, or if they also need to include an explanation of why that sequence operates as it does (i.e., a theory of change). Evaluators can ask themselves, does the

evaluation require the investigation of causal mechanisms or does it call for more narrowly defined and operationalized measures? Answers to these questions help the evaluator to determine the documented form(s) that the program's evaluation logic should take (Patton, 2008). The big idea here is that in the context of evaluation, the *right* model of program logic is the one that accurately depicts/ explains how the evaluand is structured and theorized to work that evaluators understand and use to ground their decision-making and subsequent action-taking in all aspects of program evaluation. It may or may not entail columns or spreadsheets.

In addition, when facilitating stakeholder feedback on logic models, evaluators will need to attend carefully to the language that they use. The vocabulary of evaluation uses terms and concepts of technical import to our profession; these set us apart from other disciplines and enable us to communicate with one another in robust and intellectually meaningful ways. However, the language of evaluation is typically not the language of program development and implementation, nor a language of lived experience by real people. Our profession implores us to use language/concepts in ways that "accurately reflect how individuals view their own group memberships and create nuanced understandings that move beyond simple classifications" (Yarbrough et al., 2011, p. 8). Instead of showing stakeholders a six-column spreadsheet and asking them their perceptions of their "outcomes" we might show them a picture that enables them to respond to questions about their "aspirations" or "long-term hopes." Similarly, in lieu of asking, "Are these outputs the outputs you expect to obtain through the service implementation?" we could inquire, "How would the people you serve show you that they benefited in the activities in which they participated?" Using logic modeling language and framing devices that are of meaning and accessible to program stakeholders, is more likely to increase the merit, value and worth of evaluation.

Logic Modeling Theory of Action Framework. In Figure 1, we present the Logic Modeling Theory of Action Framework (LMTAF) that outlines the needs and opportunities that compel and inspire us as evaluation educators, researchers, and practitioners to advance logic modeling for evaluation. This includes the key resources and supports that are necessary for evaluators to carry out useful logic modeling in their own contexts, and the primary logic modeling activities that evaluators could undertake at each stage of the cycle of evaluation. In addition, the Framework puts forth the immediate benefits to evaluation that result from logic modeling activities, as well as envisions what we imagine would happen in the long-term for the field of evaluation if evaluators as a whole competently and confidently carried out logic modeling throughout the life cycle of program evaluation. We chose to depict the LMTAF as linear, using a column format and heading labels most common to our profession; we believe this is the most accessible and useful format at this point in time for its intended audience, practicing evaluators.

The LMTAF situates evaluators as the primary intended users of logic modeling and showcases logic modeling as fundamental to each stage of a program's evaluation. Ultimately, we believe that when program evaluation is more fully and consistently predicated on the continuous examination, explication, analysis, interpretation and use of program logic, that is logic modeling,

"evaluation practices will improve, evaluation use will increase, evaluation as a profession will be promoted, and evaluation generally will be more likely to contribute to the generation of theory and knowledge about effective human action" (*AEA Mission, Vision and Values*, n.d.)

We aim to re-center logic modeling in the evaluation profession, and provide evaluation practitioners with a touchstone for reflective practice and future action. Similar to the purpose of the AEA competencies (King & Stevahn, 2020), the LMTAF is intended to offer some clarity about what logic modeling means to the profession of evaluation, to make clear some important characteristics of logic modeling practice in evaluation, and to challenge us to further advance our field's capacity

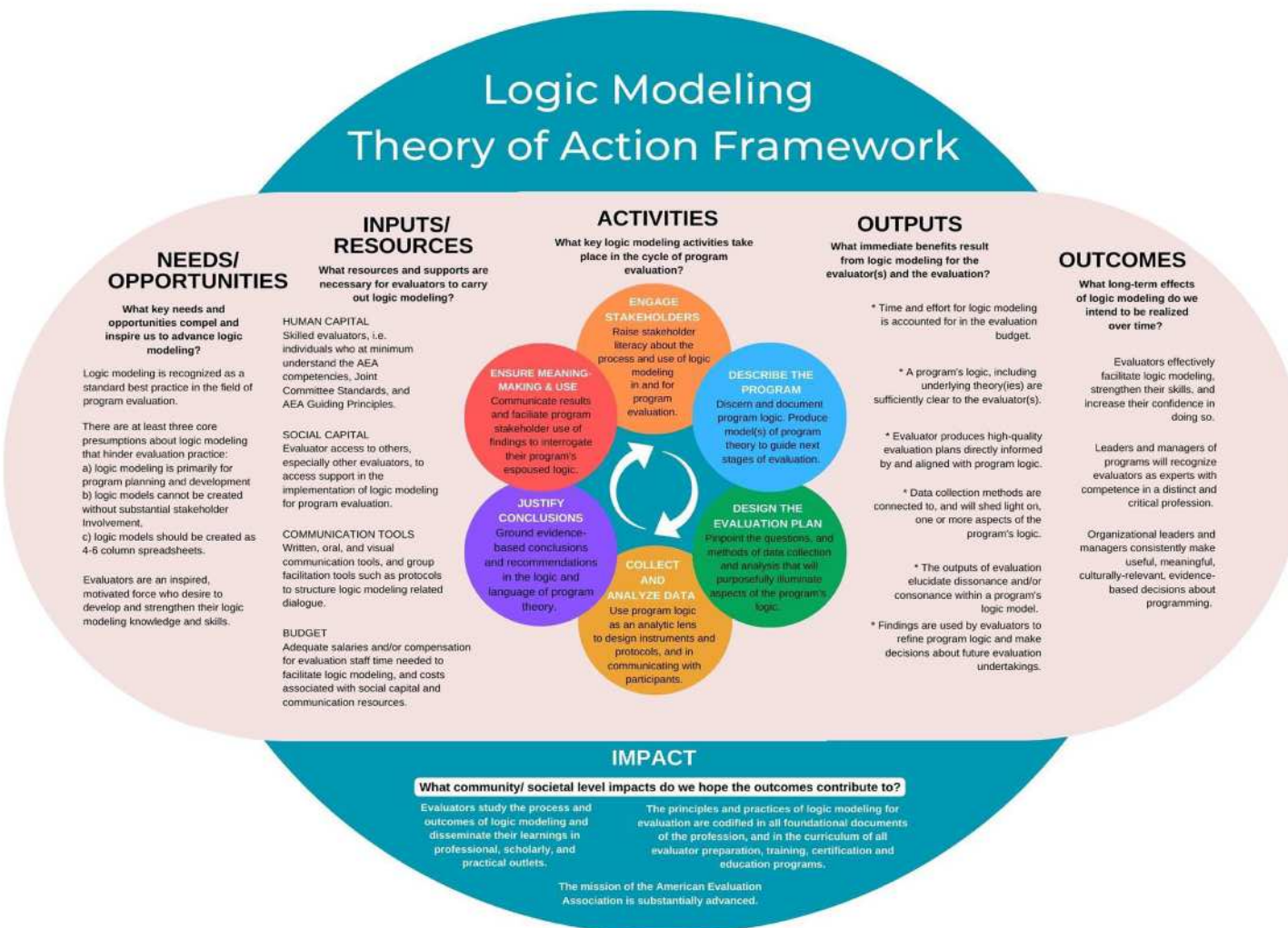


Figure 1. Logic Modeling Theory of Action Framework.

to advance effective human action. The LMTAF is not meant to be definitive; rather, it is an expression of the theory of action that drives us, the authors of this article, to do what we do as scholars, educators, and practitioners of evaluation.

Needs and Opportunities: What Key Needs and Opportunities Compel and Inspire Us (Evaluators) to Engage in Logic Modeling?

There are compelling needs and opportunities that inspire us to construct, design, and share the Logic Modeling Theory of Action Framework.

Logic Modeling Is a Core Program Evaluation Undertaking. Logic modeling is a concept and set of skills unique to the profession of evaluation, an important value-add, which sets us apart from other disciplines. Seminal documents and organizations in evaluation assert that logic modeling is a core undertaking for evaluators. Direct reference to the importance of evaluator skill in logic modeling is represented in the AEA Evaluator Competencies (King & Stevahn, 2020): competent evaluators “identify assumptions that underlie methodologies and program logic,” and “use program logic and program theory as appropriate,” and the AEA Statement on Cultural Competence (Public Statement on Cultural Competence in Evaluation, 2011): a culturally competent evaluator “constructs a model or theory of how the evaluand operates” that “reflects the diverse values and perspectives of key stakeholder groups.” Logic modeling is substantiated in the *Encyclopedia of Evaluation* as “an evaluation approach,” one that starts with the construction of a model of how a program is believed to bring about its intended outcomes, which is then used to guide the evaluation cycle (Rogers, 2005). Step 9 of the Utilization-Focused Checklist (Patton, 2013) directs evaluators to “determine what intervention model or theory of change is being evaluated” (p. 1). The premise is that “a program or intervention can usefully be conceptualized as a model or theory which describes how intended outcomes will be produced,” and a primary task of evaluators is to “appropriately match the evaluation design and measurement approach to how the program or intervention is conceptualized” (p. 10). The Office of Economic Cooperation and Development (OECD) Standards for Development Evaluation (*Quality Standards for Development Evaluation*, 2010) delineate that the object and scope of evaluation must entail a clear definition of the evaluand, “including a description of the intervention logic or theory” (p. 8) and that a quality evaluation report “describes and assesses the intervention logic or theory, including underlying assumptions and factors affecting the success of the intervention” (p. 12). The CDC specifically names logic modeling as an approach to evaluation and provides extensive guidelines and directions on how to take the key steps to developing useful logic models for evaluation. The list of important groups and individual thinkers that have expressed the importance of logic modeling goes on, but we will not belabor their enumeration. Rather, we will add that our own experience has convinced us that logic modeling is crucial to high-quality program evaluation, and that it is a core practice of our profession.

Evaluators Want to Logic Model Well. Evaluators routinely find themselves in the situation of being able (and asked) to facilitate, direct, or otherwise strongly influence the scope, scale and elements of an evaluation. Though an evaluation proposal can be tightly delimited, narrow and/or prescriptive (and therefore may potentially preclude enacting foundational evaluation approaches/activities such as logic modeling), a great many evaluation solicitations, contracting situations, and evaluation contexts are unspecified, more-or-less open, and flexible. In these circumstances especially, evaluators recognize the opportunity to engage in logic modeling—they know it is a powerful and essential undertaking that will help them ground evaluation planning, methodological design, build evaluation capacity, and foster organizational learning. Evaluators communicate a strong desire to carry out logic modeling in rigorous, useful, systematic,

and engaging ways. Below is a small subset of illustrative reasons that participants give for attending our “Strategies for Making the Most of Logic Modeling” professional development workshops:

I learned a little about [logic models] in graduate school, but I need a refresher to support the current work I am doing. I want to know how to discuss logic models in a way that is accessible to others.

I am going to be doing evaluation and logic model development in my new position and supervising evaluators. I’m an epidemiologist who is not formally trained in evaluation, so I am trying to learn more.

I’ve drafted logic models before, but I’d like to understand the difference between outputs and outcomes, and outcomes and impact. I’m also looking to improve how I can communicate those two column pieces or show the value of the logic model to program personnel so that they can improve their program strategies.

I think logic models are powerful but also don’t think I’m using them to the fullest extent.

I’m an internal evaluator, my organization is in the process of updating its logic model and I’m eager to make sure it is as useful a process as possible for learning and not just a box checking exercise.

We are inspired by these and other heartfelt sentiments to find ways to advance the core competency of logic modeling for evaluators and believe our profession has strong needs and opportunities in the domain of logic modeling. As noted by Renger and Titcomb (2002),

“The challenge...is that while much has been written about the importance of logic models and the essential elements there is a dearth of literature that actually provides step-by-step instruction as to how to develop a logic model” (p. 503).

Inputs/Resources: What Resources Are Necessary for Evaluators to Carry Out Logic Modeling?

There are at least four categories of inputs that provide evaluators with a baseline of necessary resources to successfully engage in logic modeling: human capital, social capital, communication tools, and budget.

Human Capital. The enactment of logic modeling through a cycle of program evaluation requires the efforts of one or more skilled, competent evaluators. For us this means that logic modeling ought not to be undertaken unless the evaluator holds basic competencies, attends to the Joint Committee Standards for Evaluation (Yarbrough et al., 2011), and considers both the AEA Guiding Principles and the AEA Statement on Cultural Competence (*Public Statement on Cultural Competence in Evaluation*, 2011) in their work. (Obviously, one could argue that no evaluation activity should be undertaken without a skilled evaluator.) Beyond those foundational attributes, those most likely to be able to successfully negotiate the dance of deciphering and using program logic in and for program evaluation will have a strong understanding of the knowledge, principles, skills and practices specific to logic modeling. Evaluators need educational opportunities to acquire and develop these essential skills.

Social Capital. An evaluator needs access to others who can engage in shared dialogue and meaning-making throughout the life cycle of a program’s evaluation. The quality of logic modeling is highly

dependent on the ability of the evaluator to learn, understand, conceptualize, and use program logic. Learning is a socially constructed phenomenon. An evaluator needs to test their own theories and ideas about a program's logic, as such they need access to others who speak the language of logic modeling and therefore who are able to offer critical feedback. This may be another person on the evaluation team, or someone outside the context of the specific evaluation. As participants shared in post-workshop assessments,

Being able to work with other evaluators to assess and provide feedback on the logic models I am creating and using was so useful and enlightening. It really improved my practice. I need to find a way, and I think we [evaluators] all need to find a way to make that happen in our real work life and evaluation practice.

Communication Tools. Written, verbal, and visual communication tools are crucial for evaluators to process and make meaning of the data, artifacts, and materials of program logic and to engage in meaningful dialogue with their evaluation team members and stakeholders. We rely heavily on such online tools as Zoom, Jamboard, Canva, and Drive, in person tools such as meeting space, white boards, paper/stickies, and group facilitation tools such as dialogue protocols to structure discussion. We note here that modern technology does not make the magic of logic modeling happen—people do—but flexible and interactive communication tools can be helpful.

Budget. As with all elements of an evaluation, there are costs associated with logic modeling, and financial resources must be devoted to it. The budget should include appropriate compensation for the time and effort of internal evaluation staff and/or external evaluators, as well as the cost for communication tools. Evaluator time, resources, and effort for logic modeling should be clearly delineated and accounted for in the evaluation budget and contract.

Activities: What Key Logic Modeling Activities Take Place in the Cycle of Program Evaluation?

Logic modeling is an essential piece of each phase of the evaluation cycle. Here, we use the CDC's frequently-cited six-step approach to evaluation (*A Framework for Program Evaluation*, 2017) to describe the role of logic modeling when: engaging stakeholders; describing the program; focusing the evaluation design; gathering credible evidence; justifying conclusions; and ensuring use and sharing lessons.

Engage Stakeholders. From the outset of a project, evaluators can raise stakeholder literacy about the importance of program logic to an evaluators' ability to conduct rigorous, appropriate, and accurate work. Hence, it needs to be accounted for in the budget. Critically, program personnel with little experience with logic modeling, or whose past experiences have soured them on it, need to understand that logic modeling will reveal data needs and provide an essential framework for interpreting evaluation results.

Describe the Program. Evaluators must discern the needs and opportunities that compel program personnel to deliver their program. In addition, they need to understand the essential inputs and resources, core activities, and intended consequences of the program. This will often involve a range of evaluative activities including a review of relevant literature, a desk review of program documents, and perhaps some key informant interviews. The evaluator will produce one or more written and or diagrammed expressions of program logic to be used in the subsequent stages of evaluation with program personnel and participants.

Design and Focus the Evaluation Plan. Once equipped with an accurate and thorough understanding of program logic (including potential gaps and explicit and tacit assumptions), the evaluator determines what questions to investigate, and can use their methodological expertise to understand how to approach that investigation. This stage of work often yields surprises; for example, we have entered into projects suspecting that we will focus our evaluation on outcomes, only to find that the most important questions center on a program's activities or inputs. Similarly, we have been hired with the assumption that we would conduct a purely qualitative study with participant interviews, and determined from program theory that a network analysis approach was warranted. We have made these pivots in collaboration with stakeholders, using the explicit logic of the program to justify and explain our recommendations and decisions.

Collect and Analyze Data. The evaluation questions and design decisions made in the prior step will be the primary driver of data collection and analysis. Therefore, all data collection and analysis activities will be directly tied to program logic and intended to generate insight not only into what occurred but why. In addition, it is also important to appropriately infuse the language of program logic into participant-facing instruments and protocols. Evaluators can help ensure that program logic is recognizable to participants, that is, that they are aware of the what, why, and how of data collection activities. In more participatory and collaborative approaches, stakeholders, including clients, will likely co-analyze and interpret data based on the logic frame.

Justify Conclusions. Evaluators will note how emergent findings appear to support one or more elements of program logic, and where findings may reveal dissonance between program logic and results. Evaluation findings and conclusions should be articulated to stakeholders using the language of their program. To offer a simplistic example: an evaluation of a one-week training may reveal minimal learning gains by attendees and conclude that the duration of the training was insufficient to result in meaningful benefits for participants. Program logic may assert that participants should reflect on each lesson after it is presented, but evidence suggests that they were pressed for time and had few opportunities to pause and reflect. Here, the evaluator can suggest that the program's planned logic (participants will reflect after sessions) did not take place in practice, and that the allotted time was miscalculated or misused. Regardless, the conclusion is grounded in the program-specific logic around which the evaluand was designed.

Ensure Meaning-Making and Use. When evaluators ground results and align potential recommendations in essential aspects of program logic, the more likely they will be actionable, accessible, and useful to program personnel. To extend the overly simplistic example from above, there is a wide gulf between the utility of a finding such as "participants demonstrate minimal learning gains" and "the minimal learning gains demonstrated by participants may be due, in part, to the minimal time that they were given to pause and reflect on lessons." What caused the time crunch? What assumptions about the timing of the training turned out to be incorrect? What changes can be made to ensure that reflection time is allotted? These are the types of meaning-rich questions that program personnel are set up to explore when an evaluation has been firmly grounded in program logic.

Outputs: What Immediate Benefits Result from Logic Modeling for the Evaluator(s) and the Evaluation?

There are a range of immediate benefits to the evaluator and the evaluation that result from the core logic modeling activities. If the planned logic modeling activities are carried out with fidelity, we should

expect to see the time and effort necessary for logic modeling to be delineated and accounted for in the budget for evaluation. A program's logic and underlying assumptions will become clear to the evaluator and the evaluation team and will honor and include the language and approaches that are already in use and of meaning to the evaluation stakeholders. With this documentation, the evaluator(s) will be able to produce a high-quality evaluation plan that is directly informed by and aligned with the program's logic. Namely, it will be clear to the evaluator (and their stakeholders) how proposed methods of data collection and analysis are designed to shed light on key aspects of the program's logic.

Outputs of evaluation (i.e., reports, findings, communications) will elucidate dissonance and/or consonance within a program's logic. While sharing results and evaluation findings, the evaluator will be on the lookout for new information about the implied or stated logic and theories that live within the minds of program staff, and seek to uncover assumptions about why they do what they do and what they expected to have happened. These discoveries can and should be used by evaluators to make updates, revise, and otherwise construct a more robust and accurate model, depictions, and descriptions of program logic. These "new" logic models enable evaluators to make evidence-informed, empirically sound, culturally responsive decisions about how best to describe the program and plan future evaluation activities and approaches.

Outcomes: What Long-Term Effects of Logic Modeling Do We Intend to Be Realized Over Time?

Widespread enactment of high-quality logic modeling will result in a significant increase in an evaluator's sense of efficacy. Bandura (1977) explains self-efficacy as a mechanism for analyzing behavioral changes and as "the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 193). Self-efficacy beliefs determine an individual's level of motivation as exhibited by the amount of effort exerted to undertake an activity, and level of persistence in the face of hardship. Evaluators who persevere and successfully engage in logic modeling activities will, over time, collect invaluable "mastery" experiences that bolster their confidence in their ability to successfully carry out meaningful and useful program evaluation. Crucially, better program evaluation is more likely to lead to better programming and realizable program outcomes. Program stakeholders, reaping the benefits of program evaluation and stronger programming, will more often see evaluators as experts with competence in a distinct and critical profession.

In addition, the contribution of higher-quality evaluation will result in program improvement. Clients and/or program personnel will be positioned to make formative and summative judgments about their work, including understanding what additional inputs and resources they need and ways to modify or scale their activities and services. In addition, they will have documentation that allows them to both celebrate and communicate their efforts, including their ongoing learning, to funders, clients, and community members.

Influence: What Professional and Community-Wide Impacts Do We Hope Widespread Logic Modeling Will Contribute To?

If evaluators *en masse* facilitate logic modeling for the purposes of advancing evaluation, then logic modeling will take place in a wide range of program evaluation contexts, settings, and sectors. As the volume and prevalence of logic modeling for evaluation increases, a commensurate level of demand and provision for training and professional development in this skill area will emerge. Hence, it is likely that the curriculum of evaluator preparation, training, certification and education programs may increasingly work to instill deep appreciation for logic modeling, and enable the acquisition of the methodological, contextual, and management skills of logic modeling. In these ways, the

value, merit, and worth of logic modeling will become more prevalent in the evaluation field's professional and scholarly discourse. As our profession amasses new insights and shared clarity about logic modeling as a core evaluative undertaking, we believe the tenets and significance of logic modeling for evaluation will be reflected in all reified foundational documents of the evaluation field, including the AEA's Guiding Principles for Evaluators (*Guiding Principles For Evaluators*, 2018) the 2018 AEA Evaluator Competencies (King & Stevahn, 2020), and the JCSEE Program Evaluation Standards Statements (Yarbrough et al., 2011). Most importantly, we believe that when logic modeling becomes universally recognized as a unique and foundational aspect of evaluation, consistently undertaken with rigor, becomes endemic to the practice of evaluation, and empirically understood by the field, evaluation will, in all likelihood, contribute to the generation of theory and knowledge about effective human action.

Discussion & Conclusion

While we have countered some widespread presumptions about logic modeling in this article, we have not directly addressed its critiques. A number of trenchant and nuanced critiques of logic-based evaluation exist, particularly from evaluators who work with highly complex programs and those who take developmental and/or postmodern approaches. For example, some evaluators have observed a narrowing or constraining effect of logic models, noting that "the problem is that solutions to problems within complex environments are constructed as if they weren't complex" (Burns & Worsley, 2015, p. 18). Developmental evaluation is sometimes seen as offering "an alternative to logic models" (Donaldson & Franck, 2021, n.p.) through its highly adaptive and emergent approach, though there are certainly cases where developmental evaluation is used alongside more traditional, logic-based evaluation (see Mitchell, 2018). For some feminist evaluators, the "privileging of logic and rationality as dominant, authoritative, or exclusive ways of knowing while other forms are largely devalued," is seen as an artifact of "masculine epistemology" (Brisolara, 2014, p. 16).

We appreciate these and other critiques. While we find immense value in the process and products associated with high-quality logic modeling, we do not mean to suggest that logic modeling must be present in all evaluations. Rather, we assert that we—evaluators—are the primary intended users of logic modeling, and that the process can and should center the needs of evaluators and evaluation at its core. In addition, we understand logic modeling as a key strategy for helping evaluators avoid the "traps" of falling into professional development or program level management roles. In fact, half-hearted logic modeling, or logic modeling "just" for program development may inadvertently reify existing power structures, further exclude marginalized voices, miss the opportunity to interrogate institutional inequity, and forgo evaluation's potential to advance social justice. When logic modeling is robust, it enables evaluators to identify and operationalize critical program variables without foreclosing on the important contextual, cultural and theoretical complexities that may be at play, and without forcing program personnel to concede to a narrow, linear understanding of their work.

We find logic modeling to be nothing short of essential, most of the time, we can not do our evaluation work without it. We agree with Weiss (1998), "We cannot control all aspects of the evaluation. But, we have a responsibility to think clearly about which elements of the evaluation we want to see used, by whom, and for what purposes" (p. 32). Our purpose in writing this article is to surface and address common presumptions about logic modeling, to provide practical guidance for reclaiming logic modeling for evaluation, and to open up new avenues of conversation about the value and practice of logic modeling within the profession.

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Note

1. Renger notes that conducting a full-fledged literature review is often infeasible because of time, resources, or lack of expertise in the program area. We appreciate this and agree that conducting a literature review is outside the scope of any typical logic modeling process. However, we also see value in knowing if there is relevant literature that has already offered insights about key activities, outcomes, or similar programming efforts.

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