

Collaborative Logic Modeling

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Implementation: From Vision to Impact
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AN AWARDEE-LED SESSION

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Session Type:

Collaborative Session: a coordinated presentation with colleagues from several MSPs that goes beyond a simple showcase of project work.

Conference Strand:

Evaluation, Research and Implementation: The Feedback Loop



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Cover photo: Participant discussion

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About This Summary

This document focuses on a presentation in one of the awardee-led sessions at the 2013 Math and Science Partnership Learning Network Conference (LNC). The intent is to provide a summary of presentation highlights as well as participant discussion.

Brief descriptions of all awardee-led presentations may be found at the 2013 LNC site on MSPnet (see URL at right). Original PowerPoint slide presentations are also available on MSPnet.

The LNC Online:

http://hub.mspnet.org/index.cfm/msp_conf_2013

Readers interested in pursuing any of the plenary session presentations from the 2013 LNC are encouraged to access MSPnet to find a document summarizing these sessions, full video recordings of the presentations, the original PowerPoint presentations, and detailed speaker biographies. All abstracts submitted for breakout sessions during the conference are also available on MSPnet.

COLLABORATIVE LOGIC MODELING: ALIGNING PROGRAM DEVELOPERS, RESEARCHERS AND EVALUATORS

Introduction to Collaborative Logic Modeling (CLM)

Susan Tucker
Evaluation & Development Associates, LLC

Susan Tucker opens the session, explaining that as an external evaluator she has been involved with all three MSPs featured during this session to some degree. After introducing the other presenters, she briefly reviews the agenda.

Agenda

1. Logic Model theories of action and uses
2. Logic Models applied to MSP partnerships
3. Developing project map for overall partnership
4. Developing CLMs for separate components
5. Accommodating for iterations over time
6. Aligning R&E
7. Building capacity to use CLM within projects
8. Software strategies

Tucker launches the session with a discussion exercise to surface participant expectations.

Think-Pair-Share: Expectations

- How have you had experience using LM in your MSP?
- If so, identify 1 success and 1 challenge using LM?
- If not, what do you want to get out of today?

Panel of Presenters

- Susan Tucker, Evaluation & Development Associates LLC
- Ray Ivatt, Evaluation & Development Associates LLC
- Robert Curtis, Alameda County School District; Director, IMSS MSP
- Jeffrey Seitz, California State University, East Bay; Principal Investigator, IMSS MSP
- Davida Fischman, California State University, San Bernardino; Principal Investigator and Director, Mathematical ACES MSP
- DeWayne Morgan, University of Maryland; Evaluator, (MSP)²



Susan Tucker

The MSPs:

Minority Student Pipeline Math
Science Partnership - (MSP)²
msspquared.mspnet.org/

SF Bay Integrated Middle School
Science Project (IMSS)
imss.mspnet.org/

Mathematical ACES (Algebraic
Concepts for Elementary Students)
aces.mspnet.org/

Summary: NSF requires articulating theories of change and/or logic models (LM) for MSP proposal submission. Situated in three MSP targeted partnership programs, a panel of PIs, project directors, district leaders, and evaluators will share their journeys using LMs formatively for continuous improvement. This panel used a collaborative LM development (CLM) process for management, research, evaluation and professional development initiatives along with examples. Findings address the benefits and challenges of using CLM to: 1) help build consensus and foster collaboration across complex layers of networked partners, 2) strengthen program management, implementation, research and evaluation designs, and 3) identify and articulate negotiated theories of change. Panel members will help participants apply templates to explore how CLM can be adapted for their projects.

Participant Expectations/Needs

- I want to learn what a logic model is and how I can use it from a teacher's perspective.
 - I want to learn the same thing from an evaluator's perspective, helping the program develop in a formative way.
 - We want to find additional ways to help our evaluator from our perspective as district-level specialists and managers who gather the data.
- It's a common problem, to get a huge project down on paper and see what the relationships are, because there's a balance between complexity and simplicity.

Logic Model Theory of Action

- A **model** is an **abstraction** designed to identify **important elements & relations** in a **system**.
- *LM can serve as the basis for program evaluation, research and project management plans, involving stakeholders in logic modeling process so that buy-in and "ownership" occurs, which is central to the success of the subsequent evaluation and research efforts and use of results.*
(Torres, Hopson, & Casey, 2008)

Responses from participants are summarized at left. Tucker begins with a focus on the big picture before honing in on the challenges, what a logic model can and cannot do, and an approach being developed called collaborative logic modeling (CLM). CLM grew out of observations by E&D Associates) that if an evaluator or a director or any one person in these partnership projects states the logic model it does not capture the nuances and needs of the project very well, Tucker explains.

Logic models (LMs) are just that, a model, she notes. They don't contain all the details, they are an abstraction, and they try to get at important elements and relations. LMs may look like a laundry list, or they may look like a chart with arrows and lines linking the elements. E&D Associates have used this as evaluators for many years as a way to map a project and link the evaluation, research, project management, and the project activities.

There are many benefits to logic modeling, Tucker observes. She encourages session participants to refer back to the list of benefits below as they hear more about logic models from the other panelists: Are the LMs that panelists describe leading to these benefits? They should also be able to put all of the elements of a logic model page, which can be very challenging she acknowledges. Tucker relates that she heard someone at this LNC talk about the "secret sauce" in a project, and observes that you should be able to tell that secret sauce by looking at the logic model.

Logic Model Uses & Benefits

- Represents program and **theories/assumptions** graphically
- Facilitates conversation @ **common language** & goals across partners
- Provides **framework for joint planning and evaluation**
- Provides planners & implementers with **road map**
- **Aligns with budget** to articulate & review priorities
- Keeps **end outcome** out front & center
- Uses local NA, KO & **works with partners** to inform LM development
- Shows **how learning, action, & outcomes related**
- Delineates & **aligns indicators** of achievement & evidence

A logic map should enable multiple players (much like the variety of players in this session) to engage in conversation using a common language. It should provide a framework for both planning and evaluation. It should also be a road map so that you have a list not only of what is going on, but how it is going to happen.

There are nuances to this, Tucker notes. Some people believe that a logic model should be able to align to a budget: How much did you actually spend in each of the "buckets" on your logic model? Tucker worked with one project that did this, with the project director and principal investigator matching elements of their logic model to budget items.

Since 2011, Tucker points out, NSF now requires everybody to have a logic model. The logic model represents the dream state and the reality is what happens each year. For example, Tucker, as evaluator, may push Davida Fischman to identify how much money went into each bucket in the logic model for the ACES MSP.

Participant Q & A: LM Budget Check

Q: Did the first project you mentioned actually write their budget with the logic model in mind?

A: No, it was an NSF ADVANCE grant, so it was a big chunk of money, but the director didn't have any idea what logic modeling was. This was before NSF required it.

Q: So it was a different sort of slicing of the project.

A: Yes, the director saw a formative use of this, a management use, and this made the director do a really strong reality correction. It was the director's idea—I had never seen this done before. If we all understood where the budget goes, I think everybody would understand some of the game better, and the game changes from year to year.

Another use for the LM is for those who want the big picture, those who want to know what the end outcome of a project is. Many different people and elements are involved in a project and the LM shows the relationship between learning, the activities and actions, and the outcomes.

The final item in the benefits list is probably the hardest for an evaluator to pull out, Tucker

observes, and that is delineating the indicators of success. Can all of the different roles, like those represented in this session, agree on what constitutes success? In addition, she notes, success changes from time to time, so this is reviewed from year to year. "In several of our projects we have data retreats, where we look at the logic model and look at our progress that is linking all of these different players," Tucker explains.

She turns to the CLM process as it is applied to NSF MSP projects. In working with an MSP project they started with a five-year logic model and then have logic models each year which are reviewed intermittently throughout the year. While NSF now requires a logic model, what is typically in an NSF proposal is not a true logic model, she notes, adding that this assertion will be tested during this session. For a collaborative effort the logic model in these MSPs should be negotiated, and the CLM should serve as a project management tool, an evaluation tool, and a reflective tool for teachers.

MSP Project Examples

Integrated Middle School Science (IMSS)

Robert Curtis

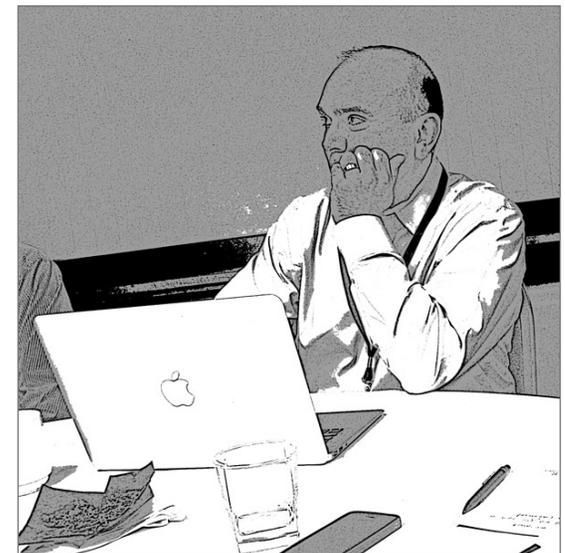
Alameda County School District; Director, IMSS MSP

Robert Curtis reports that the IMSS did all of these pieces at Susan Tucker's urging, but they weren't at all convinced initially about how valuable they would be given the amount of time they take. "And they do take time,"

CLM Process applied to NSF MSP

- **Started with 5 year program logic model** and then logic models developed by various project working groups
- **Focused on building capacity** of partners & subgroups cutting across partners to use LM as a strategy to reveal and negotiate core assumptions
- LM serve as a **tool for inquiry** into the various project components and groups
- **Process of modeling and product of negotiated models** serve multiple purposes:
 1. project management tool
 2. evaluation tool
 3. reflective tool

Robert Curtis



IMSS Examples of LM Uses

- Refine and evaluate project goals outcomes and activities across various project components
- Inform and coordinate program management, research and evaluation
- Increase coherence across all partners
- Build capacities of all partners for inquiry-based teaching and learning and evaluation

he observes. “What we’ve found is that we have gotten multiple uses out of it not just for evaluation purposes, but for project management and also for research, in terms of guiding some of our research questions and methods,” Curtis reports, adding that in this 10-district project, it has helped build capacity across the partnership. “We have a fairly large MSP with a large number of partners, so it is a communication tool, and we have been able to use it to communicate with some of our internal core partners as well as other partners. It is also helping to build capacity in terms of project goals. As we discuss the logic model and some of the theories of action, it is building people’s capacity to understand some of the actual theories of action and the project goals. It is also helping us to continually update those. We don’t do it every month, but we take it out periodically throughout the year and look at it and use it for discussion purposes.”

Panelists (from left): DeWayne Morgan, Davida Fischman, Ray Ivatt, Robert Curtis, Jeffrey Seitz



Participant Q & A: IMSS Logic Model

Q: Who designed your logic model? Who was on the team?

A: We have multiple logic models. The project model is kind of the 10,000-foot view, primarily designed by the Co-PIs and key project staff as well as the evaluation team and research team. Then we have an LM for each of the components. The professional development LM was designed by the professional development folks. The logic model for the IAG component was developed primarily by Jeff Seitz, with input from other IAG staff and Susan Tucker. We have one for lesson study that was put together by lesson study folks as well as a few of the coaches and facilitators.

So the developers of a logic model were the core people of that group. The LMs would then get vetted, sent up to me and Susan, and we would give feedback in an iterative process. They’re also building their capacity in terms of learning how to use it for their piece of the project.

Q: Did you ever share it with the teachers?

A: We’ve shared the programmatic one at a number of our meetings. I don’t know how much we’ve shared some of the other ones. The smaller LM shared with teachers was the professional development LM.

Q: I would think it would help if everyone, including the teachers, understood why we are all here and what we are doing.

A: If you present something to the teachers one time, that’s not going to do it. What has helped is getting us all communicating about the same stuff, so what I say isn’t different from what Jeff or Susan or the PD person says. Part of it is repeating that message clearly. The LM has helped us be very clear about what we’re doing and has helped us communicate with participants.

Mathematical ACES MSP

Davida Fischman

California State University, San Bernardino: Principal Investigator and Director, Mathematical ACES MSP

Davida Fischman notes that while this MSP is not the first project she has been involved with as PI, it is the most complex. “My view of logic models has changed,” she reports. “We wrote the first logic model for the proposal because Susan insisted it would be a good thing. It was a good thing, and it helped us clarify the processes that we wanted to go through.” However, as they began updating the LM, Fischman realized that it wasn’t really a project LM, it was more of a PD logic model dealing with the PD aspects of the project. “There are enormous aspects that didn’t appear there,” she explains. Those

Davida Fischman



aspects included project management, “which is huge in these projects,” Fischman notes. She found that the research aspect was also missing in the LM.

A few months ago the project started looking at how to develop a logic model that would encompass the whole project and also be useful for components. Fischman is also learning to use the software that E&D Associates uses for its logic models. DoView (<http://www.doview.com/logicmodels.html>) allows the 10,000-foot view Robert Curtis described, Fischman explains, and it creates layers, allowing you to take any particular component and look at one or more layers for that component.

“In my mind, the logic modeling has been primarily a tool for clarifying relationships between components of the project. The exercise of trying to abstract an enormous project into something that fits on one page is an interesting intellectual exercise. Even if you don’t succeed, it helps you better figure out what is going on in the project.”

Minority Student Pipeline MSP (MSP)²

DeWayne Morgan

University of Maryland; Evaluator, (MSP)²

DeWayne Morgan notes that the (MSP)² project began before the NSF mandate regarding logic models, and logic modeling wasn’t in the original project design. He reports that when he came onboard, “The project had a lot of moving parts that didn’t really fit together at all. For

Setting Priorities?

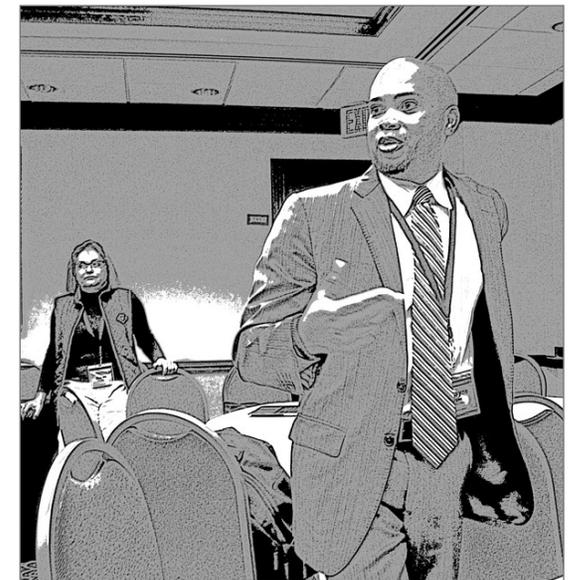
Ray Ivatt:

It helps you set up priorities, because what stays on the paper is the important stuff.

Davida Fischman:

True, but sometimes what stays on the paper when you’re looking at the top layer is so important that it’s meaningless. It’s so broad. You talk about your belief in content. Well that’s great, but until we drill down into what “content” means, that doesn’t mean a lot.

DeWayne Morgan



Varying Project Structures

Davida Fischman:

You're describing almost the opposite of our situation. You said you had separate strands that didn't talk so well together, whereas we had everything so closely intertwined that it's harder to separate them from each other.

a long time we had to reconcile this universe where we had all of these moving parts that didn't communicate with each other and try to create something that looked like one project.”

For example, Morgan explains, the project has four strands, and those working on the project had to accept as a reality the fact that those four strands might not communicate with each other and move forward. One of those strands is used later in this presentation as an example of how the project used logic modeling to focus forward, aided by data collection and use of data.

“So this project did not start out using logic modeling,” Morgan reiterates, “and didn't begin to think about logic modeling in a real, concrete way until year two or so.”

A Deeper Dive into Logic Modeling

Susan Tucker
Evaluation & Development Associates, LLC

Susan Tucker resumes the presentation to further explain what logic modeling is. As a road map, LM tells you where you're going and how you plan to get there. The difference between that plan and where you ended up becomes a source of evidence,

and both a management tool and an evaluation tool. What criteria will you use to let you know you reached your destination? How will you know what success is? Logic modeling is helpful in trying to block out those indicators of success, Tucker notes. What happens if you are off your path? Sometimes that can be good thing, she observes.

The University of Wisconsin-Extension, one of the largest extension programs in the country with projects across the State of Wisconsin, was one of the first places to use logic modeling. They looked at it in terms of a strategy and the impact of that strategy, and then broke strategy up into inputs and outputs. The inputs include resources, funding, etc., and the outputs are the activities and the nature of the participants.

Impact can be broken out into different layers: short-term, intermediate, and long-term. Over time, Tucker explains, people have gotten more sophisticated about carving up these impacts.

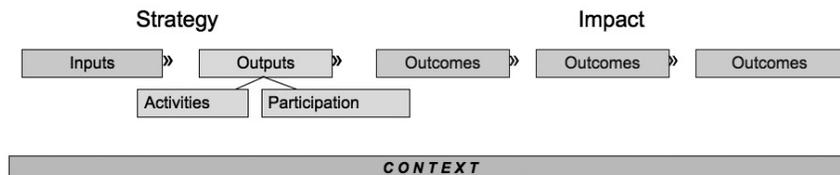
Logic Models as Road Maps

A framework or reference point when answering key process & program questions:

- Where are we going?
- How do you plan to get there?
- What will tell you that you've arrived?
- How will you “recalculate” - when things don't go as planned?

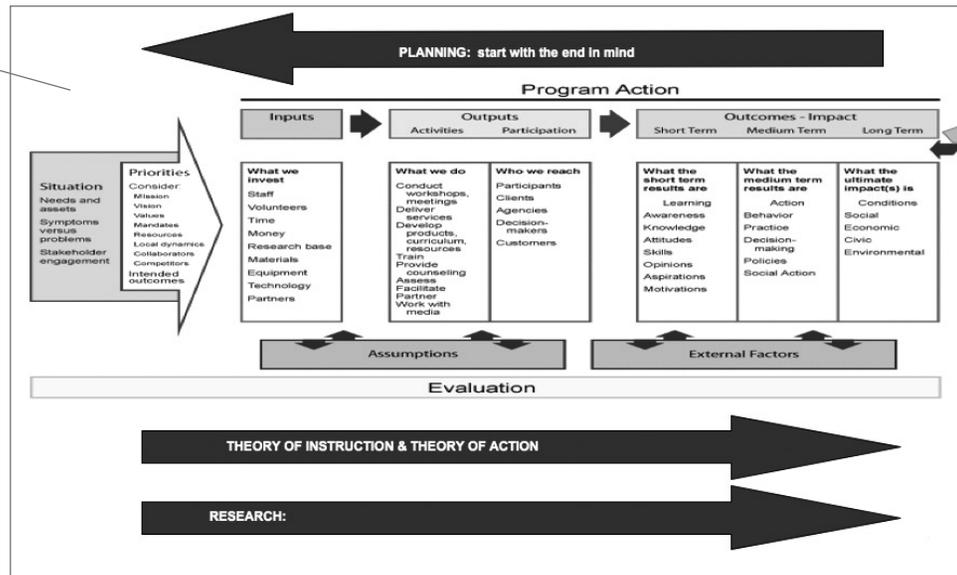
Generic Logic Model

A *diagram* of the *theory* of how a program is supposed to work
A graphic depiction of relationships between activities and results



Source: University of Wisconsin - Extension
<http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html>

This is a ramped-up version. While this is difficult to read, you can see the blocks for inputs, outputs, and outcomes. In the large arrow at left is the context that shapes a project (called “situation” on this



LM), and the priorities. The inputs identify the investments, and the outputs identify what the activities are, who is reached, and all of the different players. Originally, people were thinking of “participants” as those who were directly impacted, Tucker notes, but now the thinking encompasses clients, agencies, decision makers, and so on.

Another element has also been added. You can't understand a logic model without understanding the core assumptions, the theory of action, the theory of instruction, Tucker explains. The focus is on the things we believe. For example, “We believe good math instruction is...” This is also where the “secret sauce” assumptions need to be, Tucker notes. “What makes your project unique or special?” she asks. “Those beliefs need to be embedded and clearly understood.”

Then there are external factors. For example, the State of California has been experiencing serious financial difficulties. That is an external factor that must be worked with, she observes.

Q & A on the Above LM Diagram

David Fischman:
Why are the two boxes, “assumptions” and “external factors,” in different places?

Susan Tucker:
It's a bad diagram because I ran out of space. The assumptions are at every phase and external factors can change at every phase as well. For example, were NGSS and Common Core in your original proposals? No. And we are still not clear in science, which is still rolling out.

This process is iterative, Tucker explains. “It is one step forward, two steps back. There is constant realignment of things. Why even do it?

Dealing with External Factors and Project Changes

Susan Tucker:

One example of an external factor would be when NSF came to IMSS and said you needed to be impacting more teachers.

Robert Curtis:

That came before we got the money, in year zero. They didn't say how many more teachers, they said we needed to have greater impact. We were at 60 to 80 teachers originally and ramped it up to 144. We had four districts in play in our original proposal, and the grant got accepted as four districts. We thought we'd bring in other people at a lesser level, but we realized we needed to engage the district-specific level, so we brought them on as part of the leadership development. That was separate from the numbers issue. It was in year two that we recognized the importance of engaging the district level and began to engage principals and district staff.

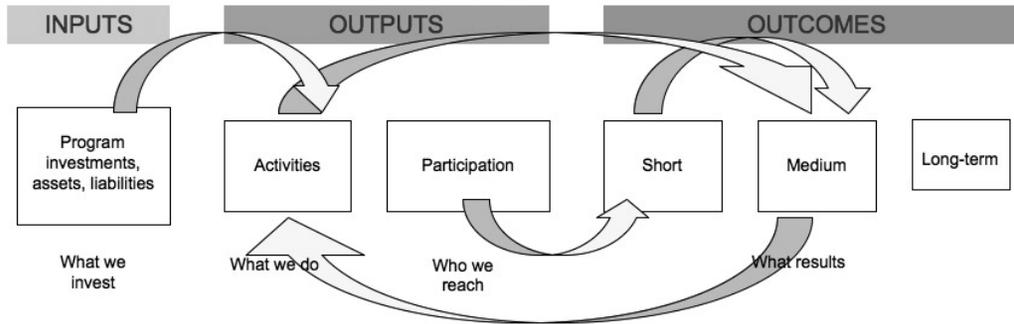
Susan Tucker:

So it started with four districts and there are now ten, so the game has certainly gotten more complex because the expectations are different. Dealing with even one district is a challenge.

It is important to understand the dynamics, that it is a changing kind of game. For example, we just heard that the participants changed in the IMSS project.”

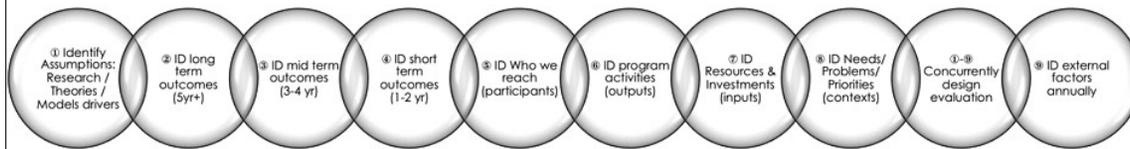
Partnership Projects are Iterative Rather than Linear

Feedback loops and multiple layers critical...



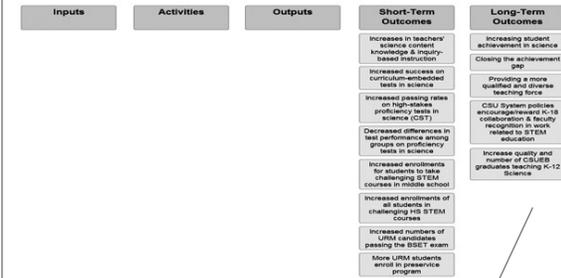
Another important point is the concept of backward-reasoning, Tucker explains.

Using Backward-Reasoning



When you do a logic model you start with the outcomes and reason backwards. Then you think about outputs and activities, and then inputs. “If you don’t know where you are going,” Tucker observes, “you can’t design your strategies to get there. A lot of times educators like to come up with their activities first and then

Identifying Outcomes



Building a logic model starting with short- and long-term outcomes.

you end up with what DeWayne talked about, people going in multiple directions because you didn’t design for them to be in concert with each other. This forces you to think of how they all leverage to get to your product.”

Tucker emphasizes the importance of probing those involved to make explicit their assumptions. She explains that when she uses the term

Start with the Assumptions

- Use backward reasoning for complex, iterative, organic projects
- Explicitly state, explore, and clarify:
 - Theories of action
 - Theories of instruction
 - Assumptions by funder
 - Assumptions by partners & other stakeholders
 - Assumptions about core concepts:
 - partnership, development, evaluation, research
- Remember: every element of a LM is a hypothesis that can be wrong & perceived differently by various stakeholders—and errors compound!

“lesson study” her thinking is informed by the fact that she has worked on five lesson study projects. Someone on a project may have never been involved in lesson study and it may be a case of seeing is believing—unless they do that, it doesn’t happen, she observes. In IMSS and Aces they are testing the boundaries of lesson study, of where it works in their content areas and how it works in a particular district, and each district is unique, she notes.

Tucker encourages projects to think from the very beginning about the fact that NSF calls these MSPs partnerships. What is a partnership? There is an entire research base regarding the nature of partnerships, she points out, and it doesn’t stop short at a definition but involves walking the walk. Partnership evolve and can be seen as a sort of “Arthurian quest.”

Questioning Assumptions... one example

- Do you have an authentic partnership?
Partnerships are where partners are closely bound to one another, share common goals, share liability and risk, and have a mutual interest in adapting behavior to one another in the pursuit of shared objectives...
- How do you know?
...organizations tend to require compelling environmental pressures to engage in such potentially invasive relationships (Aldrich, 1999)

Below are cues for evaluators as well as teachers to ask.

Partnership assumptions... some questions to explore with stakeholders

1. What are viable outcomes about individuals, communities, network?
 - Quality, quantity, and diversity of teachers by providing PD and coaching support
2. What is success?
 - Negotiating questions about different phases of project
 - Grounding work in state and national standards
 - Measurement/Evidence/Indicators of success
3. What are resources and needs?
 - Leveraging across partnership & communities
 - Authentic partnership research literature
4. What/how could methods match partnership skills?
 - What is partnership and how will it be managed
 - Developing P/K-20 partnership infrastructure
5. How do we build capacity and sustainability?
 - What does sustainability look like? More than finding more \$
 - leadership, R&E, institutionalization, sustainability, scaling

Tucker then encourages session participants to pair off and discuss the following question, and identify MSP project assumptions that need to be tested or examined.

Think-Pair-Share:

What other assumptions would you predict in MSP projects?

Tucker notes that it is valuable to spend time discussing these assumptions and repeats the point that it is an iterative game. “We get

Discussion: Value of LM and the Foot Soldiers’ Role

Participant from (MSP)²:

I think logic models are natural in people’s thinking, but they don’t articulate them. I actually think it’s a good idea that they are requiring them now because it forces you to be more explicit faster instead of muddling through. These grants are written in such a cerebral way that when it is time to put feet to the ground and make it happen it’s like, “What the what? What were they thinking?” No one thought of the pieces needed to get to this outcome.

Susan Tucker:

That’s where the collaborative part fits in. The more key stakeholders who are part of this from the very beginning is crucial, as is the revisiting of it.

Participant from (MSP)²:

I feel like the assumption is that those of us down here with our feet to the ground don’t really get logic models. It’s almost like a form of elitism. I appreciate the collaborative piece and know that those of us doing the work need to be part of creating that model. DeWayne will tell you, it’s amazing what has happened to the relationships and the partnerships as a result of putting this out on paper. The only way we can be real about it is to get it down. I love the fact that is now happening, and hindsight is 20/20. The next time I’m sure what we will be doing is writing it down and talking it out.

Reflection and discussion

MSP Project (Mis)Assumptions

The following is a summary of some of the assumptions identified by participants during the exercise.

- **District Buy-In = Teacher Buy-In**
When a project got district buy-in, it assumed the teachers would want in. Now they're finding the teachers aren't participating. They were also doing PD for the teachers and, ironically, teaching inquiry using lecture-style instruction.
- **Direction of Knowledge Transfer**
The assumption is that it comes from higher ed down to the school system instead of being bidirectional.
- **Trust**
You can't assume trust is in place. In a partnership it's important to do some team building or spend some time balancing those relationships.
- **Time and Human Resources**
We assume there's enough time to do what we've committed to, and enough people who believe as we do and are capable of implementing everything we've committed to.
- **Honoring Commitments**
We believe that people and organizations will come through on their commitments, that if they say they'll give us data they really will give us data in a usable form, that a faculty member who committed to the project will still have time available when you get the money two years later.
- **Implemented as Proposed**
We assume the project is and should be imple-

mented as written in the original grant. Now we realize, partly because of using LM as a tool for analysis, that if change is warranted, aspects can be changed with appropriate consultation.

- **Substance Assumptions**
 - We believe that appropriate teacher development will actually change teachers' beliefs and practice. Each project has its beliefs about what "appropriate" means, but the suspicion is that we are not all that far from each other.
 - We believe that PD should integrate pedagogy and content.
 - We believe we should practice what we preach (see above comment on lecturing about inquiry). IHE faculty shouldn't be going to teachers saying, "You should do this," but not be willing to do it in their own instruction. This leads to the question of how IHE faculty involved in MSP can learn to reflect on and change their own instruction and how they help colleagues move in that direction.

better and better at matching indicators," she notes, and suggests participants refer to the Frayer Model, which offers one technique to help explore these assumptions. That model and other tools can be brought to bear to help lend clarity to the process. The Frayer Model can also be helpful for teachers to use in the classroom regarding assumptions that their students might have.

There are other big picture assumptions,

like the ones below, Tucker notes. E&D Associates will be presenting a paper at AERA, looking at how understanding of some of these assumptions has evolved, and how they shape a complex project like the MSP. Tucker encourages all projects to explore the assumptions below depending on the nature of their particular project.

Ecological assumptions often found in MSP projects: rhetoric vs reality

- Continuous collective improvement
- Culturally responsive practice
- Building capacity for Community of Practice
- Networked Learning
- Distributed Leadership
- Authentic Partnership
- Data enhanced systemic instructional change

In looking at these assumptions, it is important to reach an understanding of what each of the words mean. All of these are huge constructs and all need to be deconstructed, she explains. Each assumption statement comes from a certain theory base, but terms like “culturally responsive practice” require translation and could mean a different thing to every person at this session until the meaning is negotiated. There are all kinds of negotiation that can happen, she observes. There are models and rubrics for “culturally responsive practice,” that can help build that conversation, so this does not creating a new strategy, it involves going and

looking at the base that already exists.

The slide at right illustrates again how backward-reasoning works, linking the outcomes to the outputs to the activities.

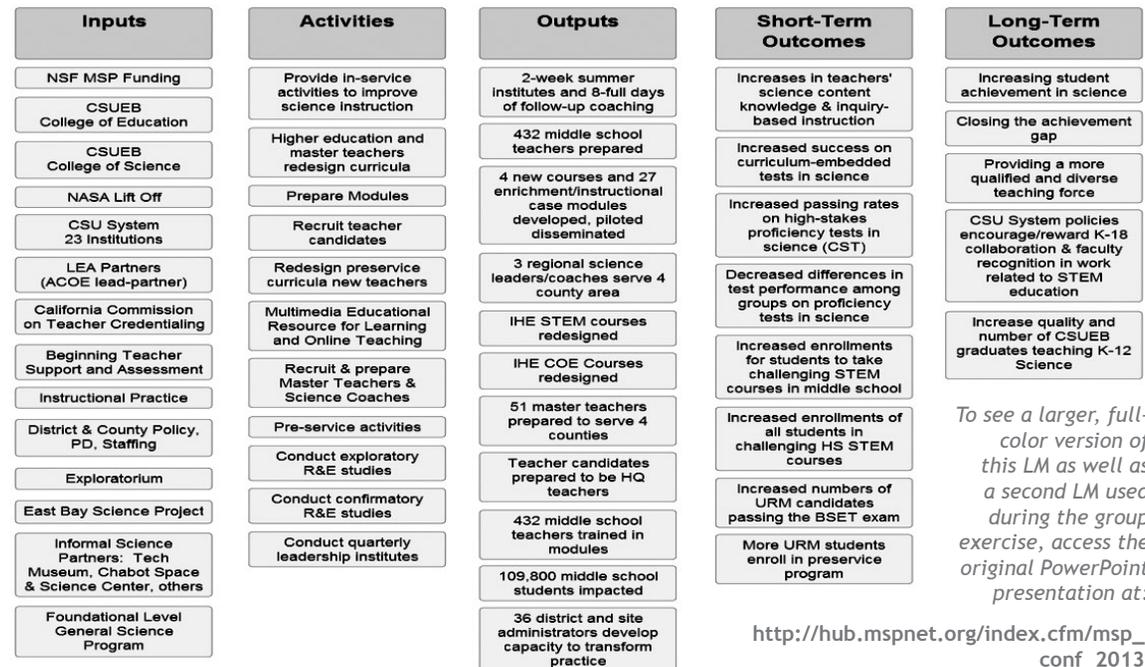
Tucker then shows the group the full logic model below and asks participants to break into small discussion groups and critique the model. She asks: What would your reaction be if someone asked you to look at this logic model? Would you change anything? Are there questions you would ask?

Once participants regroup, Tucker explains that logic modeling is an alien process, so you

Linking Outcomes to Outputs & Activities



Reality Check: What Would You Change?



To see a larger, full-color version of this LM as well as a second LM used during the group exercise, access the original PowerPoint presentation at:

http://hub.mspnet.org/index.cfm/msp_conf_2013

Phasing in LM During First Half of Grant

1. During proposal writing: negotiated overall LM for grant & then generated annual CLMs
2. During year 1-2: created CLMs for core components of grant: PD, coaching, research, pre-service, afterschool program
3. The use of constant comparison of CLM revealed 7 core assumptions
4. Evaluator and project management team aligned core components by gap analysis & identified priorities
5. Evaluator facilitated quarterly data retreats to align data of R&E with LM plans
6. Sustainability study followed 1-2 years post-grant

Transitioning from Year 3-4 with CLM**Precipitating factors:**

- Inquiries from external sources (NSF, Boards, etc.) about big picture—how are efforts building toward final outcomes
- Sustainability pressures mounting
 - Need to be able to have more data for diverse decision-makers
- Data pressures:
 - R&E data being generated by project about trends
 - data lacking fidelity, consistency and utility
- Personnel changes at partner institutions
- More refined partnership understanding of K-12 teacher and student needs (what was possible and what was not)
- Timing—year 3 is perfect time for this discussion

phase it in. People's eyes can glaze over when you explain LM to them for the first time, she observes. However, she believes it is a good fit for MSPs and allows them to walk the talk of collaborative work. It requires constant attention to those seven big assumptions, and different projects use different strategies. It is also never too soon to talk about accountability, she notes, and that is another use for LM. She then asks DeWayne Morgan to talk about his project's experience using LM to both keep the end in sight and make a significant correction.

MSP Project Example**Minority Student Pipeline MSP (MSP)²**

DeWayne Morgan
University of Maryland; Evaluator, (MSP)²

Precipitating factors for using CLM on the (MSP)² project included a presentation to the school board, during which the board asked questions about reaching a particular set of schools. The project had to explain that it wasn't designed to focus on one particular area. Then NSF visited and challenged the project in terms of whether all of the strands were leading to the overall goal of improving minority participation in STEM careers and education.

In addition, Morgan observes, "In moving from year three to

year four, you want to have the data and collection of data solidified. You want to make sure that all of the people making decisions about data and about direction are having conversations and are on the same page." Even in year three, people had their own ideas about what science inquiry was, he reports, and how it should look, so it was necessary to go back and revisit those assumptions.

There were also personnel changes at partner institutions. Two of the three coaches found other positions in the school district, which worked out well for the project because two outstanding new coaches moved into the positions, improving project capacity and enabling it to collect data in a way that hadn't been done before.

The project also refined understanding about teacher and student needs. When the grant was written, Morgan explains, there were assumptions that if students simply had these

CLM Transition Chronology: (MSP)²

Year 3	Spring	<ul style="list-style-type: none"> • Visit from NSF program officer • Steering committee discussed what constitutes partnership success (reconciling multiple perspectives into common mission)
Year 3	Summer	<ul style="list-style-type: none"> • Evaluator reviewed instrumentation and modified rubrics and indicators of success and aligned to year 5 desired products • Evaluator designed and implemented PD program for coaches to collect district data and their analysis skills
Year 4	Academic Year	<ul style="list-style-type: none"> • Evaluator asked by strand leader to engage teachers in discussions about data to understand "big picture" so they can reach goal of using BOTH formative and summative data to design instruction • Evaluator led PD1 with project teachers, coaches, research strand
Year 4	Summer	<ul style="list-style-type: none"> • Evaluator led PD2 with coaches to analyze data & using video as rubric calibration
Year 5	Academic Year	<ul style="list-style-type: none"> • Coaches collecting data—video • Evaluator will synthesize data with collaborative process TBD

experiences they would be excited about science. Of course, he notes, these assumptions were made by people who were all scientists. The first three years provided reality checks regarding what activities turned students on. The project explored teacher needs as well. How do you get teachers to be more excited? “If you build it, they will not necessarily come,” Morgan observes.

The project started looking at data and found that one of the strands, while it was a great project involving undergraduate students and high schools, was not leading towards the overall goal of improving student interest in science and science careers. “The partnership had to take a hard look and say we might want to abandon this strand as part of this project and move on to strengthening the other three strand,” Morgan relates. “This happened because of those external inquiries as well as the realization within the leadership that you can’t have all of these competing interests. In essence, that’s what we discovered that last strand was. It was a competing interest because it didn’t align with the whole.” The data regarding this strand was not negative, but it indicated that the strand was not contributing to the outcome the project was looking for, he adds.

The project used the fact that it had two new coaches as a precipitating factor to review the instrument for collecting observation data, which was an amazing experience for all concerned, Morgan notes. They looked at the

instrument and revised the instrument and the indicators for success, but they also engaged the coaches more in that discussion. That was more truly collaborative, and at the outset that was not a real part of the project.

The project started to engage the teachers as well, showing them what types of data the project is collecting and how it might be useful to them. This process took a year and the data is now being recycled. In addition, everything is being videotaped, Morgan reports.

Closing Points about CLM

Susan Tucker
Evaluation & Development Associates, LLC

Starting is not always pretty, Tucker notes. You listen to people talk and there are a lot of puzzle pieces, and there are a number of ways you can then start putting those thoughts into patterns. You then negotiate that with different players. She points to examples of CLM work (page 16). Example A shows what some of the IMSS coaches developed in year two as their road map for action. “As an evaluator this is like dying and going to heaven,” Tucker says. “They identified sources of evidence of success as part of their logic model. You don’t see that very often, and to me it showed a level of linking data to action that was very cool.”

E&D Associates is now in the midst of doing an evaluation research study of collaborative logic modeling, Tucker reports. They presented at AERA last year and will be doing another

Assumptions re NSF Proposals

Susan Tucker:

An interesting assumption, and one I’ve heard working with other projects, that once it is in your NSF proposal you can’t touch it, modify it, throw it out, or manipulate it. You’re saying that based on data and prompted by the NSF visit you were given permission you didn’t perceive you had before to call into question core elements.

Starting is Not Always Pretty

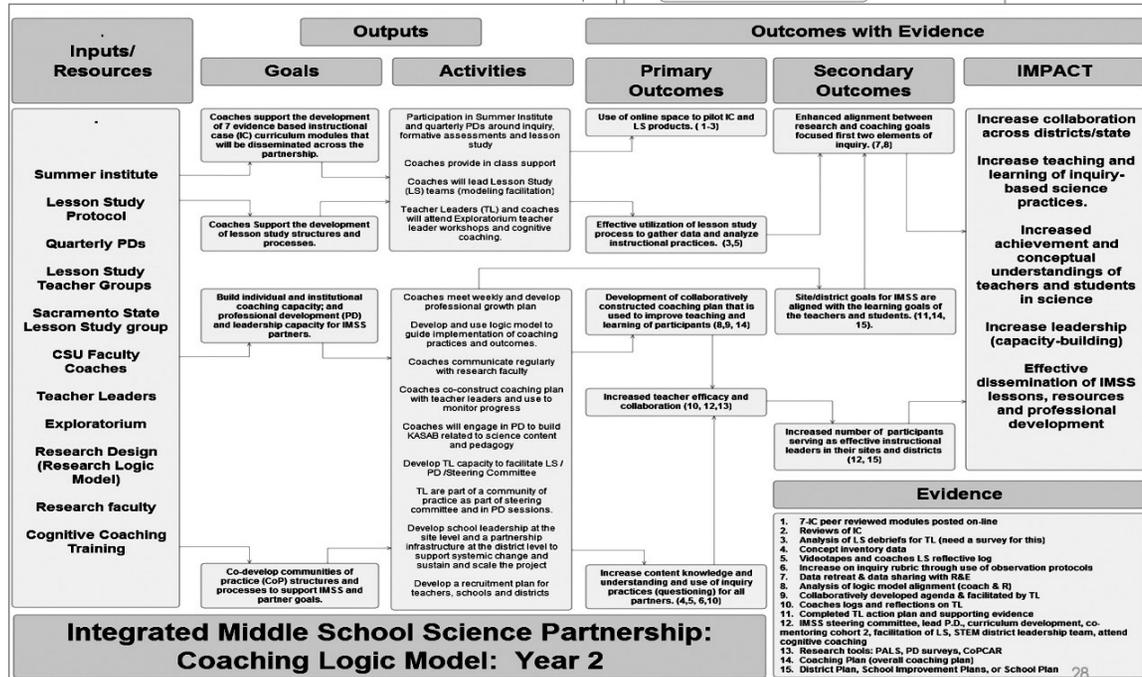


Examples

To see larger, full-color versions of these and other slides in this presentation, access the original PowerPoint presentation at:

http://hub.mspnet.org/index.cfm/msp_conf_2013

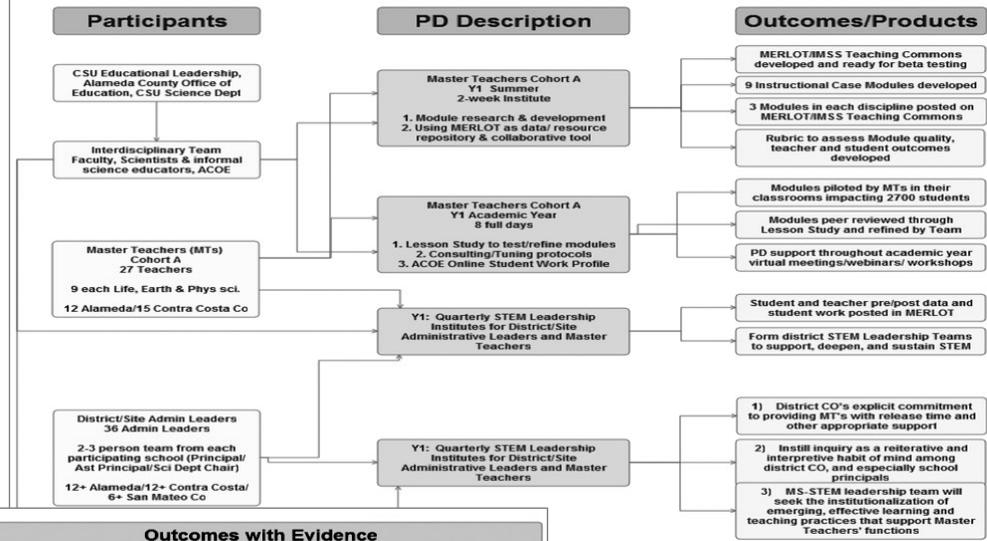
Example A



PROFESSIONAL DEVELOPMENT PLAN, TIMELINE AND FLOW OF ACTIVITIES TIMELINE BY PARTICIPANT CATEGORY

Year 1
Formation of Interdisciplinary Team; Development of Cohort A; Recruitment (& Training) of District and Site Administrators

Year 1 Participant Totals: 27 Master Teachers; 36 District and Site Administrators; 2,700 Students Impacted



Example B

Some learnings about CLM with MSPs

If preconditions are met:

Authentic partnership requires personal and organizational trust, capacity, and willingness/ aspiration to participate in critical reflection about assumptions

- Evaluators often best placed to facilitate initial conversation
- Stakeholders see utility of CLM as formative, self-monitoring tool
- When each partner prepares & shares, CLM can increase coherence across partners
- Ecological framework useful for anticipating shifts in core assumptions
- Tech tools (e.g., DoView.com) can help in use of CLM and creating new uses

presentation this year. The goal is to expand the case study to other MSPs that are interested to test how this evolves.

Emerging Questions about CLM

- What is needed to facilitate CLM ongoing development and use across the diversity of MSPs?
 - How does CLM capacity evolve over time across various partners and subgroups?
- How does CLM contribute to conceptualizing partnership?
 - What do changes in CLM tell us?
 - How can we use technology to facilitate use of CLM as communication tool?
- How does CLM contribute to sustainable capacity building regarding project collaboration, planning, implementation & evaluation use?
 - What is role of CLM in evaluation capacity building (ECB)?

Regarding evaluation capacity building, Tucker says, “One of my assumptions or values is that I believe evaluation should be improvement-oriented and contribute to project development.” There is an approach to this called developmental evaluation that Michael Patton and others have been doing for a long time, she notes. Then there is the American Evaluation Association, which has something called “evaluation use” as one of its values. “The belief is that evaluation capacity building is or should be part of our job,” Tucker explains. “We are not doing a good job as evaluators if we are not trying to show these connections and show how all of this fits.”

Thoughts from a Scientist

Integrated Middle School Science MSP

Jeffrey Seitz
California State University, East Bay;
Principal Investigator, IMSS MSP

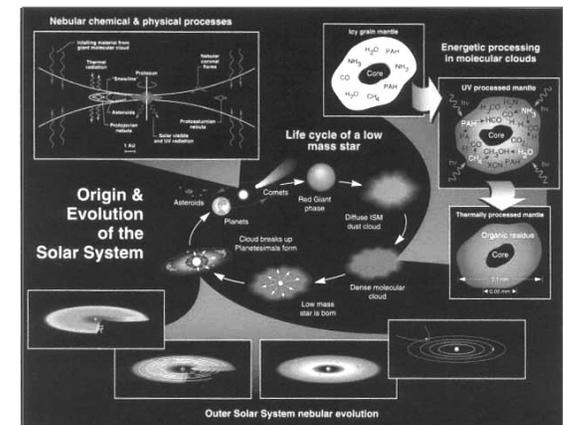
Seitz explains that logic modeling was completely new to him, and as a PI and a scientist he was initially dubious but has found it a useful tool. Noting that Susan Tucker asked him to talk about logic models from the perspective of a scientist, he points to the process diagram of the accretion of solar systems at right, showing the temporal evolution of a system.

“I think a logic model can show the temporal evolution of one of these large-scale projects as well,” he states. “One of the observations I have made that has been useful for me is that when we started making multiple logic models, what was an outcome in one logic model then became an input in another logic model in a different component of our project. That shows that evolution, where an outcome becomes an input later on.”

Next Step in Online CLM Evolution

Ray Ivatt, E&D Associates:

The way that logic models are going to evolve, in my opinion, is that they are going to be on the web and will be hyperlinked. You start with a framework you understand. Then you want to know more about project management, and you click on and go to that. You want to know more about PD, and you click on and go to that. It will be multilayered. It’s obviously hard to do that with paper. You have to balance complexity with clarity, and you can’t do that on just one page.



Committee on Planetary and Lunar Exploration,
National Research Council

Logic modeling is not dissimilar to process diagrams in science and engineering.

In the diagram, temporal change in an evolving system is represented. LMs can also represent the evolution of a large scale project from activities, to outputs, and ultimately to outcomes.

We have developed a series of LMs for different components of our project. Large scale evolution in our project is represented where an outcome (once it is achieved) later becomes an input (ex. FLGS).

Resources and References

- DoView.com for software to prepare LM
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- Torres, R. T., Hopson, R. K., & Casey, J. (2008). Initial case study findings on logic model use: Building STEM education and evaluation capacity through research on logic model use. Annual Conference of American Evaluation Association, Denver
- UW-Cooperative Extension: Program Development and Evaluation. [http:// www. Uwex.edu/ces/pdande/](http://www.Uwex.edu/ces/pdande/)

DeWayne Morgan and Davida Fischman



Thank You All

We welcome you to contact any of us with questions, comments, suggestions, resources to share, or for further information:

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