District Case Studies Evaluation Design

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This paper discusses the design of the case studies of the effects of the SCALE partnership on district policy and organization. (See Appendix A. for an overview of SCALE). Part I discusses the SCALE theory of action -- how the partnership goes about producing change -- which then becomes the focus of evaluation. Part II discusses research methods. But first what are the case studies?

The case studies are intended to study the effects of SCALE on district policy and organization, especially instructional guidance. (See Appendix A. for description of the SCALE research and evaluation). This is an area "downstream" from the focus of the Building a Partnership (BP) team, which examines partnership dynamics and the formation of partnership initiatives. And it is "upstream" from the focus of targeted studies and indicators, which examine outcomes of SCALE interventions on instruction and student achievement. Like BP, the case studies use mainly qualitative methods in tracking organizational change and dynamics, but like targeted studies and indicators, they are mainly concerned with effects inside the partner school districts.

Part I: The SCALE theory of action

The case study design follows the "theory of action" school of evaluation, which requires a focus on the effects of the real operating design of an intervention (Weiss, 1998). Under this approach, mapping the theory of action is the important first step, but mapping the SCALE theory of action proved surprisingly difficult, in essence because it does not fit the model of discrete programs commonly evaluated. In fact, we started with a model of the partnership as a bundle of programs each with its own administration, but this theory was replaced with the current version that resulted from a better understanding of complex partnership dynamics. As early as the first year of the partnership, the theory of action was modeled in this way:

The partnership theory of action has an influence on >
The district theory of action embodied in >
Active district instructional guidance within the SCALE mission, which leads to >
Improvement of schools, instruction, and student learning

Under this model, which has held constant, the "programs" which are the typical focus of evaluation under a theory of action approach operate within and are managed by the districts. The question then becomes how to describe the theory of action through which the partnership influences these programs in a way that ultimately produces the desired outcomes. The answer to the question is complex and best discussed in four parts: target of change, goals for change, and theory of action.

Target of change

SCALE aims initially for improvements in what is often called instructional guidance, in the areas of curriculum, professional development, monitoring, and accountability. Other functions like finance and human resources may be implicated in plans for the guidance functions, but they are not the primary target of change. Thus, SCALE aims to improve

teaching and learning mainly by improving the instructional guidance activities of districts and IHEs.

<u>Goals for change</u>

The general goal of SCALE for the districts is increased coherence and effectiveness of instructional guidance across all its elements, where coherence can be defined as mutual compatibility and reinforcement among separate policies. The SCALE mission and strategy provides templates for district policy in the areas of curriculum guidance (e.g., required courses), in-service training for teachers and administrators, monitoring (e.g., interim student assessments), and accountability (e.g., effective responses to NCLB)(all of these under Goal 1), development of new extended units of instruction called immersion units (Goal 2), development of coherent pre-service training by local universities (Goal 3), and targeted equity policies (Goal 4).

All parts of the model are oriented to and unified by the common goal of challenging teaching and learning for all students embodied in IFL's Principles of Learning (see Appendix A. for more information on IFL). These specific goals are, in turn, informed by the IFL model of the district as a learning organization, referred to in that way because professional knowledge and learning is assumed for every role in the district -- central office, supervisors, principals, coaches and teachers (Resnick & Glennan, 2002). Under the IFL model, professional learning in the district is implemented through a system of reciprocal accountability across "nested learning communities" in which the accountability of each level of the system creates an entitlement to receive the training and support necessary to meet those expectations. The needed training and support usually involves some contribution from expert third parties.

Theory of action

The SCALE theory of action operates at two levels, Tier 1 (district) and Tier 2 (schools), and can be represented in the following table:

Table 1

The SCALE two-level theory of action

Tier 1 Theory of Action (district)

Activities	Multi-level co-construction of district policy & practice
Intended outcomes	Multi-dimensional change in instructional guidance
Change theory	Instructional leadership is widely distributed

Tier 2 Theory of Action (schools, teachers)

Activities	Multi-level changes in district policy and practice
Intended outcomes	Improvements in school support, instruction, learning
Change theory	School staff respond to coherent policy, high support

In Tier 1, the theory is that co-construction of district policy and practice and multiple levels will produce multi-dimensional change in instructional guidance because (theory of change) instructional leadership in districts is widely distributed and loosely coupled. In Tier 2, the theory is that the multi-level changes in district policy and practice created in Tier 1 will produce improvements in school support, instruction, and learning, because (theory of change) school staff respond to coherent policy and high support.

Evaluation proceeds by investigating whether the planned activities occur, whether they are followed by the intended outcomes, and whether the theory of change seems to be operative in the changes that occur. The core of the case studies is gathering data on the two levels of activities and outcomes: co-construction at the district level and response to the new policies and practices at the school level. Each of those levels is described in greater detail in the following sections.

Co-construction of district policy and practice

At the district level, all of the SCALE goals are pursued through co-construction of district policy and organization at multiple levels; and co-construction operates through self-organized working groups (Millar & Clifford, 2004, 2005) whose influence is various, indirect, and context-specific. Co-construction of this kind requires an usual degree of access to the core policies of instructional guidance, which it is the purpose of the partnership to provide. Strategic leverage (based on expert training and consulting) over powerful policies is the essence of this type of partnership. In contrast, free standing

programs and pilots usually do not include any methods for going to scale and create inconsistencies across programs that threaten coherence.

The basic pattern of co-construction at the district level can be represented in a large grain size in the following table:

Table 2

The SCALE theory of action as coordinated co-construction of instructional guidance at multiple levels of the district and IHE system(s)

District instructional guidance activity	SCALE co-construction activities (training, product design, joint planning, co-piloting)
Top management strategy and support	• Superintendents' training • Joint strategic planning
Design of district/IHE policies	• Design, co-piloting of instructional monitoring tools • Design of instructional units
Instructional management by district departments	• Training, coaching of managers • Joint strategic planning
Instructional management by local districts	• Joint design of science units • Limited joint strategic planning
Supervision and evaluation of principals	• Training, coaching of supervisors of principals • Part of IFL, not part of Goal 1
Principals' instructional management of schools	• Training, coaching of principals • Design, co-pilot of rubrics for instructional leadership
Professional training of teachers	• District and cross-district professional development for teachers • Piloting of instructional units with customized professional development • Design of pedagogical models • Coaches' training • Joint design of pre-service, in-service training
Assuring students readiness for instruction	• Joint planning of supplemental instruction • Joint review of equity policies

As indicated in the heading, the co-construction activities in column two tend to fall into one of four categories: training, product design, joint planning (or review), and co-piloting. As shown in the rows, the activities are carried out at every level of the system, from top management to preparing and coaching teachers.

District outcomes: multi-dimensional change in policy and practice

Under the SCALE theory of action, change at the level of schools and teachers depends on the outcome of Tier 1: multi-dimensional change in policy and practice, but not just any change. The kind of change aimed for has three elements: (a) quality and consistency

in five dimensions of instructional guidance; (b) redirection of inefficient resources; and (c) improved leverage on instruction.

The first intended outcome is *quality and consistency in five dimensions of instructional guidance* (the five dimensions of Goal 1): high quality curriculum, full support for professional development, monitoring of outcomes, leveraging of external accountability, and coherence across programs and program design engineered through intelligent guidance and support of the district leadership. In contrast, traditional programs and partnerships often lack both coordination with each other and realistic models for full service delivery.

The second intended outcome is r*edirection of inefficient resources*. The prevalence of incomplete and uncoordinated programs in districts implies underutilized resources in large areas of the budget and human resources -- inefficient efforts that consume resources with little effect. Several such programs have become the focus of joint SCALE/ school district planning: after-school remedial training, uncoordinated professional development of teachers, and pre-service training uncoordinated with district goals (especially local institutions that provide the bulk of teachers for a district, one of which, a SCALE partner, California State University, Dominguez Hills, is engaged in regional networking with other IHE's).

Improved leverage on instruction is the third intended outcome. SCALE seeks additional leverage over instruction in two ways: (a) integration of instructional guidance with district management of schools and principals (what might be called de-silo-ization); and (b) vertical coherence between the central district and schools achieved through two IFL principles: nested learning communities from top to bottom, tied together through reciprocal accountability and support. Integration of instructional guidance with district management of schools and principals is needed because of the common practice in school districts of putting principal evaluation and school improvement in one silo with line authority, while curriculum and teaching is put in another silo lacking line authority and relying on soft incentives and services. Change at the school level requires that the leadership and policies in both silos is coordinated and consistent. Vertical coherence in each silo is achieved by nested learning communities built around principles of reciprocal accountability and support. Resnick and Glennan (2002) describe these IFL principles as follows:

> "Formed in 1995, the [IFL] enrolled a number of districts in a program of national seminars and on-site technical assistance designed to help them reorganize as nested learning communities: that is, organizations in which all individuals and units are expected to upgrade their capacities continuously in accord with a shared set of instructional principles and strategies. In this design, instructional leadership, coupled with reciprocal accountability between "layers" of the organization, provides professional learning opportunities specifically geared to the district's vision of instruction."

An illustration of the attempted use of all four sources of leverage an be found in an early SCALE case study of new periodic assessments in Los Angeles (Osthoff & Cantrell,

2004), which discovered unanticipated effects as teachers struggled to incorporate the new assessments into teaching practice that was already stretched to the limit. On the basis of this study, a planning group decided to experiment with replacement units as an efficient way of combining rather than adding requirements. Interestingly, these replacement units involved all four elements of leverage at once: access to core policies (instructional guidance), incremental coherence (across curriculum, assessment, and professional development), redirection of inefficient resources (reduction and harmonization of demands on overburdened teachers' time), and improved leverage on instruction (through the work of the IFL coordinating instructional guidance with supervision of local districts and principals)

Part II: Research Methods

Evaluation research is necessary because a plausible theory of action is no guarantee of success. A theory of action is a hypothesis, and research methods provide the empirical test. Discussed here are research questions, the challenge of causal attribution, the strategy for evaluation given the challenge of causal attribution, ethnographic method with a district focus, staffing, sources of data, and a common outline for the case study reports.

Research questions

Good research questions frame the empirical research in a way that is sensitive to theory of action but neutral as to its validity. The major research questions for the case studies are two, one for each Tier of the theory of action:

(1) Did the SCALE partnership have the intended effects on policy, organization, and implementation of instructional policy in the districts?

(2) Did the changes in instructional policy and practice co-constructed by SCALE have the intended effects on teachers and schools?

The challenge of causal attribution

Addressing the research questions requires establishing causal links between program activities and effects -- causal attribution. At the district level, the combination of small, multiple forms of collaboration, combined with co-construction of policy with much larger and more influential district partners, means that many of the causal effects of SCALE are likely to be difficult to establish. On top of that, the influence of the policies themselves on instruction and student learning presents another challenging problem. In a sense, the influence of district policy on schools and teachers involves a whole new level of partnership and co-construction, which means that both tiers in the theory of action have similar problems of causal attribution: (1) the partnership between SCALE with the districts (Tier 1), and (2) the partnership of the district central office with its own schools (Tier 2). With complex patterns of influence occurring in both tiers, the challenge of causal attribution is compounded and with it the need for a good strategy for creating a credible body of evidence to test the validity of the model.

Two strategies for evaluation: bottom-up and top-down

The case studies have adopted two basic strategies for answering these research questions and building a body of credible evidence: bottom up and top-down. The bottom-up strategy looks for SCALE effects in all major examples of target activities, while the top-down strategy looks for the effects of specific SCALE interventions (co-constructions). The bottom-up strategy recognizes the possibility of multiple and cumulative effects flowing through unexpected channels by looking for traces of SCALE influence in the full range of district activities. The top-down strategy recognizes the need for documenting the causal mechanisms of influence by looking more closely at particular instances of SCALE co-construction and tracing the effects. Both strategies will be used for both Tier 1 and Tier 2. The Tier 1 studies, which will be done first, we call "panoramic case studies; the Tier 2 studies will be done later and are called "in-depth case studies).

Strategy 1 , Tier 1. Here the case studies will track all major changes in instructional policies, looking for convergence around SCALE goals and the presence of SCALE vision and tools. Examination of change rather than preexisting policy increases the chances of observing effects due to recent interventions. Tracking all major changes is more neutral and agnostic about the presence of SCALE effects than observing effects only where SCALE has been involved. The broad definition of effects (convergence and presence) is compatible with the broad aim of the SCALE interventions. Of course, correlation is weak evidence of causation, but it is some evidence.

Strategy 2, Tier 1. This part of the case studies will track SCALE inputs and co-construction activities in each district and evaluate plausibility of connections between these inputs and identified changes in instructional guidance. This strategy is the inverse of the first: instead of looking for SCALE effects look at SCALE inputs and examine which aspects of instructional guidance have been targeted, paying special attention to instances where SCALE actors have been centrally involved in what appear to be major and important changes. In such cases, causal attribution may be strong even if difficult to quantify, for example, as in the previously described example of periodic assessments in Los Angeles, where SCALE actors were centrally involved in designing the intervention. This strategy is essentially one of small cases within the larger case.

(3) Strategy 1&2, Tier 2. Tier 2 addresses the influence of policies on school organization and instructional choices by teachers, as allowed by available resources. The basic approach is to investigate how policies enter into the calculus used by school administrators and teachers in making decisions about instruction and instructional support (for example, how teachers react to students' scores on interim assessments in the context of related policies and local needs). The strategy 1 approach is asking teachers and administrators open-ended questions about what influences their instructional decisions, without specific reference to interventions that have a strong SCALE influence. With this as a foundation, strategy 2 can be employed to look more closely at the interventions co-constructed by SCALE. Both strategies were used in the interview

protocol for the focus group study of L.A. teachers referred to earlier (Osthoff & Cantrell, 2004).

Tier 2 does need the qualitative focus of the case studies. While two other parts of SCALE research and evaluation (targeted studies and indicators) are designed to measure outcomes, neither tracks the adjustments made by school administrators and teachers to central policies. Qualitative research on policy formation can be critical for interpreting policy impacts. How policies are processed and incorporated by schools and teachers usually exerts a powerful influence on results.

Ethnographic method with a district focus

An ethnographic method is needed for the case studies because answers to the research questions are completely defined by the local district context. The construction and co-construction of policy will depend on its history, structure, and environment, and will be intensely idiosyncratic and contextual to that site. The case study researcher is like an anthropologist visiting another society who must observe, record, and analyze distinctive patterns of interaction within distinctive institutions. Variation is to be expected, and cross-district synthesis will be used to identify both variation and common patterns.

The research method is ethnographic in the sense that respondents and other data sources were chosen according to how well they answered the guiding research questions in the district context. Interviews started with district leaders and continued until the research questions could be answered, using prior interviews in part to identify key respondents for later interviews (respondents who have some key part of the story) and in part to re-interview respondents about key facts. Fact gathering continued until analytic closure was reached. Different clusters of respondents were involved for mathematics and science involved at the middle management level (under common leadership at the top). Interviewing began with the departments concerned with curriculum and instruction but gradually expanded to reach other departments and layers, especially those concerned with supervision of school principals and the local superintendents (in the two large districts).

A common outline for the report was developed iteratively from (a) team meetings and discussions on the nature of and evidence for SCALE effects, and (b) team debriefings after visits to districts. Each district researcher analyzed the data by identifying and tagging the evidence relevant to the research questions, gradually conceptualizing a district-level analytic synthesis responsive to the research questions. Graphical or textual summaries of the synthesis (e.g., maps, charts) were developed and shown to respondents in the districts to check the accuracy of the emerging synthesis. Team meetings continued throughout the research cycle on emerging questions, unanticipated findings, supporting evidence, analysis, synthesis, and drafting of reports.

Cross-site synthesis

A cross-site synthesis will be written on the basis of the four separate district reports focusing on common patterns, variations and lessons for the field. An important question

for the synthesis is how well the SCALE theory of change (sources of leverage) described above (which was derived partly from verbal briefings) actually worked when subjected to closer examination.

<u>Staffing</u>

The ethnographic method dictated that there be a case study researcher for each district. The alternative of assigning a case study researcher to each SCALE goal was considered early in the process, when the traditional model of program implementation seemed plausible, but was rejected as the team understood the complexities of partnership influence in districts and the power of local contextualizing forces. In other words, the evaluation will investigate how all four goals play out in each district rather than how each goal plays out across all four districts. One part-time case study researcher was assigned to each district. The cross site synthesis will be written by the team leader, who also directed the research and did some data gathering.

<u>Sources of data, interview protocol</u>

Sources of data vary for each district but generally included (a) interviews with district leaders, district middle management and IFL fellows; (b) observation of meetings involving intended change in practice, (c) district documents; (d) internal data on SCALE activities held in districts, supplemented by data collected by the BP (Building the Partnership) team.

The interview protocol (attached as Appendix B) is semi-structured with open-ended questions about current instructional guidance initiatives (the unit of analysis for the study). For each initiative, focused questions inquire about context and history, goals and strategies, procedures and actions taken or to be taken, role of individuals who have played or will play an important part, factors that have inhibited or supported progress, estimated current and future effects. The protocol concludes asking about connections among the initiatives and suggestions for the next round of respondents.

Note that, in effect, the interview protocol focuses on the theory of action of district initiatives (in exactly the way called for by Weiss, 1998), which is appropriate for both the top-down and bottom up studies described above. In the case of the bottom-up studies, the influence of SCALE, SCALE effects, will be inferred from convergence of instructional guidance around SCALE goals. SCALE effects are not data but rather analytical conclusions reached from data on district activity. In the case of the top-down studies, internal sources will be used to document SCALE co-construction activities (including data from the BP team), but the activities themselves are aimed at specific domains of instructional guidance where the interview protocol is again appropriate for gathering data on effects. Consider a hypothetical example which involves both Tier 1 and Tier 2. Suppose SCALE puts a major effort in pushing and co-constructing replacement units as a means of curing low scores on periodic assessments in mathematics (a top-down case). The Tier 1 question would be whether and to what extent replacement units actually take shape in district instructional guidance. The Tier 2 question would be whether the units are adopted by schools and teachers and, if so, with

what variations and for what reasons. In neither case would leading questions like "what were the effects of the SCALE effort" be appropriate. But the questions in the interview protocol are appropriate, to repeat -- "focused questions [inquiring] about context and history, goals and strategies, procedures and actions taken or to be taken, role of individuals who have played or will play an important part, factors that have inhibited or supported progress, estimated current and future effects." Success of the initiative is judged by whether the intended activities and outcomes actually took place, not on the basis of opinions.

<u>Common report outline</u>

The case study reports from each district will use a common outline. Each section of the outline has a suggested list of analytical questions (in essence, subsidiary research questions) that the researcher will answer from the local context if appropriate (see Appendix C). The major headings of the common report outline are listed below. The main research questions for the study (discussed above) appear as the two headings of Part III of the outline (Analysis).

I. District Context
- *Demographics, student assessments*
- *Central office administration*
- *History of relationship with IFL and SCALE*

II. Description of major intended changes in math/science instructional guidance
- *Guidance, goals, history*
- *Staff, teams, leadership*
- *Implementation, obstacles*

III. Analysis: Effects of SCALE and Effectiveness of Instructional Guidance
- *SCALE influences and effects*
- *Progress toward effective instructional guidance and remaining problems*

<u>Conclusion: system-wide reform and sustainability</u>

The design presented here grows out of implementation research and the grounded methods of program evaluation summarized by Weiss (1998). SCALE is not a separate program, however, but a set of related reforms of instructional guidance co-constructed with district staff (what might be called system-wide reform). Evaluating such a bundle of co-constructed activities raises the problems of causal attribution discussed in this paper, problems addressed by the top-down/ bottom-up design presented: (a) study the effects of initiatives from the point of origin, and (b) study the intended targets of change in a way that is open to, but not biased toward, finding the intended effects.

Sustainability also requires system-wide change. Building districts as learning organizations, smarter in pursuing the vision of good instruction in the midst of changing circumstances, is one way of viewing the SCALE mission. That kind of district -- with all the knowledge, tools, and training implied -- probably is the best way of describing

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sustainable change. Sustainable change is not just the latest package of policies, organizational structures and standard operating procedures, however effective, but rather the capacity distributed throughout the system which produced and implements all of them and which is capable of making adjustments as needed to maintain critical levels of performance (Century & Levy, 2004). A district like Denver that can apply a comprehensive theory of action developed for literacy to new instructional initiatives in mathematics and science has moved far beyond a single program or a set of programs and mastered a system-wide approach to instructional reform.

Appendix A. Background information on SCALE

Overview

Funded in the 2002 Math and Science Partnership (MSP) competition, SCALE currently includes four major urban school districts (Denver Public Schools, Los Angeles Unified School District, Madison Metropolitan School District, and Providence (RI) Public Schools), three universities (University of Wisconsin-Madison, University of Pittsburgh, and California State University, Dominguez Hills), and two large education centers (Institute for Learning at the University of Pittsburgh and the Wisconsin Center for Education Research at UW-Madison).

The partnership seeks to improve the mathematics and science achievement of all students at all grade levels in the four partner school districts by engaging them in deep and authentic science and mathematics instructional experiences. Simultaneously, the partnership seeks to improve pre-service and in-service mathematics and science professional learning. Finally, the partnership seeks to improve models of collaboration among K-12 and post-secondary institutions in ways that more fully integrate engineering, mathematics and science faculty. The goal is to provide a seamless K-through-Infinity education system in the service of mathematics and science education for all.

Institute for Learning (IFL)

The Institute for Learning was founded in 1995 as a partnership of school districts committed to standards-based education and system-wide reform. It serves as a liaison between its parent institution, the Learning Research and Development Center at the University of Pittsburgh, and educators in school systems nationwide. It bridges the domains of research and practice by conveying to educators the best of current knowledge and research about learning processes and principles of instruction. It serves as a think tank, a design center for innovative professional development systems, and an educator of core groups of school and district professionals, providing the resources and training that educators need to enhance learning opportunities for all students.
The Institute believes that for educational reform to be broadly effective and equitably distributed, the unit of change must be the district. As a result, the programs IFL develops are not designed for schools or individuals but rather for entire districts.
IFL's programs are built around the Principles of Learning, condensed theoretical statements summarizing decades of learning research.

SCALE activities and goals

SCALE is organized into five activities or goals:

Goal 0 - Management: The SCALE Senior Management Team takes responsibility for the leadership of the SCALE project. The SMT is supported by the SCALE Administrative Office (SAO), which also supports the SCALE Goal Design Teams.

Goal 1 - Core STEM Instructional System: Implement strategies to transform core STEM teaching system-wide in each of the four partner school districts so that every student experiences deep, conceptually based instruction on core mathematics and science concepts on a continuing basis.

Goal 2 - Immersion Units: Develop and implement immersion STEM learning experiences to ensure that every student in our partner districts experiences the process of engagement in an extended (e.g., four-week) scientific investigation at least once a year.

Goal 3 - Coherent Teacher Preparation: Design a new environment for and implement new teacher preparation and development programs that give teachers a deeper grasp of STEM content and effective pedagogical strategies for engaging students in learning.

Goal 4 - Equity: Increase the participation of minority and female students in high school mathematics and science courses and send more of them to college as students in these fields, thus building a more diverse pool of potential STEM teachers.

Goal 5 - Research and Evaluation: Ensure that a culture of evidence permeates all lines of work in the partnership through a program of research and evaluation. Collectively, progress on these goals will result in substantially improved STEM achievement for all students in the partner districts. As we work on these goals, we also will be creating a model form of partnership for reforming K-12 and teacher STEM education, bringing together STEM faculty, teachers, learning science researchers, and other educators in a collaboration that creates new tools and strategies, documents what works (and what doesn't), and disseminates this understanding, along with the tools to take it into practice, to a wide audience of policymakers and university and school leaders.

SCALE evaluation

Since submission of the original proposal, SCALE's research and evaluation work has evolved into four complementary lines to form an integrated and complete approach. The first line of work, led by Norman Webb, builds, maintains, and interprets a system of quality indicators. The second line of work, also led by Webb, involves targeted evaluations of specific implementation activities undertaken in pursuit of each of SCALE's first four goals. The third line of work, led by William Clune, studies the implementation and sustainability of SCALE initiatives in partner districts and collaborating colleges and universities. The fourth line of work, led by Susan Millar, documents the building of the partnership and provides context-sensitive and timely formative evaluation information to SCALE leadership.

Appendix B.
Interview Protocol for case studies

SCALE District-level Initiators and Managers Interview Protocol.

Introduction. This interview is for a project called SCALE: System-wide Change for All Learners and Educators. SCALE, a Math-Science Partnership funded by the National Science Foundation, brings together four school districts (LAUSD, DPS, MMSD, and PSD) and 2 Universities (University of Wisconsin-Madison and University of Pittsburgh) to work toward system-wide reform of mathematics and science education. I am conducting interviews as part of a case study of how reform efforts in math and science are developing and playing out in LAUSD. It is important that I talk with you even if you have previously participated in an interview with researchers from the *Building a Partnership* team. This is in part because we need occasional updates on the progress of your work, but also because *Case Study* and *Building a Partnership* inquiries have significantly different foci.

{Note to interviewer: The following statement should be given to key interviewees for whom you have already determined that additional interview sessions will likely be needed.}

We may not be able to cover all the questions I have in the time we set aside today. At the end of today's session we can consider the possibility of talking again in the future.

Here is a form I form we ask you to sign to show we have explained the purpose of the interview, and the terms of your participation. Your participation is completely voluntary. The interview is designed to run [30/60] minutes, but you may quit at anytime without penalty or loss of benefits. Any information you share is strictly confidential, you will not be identified by name in any project reports.

With your permission, I would like to audio record our conversation. If you agree to this at the outset, but later change your mind, I will stop recording at your request.

I am providing a spare copy of the interview consent form for your records. It contains contact information for people at the University of Wisconsin you may call with questions about the study or this interview. I have also attached a copy of my business card so you can contact me later if you have additional comments.

Part A.
Respondent background.

Before turning to K-12 math and science reform I'd like to learn a little about your professional background.

A1. What is your current title, and how long have you been in this position?

A2. What teaching and administrative positions have you had prior to your current position? Of these, which one or two most inform your current work?
A3. What, if any, teaching credentials or certifications have you held?

Part B.
Naming major initiatives.

Let's turn to math and science reform. Please begin by identifying what you consider to be *major areas of work or initiatives* under way in the district to improve [math and/or science] teaching and learning.

{Note to interviewer: If interviewee only names large, formal/structured initiatives, ask if there are also important areas of work that are less formal or less far along in their development and therefore not yet part of a comprehensive initiative}.

Initiatives/activity targeting Math *and* Science (and possibly additional subject areas):
M/S 1.
M/S 2.
M/S 3.
M/S 4.
Math-specific initiatives/activity.
M1.
M2.
M3.
M4.

Science-specific initiatives/activity.
S1.
S2.
S3.
S4.

{Note to interviewer: For each domain of important initiatives (i.e., math, science, both subjects) ask which ones interviewee is most involved in and focus primarily on those. If equally involved in all, ask if they can identify the one or two most important ones to discuss first}.

Part C.
Describing and Assessing Initiatives/Activity.

> *Note to interviewer: These are the central issues to explore relative to major initiatives:*
> - **Context and history** *of each initiative.*
> - **Goals and strategies** *associated with each initiative.*
> - **Procedures and actions** *taken or to be taken to advance or implement the initiative.*
> - **Role of Individuals** *who have played or will play an important part in the initiative.*
> - **Factors that have inhibited or supported** *the progress of the initiative.*
> - **Effects** *of the initiative to date and likely effects in the future.}*
>
> *Also note, Questions C1-C9 and related probes are not to be asked sequentially of all interviewees for all initiatives. The questions as a whole convey the scope of issues of central import at this point in the Panoramic Case Studies. Individual questions may be used to guide and probe as appropriate during interviews.*

I would like to learn about district initiatives or areas of activity in greater detail. The questions I am going to use to guide our discussion of district initiatives or areas of important work include their *history*, *goals and strategies*, *implementation activities*, *important actors*, *factors supporting or impeding progress*, and *effects* to date.

Let's start with [name district initiative/area of activity]. *{Note to interviewer: prioritize initiatives the interviewee has identified as important or ones they are highly involved in}.*

Initiative context/history

C1. When did this initiative originate, and what was the district context at the time?

- What factors provided an impetus for action.
- How did these factors affect how the initiative was conceived or implemented?
- Were alternative approaches were considered and rejected?
- What have been the main stages in the development of the initiative?

Goals

C2. What are the major goals of this initiative?

- What is your understanding of how this initiative was intended to affect: curriculum?
- professional development?
- system monitoring?
- accountability?
- equity?

What is your understanding of the intended impact of the initiative on various levels of the system, including:

- central office divisions, departments, or programs?
- local district offices, departments, or programs?
- schools?
- classrooms?

<u>Strategies</u>.

C3. What implementation strategies have been used for this initiative?

C2. What specific procedures or actions have been undertaken to advance/implement the initiative?

C4. What implementation strategies were considered but not used?

<u>Important actors and their roles</u>

C5. Which actors have played an important role in conceiving, designing, or implementing the initiative?

- How have the various actors involved interacted with one another in shaping the initiative?

C6. Which if any new actors need to be involved in the initiative if it is to have the intended impact?

- What would this group of actors bring to the initiative? How would they participate?

<u>Supports and Obstacles</u>

C7. What factors have either supported or inhibited the progress of this initiative to date?

<u>Actual and potential effects</u>

C8. What if any impact has the initiative had so far?

- What if any data provide evidence of such impact?
- How do you explain the initiative having this impact?

C9. If implementation of this initiative goes smoothly, how would you expect it to look
- 1 year from now?
- 3 years from now?

Part D.
Coherence/System Issues.

Now that we've discussed a number of individual district initiatives, let's explore connections among them.

D1. To what extent do the initiatives you've described interact with and affect one another?

- What factors encourage or inhibit the various initiatives from interacting in mutually supportive ways?
- What steps have been taken and by whom to coordinate initiatives?

Part E.
Follow-up/Extension.

E1. Who else should I talk to regarding these issues?

E2. What other questions should I be asking about the initiatives?

E3. {*Note to interviewer: Make statement immediately below if you judge more time is needed with this interviewee}:*

I feel I need more time to learn about your experience and perspectives on important district initiatives in [math and/or science]. May I come back [*suggest time or time frame for return*] to explore these issues in greater depth and get updates on how things are proceeding?

E4. What documents are available that would help me understand important district [math and/or science] initiatives more thoroughly?

E5. Do you have any questions for me?

Appendix C. Common outline for panoramic case study reports

I. District Context

Demographics, student assessments. Number of schools, number of students, number of teachers, ethnic breakdown of students, % with limited English proficiency, % receiving free and reduced lunch, current status and/or recent changes in student/teacher population, how school performance in the district compares to the rest of the state

Central office administration. Current status and/or recent changes in district personnel – superintendent, assistant superintendents, science and mathematics coordinators, etc., current status and/or recent changes in district organization – e.g., centralized vs. decentralized model, current status and/or recent changes in district budget

History of relationship with IFL and SCALE. Number of years with IFL prior to SCALE, highlights of IFL participation and effects.

II. Description of major intended changes in math/science instructional guidance

Guidance, goals, history. What are the intended changes in instructional guidance for math and science (for example in curriculum guidance or professional development)? In what ways do the pieces fit together as a package with a coherent logic of action? What is the relationship of current efforts to past efforts? What are the goals and intended outcomes of each intended change and the package of changes?

Staff, teams, leadership. How is the change being brought about, for example, by a working group, task force, communications between departments? Who is involved in the change process, and what are the roles of different people? Which areas or departments outside the main implementing group have policies or procedures that affect the change effort? Who or what solves problems as they arise?

Implementation, obstacles. How far has the effort progressed and how far does it have to go before it is finished? What factors have helped bring progress about?
What factors have hindered progress (the obstacles and problems that the effort faces)? What actual or proposed solutions have been suggested or implemented?

III. Analysis: Effects of SCALE and Effectiveness of Instructional Guidance

SCALE influences and effects. In what ways has SCALE been active and made contributions to the instructional guidance efforts described above? To what extent are the SCALE, vision, theory of action, ideas, training, tools, and other influences visible in the instructional guidance of this district?

Progress toward effective instructional guidance and remaining problems. What are the main issues facing the district on the path to effective instructional guidance? What

aspects or elements are in place and provided for by current initiatives? What problems remain to be solved?

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