REL APPALACHIA
Regional Educational Laboratory

CNA
ANALYSIS & SOLUTIONS

Draft Evaluation Plan for Collaborative Inquiry

Phase I

REL Appalachia
Stephanie B. Wilkerson
Zoe Barley

Metropolitan Nashville Public Schools
Paul Changas
Shelly Dunaway
Brian Fowler
Laura Hansen
Margie Johnson
Deborah Mitchell
Mary Laurens Seely
Tina Stenson
Antoinette Williams
Jack Willis

Deborah Olsen
Director, REL Appalachia

METROPOLITAN Nashville PUBLIC SCHOOLS

October 6, 2015

Contents

Tables

I. Introduction and Background

Evaluation Context and Statement of Need

Under the U.S. Department of Education, Institute for Education Science's (IES) contract, REL Appalachia (REL AP) formed a research alliance with Metropolitan Nashville Public Schools (MNPS) in 2013. The primary need identified for the MNPS alliance was based on low middle school scores in reading on the state assessment. In 2015 results from MNPS 3rd to 8th graders indicate that district average achievement continued below the state average and that 3rd through 6th graders declined in average achievement in reading since 2014 on state assessments (MNPS web site). 7th and 8th district grades improved slightly from 2014 but only 7th graders were above the state average (by 0.7%). The district is implementing a new district strategic plan that calls for data-based evidence supporting implementation and impacts of the plan. The main goal of the MNPS Research Alliance is to create a data-driven collaborative inquiry process for data use in adolescent literacy instruction in middle schools.

A *plan for data use* can help translate the vision held by district and school leaders into a *culture* for data use (Armstrong & Anthes, 2001; Datnow, Park, & Wohlstetter, 2007; Wayman, Cho, & Johnston, 2007). A plan, however, is not sufficient for creating the cultural shift within schools; its success depends on administrators at both the district and school levels providing adequate conditions, supports, and processes (Feldman & Tung, 2001; Mandinach & Jackson, 2012) for data use. Supports that district and school leaders can establish to help develop a culture for collaborative inquiry for teachers include providing both data and instructional coaches, fostering teacher collaboration, setting aside time for teachers to engage in data use, creating user-friendly data systems, and instituting useful formative and summative assessments (Young & Kim, 2010).

The current evaluation project arose from needs identified during the 2014, final face-to-face technical assistance activity with the alliance (*developing logic models for collaborative inquiry*) intended to improve data use in middle school literacy. Members discussed needs and next steps for achieving alliance goals. The group expressed the need to evaluate the implementation and outcomes of introducing collaborative inquiry in its middle schools. Not only was this need stated during that event, it also surfaced during the prior fishbone analyses as a barrier to effectively using collaborative inquiry in the district. Specifically, alliance members identified a lack of capacity to evaluate district initiatives as contributing to a lack of data on which to base decisions about funding initiatives that were effective.

The alliance members believe strongly that if they are advocating that schools incorporate collaborative inquiry into literacy instruction, the district itself must model the same by evaluating implementation of collaborative inquiry. Developing and implementing an evaluation plan is a key step toward increasing the district's capacity to evaluate the implementation and outcomes of its collaborative inquiry into middle school literacy instruction.

The evaluation planning subcommittee of the research partnership between the MNPS and REL Appalachia determined that the evaluation plan should be implemented in two phases with the

second phase building on what is learned from Phase I. Phase I, as described in this evaluation plan, will focus on a set of five pilot middle schools that will receive technical assistance support for their collaborative inquiry work during spring and fall of 2016. Protocols and instruments will be developed and piloted and baseline data collected from teachers, administrators, and coaches in the five pilot schools. Phase 1 of the evaluation will conclude revised instrumentation based on the pilot, a report of preliminary findings, and a draft plan for Phase II of the evaluation. Phase II will focus on evaluating implementation and impacts in a larger number of MNPS schools in 2017. During this period the capacity of MNPS designates will be built to conduct aspects of the evaluation in Phase II.

Collaborative Inquiry Description

The goal of the Metropolitan Nashville Public Schools (MNPS) Data Use Research Alliance is to build a culture of collaborative inquiry among district middle school educators that results in improved student literacy.

Collaborative inquiry defined

Collaborative inquiry shapes *how* groups work together to use data in applying instructional practices to meet student learning needs. In schools that use collaborative inquiry, teams of teachers work together over the course of the school year to diagnose the needs of struggling students and develop effective strategies to meet their learning needs (Robinson, 2010). Collaborative inquiry is a professional learning process that engages educators in using a systematic, self-directed, research-oriented approach to examining their teaching practice (Donohoo, 2011).

There are multiple stages to the inquiry process including making predictions and uncovering assumptions, framing problems and identifying questions, collecting evidence from multiple data sources, analyzing evidence, and making conclusions from the data that guide decisionmaking (Lipton & Wellman 2012). Through these stages, educators take an active role in expressing and testing research hypotheses related to teaching and learning (Reeves, 2010).

There have been many efforts to encourage collaboration on data use among teachers for the purpose of developing successful data-driven instruction (Borko, Mayfield, Marion, Flexer, & Cumbo, 1997; Hamilton, Halverson, Jackson, Mandinach, Supovitz, & Wayman, 2009; Lee & Wiliam, 2005; Little, 1990; McMillan, 2002; Means, Chen, DeBarger, and Padilla, 2011; Means, Padilla, DeBarger, & Bakia, 2009; Travers, 2009; Weinbaum, 2009). Collaboration fosters problem solving and the customization of existing instructional methods or the creation of new ones (Lyon & Leahy, 2009). Collaboration helps teachers learn not only how to analyze data, but also how to develop new instructional strategies based on data (Diamond & Cooper, 2007; Halverson, Grigg, Pritchett, & Thomas, 2005; Wayman & Stringfield, 2006).

Teachers need time to work with coaches and collaborate with colleagues. Heppen et al. (2011) emphasize the importance of allocating adequate time for the collaborative inquiry process, but they also point out that it is difficult for teachers to find this time unless school leaders make it a priority (see also Goertz, Oláh, & Riggan, 2009; Hamilton et al., 2009; Means et al., 2009).

Likewise, time pressures constrain teachers' willingness both to improve assessments and to consider assessment data (Hall & Hewitt-Gervais, 2000; Ingram, Seashore Louis, & Schroeder, 2004; Stiggins & Bridgeford, 1985). A teachers' lack of analytical training only increases the need for additional time for learning to use data to make instructional decisions (Morrison & McDuffie, 2003).

Research has shown that schools using a collaborative inquiry process increase student achievement as well as teacher collaboration and reflection on practice (Love, 2009; Robinson, 2010). Collaborative inquiry has been adopted by some school districts as a potentially powerful process for helping administrators and teachers use student data to improve instruction and raise student achievement (Dana, Thomas, and Boynton, 2011; Robinson, 2010).

In MNPS, educators are adopting a collaborative inquiry process framed by Lipton and Wellman and presented in their book *Got Data? Now What? Creating and Leading Cultures of Inquiry* (2012). Their "collaborative learning cycle" (CLC) and strategies for developing high-performing groups combine to address the conditions, supports, and processes that data teams of teachers, instructional support staff, and administrators need for effective data-driven dialogue and collaborative inquiry.

Their CLC model is intended to build educators' capacity to engage in the three phases of collaborative inquiry:

- *Activating and engaging* prior knowledge by surfacing predictions and underlying assumptions before examining datasets.
- *Exploring and discovering* patterns, trends, and surprises in data displays.
- *Organizing and integrating* learning by developing theories of causation and theories of action as platforms for thoughtful improvement planning.

They also identify three types of discourse that data teams implementing these phases will use in navigating data conversations:

- Dialogue—divergent discourse for opening choice.
- Discussion—convergent discourse for clarifying priorities.
- Decisionmaking—convergent discourse on choice.

Understanding how these types of discourse apply to each phase of the CLC model gives educators a tool to facilitate difficult conversations while using data to promote professional interactions about tough-to-talk-about topics.

Lipton and Wellman also purport that going through the three phases of their collaborative learning cycle is most effective when data teams practice the seven qualities of high-performing collaborative inquiry groups:

1. Maintain a clear focus.
2. Embrace a spirit of inquiry.
3. Put data at the center.
4. Honor commitments to learners and learning.
5. Cultivate relational trust.

6. Seek equity.
7. Assume collective responsibility.

REL AP professional learning partnership on CI in 2014 and 2015

When MNPS began the partnership with REL AP in 2014, the alliance focused on building educators' collaborative inquiry knowledge and skills. Guided by their book, *Got Data, Now What?*, authors Laura Lipton and Bruce Wellman facilitated a two-day workshop on building cultures of collaborative inquiry in adolescent literacy instruction. The alliance then explored the question, "What are the barriers to using a collaborative inquiry approach for effective data use in adolescent literacy instruction?" REL AP engaged 41 members in a fishbone, or root-cause, analysis to identify the key barriers in the district. Of the 11 barriers identified, the three most significant barriers were (a) lack of structures, protocols, and a common language for collaborative inquiry, (b) lack of relational trust in using data, and (c) lack of clear direction in implementation of collaborative inquiry. During a follow-up workshop, the group addressed the question, "What outcomes would we expect to see if we implemented a collaborative inquiry approach to data use without any barriers?" To answer this question, the alliance developed three logic models that identified short, intermediate and long-term outcomes related to the three most significant barriers in implementing collaborative inquiry.

Continuing the professional partnership with REL AP, the alliance supported development of the Teacher Data Use Survey (TDUS), which is currently under IES review. REL AP is developing a survey administration manual in 2015. In addition to the survey, the alliance began work in 2015 on the development of this evaluation plan for collaborative inquiry in the district.

In 2015 the alliance is focusing its work on identifying the practices that data teams need to implement to achieve the outcomes delineated in the logic models. The alliance is doing this through the development of an Innovation Configurations (IC) Map for collaborative inquiry. An IC Map divides an innovation, in this case collaborative inquiry, into its components and describes variations in practices from less-than-ideal to ideal. To develop an IC Map for collaborative inquiry, the alliance has supported a webinar on principles of innovation configurations and two workshops on developing innovation configurations. A working group of 15 members is engaged in developing the collaborative inquiry IC Map. The collaborative inquiry IC Map will be a key tool in implementing and evaluating collaborative inquiry in middle schools.

The alliance is continuing to build capacity around collaborative inquiry through a two-day replication workshop offered by Dr. Laura Lipton on the collaborative learning cycle and high performing teams. This is the same workshop conducted in 2014, but offered again to reach more middle school teams and central office staff.

II. Evaluation Purpose

The overall purpose of the evaluation approach is to build trust while providing information to stakeholders at all levels about teacher instruction and student learning results from the Collaborative Inquiry (CI) work. The evaluation will inform district decisionmaking for professional learning and implementation support based on the identification of barriers to CI implementation and the identification of exemplary models of successful implementation in middle schools. Finally evaluation information will inform decisions about the CI work including resource allocation.

Key evaluation questions (Appendix A includes all evaluation questions)

1. How and where is CI occurring in MNPS schools and with what fidelity?
2. How does the culture of MNPS support CI and promote the integration of CI in other initiatives?
3. What preparation and support, needed to implement CI, are teachers and administrators receiving?
4. Is CI making a difference for teaching and learning in MNPS?

At a March 2015 meeting of the Alliance's evaluation planning team, members identified three categories of evaluation stakeholders: primary, secondary and tertiary. The primary stakeholders identified were teachers, students, and administrators of schools & the district. Secondary stakeholders identified were the MNPS Board, parents, and community/business. Finally, tertiary stakeholders identified were colleges/universities, teacher prep institutions, students, and funders.

The evaluation planning team also identified how stakeholders might intend to use findings from the evaluation. The team identified that primary stakeholders would use evaluation information to:

- refine and or reinforce CI,
- support fidelity of implementation of CI,
- learn where CI was implemented well and under what conditions,
- learn what works and what doesn't in implementing CI,
- learn what was the general sense of support for implementing CI,
- learn what were constraints/barriers and,
- what progress in teacher capacity and student literacy is being made.

The team also believes that evaluation findings will support teacher buy-in and will highlight best practices and models. It is expected that evaluation findings also will help administrators make implementation adjustments to address issues and plan for additional resources and professional learning. The evaluation information could also help central office staff in addressing and targeting issues and broadcasting successes.

The team believes that secondary stakeholders could use evaluation findings to determine return on investment, allocation of resources, and strategies for including students in data

teams. Tertiary stakeholders, such as teacher preparation institutions, could use the findings to identify courses needed to provide the knowledge and capacities of CI.

III. Evaluation Design

A mixed-method design is proposed for the evaluation. A mixed-methods approach helps answer questions that cannot be addressed by quantitative or qualitative methods alone and therefore provides more comprehensive evidence for evaluating the implementation and outcomes of collaborative inquiry in MNPS.

Evaluation approach

The evaluation follows a utilization-focused and participatory approach (Cousins, 2003; Patton, 2008). For an evaluation to be relevant, meaningful, and useful, key MNPS stakeholders must participate in the evaluation process. A utilization-focused approach identifies the intended audiences for evaluation findings, and how those audiences plan to use the findings. Building backward from there, the evaluation aligns evaluation questions, data sources, data collection methods, data analysis approaches, and reporting mechanisms with the information needs, goals, and priorities of intended users.

Through this approach we aim to foster dialogue, reflection, and inquiry to increase the capacity of MNPS staff to understand how evaluation information can meet their needs. This evaluation approach aims to provide MNPS staff with formative information to guide decision making and improvements and summative information to account for program outcomes. A partnership of this nature can be highly effective in building stakeholder evaluation capacity and producing evaluation products that stakeholders actually use (Cousins & Chouinard, 2012; Cousins, Goh, & Clark, 2005).

Evaluation data collection methods and rationale for each

Data collection should be appropriate for the phase of program development such that relatively new collaborative inquiry activities should focus on short and intermediate-term outcomes, whereas well established and refined activities after three years of implementation would lend more credibility to the measurement of longer-term outcomes of collaborative inquiry. It would be premature and inappropriate to expect the attainment of longer-term outcomes of collaborative inquiry after only one to two years of implementation. A focus of this Phase I evaluation will be the nature of short and intermediate term outcomes and the timing of their emergence. As described in the following sections, a mixed-method approach will allow us to quantify the attainment of outcomes through surveys, school-level data, and student assessment data, and qualify the actualization of intended outcomes through interviews, focus groups, and document review.

Interviews and focus groups

To gain a better understanding of participants' perceptions and experiences as well as how schools implement collaborative inquiry, the evaluators will develop interview and focus group

protocols for teachers, data teams, administrators, and central office staff. Interviews will last approximately 30-45 minutes each and focus groups will last approximately 60-75 minutes each. We will digitally record interviews and focus groups.

The interviews and focus groups will serve slightly different purposes. Interviews will allow for one-to-one interactions that focus on individuals' perceptions and experiences with collaborative inquiry. Focus groups involve a dynamic group interaction process of questioning, listening, reinforcement, and discussion that permits an in-depth exploration of participants' attitudes and beliefs on a particular topic when they are exposed to the experiences of others. Focus groups take advantage of the enjoyment many people get from meeting and chatting with peers about shared experiences. Among the benefits of focus groups over other data collections methods are that they actively engage participants, include all participants' views, stimulate in-depth discussion, and generate an understanding with greater depth and context than would be generated from individual surveys or interviews. "In focus groups, the goal is to let people spark off of one another, suggesting dimensions and nuances of the original problem that any one individual may not have thought of. Sometimes a totally different understanding of a problem emerges from the group discussion," (Rubin & Rubin, 1995, p. 140). Whereas, we will gear interviews to uncover individual-level perceptions and experiences, we will use focus groups to illuminate how participants perceive their collective experience with collaborative inquiry. Phase I results may indicate that either interviews or focus groups are sufficient to provide the formative and summative data necessary for program improvement and success and that both will not be necessary in Phase II.

Evaluators will adhere to well-defined protocols for conducting interviews and focus groups. For interviews, evaluators will verbally solicit participant consent, review the purpose of the interview, confirm that responses will be anonymous, and convey that we are not there to evaluate them, but to learn from them about their perceptions and experiences. We will follow protocols for conducting focus groups including setting ground rules such as (1) following a set of predetermined questions, but probing for clarification when necessary, (2) having a transcriptionist present so the facilitator can focus on the participants and not recording data, (3) allowing participants to elaborate on any points covered and to bring up additional issues, (4) stating that there are no right or wrong answers to the questions, (5) conveying that we are interested in their honest thoughts and opinions, and (6) sharing that in order to have an open discussion we will give everyone a chance to respond, everyone needs to respect each other's views, and participants are invited to express their views even when they are different from others (Krueger, R. A., & Casey, M. A., 2000).

Surveys

Similarly, a survey will be used to gain better understanding of a broad sample of MNPS middle school teachers and school and district administrators. The Teacher Data Use Survey is currently under review by IES and as approved will serve as the survey instrument. There are three versions of the survey: one for classroom teachers, one for building administrators (principals and assistant principals), and one for instructional support staff (data and instructional coaches who are not currently working as classroom teachers). Each survey

version contains the same content asking how teachers use data, but questions on the administrator and support staff versions are reworded as needed for each role. The surveys are expected to take 15 minutes to complete.

What MNPS does not know is the degree to which the staff providing content area instruction to middle school students have developed the ability needed to use data effectively. Moreover, at the school level, MNPS does not know whether the district as a whole has developed the culture of data use that it desires.

The survey will equip the district with a tool for measuring changes in data use practices over time to inform its efforts to build data use capacity among its staff. The primary questions the survey will answer are:

- To what extent do teachers use student-level data to inform their instruction?
- To what extent do staff members within MNPS middle schools perceive a culture of collaborative inquiry within their school?

In the spring of 2016 Phase I teachers, administrators, and coaches in the pilot schools will be surveyed.

The review of the survey versions by IES will ensure that the survey adheres to best practices in survey research.

Observations

In 2015 the MNPS research alliance, the partnership with REL Appalachia, developed a CI innovation configuration map (IC Map) to guide school data teams in implementing effective collaborative inquiry practices that inform instructional decision-making. The CI IC Map also serves as an evaluation tool for monitoring implementation in schools. Observational data from the IC Map will be compared to data from interviews and focus groups to confirm the nature and extent of implementation of CI.

Document review

The evaluation will take advantage of relevant district and school documents where they exist. School administrators, instructional support staff, and data teams will be asked to keep and share records of their CI work and the policies and procedures that have been put in place to support it. In addition the frequency and nature of use of the Data Warehouse by the pilot school personnel will be reviewed.

The review of these documents will use content analysis. Content analysis has been defined by Holsti (1969) as "any technique for making inferences by objectively and systematically identifying specified characteristics of messages" (p. 14). Under Holsti's definition, the technique of content analysis is not restricted to the domain of textual analysis, but may be applied to other areas such as coding student drawings (Wheelock, Haney, & Bebell, 2000), or coding of actions observed in videotaped studies (Stigler, Gonzales, Kawanaka, Knoll, & Serrano, 1999).

Content analysis enables evaluators to sift through large volumes of data with relative ease in a systematic fashion. It allows inferences to be made which can then be corroborated using other methods of data collection. Krippendorff (1980) notes that "[m]uch content analysis research is motivated by the search for techniques to infer from symbolic data what would be either too costly, no longer possible, or too obtrusive by the use of other techniques" (p. 51).

Evaluation Sample

The evaluators will collect data from a representative sample of MNPS teachers, data and instructional coaches, school administrators, and data teams from the schools piloting CI. Protocols and instruments for collecting data from central office staff, and board members through online surveys, interviews, focus groups, and interviews will be piloted in Phase I. Table 1 shows an overview of the sampling approach for each data collection method and participant group.

Table 1. Evaluation sample by method

	Data Collection Methods				
Participants	Surveys	Interviews	Focus Groups	Document Review	Observations
Teachers	150	20	5 (25-30 participants)		5
School administrators	10-15	10		X	
Coaches	10-15	10-15	2 (10-18 participants)		
Central Office				X	
Data teams			5 (25-30 participants)	X	
School board members					

A purposeful sample indicates that evaluators will select participants based on specific criteria, whereas in a random sample, participants have an equal chance of being selected based on no criteria other than belonging to their participant group (i.e., teachers, coaches, administrators) and school. The Teacher Data Use Survey will be administered by MNPS in 2016 to teachers, school administrators and data and instructional coaches in the pilot schools. Evaluators will select a purposeful sample of five staff in each pilot school to interview during the fall and spring in Phase I. These teachers will also constitute the observation sample using the IC Map for CI. Observations will be done during the fall and spring of each year. We propose to select a purposeful sample of five teachers to interview based on (a) their willingness and availability to participate in two interviews, (b) their participation in the CI training, and (c) their involvement as part of a data team. We will collaborate with school administrators to identify teachers that meet these criteria. Coaches and administrators in the selected schools will be interviewed annually.

For focus groups, evaluators will select a purposeful sample of staff including one group consisting of members of the planning, design, and implementation team in each school and one group of non-members distributed across grades. We will oversample during the selection process, given that not all participants who are randomly selected will agree or be available to participate.

It is important to note that sample sizes should be large enough to uncover representative participant perceptions, but not so large that the data become repetitive and cease to reveal new insight related to the evaluation questions. Therefore, identifying an appropriate sample size is important because more data does not necessarily lead to more information. Rather, in qualitative research, when the collection of new data does not shed any further light on the issue under investigation, evaluators reach a "point of saturation" (e.g. Glaser & Strauss, 1967). Qualitative researchers agree that saturation is achieved through a relatively small sample of 20 to 30 interviewees (e.g. Guest, Bunce & Johnson, 2006; Griffin & Hauser, 1993; Romney, Batchelder & Weller, 1986), and generally samples don't need to be greater than 60 participants (Charmaz, 2006; Morse, 1994; Creswell, 1998).

IRB/Human Subjects Review Process

The study will use specific procedures to protect the identity of the participating school, teachers and students. We will not include any information that would make it possible to identify a participant or school. Students', teachers', and schools' names and identity will be anonymous. The information gathered will be used strictly for the stated purposes of this evaluation. We will utilize several data protection procedures to maintain confidentiality. First, when appropriate, data collection and analysis procedures will prevent information being traced to, or identified with, study participants. We will keep all information provided by individual teachers, administrators, and any other participants confidential to increase the likelihood of candid responses.

Informed consent will be sought and obtained from all participants, if required, but minimally from interview and focus group participants and online survey recipients. Informed consent letters will clearly communicate the evaluation purposes, procedures, and risks and benefits. The informed consent letters also will include statements offering participants the opportunities to ask questions and withdraw at any time. We are committed to ensuring that respondents are treated ethically and fairly, informed of the importance of their involvement in the process, and afforded confidentiality.

Methods to Reduce Response Burden

Evaluators will use three general strategies to minimize the reporting burden for participants. First, we will identify a study coordinator in each participating school. The study coordinator will work with evaluators to arrive at a data collection schedule that takes into account local school holidays, in-service days, and other events. The study coordinator also serves as a main point of contact for data collection activities for both school participants and evaluators. Collaborating with a study coordinators helps to ensure that study participants have the information they need to successfully and willingly participate in all data collection activities.

Second, we will communicate the data collection timeframe for online surveys, site visit interviews and focus groups, and document review to participants through a study orientation. We also will provide participants with individual study packets that include the data collection timeframe and expectations for participation and we will email reminders of upcoming data collection events prior to their occurrence. This communication of the evaluation schedule and activities will allow participants to plan for and incorporate the data collection activities into their schedules.

Third, we will collect survey data online using MNPS's survey software program, Survey Monkey. The online nature of the data collection will allow participants to complete the data collection more quickly because they will not have to manage paper documents or mailing activities. Respondents will receive an email message providing them with a link to the data collection instrument and a requested timeline for completion. We can send acknowledgements of receipt, reminders, and other communication without adding to the current paperwork burden for recipients. If possible, we will tailor distribution of reminders so that only non-responders are contacted.

Methods to Build Rapport and Increase Response Rates

MNPS recognizes the importance of participating schools, their teachers, administrators, and coaches receiving the results of the evaluation in such a form that they are immediately useful in improving the program as well as receiving the tools and strategies needed to make improvements based on the data. The direct promise of the knowledge and support to use the results will be a primary motivating factor in participation. MNPS also knows that personal contact as a means of conveying the significance of the program evaluation to participants and the value of their involvement. In order to accomplish this, we will conduct a study orientation and will follow-up with school evaluation coordinators to ensure that implementation is going smoothly. We also propose to facilitate the development of joint letters of support from MNPS executive team members and REL AP to convey to all school participants the purpose, importance, and value of their participation and responses in data collection activities. We will recognize the contribution of study participants through verbal and written acknowledgements. To promote a school-wide commitment to completing the surveys, it is recommended that schools with a response rate of 100% for both surveys will receive an incentive. Also recommended, would be a raffle for $25 gift cards for those who participate.

Data Analysis

Evaluators will use a number of techniques to analyze the evaluation's quantitative data, including calculation of descriptive and inferential statistics. Calculation of descriptive statistics, such as means and standard deviations, will help evaluators explore and describe school variables of interest and perceptions of study participants. Survey data, protected to maintain confidentially, will be cleaned and variables transformed as necessary prior to descriptive and inferential statistical analyses.

In order to appropriately address the qualitative evaluation questions, we will analyze qualitative data using the techniques of analytic induction (Erickson, 1986). The analysis process will begin with a thorough review of the data record from all data sources, followed by the application of molar coding (e.g., school; grade; position) and molecular coding (emergent based on themes surfacing from the data). We will then generate a set of preliminary assertions (i.e., statements believed to be true based on the whole dataset) regarding the evaluation questions. Next, we will refine these assertions and establish whether each is warranted by looking for confirming and disconfirming evidence in the data corpus (i.e., passages from interviews, focus groups, and document records). Assertions based on multiple data sources will be deemed more robust than those based on a sole form of data. We will link the assertions, themes and findings in a manner that supports analytic generalization (Yin, 2004; Glaser, 1978).

To code and apply the process of analytic induction, we will use Atlas.ti, a qualitative data analysis software program (Hwang, 2008). Atlas.ti is appropriate for our analytical approach because we can search, organize, and code multiple types of data from multiple documents simultaneously (e.g., interview transcripts and scanned documents). It also allows us to apply unstructured or hierarchical codes and annotations (i.e., comments and memos) to individual

data files. The hierarchical coding is particularly important because of the nested structure of the data (participants within grades, data teams and schools), and this will allow us to examine contrasts across multiple schools and dimensions.

Communicating findings

MNPS will prepare a brief draft report and a final draft report. The report will fully explain the rationale, study questions, evaluation design, method, and evaluation findings. The report will be comprised of several sections. The first section will include a user-friendly executive summary that provides an overview of the study and highlights the major findings and any recommendations that were derived from the findings. The executive summary might also include any relevant summary tables of the results. The body of the report will contain an introduction to the study that focuses on the purposes and general content of the report. The introduction of the report also will describe the evaluation design and the approach used to guide the evaluation design and data collection efforts. The next section will detail the methodology and processes used for each of the data collection efforts. The evaluation team will then present the quantitative survey results and qualitative findings from interviews, focus groups, and document review.

The aim is to provide reporting that is user-friendly. One of the most important results of an evaluation is to provide stakeholders with readily interpretable and useable information. The approach, therefore, is to present the salient findings in the body of the report. To this end, the report will make use of tables, charts, and narratives that describe, summarize, and interpret the data and findings. Tables of detailed item-by-item data such as frequencies, means, and standard deviations, however, will be provided in appendices to the report rather than in the main body.

The evaluation planning team will co-develop detailed recommendations derived from the results of the data collected. Recommendations will be geared toward improvements of collaborative inquiry activities to assure and support its cohesiveness and overall impact

IV. Evaluation Tasks

Task 1 – Implementation Context: Obtain CI training participant lists by school; invite principals to select school study coordinators. Make arrangements for collection of documents (data usage reports, district informational materials, planning documents, minutes, data requests, school schedules, student achievement data) from central office for document review.

Task 2 – Instrument Development: Focus group protocols will be developed for teachers, coaches, and data teams. Interview protocols will be developed for school administrators, central office, and school board members. The Teacher Data Use Survey will be modified to incorporate use of specific data types the district wants to explore (e.g., formative assessment data, state data, and classroom quizzes).

Task 3 – Recruitment of interviewees and focus group participants.

Task 4 – Conduct Teacher Data Use Survey from pilot school teachers, school administrators and coaches in the spring of 2016 and possibly again in August if the district administers the survey to all schools at that time.
Task 5 – Conduct interviews of teachers, school administrators, central office staff, and Board members.
Task 6 – Conduct observations of the teacher interview sample.
Task 7 – Conduct focus groups of teachers, coaches, and data teams
Task 8 – Conduct document review: e.g. data usage reports, GDNW protocols completed by teams, district informational materials including the Data Warehouse usage, planning documents, minutes, data requests, school schedules, student achievement data.
Task 9– Data analysis – survey, interview, and focus group data.
Task 10 – Develop reports and make recommendations.

V. Evaluation Responsibilities and Timeline

This section presents an overview of the responsibilities for each party during the evaluation. MNPS will be responsible for project management, provision of information, data collection, and reporting. The participating schools will be responsible for maintaining ongoing communication, responding to information requests, administering surveys, and participating in all data collection activities. REL AP will provide consultation and training as needed on data collection and will be responsible for data analysis and share responsibility with MNPS for reporting. Table 2 summarizes these responsibilities.

Table 2: Study Responsibilities by Party

TASK	MNPS	REL AP	Participating Schools
Project Management	X		X
Information Provision	X		X
Evaluation Orientation		X	
Data Collection	X	X*	X
Data Analysis		X	
Reporting	X	X	

*REL AP will provide technical assistance support for data collection activities.

Table 3. Evaluation Timeline

2016	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Project Management & Coordination												
Evaluation study orientation	X											
Participant contact database	X											
Implementation monitoring	X	X	X	X	X	X	X	X	X	X	X	X
Site coordination and scheduling	X	X	X	X	X	X	X	X	X	X	X	X
Ongoing communications	X	X	X	X	X	X	X	X	X	X	X	X
Collection of informed consents/MOU	X	X	X									
Instrument Development												
Evaluation orientation materials	X											
Data collection protocols & instruments	X											
Data Collection												
Data Use Survey		X	X									
Focus Groups			X	X	X							
Interviews				X	X	X						
Document Review							X	X				
Data Analysis												
Data entry, preparation, and checking				X	X	X	X	X				
Survey analysis						X	X	X				
Interview analysis							X	X	X			

Focus group analysis						X	X	X				
Document review									X	X		
Reporting												
Draft Brief Annual Report										X	X	
Final Report												X

References

Armstrong, J., & Anthes, K. (2001). How data can help: Putting information to work to raise student achievement. *American School Board Journal, 188*, 38–41.

Borko, H., Mayfield, V., Marion, S., Flexer, R., & Cumbo, K. (1997). *Teachers' developing ideas and practices about mathematics performance assessment: Successes, stumbling blocks, and implications for professional development* (CSE Technical Report 423). Los Angeles, CA: National Center for Research on Evaluation, Standards, and Student Testing.

Charmaz, K. (2006). The power of names. *Journal of Contemporary Ethnography, 35*(4), 396-399.

Cousins, J. B. (2003). Utilization effect of participatory evaluation. In T. Kellaghan, D. L. Stufflebeam, and & L. A. Wingate (Eds.), *International handbook of educational evaluation* (pp. 245–265). Boston, MA: Kluwer Academic.

Cousins, J. B., & Chouinard, J. (2012). *Participatory evaluation up close: An integration of research-based knowledge.* Charlotte, NC: Information Age.

Cousins, J. B., Goh, S., & Clark, S. (2005). Data use leads to data valuing: Evaluative inquiry for school decision making. *Leadership and Policy in Schools, 4*, 155–176.

Creswell, J. W. (1998). Qualitative inquiry and research design: Choosing among five designs.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Dana, N. F., Thomas, C., & Boynton, S. (2011). *Inquiry: A districtwide approach to staff and student learning.* Thousand Oaks, CA: Corwin.

Datnow, A., Park, V., & Wohlstetter, P. (2007). *Achieving with data: How high-performing school systems use data to improve instruction for elementary students*. Los Angeles, CA: University of Southern California, Center on Educational Governance.

Diamond, J., & Cooper, K. (2007). The uses of testing data in urban elementary schools: Some lessons from Chicago. In P. Moss (Ed.), *Evidence and decision making. 106th yearbook of the National Society for the Study of Education* (pp. 241–263). Malden, MA: Blackwell.

Donohoo, J. (2011). *Collaborative inquiry: A facilitator's guide.* Retrieved March 3, 2014 from http://misalondon.ca/PDF/collabpdfs/Collaborative_Inquiry_Guide_2011.pdf.

Erickson, F. (1986). Qualitative methods in research on teaching. *Handbook of research on teaching.* New York, NY: Macmillan.

Feldmen, J., & Tung, R. (2001). Using data-based inquiry and decision making to improve instruction. *ERS Spectrum, 19*, 10–19.

Glaser, B. (1978). *Theoretical sensitivity*. Mill Valley: The Sociological Press.

Glaser, B. & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research.* New York: Aldine Publishing Company.

Goertz, M., Oláh, L., & Riggan, M. (2009, December). *Can interim assessments be used for instructional change?* (CPRE Policy Brief RB-51). Philadelphia, PA: Consortium for Policy Research in Education.

Griffin, A., & Hauser, J. R. (1993). The voice of the customer. *Marketing Science, 12*(1), 1–27.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59–82.

Hall, B., & Hewitt-Gervais, C. M. (2000). The application of student portfolios in primary/intermediate and self-contained/multi-age team classroom environments: Implications for instruction, learning, and assessment. *Applied Measurement in Education, 13*, 209–228.

Halverson, R., Grigg, J., Pritchett, R., & Thomas, C. (2005). *The new instructional leadership: Creating data-driven instructional systems in schools* (WCER Working Paper No. 2005-10). Madison, WI: Wisconsin Center for Education Research.

Hamilton, L., Halverson, R., Jackson, S. S., Mandinach, E., Supovitz, J. A., & Wayman, J. C. (2009, September). *Using student achievement data to support instructional decision making. IES practice guide.* (NCEE 2009-4067). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Retrieved July 12, 2013 from http://ies.ed.gov/ncee/wwc/PracticeGuide.aspx?sid=12.

Heppen, J., Jones, W., Faria, A., Sawyer, K., Lewis, S., Horwitz, A., et al. (2011). *Using data to improve instruction in the Great City Schools: Documenting current practice.* Washington, DC: Urban Data Study, Council of the Great City Schools and American Institutes for Research.

Holsti, O.R. (1969). *Content Analysis for the Social Sciences and Humanities*. Reading, MA: Addison-Wesley.

Hwang, S. (2008). Utilizing qualitative data analysis software: A review of Atlas.ti. *Social Science Computer Review, 28*, 519-527. doi: 10.1177/0894439307312485

Ingram, D., Seashore Louis, K. R., & Schroeder, R. G. (2004). Accountability policies and teacher decision-making: Barriers to the use of data to improve practice. *Teachers College Record, 106*, 1258–1287.

Krippendorff, K. (1980). *Content Analysis: An Introduction to Its Methodology*. Newbury Park, CA: Sage.

Krueger, R. A., & Casey, M. A. (2002). Designing and conducting focus group interviews. *Social Analysis, Selected Tools and Techniques*, 4-23.

Lee, C., & Wiliam, D. (2005). Studying changes in the practice of two teachers developing assessment for learning. *Teacher Development, 9*, 265–283.

Little, J. W. (1990). The persistence of privacy: Autonomy and initiative in teachers' professional relations. *Teachers College Record, 91*, 509–536.

Lipton, L., & Wellman, B. (2012). *Got data? Now what? Creating and leading cultures of inquiry.* Bloomington, IN: Solution Tree Press.

Love, N. (2009). *Using data to improve learning for all: A collaborative inquiry approach.* Thousand Oaks, CA: Corwin.

Lyon, C. & Leahy, S. (2009). *Developing assessment for learning through teacher learning communities.* ETS RM-09-01. Princeton, NJ: Education Testing Service.

Mandinach, E. B., & Jackson, S. S. (2012). *Transforming teaching and learning through data-driven decision making.* Thousand Oaks, CA: Corwin.

McMillan, J. (2002). Understanding and improving teachers' classroom assessment decision making: Implications for theory and practice. *Educational Measurement, 22*(4), 34–43.

Means, B., Chen, E., DeBarger, A., & Padilla, C. (2011). *Teachers' ability to use data to inform instruction: Challenges and supports.* Washington, DC: U.S. Department of Education, Office of Planning, Evaluation, and Policy Development.

Means, B., Padilla, C., DeBarger, A., & Bakia, M. (2009). *Implementing data-informed decision making in schools—Teacher access, supports and use.* Washington, DC: U.S. Department of Education, Office of Planning, Evaluation, and Policy Development.

Morrison, J., & McDuffie, A. (2003, April). *Preservice teachers' development and implementation of science performance assessment tasks.* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Morse, J. M. (1994). Designing funded qualitative research.

Patton, M. Q. (2008). *Utilization-focused evaluation.* Newbury Park: SAGE.

Reeves, D. (2010). *Transforming professional development into student Results.* Alexandria, VA: ASCD.

Robinson, M. A. (2010, November). *School perspectives on collaborative inquiry: Lessons learned from New York City, 2009–2010* (CPRE Research Report #RR-67). New York: Consortium for Policy Research in Education (CPRE), Teachers College, Columbia University. Retrieved September 1, 2013, from http://www.cpre.org/images/stories/cpre_pdfs/ci-llreport2010final(nov).pdf.

Romney, A. K., Weller, S. C., & Batchelder, W. H. (1986). Culture as consensus: A theory of culture and informant accuracy. *American anthropologist, 88*(2), 313-338.

Rubin, Herbert & Rubin, Irene. (1995). *Qualitative interviewing: The art of hearing data.* Thousand Oaks, CA: Sage.

Stiggins, R., & Bridgeford, N. (1985). The ecology of classroom assessment. *Journal of Educational Measurement, 22*, 271–286.

Stigler, J.W., Gonzales, P., Kawanaka, T., Knoll, S. & Serrano, A. (1999). *The TIMSS Videotape Classroom Study: Methods and Findings from an Exploratory Research Project on Eighth-Grade Mathematics Instruction in Germany, Japan, and the United States*. U.S. Department of Education National Center for Educational Statistics: NCES 99-074. Washington, D.C.: Government Printing Office.

Travers, E. (2009). *Complicated choices: Struggling to meet NCLB requirements and remain faithful to a school's educational vision and practice*. Philadelphia, PA: Research for Action.

Wayman, J. C., Cho, V., & Johnston, M. T. (2007). *The data-informed district: A district-wide evaluation of data use in the Natrona County School District*. Austin, TX: University of Texas.

Wayman, J. C., & Stringfield, S. (2006). Technology-supported involvement of entire faculties in examination of student data for instructional improvement. *American Journal of Education, 112*, 549–571.

Weinbaum, E. (2009). Learning about assessment. *An evaluation of a ten-state effort to build assessment capacity in high schools* (CPRE Research Report #RR-61). Philadelphia, PA: Consortium for Policy Research in Education (CPRE).

Wheelock, A., Haney, W., & Bebell, D. (2000). What can student drawings tell us about high-stakes testing in Massachusetts? *TCRecord.org*. Retrieved July 14, 2015 from http://www.tcrecord.org/Content.asp?ContentID=10634.

Yin, R. (2004). Case study methods. In *Complementary methods for research in education* (3rd ed.). Washington D.C.: American Education Research Association.

Young, V. M., & Kim, D. H. (2010). Using assessments for instructional improvement: A literature review. *Education Policy Analysis Archives, 18*(19). Retrieved July 12, 2015 from http://epaa.asu.edu/ojs/article/viewFile/809/852.

Figure B 1. Lack of collaborative inquiry structures logic model

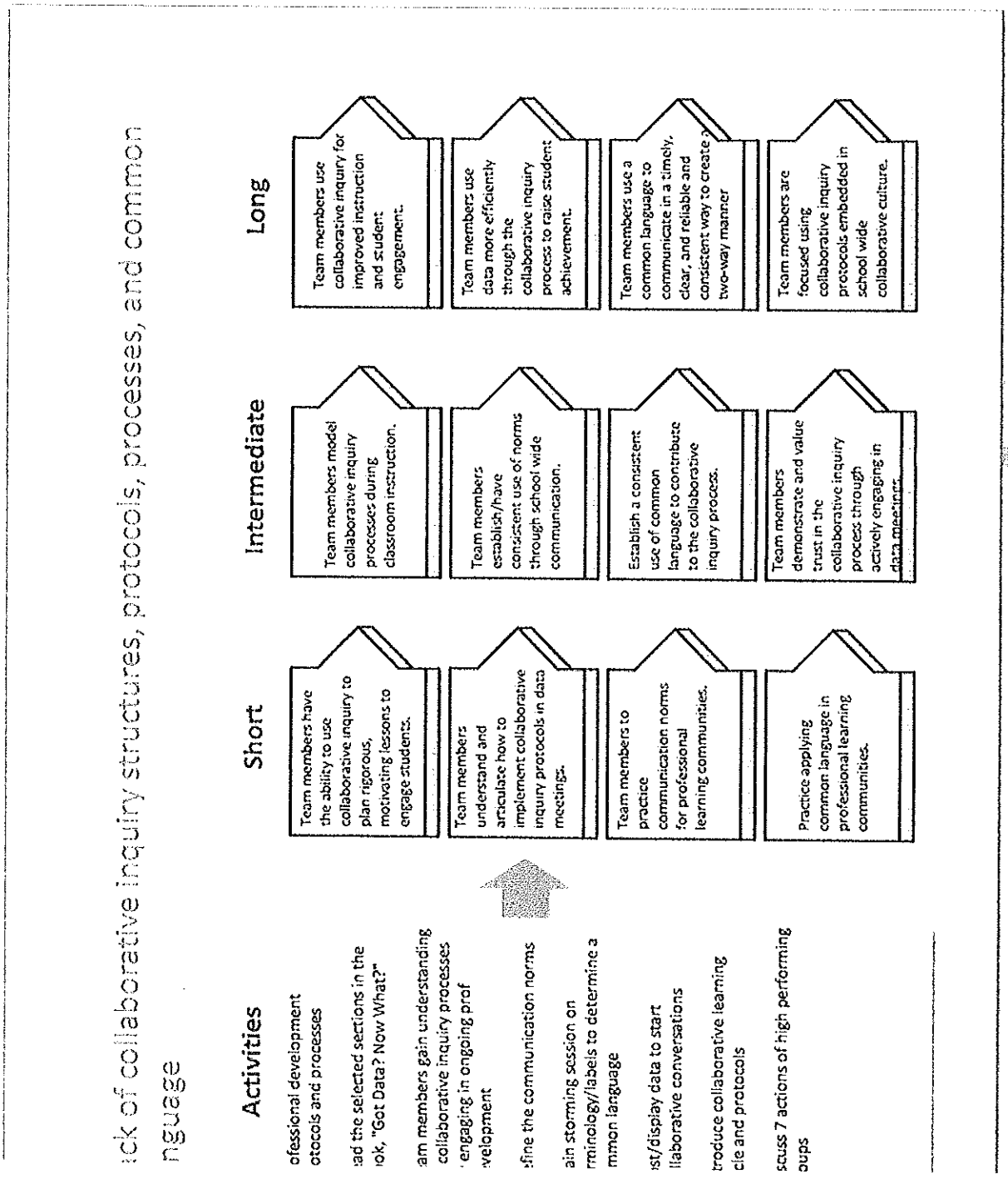


Figure B 2. Lack of direction for collaborative inquiry logic model

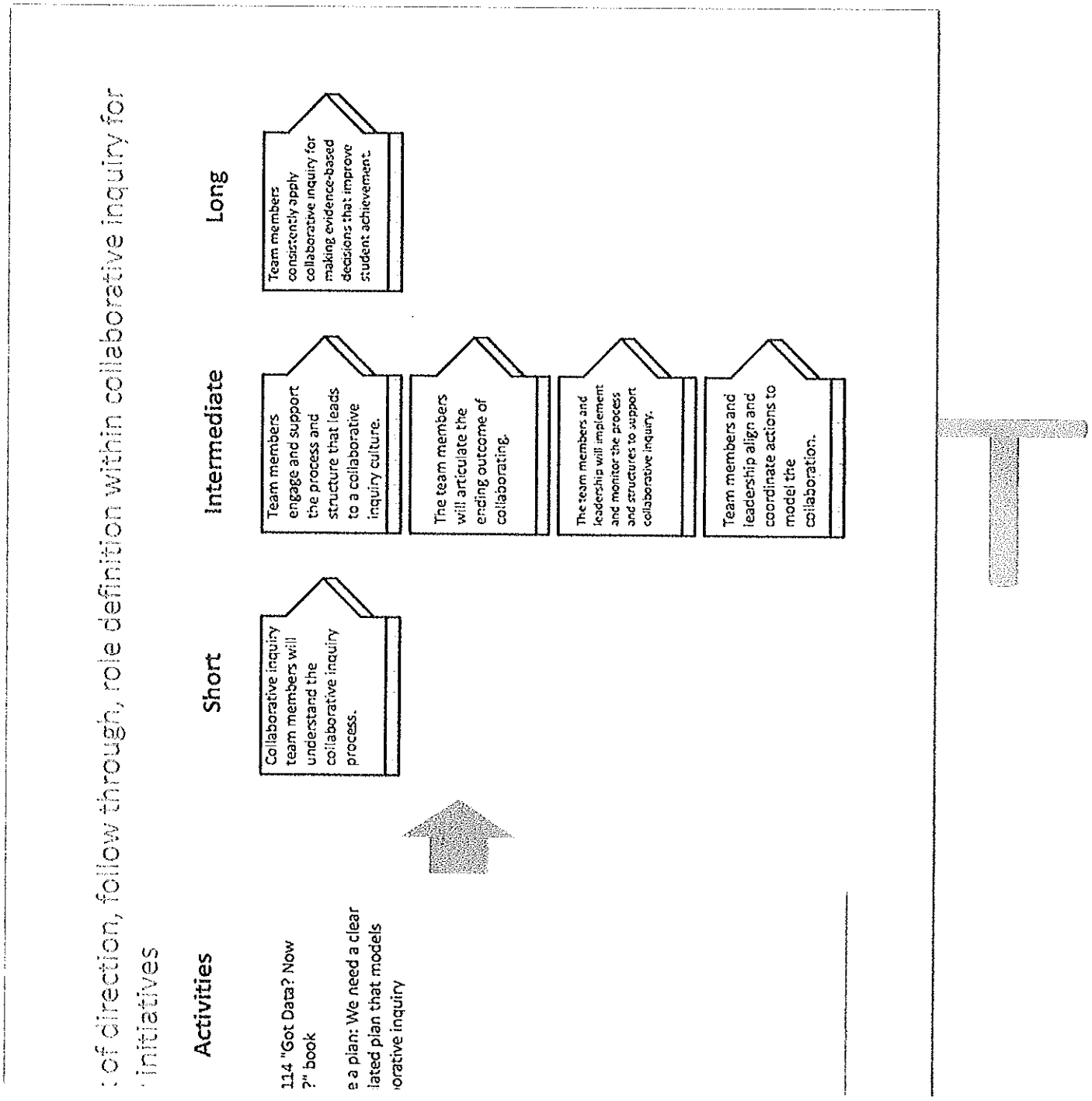
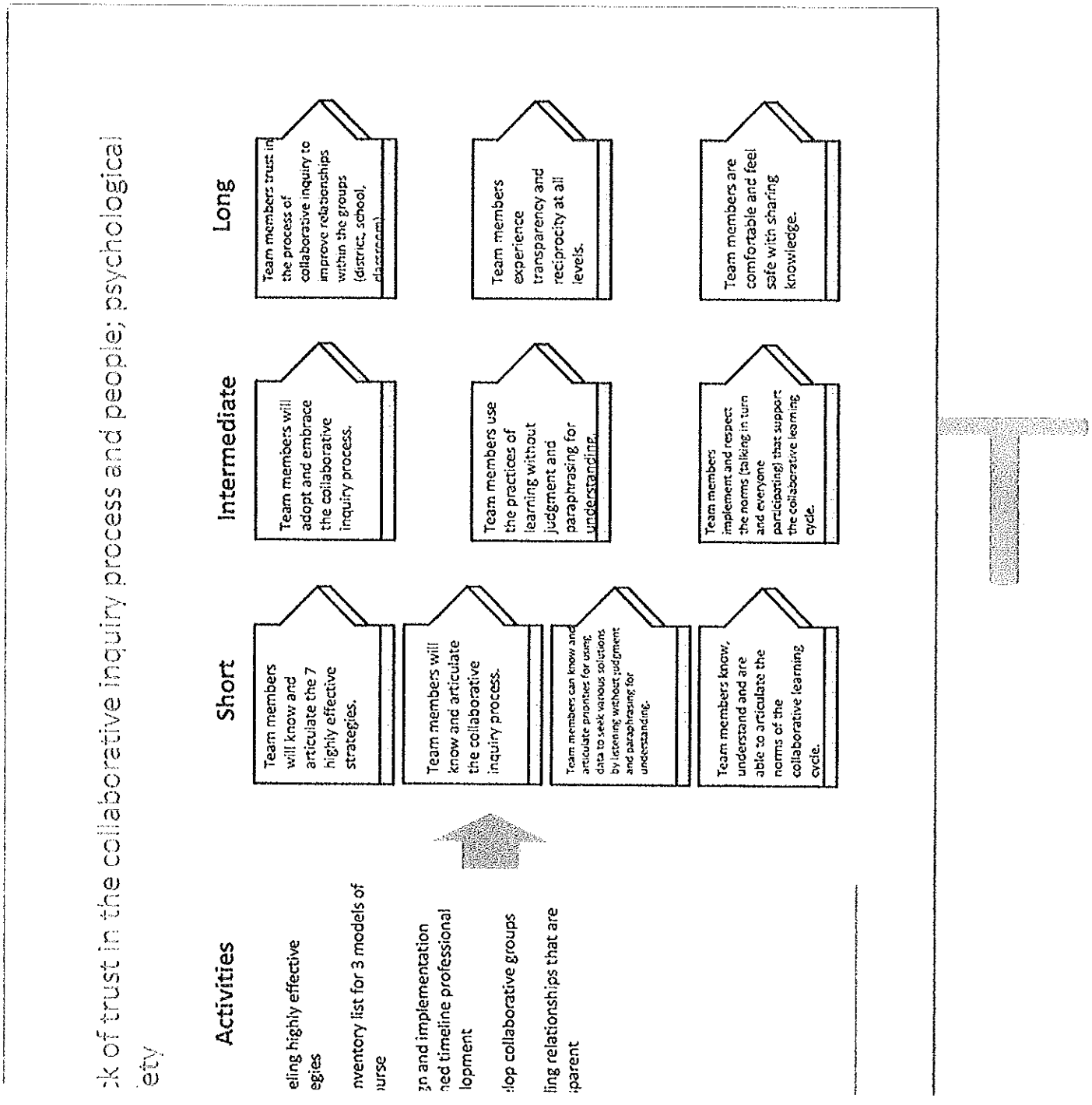


Figure B 3. Lack of trust in collaborative inquiry logic model



Appendix A: All Evaluation Questions (by source and method)

Evaluation Question	Data source	Methods
How and where is CI occurring in MNPS schools and with what fidelity?		
a. Which schools have implemented CI and to what extent?	School Administrators	Implementation Context
b. What persons are implementing CI (all levels) and to what extent?	Teachers School Administrators Data Coaches/Instructional Coaches	Data Use Survey Focus Groups Interviews
c. What does teacher and administrator implementation of CI look like?	Teachers School Administrators Data Coaches/Instructional Coaches	Data Use Survey Focus Groups Interviews
d. How is CI integrated into the instructional day's daily practice?	Teachers School Administrators Data Teams	Focus Groups Interviews
e. What data services are being accessed by the teams and are they sufficient?	Data Teams	Document Review
f. What are the CI structures, protocols, and processes in the buildings?	Teachers School Administrators Data Teams Data Coaches/Instructional Coaches	Data Use Survey Focus Groups Interviews Document review
g. What are barriers to CI in the district, in schools, for collaborative teams?	Teachers School Administrators Data Teams Data Coaches/Instructional Coaches	Focus Groups Interviews
h. How do schools that implement CI with high fidelity differ from schools with low implementation fidelity?	Data Coaches/Instructional Coaches	Focus Groups Document Review
How does the culture of MNPS support CI and promote the integration of CI in other initiatives?		
a. Is there a common language in MNPS to support CI, a common definition?	Teachers School Administrators	Focus Groups Interviews
b. How does CI fit within the district's broad goals and mission?	Central Office	Interviews Document Review
c. What message does the district have about CI for the district's stakeholders?	Central Office	Interviews Document Review
d. How is collaborative inquiry integrated in other initiatives?	Central Office	Interviews Document Review
e. What priority is given CI in relation to other initiatives?	Central Office School Board Members	Interviews Document Review
f. How is CI institutionalized in schools? The district?	Central Office School Administrators	Interviews Document Review
g. What are teachers and administrators attitudes and beliefs about CI?	Teachers School Administrators Data Coaches/Instructional Coaches	Data Use Survey
What preparation and support, needed to implement CI are teachers and administrators receiving?		
a. Do leaders and teachers who are implementing	Teachers	Focus Groups

	CI understand district expectations for training?		
b.	Are administrators prepared and supported in using CI?	School Administrators	Interviews Focus Groups
c.	Are administrators supporting teacher use of CI through teaming, time provision, and focus on CI?	Teachers School Administrators Data Teams	Document review Interviews Focus Groups
d.	What support do teachers need and do they know how to access support?	Teachers Data Coaches/Instructional Coaches	Focus Groups Interviews
e.	What resources—time, space, data—are available for CI?	School administrators	Data Use Survey Focus Groups Interviews
f.	What resources are necessary to increase the impact of CI?	Teachers School Administrators Central Office Data Coaches/Instructional Coaches	Focus Groups Interviews
g.	What comfort levels do teachers have in using CI? Do they feel supported and prepared?	School Administrators	Focus Groups
h.	How can the capacity of teachers to use CI effectively be increased?	Teachers School Administrators Coaches	Focus Groups Interviews
Is CI making a difference for teaching and learning in MNPS?			
a.	Is there trust in the CI process and a culture of trust in schools and the district?	Teachers Coaches Data Teams School Administrators	Focus Groups Interviews
b.	How has instruction changed as a result of CI use?	Teachers School Administrators Instructional Coaches	Focus Groups Interviews
c.	Are relationships among educators collaborative? Among students?	Teachers School Administrators	Focus Groups
d.	Has student self-actualization (use of data) increased?	Teachers School Administrators	Focus Groups
e.	Has student awareness and valuing of teaming increased?	Teachers School Administrators	Focus Groups
f.	Has data access and use improved for teachers, administrators, Board members given their level of use?	Teachers School Administrators Coaches Board Members	Data Use Survey Document Review
g.	Has student achievement increased? What role has CI played?	Teachers School administrators	Focus Groups Document Review
h.	What are other student/teacher/administrator characteristics or outcomes that influence or result from CI?	Teachers School Administrators	Data Use Survey