The Shape of Deeper Learning: Technical Appendix

Report #1 Findings From the Study of Deeper Learning: Opportunities and Outcomes

Prepared for:
The William and Flora Hewlett Foundation

Prepared by:
American Institutes for Research
1000 Thomas Jefferson St. NW
Washington, DC 20007
http://www.air.org

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Appendix Authors:
Mette Huberman, Catherine Bitter, Jordan Rickles, Megan Brown, Jennifer Anthony, Jennifer O'Day, American Institutes for Research

Project Director:
James Taylor, American Institutes for Research

Principal Investigators:
Jennifer O'Day, American Institutes for Research
Michael S. Garet, American Institutes for Research

Study Team:

AIR	The Research Alliance for New York City Schools

Jarah Blum	Alison Hauser	Michael Segeritz
Leah Brown	Melissa Hunter	Molly Alter
Michele Cadigan	Alex Kistner	James Kemple
Connie Chandra	Diana Mercado-Garcia	
Suzette Chavez	John Mezzanotte	
Porsche Cox	Jamie Shkolnik	
Helen Duffy	Allison Waters	
Marian Eaton	Kristina Zeiser	
Patrice Fabel	Tara Zuber	
Rachel Garrett		
Angela Hsu		

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I. Introduction

The *Study of Deeper Learning: Opportunities and Outcomes* is a proof-of-concept study focused on students attending high schools with at least moderately implemented network approaches targeting deeper learning (network schools) and comparison schools serving similar populations of students (non-network schools). Most of the schools were located in either California or New York, with the exception of three network schools located in Massachusetts, Maine, and Minnesota.

This appendix provides an extended description of the study's sampling procedures, data sources, and analytic methods. The appendix begins by describing how network and non-network schools were selected and recruited to participate in the study. After presenting the characteristics of the participating schools, we describe the primary data collections used for this report—qualitative case studies and interviews, the teacher survey, and the student survey.

II. Study Sample

In 2011–12, the Hewlett Foundation selected ten school networks to participate in in what would become the "Deeper Learning Community of Practice." The purpose of the community of practice is to share strategies, tools, and lessons that both contribute to the work of the networks themselves and build the broader knowledge base about deeper learning. The main selection criteria for the networks were:

- They needed to have experience in and explicit focus on promoting a deep understanding of content and the kinds of competencies reflected in the Hewlett Foundation's identified dimensions of deeper learning.

- They needed to do this across whole schools serving diverse populations of students, rather than targeting only certain portions of the students or teachers in a school.

The Hewlett Foundation selected the Community of Practice networks prior to the start of the *Study of Deeper Learning: Opportunities and Outcomes*. The ten networks represented in this study have a well-established history of promoting deeper learning and all share an emphasis on providing educational opportunities for minority and low-income students to prepare them for college and career. To address our primary research questions, we recruited a set of 20 network high schools from the ten networks. Criteria for network school selection are reported in Exhibit 2.1.

Given the small number of network schools in the sample, and given the criteria used to select the sample, the study's findings are limited in terms of their generalizability. For example, the ten networks include many schools that were excluded by the study's criteria, such as elementary and middle schools, very small schools, schools without substantial disadvantaged populations, and schools that opened very recently. Furthermore, because we included only moderate to high implementers of the network models, findings cannot be generalized to all schools trying to implement a deeper learning approach.

Because the network schools were drawn from ten different networks, the approach to deeper learning varied among schools. The study was not designed to determine the relative

effectiveness of the networks; rather, the study was designed to assess whether schools can promote deeper learning across a variety of reasonably well-implemented approaches and a diversity of students.

Exhibit 2.1. Network and Non-network School Eligibility Requirements

	Network School Criteria	Non-network School Criteria
Regular high school (i.e., not a special education, vocational, or alternative high school)	✓	✓
Non-magnet school	✓	✓
Non-charter school		✓
Low grade is Grade 9		✓
Low grade is Grades K–9	✓	
High grade is Grade 12	✓	✓
25+% of students are eligible for free/reduced price lunch	✓	✓
200+ students enrolled in Grades 9–12	✓	✓
Been in the network since the 2007–08 school year	✓	
Schoolwide implementation of the network approach	✓	
A moderate or high implementation rating from the network	✓	
Within the same district as a network school or a surrounding district		✓

Note: Some deeper learning networks begin focusing on deeper learning competencies before Grade 9. While these network schools included grades below Grade 9, we selected for our study students who did not attend a deeper learning network school until the ninth grade. All non-network schools selected for the study did not have students below Grade 9.

To select comparison schools, we first identified schools with a population of incoming ninth-grade students similar to the incoming ninth-grade students at the network schools. To do this, we identified a set of eligible comparison schools located in the same school district as the network school (if the network school was operated by a school district), or within the surrounding school district of the network school (if the network school was operated by a charter school management organization). Schools were identified using the 2007–08, 2008–09 and 2009–10 Common Core of Data (CCD) and were deemed eligible if they met the criteria listed in Exhibit 2.1. Specifically, we used the 2007–08 data to determine if the school was in existence as of the 2007–08 school year, and we used averages from the 2008–09 and 2009–10 school years to determine the overall number of students and the percentage of students eligible for free or reduced-price lunch (FRPL). We expected that the distribution of students across racial/ethnic categories would be relatively stable across years for most schools, so we relied on the 2009–10 data.[1]

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[1] While we expected school characteristics would be reasonably stable from 2007–08 to 2009–10, schools that recently opened might experience change in enrollment during the first few years after opening. For example, if a school opened in 2007–08, and it enrolled only 9th graders that year and added a grade each subsequent year, its highest grade would have been Grade 9 in 2007–08, grade 10 in 2008–09, and grade 11 in 2009–10. Similarly, the

Based on the CCD data, we identified up to five matches for each network school relying on Mahalanobis distances that were computed using four variables: the average percentage of students eligible for free or reduced price lunch, the percentage African American, percentage Hispanic, and percentage white students from the 2008–09 and 2009–10 CCD. To guard against matching dissimilar schools, we required comparison schools to be within one standard deviation of the network school on each of the four variables we used to calculate Mahalanobis distance. After receiving extant district data, we also compared the Grade 8 achievement of students in the network school and students in the selected comparison schools to determine priorities for school recruitment.

We encountered two challenges as we worked to secure the desired sample of schools. First, we found that some selected schools were reluctant to participate because of the data collection burden and their heavy workloads. Some candidate schools reported that they were overwhelmed by recent policy initiatives, standardized testing, preexisting research projects, staffing or facilities transitions, budgetary cuts due to the recession, and a range of other unique local factors. We employed a number of strategies to address this recruitment difficulty, including increasing incentives and honoraria for participation and involving the district leadership and/or research department in the recruitment process. Despite these efforts, some of the highest-implementing network schools and some of the comparison schools that were our preferred choices (because they were the best matches based on demographic data from the CCD and achievement data from the districts) did not elect to participate in the study. Second, in some schools that agreed to participate, we encountered challenges in obtaining active parental consent for individual students' participation in the data collection activities in the districts for which it was required. While many schools were able to manage the active consent process with our assistance quite well, six schools were unable to collect sufficient numbers of signed consent forms to participate in the student-based data collections. As a result, analyses of student survey data, which required parental consent, did not include all of the schools that were included in analyses of outcome data that did not require parental consent (see our third report *Evidence of Deeper Learning Outcomes,* Zeiser et al., 2014).

An overview of the schools included in the study is provided in Exhibit 2.2, organized by matched pairs of schools. For the qualitative analyses in this report we included all network schools (except one that was eliminated due to incomplete data), regardless of whether we were able to recruit a matched non-network school.

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school's enrollment would have increased over the same period. Therefore, selection criteria were modified for recently opened schools. To ensure a sufficient sample size for schools that recently opened, we removed schools with fewer than 200 students, *on average* between the 2008–09 and 2009–10 school years (rather than within each school year), even if the school only had two and three cohorts of students in those years, respectively.

Exhibit 2.2. Description of School Pairs

		Enrollment	Pct. Female	Pct. African American	Pct. Hispanic	Pct. Asian	Pct. FRPL
Pair 1 (CA)	Network (1N)	400	70	30	40	10	70
	Non-network (1C)	2100	50	20	20	30	40
Pair 2 (CA)	Network (2N)	300	50	10	40	0	40
	Non-network (2C)	1600	50	20	30	10	50
Pair 3 (CA)	Network (3N) [a]	400	50	20	50	10	60
	Non-network (3C)	1800	50	40	20	20	50
Pair 4 (CA)	Network (4N)	300	50	0	90	10	50
	Non-network (4C)	2300	50	0	90	10	70
Pair 5 (CA)	Network (5N)	400	50	0	100	0	40
	Non-network (4C)	2300	50	0	90	10	70
Pair 6 (CA)	Network (6N)	600	50	10	10	10	30
	Non-network (6C)	2600	50	10	30	0	20
Pair 7 (CA)	Network (7N1)	400	50	10	10	10	40
	Network (7N2)	400	50	10	10	10	40
	Non-network (7C)	2500	50	10	30	10	50
Pair 8 (NY)	Network (8N)	500	60	10	20	10	40
	Non-network (8C)	600	60	10	20	20	50
Pair 9 (NY)	Network (9N)	400	60	40	60	0	80
	Non-network (9C)	400	40	40	50	0	70
	Non-network (9Cb)	500	50	30	60	0	80
Pair 10 (NY)	Network (10N)	400	40	0	40	60	100
	Non-network (10C1)	600	50	0	100	0	80
	Non-network (10C2)	500	50	0	90	10	90
Pair 11 (NY)	Network (11N)	400	50	20	40	30	100
	Non-network (10C1)	600	50	0	100	0	80
	Non-network (10C2)	500	50	0	90	10	90
Pair 12 (CA)	Network (12N)	300	50	60	30	0	40
	Non-network (3C)	1800	50	40	20	20	50
Pair 13 (NY)	Network (13N)	400	60	80	20	0	80
	Non-network (13C)	400	60	70	20	0	80
Pair 14 (NY)	Network (14N)	400	50	80	20	0	100
	Non-network (14C)	500	50	80	10	0	70
Pair 15 (NY)	Network (15N)	300	50	40	60	0	70
	Non-network (9C)	400	40	40	50	0	70
Pair 16 (CA)	Network (16N)	300	60	0	80	10	70
Pair 17 (MN)	Network (17N)	200	40	80	0	0	100
Pair 18 (ME)	Network (18N)	300	50	20	10	0	0
Pair 19 (MA)	Network (19N)	700	50	20	40	0	60

See notes on following page

Note: School demographics from the 2010–11 Common Core of Data (CCD). To ensure school confidentiality, enrollment is rounded to the nearest 100 students and percentages are rounded to the nearest 10 percent.

Schools included by report:

Report 1. All network schools in this exhibit were included in qualitative analyses in Report 1 except school 13N, which was omitted due to incomplete qualitative data. All non-network schools were included in qualitative analyses in Report 1 except 13C (due to incomplete qualitative data) and 14C (which did not participate in qualitative data collection). All schools in Pair 1 to Pair 11 were included in the teacher survey sample.

Report 2. All schools in Pair 1 to Pair 11 were included in the student survey sample and were used in Report 2 excluding school 9Cb. School 9Cb was included in analyses of teacher assignments.

Report 3. All schools in Pair 1 to Pair 15 (excluding school 9Cb) were included in Report 3. School 9Cb was omitted because this school did not participate in primary data collection. Schools in these pairs had student survey data, extant data, or both.

Details on specific school pairs.

Schools 4N and 5N are located in the same district, and we were able to recruit only a single comparison school in this district. The students in this comparison school were matched to students in both School 4N and School 5N.

Schools 7N1 AND 7N2 were associated with the same deeper learning network and resided on the same campus. Because the schools were small in size, we combined the students attending them and treated them as single network school in the analyses in reports 2 and 3, comparing it with 7C. For qualitative analyses and teacher survey analyses in Report 1, these two schools were counted as two separate network schools.

School 9Cb was originally selected as the comparison school for 9N, but it did not reach the consent rate required to participate in the student survey and PBTS data collection, so 9C was used instead. School 9Cb was included in the qualitative analyses and analyses of teacher assignments.

Due to small sample sizes, non-network schools 10C1 and 10C2 were combined and treated as a single comparison school. Both non-network schools served populations that were similar to the network schools 10N and 11N, which were associated with the same deeper learning network. The propensity scores for pairs 10 and 11 were based on a combined sample that included both network schools 10N and 11N, and comparison schools 10C1 and 10C2, because of the limited sample size within the individual network and comparison schools. But once the propensity scores were computed, Pairs 10 and 11 were considered separate pairs for purposes of the impact analysis and meta-analysis.

For the analysis of graduation, achievement test score, and postsecondary data, network school 12N was matched with school 3C, which was also used as the comparison for network school 3N.

For the analysis of graduation, achievement test score, and postsecondary data, network school 15N was matched with non-network school 9C, which was also used as the comparison school for network school 9N.

[a] Due to missing data in the 2010–11 CCD, demographic information for this school come from the 2011–12 CCD, and free or reduced-price lunch information for this school come from 2011–12 enrollment data from the California Department of Education, 2011–12.

III. Qualitative Methods

Based on the Hewlett Foundation's theory of action for the deeper learning initiative and on theoretical and empirical literature on learning and school organization, the study team developed a conceptual framework and a list of key constructs to guide our data collection and analysis activities. The conceptual framework included the student outcomes highlighted in the initiative, the types of student opportunities we hypothesized to be associated with those outcomes, and a set of external and internal influences relevant to these elements. From the conceptual framework, the team developed a list of key constructs related to school features (e.g., organizational structures, school culture), student opportunities for deeper learning (e.g., rigorous content, opportunities for collaboration and communication), and external relationships (e.g., relationships with parents and the community, districts, networks) that served as the basis for both the interview protocols and surveys.

A. Development of Interview Protocols

The study developed ten semi-structured interview protocols, based on the constructs of the conceptual framework and protocols used successfully in prior school research:

- Network school: principal protocol (Year 1)
- Network school: principal protocol (Year 2)
- Network school: other administrator protocol
- Network school: core teacher protocol
- Network school: teacher focus group protocol
- Network school: student focus group protocol
- Non-network school: principal protocol (Year 1)
- Non-network school: principal protocol (Year 2)
- Network leader protocol
- Network technical assistance provider protocol

Interview questions were designed to elicit details about the strategies, structures, and cultures of the school in the words of the respondents themselves. The school protocols covered questions about school structures and cultures; student learning goals and instruction; teacher learning and collaboration; school leadership; parent and community involvement; and relationships to districts and networks. In addition, the network protocols included questions about the network's history, model, and vision; characteristics of the study schools; the network's supports for schools; and network collaboration, sustainability, and scalability. We pilot tested the protocols during the first phone interview or site visit and tweaked the protocol questions based on these initial interviews.

The interview protocols are available upon request.

B. Qualitative Data Collection

Our qualitative data collection included the following activities:
- Phone interviews with 20 principals in network schools in spring 2012
- Phone interviews with 10 network leaders in winter 2013

- Site visits to 20 network schools in spring 2013, which included the following activities:
    - A follow-up interview with the principal
    - An interview with two other key school administrators
    - An interview with four core subject teachers (core subjects included English, mathematics, science, and social science)
    - A focus group with other teachers (core and non-core teachers)
    - Two focus groups with lower-grade (9th and 10th grade) students and upper-grade (11th and 12th grade) students, respectively

  (These site visits resulted in interviews or focus groups with over 160 teachers and 240 students.)
- Phone interviews with two network technical assistance (TA) providers who worked directly with two of the network schools
- Two phone interviews with 11 principals in non-network comparison schools (one in spring 2012 and one in spring 2013)

For the site visits to network schools, we asked schools to pick one teacher from each of the four core content areas (English, mathematics, science, social science) and across all grade levels, 9th-12th, if possible. The representation across core subject areas and grades happened in most cases. We also asked schools to pick teachers who were knowledgeable about subject matter practice at their school beyond their own classrooms and grade(s). The teachers we interviewed tended to be department heads and/or served on the leadership team.

For the teacher focus group, we asked the school to pick six to eight other teachers who could complement the individual interviews and provide a fuller picture of core- and non-core school practices (e.g., advisories, internships, art, technology). For the two other administrator/school staff interviews, we asked schools to pick staff who were critical to their school and who were involved in key activities, such as an internship coordinator, an academic coach, or a counselor.

Finally, for the two student focus groups, we randomly selected 8 students in the 9th and 10th grades, and 8 students in the 11th and 12th grades from lists of students who had completed study consent forms. We then asked schools to schedule four students from each grade level, the first two boys and first two girls on the list, with the remaining four students from each grade as back-ups.

All site visitors and interviewers received training on the purpose and conceptual framework of the study, the case study data collection process, and the purpose of each interview protocol. Further, to prepare for the site visits, site visitors reviewed information about each school, such as a principal interview from the prior year, a network leader interview from the associated network, and school websites. Two site visitors (one senior researcher and one junior researcher) carried out two-day site visits at each network school in the spring of 2013. During this time, we held weekly meetings with the site visit team to share insights about the data collection process and main findings emerging from the visits. In addition, senior researchers conducted additional phone interviews that lasted between 45 minutes and 90 minutes, depending on the respondent type, in spring 2012 and winter/spring 2013.

For the 11 non-network schools, we collected only principal interview data (in addition to teacher/student survey data), and therefore the qualitative data for the non-network schools are not as comprehensive as the qualitative data for the network schools.

C. Qualitative Data Analysis

Each interview was audio recorded and transcribed by a transcription service. Within two days of each site visit, the two site visitors wrote a five-page "impressions report" to capture the main findings and impressions from the site visit interviews, based on a pre-determined set of questions. Subsequently, after receipt of the transcribed interviews, the senior researcher analyzed the transcript data to check, correct, and expand the original impressions documents based on a report outline that resulted in a 20-page case report capturing in a comprehensive form the main findings from the site visit. Main findings were included when multiple respondents reported on a given theme. We also noted discrepancies in respondent perceptions related to main findings.

We then summarized the main findings from each case report into a matrix organized by construct, which allowed senior researchers to analyze the prevalence of major themes across schools. Data from non-network school principal interviews were included in this matrix to facilitate comparisons of findings across network and non-network schools. When reporting findings from network schools, we provide examples of major themes that illustrate a common sentiment or a common approach at a given network school based on perceptions of multiple respondents in most cases.

IV. Teacher Survey Methods

A. Survey Development

We developed a teacher survey to collect data from network and non-network schools on school features (e.g., teacher collaboration and instructional leadership of the principal) and the school's instructional culture (e.g., academic press and commitment to individual students).

To develop the teacher survey, we first culled existing surveys for previously validated constructs and items that support the needs of the evaluation. Sources of items included the Consortium on Chicago School Research, Stanford Center for Research on the Context of Teaching (CRC), High School Longitudinal Study of 2009 Teacher Questionnaire, Organization for Economic Cooperation and Development's Teaching and Learning International Survey (TALIS), among others. In many cases, the items were modified to meet the needs of the study: modifications included slight word changes, changing of item subject (e.g., "I" to "Other teachers in my school"), and changes to the response scale (e.g., removing or combining options, changing from an extent scale to an agreement scale). We then developed any new items and measures necessary to ensure that the survey content matched with the construct models and survey blueprints.

The survey was pilot tested in spring 2012, revised as necessary, and finalized for the full administration in the 2012-13 school year. The final teacher survey included 14 constructs related to two content areas: (1) Attitudes about Instruction and (2) School Climate and Culture.

Attitudes about Instruction constructs measured teachers' attitudes, approaches, and experiences within their own classrooms. School Climate and Culture constructs measured teachers' perceptions of the attitudes, approaches, and experiences of their colleagues.

The analyses in this report are based on 3 of the 14 constructs included in the teacher survey:[2]

Beliefs about Teaching

Rasch Reliability: 0.66; Cronbach's Alpha: 0.90 (items 5-8 of original scale)

Please mark the extent to which you agree or disagree with each of the following:

My role as a teacher is to facilitate students' own inquiry.
Students learn best by finding solutions to problems on their own.
Students should be allowed to think of solutions to practical problems themselves before the teacher shows them how they are solved.
Thinking and reasoning processes are more important than specific curriculum content.

Note: Items are from Teaching and Learning International Survey 2008.

Commitment to every individual student[3]

Rasch Reliability: 0.84; Cronbach's Alpha: 0.92

Please mark the extent to which you agree or disagree with each of the following:

Teachers in my school…

Pay attention to what motivates each student. (original)
Adjust instruction to meet the needs of each student. (original)
Try to make progress with even the most difficult and motivated students.   Teaching and Learning International Survey 2008
Provide extra assistance to any student who needs it.   Diversity Dispositions index
Identify challenging yet achievable goals for each student.   Lone Tree Community School District survey

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[2] Items and reliabilities for the remaining 11 constructs are available upon request.

[3] Organization for Economic Cooperation and Development's Teaching and Learning International Survey (TALIS): http://www.oecd.org/dataoecd/16/14/47788250.pdf ; Diversity Dispositions Index: http://www.aasa.org/uploadedFiles/Publications/Journals/AASA_Journal_of_Scholarship_and_Practice/FALL08FINAL.pdf

Collective Responsibility for Student Learning

Rasch Reliability: 0.82; Cronbach's Alpha: 0.91

Please mark the extent to which you agree or disagree with each of the following:

Teachers in my school…

help maintain discipline in the whole school, not just their classroom.
take responsibility for improving the school.
set high standards for themselves.
feel responsible to help each other do their best.
feel responsible that all students learn.

Note: Items are from CCSR, 2007.[4]

B. Survey Administration

All core-subject teachers (defined as English Language Arts, mathematics, science, and social studies/humanities teachers) were invited to take the survey in all network and non-network schools listed in Exhibit 2.2. The teacher survey was administered primarily online with two schools choosing to administer the survey in hard copy.[5] To increase teacher response rates, we provided individual material incentives for survey completion. Teachers who completed the survey received a $20 Amazon.com gift card and were entered in lotteries to win an additional $100 in Amazon.com gift cards. We sent regular follow-up reminders to teachers that emphasized the importance and usefulness of the survey data. We also provided school liaisons with weekly response rate reports for them to share with principals so that they could encourage faculty to complete the survey. In schools with continuing low response rates, we mailed paper surveys and stamped return envelopes to the non-respondents. We achieved an overall response rate of 80 percent, 79 percent in network schools and 81 percent in non-network schools.

C. Psychometric Analysis

We used the Rasch rating scale model (Andrich, 1978; Wright & Masters, 1982), as implemented with WINSTEPS (Linacre, 2005) for the psychometric analysis of the surveys. The Rasch rating scale model defines a probabilistic relationship among the item difficulty, rating scale (response options) structure, and construct-level scores for the respondents. When data fit the Rasch model, the construct scores approximate interval scale estimates of the latent construct of interest.

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[4] Consortium on Chicago School Research (CCSR), My Voice, My School: Student and Teacher Surveys 1999, 2007, 2009, 2011, http://ccsr.uchicago.edu/content/page.php?cat=4&content_id=25.

[5] We administered the teacher survey in 19 network schools and 12 non-network schools total. The comparative analysis included 12 network schools and 10 network schools. Six network schools were excluded from the analysis because they were unmatched, and one was excluded (along with its matched non-network school) due to a low response rate. An additional non-network school was excluded to maintain similar match configurations of the student survey analysis. See Section D for total numbers of teachers included in the analysis.

WINSTEPS estimates both a Rasch person reliability index and Cronbach's alpha index of internal consistency. These measures tend to be very highly correlated with one another (on average). The Rasch index is based on the reliability of the measures and incorporates information on the conditional standard error of measurement of the scores and the fit of individual response patterns to model predictions. Cronbach's alpha is an index of raw score reliability. Generally speaking, the Rasch index will tend to underestimate reliability, and Cronbach's alpha will overestimate reliability. Cronbach's alpha yields a reliability of the raw, observed scores, which are survey and sample dependent. The Rasch reliability measures the reliability of the survey-independent, generalizable measures.

For the teacher survey measures, the Rasch reliability ranged from 0.63 to 0.90, and Cronbach's alpha ranged from 0.76 to 0.99.

D. Comparative Data Analysis

To estimate differences between network and non-network school strategies to promote deeper learning based on the teacher survey responses, we used a two-step process. First, to estimate the average scale score difference within each network and non-network school pair we ran an ordinary least squares regression with a binary indicator for whether the teacher was in the network school instead of the non-network school. Second, we used a fixed-effects meta-analysis approach (Hedges and Vevea, 1998) to calculate the average difference across the school pairs. This calculation is the precision-weighted mean effect size of the pair-specific estimated differences, where estimates with more precision (less error variance) receive more weight in the average. Prior to analysis, the Rasch scale scores were standardized based on the non-network teacher mean and standard deviation to facilitate interpretation of all the survey measures on a common effect size metric.

We view the results as pertaining only to the particular teachers and schools included in our sample and not to a wider population. The analysis included 505 teachers (184 network school teachers and 321 non-network school teachers) in 12 school pairs where we had teacher survey data for both the network school and the comparison school pair. The 12 school pairs were Pairs 1-11 listed in Exhibit 2.2, with the two network schools in Pair 7 split into two separate pairs for analytic purposes.

V. Student Survey Methods

For this report, we drew on data from the student survey administered in spring 2013 for the analysis of "student belonging." See Report 2 (Bitter et al., 2014) and its Technical Appendix (Rickles et al., 2014) for descriptions of the development, administration, scaling, and analysis methods for this survey. The student belonging scale included in this report is as follows:

Belonging

Rasch Reliability: 0.79; Cronbach's Alpha: 0.86

Now, we want you to think about your high school. To what extent do you agree or disagree with the following statements about your school? [Agreement scale]

I am included in lots of activities at my school.
Other students in my school take my opinions seriously.
I feel like a real part of my school.
People here notice when I'm good at something.
People at this school are friendly to me.
There's at least one teacher or other adult in this school I can talk to if I have a problem.
The teachers here respect me.

Note: Items are from CCSR. [6]

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[6] Consortium on Chicago School Research (CCSR), My Voice, My School: Student and Teacher Surveys 1999, 2007, 2009, 2011, http://ccsr.uchicago.edu/content/page.php?cat=4&content_id=25.

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