

Data Brief

Chicago Teachers Project: The New Teacher Network at the Center for Urban School Improvement

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Introduction

This data brief reports a subset of the findings from the external evaluation of the Chicago Teachers Project (CTP). The CTP is funded by an Illinois Board of Higher Education No Child Left Behind Improving Teacher Quality grant for the fiscal year 2004 (IBHE NCLB grant). Dr. Andrew Isaacs of the University of Chicago School Mathematics Projects is the Principal Investigator for this project, which works to support Chicago Public School grades K-5 teachers using the Everyday Math (EM) curriculum. External evaluation for CTP is being undertaken by evaluators from the University of Illinois at Chicago's Institute for Mathematics and Science Education.

The design of the external evaluation of CTP includes the collection and analysis of data about CTP efforts with: a) EM teacher professional development; b) EM leadership training workshops; and c) the creation of a math strand in the New Teacher's Network (NTN) at the Center for Urban School Improvement (USI). This data brief covers activities dealing with point (c) above.

Between August 2004 and June 2005 USI staff planned monthly New Teacher Network workshops with math content to approximately 30 participating teachers in their second year with NTN(Y2s). This data brief is based on observations of a sample of NTN workshop sessions, analysis of NTN agendas, interviews with NTN staff and the written reflections of teachers participating in the Y2 teacher cohort of the Network. The observations and data collection occurred between August 2004 and late January 2005.

Evaluation Method

The evaluation of the USI New Teacher Network was organized around three guiding questions:

- a. What is the format and content of the workshops and mentoring sessions?
- b. What is the quality of workshop and mentoring sessions? Do the sessions model quality professional development practices?
- c. What skills do participants report that they gain from workshops and mentoring sessions?

Considering the above guiding questions, the design of the evaluation was as follows:

Table One: NTN Evaluation Framework

Guiding Question	Design of Evaluation	Amount of Data Collected
1. Workshop and mentoring format and content	Observations were made of NTN Y2 workshop sessions using a protocol that allowed for the coding of time allocation. Analysis and coding of agendas supplemented these observations.	A total of 692 minutes (~ 11.5 hours) from 5 NTN workshop sessions were observed between August 2004 to January 2005. Agendas were also analyzed. 1 mentoring session was observed (~ 2 hours).
2. Quality of workshops and mentoring	Observations of workshop and mentoring sessions were made using a protocol that framed desired qualities of professional development.	A total of 692 minutes (~ 11.5 hours) from 5 NTN workshop sessions were observed between August 2004 to January 2005. Agendas were also analyzed. 1 mentoring session was observed (~ 2 hours).
3. Impact of training	Teachers were asked to write about the impact of NTN workshops and mentoring sessions.	14 teachers participated in written reflections at the NTN workshop on January 26, 2005; Interviews were also conducted with NTN staff.

Overview and Notes

Before moving into the findings of the data collection and recommendations for NTN, this section provides an overview and notes about the CTP goals, NTN background and goals, and the background of NTN Y2 participants.

CTP and NTN

The Chicago Teachers’ Project has three overarching goals:

- i) To improve student achievement in mathematics at Grades K-5 in the CPS;
- ii) To improve the quality of mathematics instruction at Grades K-5 in the CPS; and
- iii) To develop local leadership that can sustain long-term improvement in mathematics instruction achievement in the CPS.

The NTN work touches on each of the goals above, aiming to improve the quality of mathematics instruction and student achievement in mathematics and to develop teacher leaders through the workshop content and support. The primary objective of the NTN component of the CTP as outlined in the IBHE NCLB grant proposal is:

To create a mathematics strand for the NTN that introduces new teachers to curriculum and instruction that are aligned with the Chicago Math Science Initiative (CMSI)

with the anticipated result that:

Teachers in the NTN will increase their effective use of standards-based mathematics curricula such as the two supported by the CMSI, Everyday Math and Math Trailblazers

The NTN website and brochure states the NTN's goals:

The purpose of NTN is to support new teachers during their first two years in the classroom. Our goal is to keep enthusiastic, dedicated people working in the most important of professions—teaching our city's children.

The NTN is in its sixth year of operation. NTN is a two-year induction program for new Chicago Public Schools' teachers in Area 15.¹ "NTN offers you a professional community that will make your first years in the classroom more productive and rewarding for both you and your students," states the NTN brochure. This is accomplished by NTN staff through five main supports:

- A weeklong summer institute
- Visits to the North Kenwood/Oakland Charter School
- Personalized coaching
- Regularly scheduled working meetings (biweekly for first year teachers Y1; monthly for second year teachers Y2)
- Online network support from NTN coaches and peers

Prior to 2004-05, the primary subject focus was on literacy. The math component was added as a part of the Chicago Teachers' Project grant. While literacy remains the focus for Y1 teachers, math is the subject focus for Y2 teachers.

It should be noted that while the content focus is literacy for Y1 teachers and math for Y2 teachers, that the purpose of NTN, according to USI staff, is broader than providing teachers with professional development about teaching content. According to staff, the goals of the NTN include:

- The building of a professional community of NTN teachers that will:
 - increase teacher confidence
 - increase teacher professional expertise and discretion
 - encourage new teachers to remain in Chicago Public Schools²

These spoken goals, though unwritten in NTN brochures, are a crucial aspect of telling the story of the NTN component of the CTP.

Background of NTN Participants

A survey of participants in the Y2 cohort of NTN was conducted by NTN staff in the fall of 2004³. The table below summarizes the background information provided by the 29 participants who completed the survey.

¹ Although focused on supporting teachers in Area 15, NTN staff noted that teachers in the USI network as well as other teachers were welcome to participate in NTN. Teachers in Y2 came from at least 9 Areas, as noted in the survey summary.

² NTN staff interview, conducted on 12/1/04

³ These data are taken from a summary of surveys, version 10-27-04.

Table Two: Gender, Schools & Areas Represented in NTN Y2s

Female	Male	Number of Schools	Number of Areas
24	5	19	9

Twenty-nine of the participants who filled out the survey were female and 5 were male. The teachers were from 19 different schools located in 9 instructional Areas in Chicago Public Schools.

Table Three: Grades Taught by Teachers in NTN Y2

Grade Taught	Number of Respondents
Pre-Kindergarten	1
Kindergarten	1
Grade One	6
Grade Two	7
Grade Three	4
Grade Four	1
Grade Five	4
4/5 Split	1
Grade Six	2
Grade Seven	1
Special Education	1

The grade levels most represented among the teachers responding to the NTN survey are first, second, third and fifth grade. Twenty-two of the twenty-nine teachers who filled out the survey came from these four grade levels. Two teachers reported that they taught sixth grade. There was one teacher from each grade level at Pre-kindergarten, kindergarten, fourth, and seventh grades and one teacher responded that she was a grade 1-4 Special Education teacher.

Table Four: Math Curriculum Used by NTN Y2s

Math Curriculum	Number of NTN Teachers
Everyday Math	18
Math Thematics	6
Connected Math	6
Math Trailblazers	2
Direct Instruction	2
Houghton Mifflin	1
Math Central	1
McGraw Hill	1
No math curriculum listed	2

Eighteen of the twenty-nine NTN Y2s reported that Everyday Math was the K-5 curriculum taught in their school; two reported that Trailblazers was used with K-5 students. For the teaching of 6-8 math, 6 teachers stated that they were using Math Thematics and 6 reported using Connected Math. Two teachers reported using SRA Direct Instruction. One teacher reported using Houghton Mifflin, one using Math Central and one using McGraw Hill. Two respondents did not indicate which math curriculum was used in their school.

Findings

The findings sections of this data brief begin by summarizing collected data on: a. NTN workshop format; b. NTN workshop content; c. NTN workshop quality and; d. NTN workshop impact. These sections present evidence descriptively, providing illustrations from observation and reflection data where relevant. Following these descriptive sections are conclusion and recommendation sections that provides a more analytical treatment of the data.

Workshop Format

There were approximately 25 hours of workshop training offered to Y2 teachers in the time of this study, between August of 2004 and January of 2005. Nearly 12 hours of training were observed by the evaluation team. These observations occurred in two half-day observations of summer training⁴, and in observations of three out of the five after-school workshops (late October, early December, late January). The summer meetings occurred from 9:00 to 3:00 on August 24th and 25th, 2004. The school-year trainings for Y2 teachers occurred monthly, from 4:00 to 6:30 p.m.

The NTN workshops took place at the Center for Urban School Improvement, located on the southeast end of the University of Chicago campus in Hyde Park, on the south side of the city.

To begin the consideration of the NTN workshops for Y2 teachers offered from August 2004 to January of 2005, we first take a look at the format -- how time was allocated -- in observed workshops. Written observation notes were coded to quantify time allocation during the sessions. The following categories were used for coding:

- Individual work: Time in which participants worked alone on an activity
- Small group: Time in which participants worked on an activity in smaller groups
- Full group discussion: Time spent in full group discussion generally facilitated by instructor
- Presentation by NTN staff: Time spent listening to instructor presentation
- Break/Late start: Time in which scheduled meeting time was not used due to breaks or late starts.

⁴ Half of the summer workshop days were devoted to math and half to other topics; only the sessions focused on math were observed.

Table Five: Percent of Total Session Spent on Various Activities in a Sample of NTN Workshops, August 2004 – January 2005

	August 24, 2004	August 25, 2004	October 27, 2004	December 1, 2004	January 26, 2005	Average across four sessions
<i>Total Minutes Observed</i>	<i>(142 min)</i>	<i>(190 min)</i>	<i>(148 min)</i>	<i>(152 min)</i>	<i>(60 min—partial observation not included here)</i>	<i>(632 min)</i>
Individual	10.3%	13.2%	17.6%	6.6%	NA	11.9%
Small Group	32.2%	31.6%	18.9%	37.5%	NA	30.0%
Full group	22.6%	15.7%	31.1%	34.2%	NA	25.9%
Presentation	28.1%	21.1%	12.1%	5.3%	NA	16.7%
Break/Late start	6.8%	18.4%	20.3%	16.4%	NA	15.5%

Analysis reveals that across the four observed sessions, on average, the largest percentages of time were spent in small group work and full group discussion, at 25.9% and 30.0% of workshop time respectively. Presentations by NTN staff took about 16.7% of observed time. Individual work was approximately 11.9% of observed workshop time. On average, 15.5% of workshop time was taken up in breaks and late starts⁵.

Workshop Content

Based on the analysis of agendas and observation of the five NTN sessions described above, the content of NTN Y2 training spanned across five main subject areas:

- Illinois & National Council of Teachers of Mathematics (NCTM) standards
- Math activities
- Reflection on self as a math teacher and learner
- Consideration of scholarly literature on teaching
- Skills for working in CPS

In the section that follows, a brief description of each content area is provided, including descriptions of meeting excerpts that illustrate them.

Illinois & NCTM standards. In two of the five observed meetings, NTN staff used the State of Illinois and NCTM standards to frame conversations about the teaching of mathematics. Participants were introduced to the standards and led through activities to explore them. For example, in the August 25th session, participants were given the state standards and performance descriptors and worked in grade level groups to examine the standards and brainstorm possible learning activities. The teachers were asked to consider a lesson they had taught in the previous school year in relationship to the standards. This activity helped

⁵ The evening sessions began at 4:00. However, the meeting rarely began before 4:30 as many teachers arrived after 4:00 and the NTN staff was often waiting for enough teachers to begin. At the same time, this time was used by teachers and NTN staff to socialize, schedule mentoring sessions, etc.

teachers to understand the standards, and to see that a single activity cuts across more than one standard.

The NTN staff introduced the NCTM standards at the December 1 meeting. Participants were led through a “glyph” activity in which they drew a self-portrait based on their style and abilities in learning mathematics. Five attributes were used to draw the self-portrait. For example, step one was to draw hair. An NTN staff member gave participants the following rules:

- If when you do your bills, you do multiple step multiplication in your head, give yourself spiky hair.
- If when you do your bills, you don’t do multiple step multiplication in your head but you do addition in your head, give yourself curly hair.
- If when you do your bills, you use a calculator, give yourself straight hair.

Similar descriptions were given for participants to draw their eyes, nose, ears and mouth, depending on their math abilities. After the portraits were drawn, the NTN staff member revealed that each of the five attributes represented one of the five NCTM standards. Hair was numbers and operations; the nose was geometry; the mouth was data analysis, eyes were measurement and ears were algebra.

These portraits were used to open conversations with participants about the NCTM standards and about their math learning and teaching. Teachers were asked to talk about their self-portraits and to rate their teaching so far in the school year on each of the NCTM standards, providing activity examples for the standards on which they rated their teaching highly.

Math activities. Participants were introduced to, and encouraged to engage in and discuss, math activities to use with their students. The source and type of these activities varied widely. The five observed sessions revealed activities taken from a wide variety of literature on the teaching of mathematics, the NCTM website, university websites, ISAT extended response worksheets, the US Department of Education website, Figure This: Math Challenges for Families, the Illinois State Board of Education website and from the Everyday Math curriculum. The NTN staff stated that their main “text” for the workshops was “Mathematical Power: Lessons from a Classroom,” by Ruth E. Parker⁶.

A large portion of workshop time observed was spent on math activities (approximately 50-60%). Participants were introduced to activities and then asked to try them out. For example, on the August 25th session, participants were each given an index card with a fraction, decimal or picture on it representing numbers between 0 and 1. The group then ordered themselves silently from 0 to 1. Those who were equivalent fractions were to link arms. Participants tried this activity, debriefed it as a group, and then were encouraged to use it with their class.

These activities seemed to unfold primarily in three ways. In some instances, the introduction of activities and their “piloting” with teachers was brief and not linked to extensive discussion. Secondly, there were times when longer discussions ensued after the introduction of an activity as teachers were encouraged to contemplate the ways in which they could modify the

⁶ NTN staff interview, conducted on 12/1/04

activity for their own grade level or contextual situation. For example, in the October 27th meeting, participants engaged in “data dating”, a silent activity to collect data in pairs, observing eye color, hair color, etc. These data were then graphed. Teachers were asked to discuss the ways in which they could modify the list of data to collect, the graphing technique, even the name of the activity, to accommodate the age and needs of their students.

Finally, there were activities that teachers were encouraged to take and try with their students, followed by debriefing at the next meeting. For example, participants were given an ISAT extended response math problem at their session on January 5, 2005 and asked to try it out with students. On January 26th, participants were observed sharing examples of the work their students did on the ISAT activity, thinking out loud about the strengths and weaknesses of the manner in which they approached the activity and talking about what their students knew and what they still needed to learn.

Reflection on self as math teacher and learner. Participants were led through activities that helped them to reflect upon their conceptions of math, both as a learner and a teacher. A high degree of overlap exists between these activities and those that introduced standards and math activities. Often these activities were used to lay the groundwork for the introduction of math activities or content, as can be seen in the use of the glyph self-portrait as an introduction to the NTCM standards, described above. Participants were encouraged to reflect upon what “good” math instruction looks like and on their strengths and weaknesses as a learner and teacher of mathematics.

Consideration of scholarly literature on teaching. Participants were given time to engage in silent reading and discussion of scholarly literature on teaching, both on the subject of mathematics and in general. As stated above, the NTN staff chose as their main “text”-- “Mathematical Power: Lessons from a Classroom,” by Ruth E. Parker. This book was often used for silent reading periods in which participants could read about teaching. Other reading material sources included Education Week, Phi Delta Kappan and “About Teaching Mathematics”, by Marilyn Burns. While the separation of the consideration of scholarly literature from the introduction of mathematical activities described above makes sense conceptually, these readings and activities often came from the same books. Separating them here illustrates the different uses of these reading materials, at times to introduce student activities and at others for silent reading and reflection.

Skills for working in CPS. Participants were also given information to help them negotiate working in the Chicago Public Schools. These parts of the session were unrelated to mathematics. For example, in the October 27th session, participants were given information about “Donors Choose”, a website that matches classroom teachers in need of materials with donors who will buy the materials for them. Later in the same session, NTN staff led a discussion about first quarter parent-teacher conferences, allowing participants to talk about the plans they had to talk with parents, and providing suggestions for how to deal with conferences regarding particularly difficult students. At the December 1st meeting, the primary grade level group spent some time talking about the process of referring children for special services. NTN staff provided participants with information about the referral process, language to be used in referring children, and allowed participants to talk about the frustrations of being unable to get children the supports they needed.

Workshop Quality

Research suggests that high quality professional development encourages reflection on practice, provides the opportunity to apply new ideas, actively involves participants, promotes discussion of challenging intellectual ideas, engages participants as sources of expertise, and presents participants with feedback on their practice (Smylie et al, 2001). This understanding of high quality professional development was built into the data collection for this evaluation. The observation protocol aimed to tap the extent to which the NTN workshops exhibited evidence of high quality professional development.

Reflection on practice. The high percentage of time spent in small group and full group discussion (~ 56%) of practice supports the notion that the observed sessions allowed for reflection on teaching practice. Small group and full group activities and discussions generally included the introduction of a new math activity for participants to use with their children, wrapped inside or around a self-analysis activity that allowed teachers to reflect on their own mathematics teaching and learning styles. Participants were encouraged to raise challenges from their classrooms in discussion and to brainstorm possible solutions as a group. Reflection on practice also occurred as participants engaged in the reading of scholarly work on teaching and the teaching of mathematics.

Time for applying new ideas. The hands-on, group and individual activities were geared toward allowing participants to process new ideas by actually applying them. Student activities were introduced in a hands-on manner that allowed participants to “play” students. For example, participants tracked time using time charts (8/25/04), collected data from one another and graphed it (10/27/04), and played common board games that build math skills (12/1/04). NTN staff allowed teachers to engage in activities that promoted deeper understandings. For example, when introducing the Illinois standards, NTN staff gave teachers time to take the standards and create activities that mapped to the standards, or to chart activities they had already done with students on the standards (8/24/04). NTN activities were characterized by this deep learning.

Active participation through attendance, discussion, writing activities. The style of the five observed sessions was geared toward active involvement of participants. Presenter “talk” was generally minimal, averaging at 16.7% and ranging from 5.3% to 28.1% of NTN workshops. Presentations, instead of being structured as a one-way presentation of information, were formulated as a dialogue between NTN staff and participants. NTN sessions were very “active”. Participants were moving from one activity to the next, and the format of the sessions was very hands-on.

Discourse around challenging intellectual ideas. Participants were encouraged to honestly reflect upon their strengths and weaknesses as learners and teachers of mathematics. At times, this involved examining closely personal philosophies and weaknesses that challenged teachers’ image of themselves. Teachers were pushed to consider a new perspective on activities. For example, participants were asked to learn about and engage their students in an extended response math ISAT problem (1/26/05). In the process, the NTN participants focused on the skills students needed to learn to be successful on these items and the ways in which aspects of these skills are linked to literacy teaching. Many teachers commented as they left this session, that they saw the test in a new way, as a potential source of building strengths

rather than as just another “terrible standardized test”. Pushing participant thinking was common in NTN sessions.

Participants are engaged as sources of knowledge and experience. The minimal amount of presenter “talk” is evidence for the extent to which participants were engaged as sources of knowledge and experience. Teachers were encouraged to raise and solve problems together, to share their experiences in teaching and to apply their judgment to activities introduced by NTN staff. NTN staff often facilitated discussion asking questions such as “What would you do to alter this activity to fit your grade level?” or “What problems do you foresee in using this activity and does anyone have a suggestion?”

Participants receive constructive feedback on their work. Participants received feedback on their work and practice in multiple ways. They were encouraged to share their challenges and experiences with colleagues who could give them potential solutions and feedback. For example, after engaging in an activity on “data dating”, participants were asked for ways in which they might alter the activity for their class. Teachers responded that they would set parameters, use certain classroom management techniques, appoint class leaders, et cetera (10/27/04). Teachers also brought in examples of student work for NTN staff and NTN colleagues to consider and analyze (1/26/05). And, a portion of participants was given mentoring visits by NTN staff in their own classroom⁷.

Workshop Impact

The impact of the leadership training is considered using written reflections from 14 NTN participants on 1/26/05.⁸ Ten questions were on the reflection document. Five questions had statements and participants circled numbers 1-5. Five questions asked participants to write short responses. This reflection document was co-written by NTN and evaluation team staff and administered by NTN staff.

Circle the number that best reflects your opinion on the following points:

1. I feel NTN meetings help me connect with other NTN teachers, facilitators and coaches. (Responses on a four-point scale, “not at all” to “very much”).
2. Leaving NTN meetings, I felt less isolated in my work as a teacher. (Responses on a four-point scale, “not at all” to “very much”).
3. I find “doing” classroom applicable activities. (Responses on a four-point scale, “Not at all engaging” to “Very engaging”).
4. I find grade level group discussions. (Responses on a four-point scale, “Not at all helpful” to “Very helpful”).
5. Overall, I feel engaged and involved in my own learning during NTN meetings. (Responses on a four point scale, “Not at all” to “Very much”).

⁷ Descriptions of these mentoring sessions, provided by participants through a written reflection conducted on 1/26/05, are included in the section below on the impact of NTN.

⁸ On the day that written reflections were administered, 14 Y2s were present to participate. Thus, the views reflect only a portion of the total participants.

Quick Writes

- Have you been able to incorporate an NTN math activity into your instruction? If so, please describe briefly. If not, what have some of the barriers been?
- What teaching skills have you gained during NTN? Write briefly about one or two of them and explain how they’ve been beneficial to you (and your kiddos). If you haven’t gained any new skills, let us know what you would like us to focus on in upcoming meetings.
- Have you received a mentoring visit from NTN staff?
- If so, write briefly about the mentoring you received. What was the length of the visit? What was the format of the visit (Pre and Post conferencing? Observation? Demonstration? Co-Teaching? Etc.) What were the benefits of the experience? What would you change about it?⁹

Reflection Results

On the “circle the number” reflection section, participant responses had similar averages across all five questions. The responses of the 14 participants to each question appear below. At the bottom of each column, the mean score is calculated for each question.

Table Six: “Circle the number” reflection responses 1/26/05

NTN Evaluation Question Responses 1/26/05				
Question 1	Question 2	Question 3	Question 4	Question 5
4	4	4	3	3
3	3	3	4	3
3	3	2	3	3
4	4	4	4	4
4	4	4	4	4
3	4	3	4	4
3	2	2	2	2
4	1	3	2	4
3	4	4	3	3
3	3	4	3	4
4	4	3	3	3
3	3	4	4	3
4	4	3	3	3
4	4	4	3	4
3.5	3.36	3.36	3.21	3.36

The section below summarizes the responses on the “Quick Write” portion of the evaluation given to participants at the NTN meeting on 1/26/05.

⁹ A fifth “Quick Write”, aimed at collecting information for NTN staff about future NTN work, is not included in this summary.

Have you been able to incorporate an NTN math activity into your instruction? If so, please describe briefly. If not, what have some of the barriers been?

Ten of the fourteen respondents reported that they had used an NTN math activity in their classroom. Multiple respondents reported using the glyph activity (4) and extended response problems (4). Other participants reported using the paper pool activity, math pictures on post-it notes, fractions using food, quiet organizing math activities and Sammy's Sweet Shop.

For those who reported they were not using NTN activities in math, two reported they didn't have time. Two of the respondents who reported they had used an NTN math activity also reported they did not have sufficient time to integrate these activities because of the math curriculum being used in their school.

What teaching skills have you gained during NTN? Write briefly about one or two of them and explain how they've been beneficial to you (and your kiddos). If you haven't gained any new skills, let us know what you would like us to focus on in upcoming meetings.

Five of the fourteen respondents wrote about gaining skills in math teaching and thinking. Two of these teachers reported having "a better understanding of math with abstract thought patterns" and "a good understanding of why math is important." The other three teachers noted enjoying the emphasis on group work and "the use of different modalities to convey mathematic principles," gaining ideas for activities and becoming more confident in "using higher level thinking skills in math."

Two participants focused on literacy, one emphasizing the assistance of choosing good picture books, the other writing about knowledge gained about "Read Alouds".

Three participants focused on more general gains in teaching skills. One focused on the ways in which NTN "has helped me to keep an open mind at what is considered teaching...", another wrote about her raised awareness of the language she used in instruction, and the third focused on how NTN has helped her to "make teaching fun".

Finally, two teachers focused on resources and networking, pointing to the access to new books and ideas and to colleagues.

Have you received a mentoring visit from NTN staff?

Ten of the fourteen participants who wrote the reflections reported that they had received, or were scheduled to receive, a mentoring visit from NTN staff.

Four respondents answered no. One of the four wrote that his/her visit was "pending—to be re-scheduled".

If so, write briefly about the mentoring you received. What was the length of the visit? What was the format of the visit (Pre and Post conferencing? Observation?)

Demonstration? Co-Teaching? Etc.) What were the benefits of the experience? What would you change about it?

Of the ten participants who reported they had a visit, 8 described their visit. Visit lengths were reported to range from 20-45 minutes. Three respondents reported that NTN staff had done a demonstration, 4 reported that NTN staff had observed them.

The three demonstration lessons were reported by teachers to be focused on literacy, “Read Alouds” and independent writing. One of the three participants who reported being observed, stated that the observation had been of written response. The other two participants who reported being observed did not specify the content of the observation.

One respondent did not specify in her/his description the format or content of the visit.

Teachers reported liking demonstration lessons because it was valuable to see “what my kids already knew about the subject,” and to see “a variety of methods [used] to redirect [the students].” Teachers suggested they got good suggestions and that it “was nice to see more than my point of view.” Three respondents reported wishing there was more time for collaboration, feedback and pre- and post-conferencing.

Conclusions and Recommendations

The remaining sections of this data brief provide summary and concluding remarks about NTN Y2 teacher workshop format, content, quality and impact. Each of these three areas is considered in turn, summarizing findings and making recommendations for future work.

Workshop Format and Content Considered

Descriptions in the format and content sections above provide evidence of high quality content and effective format of the NTN Y2 teacher workshops. The organization of activities to involve participants in small and full group discussions and work on activities together is engaging to these tired teachers who voluntarily attend this meeting after-school. The flexibility and dynamic atmosphere is a great strength of the NTN math strand. This same flexibility, however, often leaves planned activities uncovered due to the late starts that take 30 minutes of workshop time from the facilitators.

The introduction of math activities and content comes from many sources. This is at the same time a source of strength and weakness for the NTN math strand. The great richness of perspective that the many materials provide is impressive. NTN participants use the materials, or portions of the materials, or adapted forms of the materials, in their classroom as they are most useful. The down side to this approach is a potential lack of connectedness or coherence in the approaches and goals of the math strand in NTN, especially in relation to the Chicago Math and Science Initiative, with which the CTP is supposed to “align” (see CTP goals in the introduction of this data brief).

This difficulty was recognized and expressed by NTN staff. This is the first year of NTN focus on math, and this is the first pass at collecting, organizing and presenting it. Two NTN staff members talked about their learning in this process:

Part of the challenge is that we don't have a binder with this stuff yet...Being in this process for five years, we know what our second year teachers need but now we are rethinking what they need in terms of math instruction (NTN staff)

I really wanted to go deep on what was the best format out there and that's not what I have studied in depth. And so I had to do a lot of personal reading and really finding out what is the debate on math reform and getting a sense of both sides and trying to find examples of strong math instruction...Now I am learning lots of channels and pipelines of good thought but some of it was at first just casting a really wide net and seeing what comes up (NTN staff)

Recommendations: The evaluation data point to two key foci in format and content of the NTN math strand.

- **Format.** NTN staff may want to consider the time allocation in workshops. Does the first 30 minutes of workshop time primarily serve a social and community-building function? If so, content of workshops may be altered to fit the 2-hour timeframe so that activities do not have to be condensed or cut. If the 30 minutes is to be an instructional time, perhaps the workshop start time could be pushed back to 4:30, or shorter meetings could be offered more frequently.
- **Content.** The content of the NTN math strand for Y2s would benefit from coordination of the math activities and ideas.
 - What are the goals for the introduction of math activities and how do the activities introduced strategically support those goals?
 - How does the math content introduced fit into the curriculum materials already being used in NTN Y2 classrooms?

It is clear from the conversation with NTN staff that they recognize this as a needed focus for future math work.

Workshop Quality Considered

Analyzing workshop quality using the professional development framework reveals that NTN Y2 math sessions reflect high quality practices. Participants reflect on practice, apply new ideas, actively participate, are challenged with new ideas, are engaged as sources of knowledge and receive constructive feedback on their work.

Suggestions for improvement, as in the section above on content and format, focus primarily on the coordination, connectedness and coherence of the work being done in the math strand. The approaches and activities being provided engage teachers in critical inquiry and deep dialogue about their practice. Teachers reported that they appreciate being exposed to different ways to teach and think about mathematics. At the same time, however, it is unclear whether the math content provided fits into the context in which they work, especially if they are using a math curriculum that requires staying on a daily schedule.

This dilemma, between wanting to provide a range of thoughtful math materials for teachers to draw upon, and the need to have materials that coherently fit into what teachers are already using to teach math, was recognized by NTN staff. When reflecting upon lessons learned and looking ahead, one NTN staff member stated:

...[In] drawing upon a wide range of sources I really went out and said what are some things that are compelling math that will help to teach or build capacity for new teachers to deal with the situations they are in. The bigger issues that they are facing with setting up routines... ‘Here is a great way to build community in the classroom,’ ‘Here is a great way to make math an exciting, engaging time.’ But I think what a lot of teachers are experiencing is being handed a math text and I think we should have started with everyone bring in your math text, Let’s see who has good stuff here, let’s see what is not so good and where someone else’s might be strong.

Recommendation: The format of NTN sessions engages Y2s, through participation in hands-on activities. The recommendation on improving quality is the need to focus on the coherence of NTN offerings in math, both in relationship to the goals of the NTN math strand and in relationship to the context of participant school context in teaching mathematics. It is recommended that NTN staff formulate clear goals for the NTN math strand, considering the context of NTN participants, and then build content coherently around them.

Especially important here is the need for discussion about how to fit the pieces of math instruction given by NTN staff into the materials being utilized by NTN Y2 teachers. The background information of 29 teachers who responded to a survey summarized in the introduction of this data brief reveals that 18 of 29 teachers were using Everyday Mathematics. Six were using Connected Math and six were using Math Thematics. Are there ways to target these large groups of teachers and the curricula that they are using and create NTN workshop content that supports the materials they are using? Twenty-one of 29 respondents to the survey report using CMSI curricula. Is it possible to draw upon vendor or district expertise to build NTN math content that is coherent with these curricula? Building NTN staff knowledge about the mathematics materials Y2 teachers are using and designing workshop content to build upon the materials teachers are using is an important step in developing the math strand.

Workshop Impact Considered

The written reflections of participants revealed high levels of satisfaction on the part of teachers participating in NTN Y2 workshops and mentoring. The “circle number” questions reveal average ratings between 3 and 4 by the 14 teachers who participated. In “quick writes”, teachers report important skills they have gained from their participation in NTN. These range from better understanding of math concepts and diverse ways to teach them, to knowledge of and access to materials, to shifts in thinking about teaching techniques. Some participants also report benefiting from NTN staff mentoring visits. They report NTN staff is providing demonstrations for them as well as observations of their practice, modeling and suggesting new ways to organize classroom instruction.

The impact of NTN math work would be improved by increasing the frequency of mentoring visits devoted to mathematics. Descriptions provided by Y2s in written reflections primarily focused on literacy. In addition, participants wished for more feedback, especially if they received an observation visit.

Evaluation data on the impact of NTN also reveal the need for a careful consideration of the characteristics of the teachers being served. The survey information given by participants reveals a set of schools, Areas, grade levels, and gender of participants. What are the goals of the NTN math strand in terms of the background of teachers they hope to impact? Are they represented in the teachers who are attending?

Recommendations: Recommendations on the impact of the workshops focus on two areas: a. mathematics mentoring; and b. assessing the population of new teachers being served by NTN.

- **Mentoring.** Early indications from the analysis of participant reflections point to the need to increase the scope of mentoring visits, find ways to increase follow-up to visits and increase the number of visits focused specifically on mathematics instruction. It is recognized that increasing the scope of mentoring bumps up against two difficult challenges: a. the size of NTN staff and availability of resources and b. the busyness of the school day. However, working on these issues will likely bring great benefits to both teachers and to NTN staff. Similarly, the focus of mentoring visits specifically on mathematics may be difficult given the requests of teachers to focus on literacy and the size of NTN staff. The increase in focus on mathematics in mentoring, coupled with increased coherence of math materials, would strengthen the NTN math strand in important ways.
- **NTN population.** It is recommended that NTN staff discuss and consider the data they have collected about the demographics of the new teachers they are serving.
 - What is NTN's mission in terms of the kind of new teachers they hope to reach?
 - Does this group of teachers represent the background of new teachers in the Area(s) served?
 - Are recruitment efforts necessary to reach new teachers of a wider range of backgrounds in terms of grade levels, gender, race, etc.?

Note About Goals

It is important to return to a statement made earlier in this data brief about goals of the NTN and the relationship between these and CTP and CMSI goals. The consideration of these goals together is the subject for a final recommendation for the CTP and NTN staff.

To reiterate, the goals of the CTP are:

- i) To improve student achievement in mathematics at Grades K-5 in the CPS;

- ii) To improve the quality of mathematics instruction at Grades K-5 in the CPS; and
- iii) To develop local leadership that can sustain long-term improvement in mathematics instruction achievement in the CPS.

In collecting the data, conducting the analysis and writing the data brief for the NTN strand of the CTP, it has become clear that NTN and EM have different ways to address these goals. The recommendations in this data brief are written from the perspective of trying to more closely align the work of the NTN and that of EM, especially in relationship to the CMSI. However, this is difficult because in some ways, the way in which NTN is translating the CTP goals above is different from EM/CMSI.

The mission of building community, of increasing teacher discretion and of encouraging teachers to stay in Chicago Public Schools are overarching goals that encompass the math strand, and all of the other work done, in the NTN. An NTN staff member stated:

We put out there as a goal that something in their teaching is changing...I also hope that they say that something in their thinking is changing...Maybe when they gain confidence they will be able to push back a little more when they are in a grade level meeting and the fourth grade team is like, 'OK, chapter six next week,' and one of our teachers will have enough wherewithal to say, 'You know, my kids really didn't understand chapter five so we are going to do some additional activities and gather some more data. And I need to reassess because a lot of kids failed the test and I just need to re-teach some of this material and give them some different kinds of exposures...That's kind of the disposition side of the confidence that they know that good teachers use what is happening in their classrooms to make decisions and they are not beholden to the scope and sequence of their grade level teams...

In contrast, EM materials are built on the idea that following the curriculum in a time frame is critical to the success of the materials and the building of student understanding.

Our role as evaluators is to point to these possible differences as an opportunity for dialogue. This emphasis on teacher discretion is a key aspect of NTN work. How does this fit in with the goals and work of EM? EM materials guide teachers through teaching mathematics using a set of carefully paced and assembled content and approaches. What can EM staff learn from NTN and what can NTN learn from EM?

The differences in approaches between NTN and EM (and the CMSI) is evident in the dilemma described by NTN staff of wanting to provide a range of thoughtful math materials for teachers to draw upon and the need to have materials that coherently fit into what teachers are already using to teach math. The desire to provide teachers with a range of thoughtful math materials was stressed by NTN staff as important in helping teachers to establish routines and build community in their classroom and to help build teacher expertise and discretion. However, there is some conflict recognized by NTN staff between introducing this range of materials and trying to coherently fit into what teachers are already using to teach math.

There is much to be learned from this conflict. As a district-level initiative, the CMSI is focused on introducing a coherent set of instructional materials in mathematics. The scale is so large that straying from scope, sequence and pace is problematic; it defies the purpose of coordinating instruction across the district. NTN staff might argue, however, that teaching teachers to teach requires the building of teacher expertise, discretion. And, that keeping new teachers in the district requires going beyond telling them to teach from a pacing chart.

The coherence of CTP programming is dependent on recognizing, learning from and working on these differences in approaches and goals.

Recommendation: The final recommendation is for some open dialogue, between NTN and EM staff (perhaps including CMSI staff if possible) about what can be learned from one another. This conversation, and any resulting outcomes, will increase the coherence of what is being done in the CTP and may enrich the work of both NTN (through coordination with the district) and EM/CMSI (through expanding opportunities for teacher training in discretion and problem-solving).