



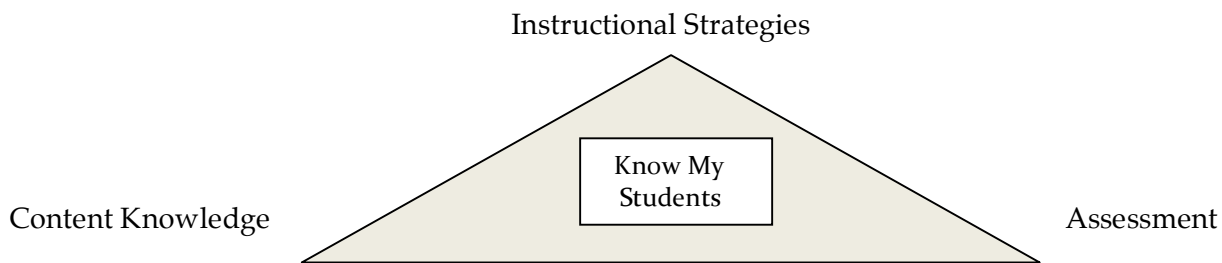
Lincoln Public Schools Lincoln, Massachusetts

To: School Committee
From: Mary Sterling
Re: Progress Report on Differentiation
Date: May 5, 2011

The district has chosen to make "differentiation" a goal for the past few years in order to emphasize its importance in the education of our students. Differentiation refers to instruction that is planned and carried out to address a full range of learners in terms of pace, level of difficulty, choice, and focus. To be successful in differentiating instruction, teachers must know their students well and they must be:

- 1) well-informed about content concepts and information
- 2) skilled in using assessment to determine both level and growth in student learning
- 3) able to draw upon a range of instructional strategies to suit the learners and purposes for specific lessons.

Furthermore, effective differentiation grows well in school and classroom cultures that support student engagement and a growth mindset. The graphic below depicts the relationship between elements that are essential to successful differentiation:



School and Classroom Culture Support Student Engagement and a Growth Mindset

A report to School Committee on February 11, 2010 offered an in-depth discussion of the three dimensions for differentiated instruction and gave examples of teacher practice in our district. This report provides an update on our efforts in the 2010-2011 school year. We have worked to ensure a strong foundation for high quality teaching and to continue refining curriculum, assessment, and practices that support differentiated instruction. We have also focused specifically on the curriculum areas of writing and mathematics.

Foundational Work

Teachers and administrators in this district have spent time and energy on several significant district goals to strengthen the foundation for high quality teaching; these goals are also key to successful differentiation.

- The Lincoln Learning Expectations provide the framework for a guaranteed and viable standards-based curriculum. Teachers have revisited –and sometimes revised -- the Key Outcomes in our Learning Expectations in order to anchor curriculum planning and assessment in all grades and subjects. Clarity about curriculum enables teachers to discern how students are progressing according to standards and where adjustments in instruction should be made to meet the needs of different learners.

- Using the Data Process for Common Assessments (See School Committee Report, February 11, 2010) is a multi-year goal that has continued this year. When teams of teachers analyze data from common assessments, they readily see how different students are performing and can make decisions about SMART¹ goals to target specific learning needs. This data-driven focus and analysis leads directly to differentiated instruction.
- The report on the Achievement Gap (See School Committee Report, January 20, 2011) described the use of data points to define where students of color were not performing at a level commensurate with their white counterparts. The work leading up to this report – and the efforts thereafter – highlighted specific areas of concern that require differentiation in instruction to fit the pace and needs of specific students.
- The Standards-based Reporting pilot (See School Committee Report, March 31, 2011) has involved teachers and specialists who teach fourth and fifth graders in gathering data about learning aligned with specific standards-based descriptors. The process has resulted in greater precision and timeliness in knowing student progress and more opportunity to differentiate instruction according to the needs of individual students.
- The development of a Literacy Assessment Plan (See School Committee Report, March 11, 2010) and the implementation of that plan has strengthened teacher assessment of student reading level and differentiation in reading instruction, which happens on a daily basis.
- The ongoing commitment to Responsive Classroom in the elementary grades and the introduction of Developmental Design for Middle School has contributed to a strong foundation for differentiation. The teaching practices associated with these programs build school and classroom cultures which encourage students to engage in learning, believe in their own capacity to make progress, and become increasingly responsible and independent as learners.

K-8 Writing

One of the major goals for the district this year has been to increase student success and engagement in writing (See School Committee Report, October 28, 2010). Meeting a range of learner needs in writing has been one of the core purposes in the K-8 writing initiative. To that end, we have worked to deepen teacher knowledge about the development of young writers and expand the teachers' repertoire of instructional strategies to help students grow. Assessment practices –especially collecting evidence about individual writer's growth – have been central to our work at every grade level. In the June 2010 Summer Writing Institutes for teachers and through professional development during the year, teachers have learned to use "Writers Workshop," which is a model for differentiated instruction. This model gives all students more time for the writing and more choice over their topics. It also places importance on individual conferencing with teachers so that students receive differentiated, individualized feedback and instruction.

At the outset of the summer institutes on writing instruction, we administered a survey to gather some information on current teacher perception and practice in differentiating their writing instruction. (See ELA survey questions at the end of this report.) 51 K-5 teachers responded to the survey, 6-8 teachers per grade level. The results provided a baseline about teacher viewpoints as we planned professional work for the writing initiative. The following highlights of survey results reference items in the survey:

Frequency of Practice At least 75% of K-5 teachers report using the following practices 3 to 5 times a week in classrooms: B) Assessment, C) Whole Group Mini Lessons, E) Independent Practice, F) Conferring, G) Use of Other Teachers, L) Support for Students. Lower frequency of practice (more than 45 % reporting 0-2 times per week) was reported in the categories of D) Small Group, I) Choices, N) Technology. More than 86% of K-5 teachers report that they do not differentiate writing homework very often.

¹ "SMART" refers to: Specific, Measurable, Achievable; Relevant, Timely

Goals for Development K-5 teachers expressed a desire to develop greater expertise in these categories: C) Whole Group Mini Lessons, F) Conferring, I) Choices.

Content Knowledge about Writing 50-65% of K-5 teachers reported a proficient to very high comfort level with their knowledge of writing instruction, the use of that knowledge with students, and their use of writing resources.

Student Perceptions 68-82% of K-5 teachers believe that most of the students would agree with statements A, B, D, E. For statement C regarding student perception of small group work, 32% of teachers report that only some students would agree. For statement F about the availability of challenges in writing, 26% of teachers report that only some students would agree.

We plan to re-administer this survey on May 25, 2011, when teachers meet to score the common assessment in writing. The information gained from the June 2010 survey – along with discussions with literacy specialists and principals – assisted our planning for the 2010 – 2011 school year. We have focused particularly on three needs that directly support differentiation: to deepen teacher knowledge of teaching targeted writing skills through mini-lessons, to build capacity to assess writing for specific traits, and to increase teacher expertise in conducting individual writing conferences. Principals have conducted observations in elementary classrooms when writing is being taught. They have noticed an increase of time spent on writing instruction, more skillful use of the Writers Workshop model, greater focus on specific writing skills, and growth in frequency of writing conferences. When the second survey is completed in late May, we will analyze results and share them with teachers, literacy specialists, and principals to assess our progress and assist us in planning for the coming year.

At the middle school level, teachers in the academic subjects have focused on student writing in the content areas. The teachers have then shared examples of student writing in grade-level, interdisciplinary team meetings. The focus of their discussion has been twofold. First, what expectations should all students meet in informational writing in every content area? Second, how do students vary in performance and what approach might we take in meeting their needs? These two questions guide teacher decisions for differentiating instruction. Principals have joined teachers in their discussions about informational writing, and have noticed some differentiated practice and some gains in student growth. Yet they believe that such focus must continue to be part of teacher team work next year.

K-8 Mathematics

The district is in its third year of implementing *Everyday Math*, grades K-5, and in the second year of implementing *Impact Mathematics*, grades 6-8. The emphasis in our professional meetings and conversations continues to be on the three dimensions essential to differentiated instruction: deepening content knowledge, expanding range of instructional strategies, and using assessment to gather evidence of student growth to inform instruction. Teachers of mathematics know these two programs well and are now more able to differentiate more flexibly for a range of student needs.

In June, 2010, we conducted a survey to gather information about teacher perception of differentiating instruction in K-5 math. The survey format was almost identical to that used for writing (See Math survey questions at the end of this report.) 38 K-5 teachers responded to the survey, 5-6 teachers per grade level. The results provided a baseline about teacher viewpoints to consider as we planned professional work during the year. The following highlights of the math survey results reference items in the survey:

Frequency of Practice At least 75% of teachers report using the following practices 3 to 5 times a week in classrooms: A) Learning Goals, C) Whole Group Discussion, E) Use of Other Teachers, K) Student Support. Additionally, in the intermediate grades (3-5), more

than 75% of teachers report a high frequency of: J) Advanced Learning Opportunities, M) Options in Program Materials, O) Technology. Of the grade 3-5 respondents, 50% or more set aside two days a week for G) Choices and I) Centers as part of their regular practice. More than 75% of K-5 teachers report that they do not differentiate math homework very often.

Goals for Development K-5 teachers expressed a desire to develop greater expertise in these categories of instruction: G) Choices, I) Centers J) Advanced Learning Opportunities, N) Other Materials

Math Content Knowledge Over 90% of K-5 teachers reported a proficient to very high comfort level with their knowledge of mathematics, the use of that knowledge with students, and their use of math resources.

Student Perceptions More than 80% of K-5 teachers believe that most of the students would agree with statements A, B, D, E. For statement C regarding student perception of small group work, 48% of teachers report that only some students would agree. For statement F about the availability of challenges in math, 57% of teachers report that only some students would agree.

These K-5 math survey results -- along with discussions among math specialists and principals -- contributed to our planning the areas of focus for math specialists' work with teachers, team meeting discussions, and dialogue between principals and teachers. Four areas have received focus and each one contributes to a teacher's capacity to differentiate math instruction:

- small, flexible groups during math lessons to meet student needs at different levels of achievement and readiness
- ancillary materials to complement the program materials, offer challenges, and create more student choice
- formative assessments to get a sense of student progress in the moment and adjust instruction
- mathematical discourse in whole class lessons and individual dialogue with teachers to deepen student thinking and foster more skillful expression of mathematical reasoning

In June, 2011, we will revisit the types of questions on the K-5 survey and gather more information to determine the extent of differentiation in mathematics and the areas of focus for the coming year.

To build instructional expertise in K-8 mathematics, we decided to offer "Developing Mathematical Ideas," a graduate course for teachers of students in kindergarten through grade 8, taught by Lincoln school math specialist, Elizabeth van Cleef. This course strengthens differentiation in mathematics teaching because it builds teachers' conceptual knowledge of math, adds assessment approaches to determine student understanding, and increases teacher capacity to question students about their reasoning. 10 teachers and one administrator took the course this spring; 18 teachers plan to take the course this summer with follow-up sessions next fall. Principals have observed in the classrooms of teachers who took the course and have noticed an increase in strategies to reach a full range of learners.

At Hanscom Middle School, mathematics assessment results last spring indicated some clear needs in a small group of seventh graders who were not ready for the pace and scope of the *Impact* math program. Substantial differentiation was provided with alternative materials. Data on student progress has been collected throughout the year. As the year draws to a close, teachers, math specialists, and the principal will examine the trends in these students' progress and make decisions for programming in the coming year.

In the Lincoln school, substantial acceleration for a small group of students who excel in mathematics has continued this year. This group, which includes sixth and seventh graders, has participated in the eighth grade Advanced Algebra I course. Next year, we have arranged for this small group to take Algebra II.

In grades 6-8 mathematics classes on both campuses, teachers have been able to differentiate more than in the first year of the program. Teachers frequently select from the options in the program to differentiate within a class lesson. For example, some students demonstrate the need to do exercises in a given lesson that provide more practice; others benefit from skipping the practice section and working on the extension problems. Some students also access the more advanced lessons in the program as arranged by the teacher. At Hanscom, math specialists are scheduled into math classes regularly to provide on-the-spot individualization of instruction and to collect formative assessment data about performance. In Lincoln, math specialists are scheduled into classes with small groups and/or individuals to teach mini-lessons that either remediate or extend learning.

The consultant who supported our first year of implementation, Faye Ruopp, returned on several occasions to work with the 6-8 district team and with individual teachers on adjusting instruction to meet the needs of a range of students. Our mathematics content specialist, Ellen Metzger, and three middle school math teachers participated in a special *Impact* users group meeting, led by Faye Ruopp, which focused on resources appropriate for advanced learning opportunities. Ellen and the other teachers brought these resources back to all the mathematics teachers of grades 6-8 for use with their students.

We anticipate that the work on differentiated instruction in mathematics at the middle school level will continue next year, particularly in the context of our major goal regarding standards-based teaching, assessing and reporting.

Differentiated Instruction in Writing: Survey Questions June, 2011

1. **Your grade level:** K 1 2 3 4 5 Sped

2. **Reflect on your practice** in writing in typical week and respond to these statements with your rating.

1 (almost never) 2 (sometimes) 3 (most of the time) 4 (all of the time)

- A. **Learning Goals:** I make the learning goals clear to students and then I adjust the time and support needed for each student to reach the goals.
 - B. **Assessment:** Results from formative assessments give me information that helps me adjust instruction for different students.
 - C. **Whole Group Mini Lessons:** Our whole group mini lessons provide opportunities for all students to contribute different ways of thinking about writing.
 - D. **Small Group:** My students are grouped flexibly during writing instruction to focus on specific skills/strategies with me.
 - E. **Independent Practice:** My students have time to practice writing on self selected topics.
 - F. **Conferring:** I confer with students individually during our writing time.
 - G. **Other Teachers:** I anticipate the presence of teaching assistants and/or literacy specialists and make sure they work with a range of learners to support learning needs.
 - H. **Special Education:** The special education teacher integrates targeted support for students within our writing time.
 - I. **Choices:** I offer my students choices in during writing time to engage their interests.
 - J. **Flexible Pacing:** In a given week, I adjust the pacing to meet different student needs.
 - K. **Advanced Learning Opportunities:** I provide my students with opportunities for advanced learning within our regular writing time.
 - L. **Support for Students:** When my students have difficulty, they receive extra support within our lesson time such as: pre-teaching, readiness tasks, re-teaching, reinforcing, etc.
 - M. **Homework:** I assign different homework for students who are at different levels of skill and understanding in writing.
 - N. **Technology:** My students use technology in different ways to write and develop their skill.
3. **For which of these categories** in questions #2 (letters A – N) would you like to develop greater expertise? List your top three letters.
4. **Content Knowledge:** Rate your sense of your own content knowledge of literacy.
- A. I am comfortable with my knowledge of writing for teaching at my grade level.
 - B. I draw on my knowledge of writing to frame questions to further challenge students and/or to assist students with difficulties with written expression.

- C. I use the resources available to me (literacy specialist, content specialist) when I am uncertain about a writing strategy that I am working on in class.

5. **Student Perceptions:** What is your sense of the way your students perceive their participation during writing instruction? Please check whether you believe that “most” or “some” of your students would agree with the following

- A. “It is okay in this class for me to do different kinds of writing tasks than other kids.”
- B. “Sometimes I write more quickly, sometimes it takes more time and effort.”
- C. “We do work in small groups and the groups keep changing.”
- D. “It is okay to make mistakes in writing.”
- E. “If I don’t know what to write about, I feel comfortable saying so and asking for help.”
- F. “If I am ready for a challenge in writing, there are some interesting tasks I can do.”

6. **Your Contributions to our Collective Knowledge:** For which of the statements above do you have a successful approach that you would be willing to share with other teachers? Please state a title or name for the approach you have in mind.

Differentiated Instruction: Math Survey Questions June, 2011

1. **Your grade level:** K 1 2 3 4 5 Sped

2. **Reflect on your practice** in math in a typical week and respond to these statements with your rating.

1 (almost never) 2 (sometimes) 3 (most of the time) 4 (all of the time)

- A. **Learning Goals:** I make the learning goals clear to students and then I adjust the time and support needed for each student to reach the goals.
- B. **Assessment:** Results from formative assessments give me information that helps me adjust instruction for different students.
- C. **Whole Group:** Our whole group time provides opportunities for all students to contribute different ways of thinking about mathematics.
- D. **Small Group:** My students are grouped flexibly to focus on specific skills/topics with me.
- E. **Other Teachers:** I anticipate the presence of teaching assistants and/or math specialists and make sure they work with a range of learners to support learning needs.
- F. **Special Education:** The special education teacher integrates targeted support for students within our math lessons.
- G. **Choices:** I offer my students choices in certain learning tasks to engage their interests or style.
- H. **Flexible Pacing:** In a given week, I adjust the pacing to meet different student needs.
- I. **Centers/Stations/Workboards:** I organize my class to include centers/stations or workboards to meet the needs and pace of different students.
- J. **Advanced Learning Opportunities:** I provide my students with opportunities for advanced learning within our regular math lesson time.
- K. **Support for Students:** When my students have difficulty, they receive extra support within our lesson time such as: pre-teaching, readiness tasks, re-teaching, reinforcing, etc.
- L. **Homework:** I assign different homework for students who are at different levels of skill and understanding.
- M. **Program Materials:** I draw upon options within Everyday Math to meet different learner needs.
- N. **Other Materials:** I draw upon ancillary materials to meet different learner needs.
- O. **Technology:** My students use technology to learn in different ways (e.g. Everyday Math online, Fastt Math, or other).

3. **For which of these categories** in questions #2 (letters A – O) would you like to develop greater expertise? List your top three letters.

4. **Content Knowledge:** Rate your sense of your own content knowledge of mathematics.

- A. I am comfortable with my knowledge of mathematics for teaching at my grade level.

- B. I draw on my knowledge of mathematics to frame questions to further challenge students and/or to interpret and respond to misconceptions.
- C. I use the resources available to me (math specialist, Everyday Math professional development materials, other) when I am uncertain about a mathematical idea that we're working on in class.

5. **Student Perceptions:** What is your sense of the way your students perceive their participation in math learning? Please check whether you believe that "most" or "some" of your students would agree with the following statements.

- A. "It is okay in this class for me to do different kinds of math activities than other kids."
- B. "Sometimes I do math quickly, sometimes it takes more time and effort."
- C. "We work in small groups and the groups keep changing."
- D. "It is okay to make mistakes in math."
- E. "If I don't understand what's going on in math, I feel comfortable saying so and asking for help."
- F. "If I am ready for a challenge in math, there are some interesting tasks I can do."

6. **Your Contributions to our Collective Knowledge:** For which of the statements above do you have a successful approach that you would be willing to share with other teachers? Please state a title or name for the approach you have in mind.