

# **LESSON STUDY AT CSR: An Historical Perspective**

## **Lesson study beginnings and evolution**

- In the summer of 2000 approximately 40 RCSD teachers were trained in Thinking Math I by national trainers Barbara Drake and Paula Drake.
- They were introduced to lesson study by Alice Gill of AFT in Washington, D.C., who saw it as a means of ongoing support for teachers involved in the TM training as well as a way to deepen teachers' understanding of math and their use of TM in the classroom.
- 12 teachers participated in online conversation, on an AFT listserve initiated and guided by Alice, and over a few months forged the beginnings of a support system.
- With the support of knowledgeable others including Alice Gill, Barbara Drake, Paula Drake and Tad Watanabe of Penn State, the first study lesson was taught in Spring, 2001 at the Children's School of Rochester and School Number 41.
- One or two lesson studies have been conducted each year since.
- We chose overarching themes: mathematical discourse in 2004, number fluency in 2005 and moving from semi concrete to more abstract reasoning with manipulatives in 2009.
- Over 40 teachers from seven Rochester schools have participated in the lesson study group since 2000.
- In 2004-05 two collegial learning circles formed, one at CSR, one at Number 41 School. Combined there were ~20 participants, 10 at CSR with 6 from the original group of 12.
- The two collegial learning circles have continued semi independently since 2004-05.
- In 2009-10 there are ten CSR CLC members, looking to affiliate again this year with the RCSD MSP Group, with continuing online support from Alice, Tad, Makoto and Paula.

## **Lesson study structure at CSR**

- Involvement of multiple outside experts (in person and via online discussion)
- Conversations online and in face to face meetings before/after school and on weekends.
- Funding has come from the Rochester Teacher Center, the Math Science Partnership and private donations. It has been used for substitutes so teachers can observe study lessons, support for knowledgeable others from out of town and supplies, student materials and professional books. In some years it supported staff/parent workshops with our knowledgeable others.
- There has been some support from both the RCSD administration and RTA.
- The connection between the two lesson study schools, Number 41 and CSR is not as strong as we would like to see it. Schedules, extended day programs, etc. seriously complicate logistics. We do, however, attend each other's lesson study open houses.

## **Lesson study events:**

- 12 lesson studies have been conducted at CSR, with 5 lesson revisions and 9 reports.
- Study lessons have been taught at K and grades 1, 2, 3, 4, a multi-grade 4/5 and 6.
- 9 CSR teachers have taught research lessons, and more are opening their classrooms.
- CSR teachers attended the RBS (Research for Better Schools) Lesson Study Conference in Stamford, Connecticut, 12/02; the Mills College Cross-Site Lesson Study Summer

Institute w/ Japanese & American educators in San Mateo, Calif., 7/04; and the Chicago Lesson Study Conference, 5/06.

- CSR teachers co-presented workshops at the NSDC (National Staff Development Council) national conference, 12/03; for district specialists 4/04; and at the district math conference, 3/05.
- Rochester Lesson Study has been reviewed in two national professional journals: AFT Math Journal *Right Angle*, Fall, '01; NSDC publication *Tools for Teachers*, Spring, '04.
- CSR & No. 41 have each hosted lesson study open houses, 3/05, to our knowledge the first ever in the Rochester area, and at least one open house each year since.
- With the support of the Rochester Teachers Center, Rochester Teachers Association, CSR's Parent Teacher Organization, Margaret Crowley and our school, CSR hosted both a lesson study and a workshop presented by Tad Watanabe and Makodo Yoshida: "*Investigate Japanese Elementary Mathematics Textbooks: Focus on Number and Operations*" with a session for staff and another for staff and parents, 3/07.
- CSR teachers presented two workshops, "*Lesson Study... When Students Teach the Teachers Parts I and II*" at the AMTNYS (Association of Math Teachers of New York State) Summer Institute at Wells College, 8/07.
- CSR teachers co-presented "*Lesson Study: The Rochester Experience*" at the AMTNYS Annual Conference, 10/07 with a follow up session, "*Our Experience Using Japanese Textbooks with Grade 2 Students*" at the spring meeting of the New York State Math Mentors in Kingston, NY, 5/08.
- CSR teachers co-presented "*Lesson Study and Student Learning*" at the AFT National Lesson Study Conference in Daytona Beach, FL, 1/08; had a presentation "*Beyond One Lesson and One Team of Six*" at the AFT National Lesson Study Conference at the Greenwich Japanese School, CN, 12/08; and co-presented "*What have we learned from Lesson Study? How has it changed how we teach?*" at the Lesson Study Academy of the AFT QuEST Conference, in Washington, DC, 7/09.
- CSR's Lesson Study Collegial Learning Circle is participating in a research study, *Improving the Mathematical Content Base of Lesson Study, 2009-2010*, conducted by Catherine Lewis & Rebecca Perry, Mills College, Oakland, California & funded by the Institute of Education Sciences, U.S. Department of Education.
- CSR's LS CLC is presenting a public lesson and coordinating the Lesson Study Strand at the Collaboration Event of RAC CEMS (*Rochester Area Colleges Center for Excellence in Math and Science*), 10/6/09.

### **Research topics so far:**

- Area (What happens to the area of a square when you double the sides?) *March 2001*
- Understanding larger numbers (What is the value of 25 in 2,500? 2001-02. The revised lesson became: How many tens are there in \_\_\_?) 2002-03
- Multiplication (What is an array? and Distributive property) 2003-04
- Fractions (How can you show  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$  using a variety of manipulatives?) 2004-05
- Data analysis (What is the same/different about how the same data set is represented? What is the best representation of the data for the purpose and audience?) 2005-06
- Fractions (How many of 12 items will 4 people get? How do you change a recipe for more or fewer servings) 2006-07
- Mental Calculation: Two-digit Minus One-digit Numbers (How does making tens help you solve problems like this?) 12/200, and revised 2/2008
- Manipulatives and More Abstract Representations (How can you use think lines to show what you did with tiles when you add two numbers together and get a sum in the teens?) 2008-09
- Number Sense, Focus on Ten (How can you put two numbers together to make ten?), 10/6/09