

Professional Learning through Lesson Study

Teacher learners in the Rocky Mountain Middle School Science and Mathematics Partnership began by extending their content knowledge through intensive summer courses taught collaboratively by university faculty and district science or mathematics instructional experts. During four day-long monthly *Structured Follow-up* classes held during the subsequent fall, the teachers engaged in the development or refinement of a lesson for their own students. Through a form of the professional learning design called *Lesson Study*, they increased their understanding of pedagogy as related to science or mathematics instruction.

Lesson Study as a professional learning model originated in Japan and is an emerging design in the United States. (Easton, 2004, p. 147). This professional learning model requires that teacher learners value continual improvement of teaching and learning. The model is based on viewing instruction as a work in progress. *Lesson Study* is a vehicle that is intended to make learning increasingly accessible to student learners resulting in greater depth of students' understanding and thus their retention and transfer of content knowledge. *Lesson Study* includes protocols for collaboratively reflecting on how a lesson may be designed and delivered followed by implementing the lesson and again assessing the results in terms of student engagement and depth of learning.



The selection of *Lesson Study* as a professional learning model was a logical choice that reinforced the partnership goal of increasing inquiry instruction for students. The teacher learners applied some inquiry processes to the study of their instruction. To “think like a scientist,” teacher learners and students examine and manipulate variables that may influence results. The gist of the *Lesson Study* process is for teacher learners select one of the most essential student learning standards, practice solving the problems or tasks that are provided for students as a way to learn and demonstrate the standard, and predict student thinking as they approach the problem-solving. Teacher learners collaborate in this process to benefit from multiple perspectives and their collective content knowledge. Teacher learners observe their students as the selected lesson is conducted, and other teacher learners observe the same lesson focusing on student engagement and thinking. Then teacher observers and the teacher share their observations about what did and did not work so that additional adjustments in the lesson may be made.

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Lesson Study also provided teacher learners with a tangible product

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through which they could demonstrate new content and pedagogical knowledge. Teacher learners had a way to approach and “chunk” improving their instruction. By using the *Lesson Study* process and protocols for one of their lessons, they learned how it could be transferred to the study of another lesson for which the teacher (or team of teachers) is responsible. Having a tangible product also allowed the instructors to assess the progress of the teacher learners and ensure accountability in the learning process.

Heather Sammons (participant in lesson study related to cells and their functions) reported the following: *As teachers, we often talk in passing about a lesson that has gone well (or hasn't) but never get time to go into detail. Lesson study is a valuable tool because it allows teachers to set aside time and share classroom strategies and ideas. Then we*



actually get to see those strategies used by observing other teachers. It's a great opportunity to see another teacher teach the same lesson in a different way. ... Truly studying the way we teach is a time-consuming but extremely valuable endeavor. I honestly feel that I have grown more as a teacher while participating in these lesson studies than I have on my own in the last four years. I would definitely recommend this

experience, and I will participate in it again [next semester].

Content knowledge was also extended through *Lesson Study* during the Structured Follow-up course sessions. During the debrief meeting of the course instructors held on December 7, 2005, the consensus of the instructors was that “teacher [learners] “don't get the content until they have to use it in the Structured Follow-Up assignments.” The instructors also observed that content is reinforced through the questions and responses provided as teacher learners worked through the development of demonstration lessons. In addition, the urgency and relevancy of having the content knowledge increased as the lesson study planning was required.

The confidence in the *Lesson Study* model was reiterated during the instructor (university faculty and partner district experts) debrief meeting when the instructors determined that they needed to use the *Lesson Study* model to refine the professional learning they are providing teacher learners.

Readers who would like to know more about *Lesson Study* as a professional learning model may wish to read Chapter 14 of *Powerful Designs for Professional Learning* edited by Lois Brown Easton and published by the National Staff Development Council, 2004. Another resource for an examination of principles for developing thought-revealing activities for students and teachers is *Handbook of Research Design in Mathematics and Science Education* (pp. 591-646) by R. Lesh, M. Hoover, B. Hole, A. Kelly, and T. Post published by Lawrence Erlbaum Association (2000).