

Foreword

In 1997, Dr. Lynn Liptak, the principal of School No. 2 in Paterson, New Jersey, an inner city school of 720 low income mostly Latino and African American students, organized a voluntary math study group to conduct action research in our classrooms and explore ways to improve mathematics teaching and learning at our school. I was teaching 8th grade at the time and had become very interested in learning more about Japanese teaching techniques after Dr. Frank Smith of Columbia University Teachers College introduced all of Paterson's 8th grade teachers and principals to the videotaped lessons from the Trends in International Mathematics [Mathematics] and Science Study (TIMSS), so I decided to participate in the group to learn more.

In 1998, the group was introduced to lesson study by Dr. Patsy Wang-Iverson of Research For Better Schools, whom Dr. Liptak had met at a conference. She referred us to Catherine Lewis's article, "A Lesson is Like a Swiftly Flowing River" and videotape "The Secret of Trapezes" (<http://www.lessonresearch.net>), which focused on Japanese lesson study in science. We became very interested in the process of lesson study and actually attempted to do lesson study. After these first unsuccessful attempts, we realized that we needed help if we were to really conduct meaningful lesson study. Dr. Liptak met Clea Fernandez and Makoto Yoshida from the Lesson Study Research Group (LSRG) at Columbia's Teacher's College and arranged for them to come to our school to give presentations on lesson study in the summer of 1999, and lesson study in the U.S. was born.

From the outset, School 2 benefited from the expertise of many knowledgeable others. The LSRG arranged for us to meet the principal and teachers from the Greenwich Japanese School (GJS) in Greenwich, Connecticut. We visited GJS on several occasions to watch research lessons with English translation provided by Dr. Yoshida and the GJS staff. Our group of 16 volunteer teachers and administrators met for two hours every Monday afternoon to conduct lesson study with the aid of the Japanese teachers. Dr. Liptak arranged for other teachers to cover our classes during these meetings. These lesson planning meetings led to the first lesson study open house in the U.S., which took place at Paterson School No. 2 on February 28, 2000.

I will never forget my initial fear when I taught my first public research lesson to a room filled with over 40 observers, including many well known lesson study experts: Catherine Lewis, Jim Stigler and Jim Hiebert, the authors of "The Teaching Gap," Clea Fernandez, Makoto Yoshida, and Patsy Wang-Iverson, as well as many Japanese teachers, my principal and my colleagues! Afterwards, we had a big and emotional party at a local restaurant. In addition to the merriment, many of us, including the Japanese teachers, shed tears, not out of shame or frustration, but out of joy, stress relief, and a myriad of hitherto untapped emotions. The most

xii LEADING LESSON STUDY

interesting thing about it was that at the party we were already planning another open house, which we held the following May, 2000! Talk about gluttons for punishment!

After our first year of lesson study, we reflected on what worked, what didn't work, and suggestions we received for improving the process. One of the things we realized was that lesson study was creating resentment among teachers who were not involved. We also realized that for lesson study to impact our entire school, all classroom teachers needed to be involved. So the following year we made a presentation to the entire staff about lesson study with testimonials from many teachers about how it was helping them to improve their teaching, understand their students, learn more content, and collaborate with their colleagues. The result was that every classroom teacher except one asked to be included in lesson study the following year. Our principal revised the school schedule to arrange weekly 80–100 minute lesson study meetings during the school day, in addition to the 40 minute weekly prep period for teachers mandated in our contract, and created a new full time position for me to facilitate the work of the lesson study groups, all without outside funding!

In addition to our lesson study work in Paterson, in 2002 a group of 10 volunteer teachers began to travel twice a month after school to conduct lesson study with the Japanese teachers at GJS. This collaboration allowed us to see first hand how Japanese teachers conduct lesson study. We brought what we learned back to the staff and, as a result, modified almost everything we were doing. We developed a schedule of meetings based on how the Japanese teachers conducted their lesson study cycle with a specific agenda for each meeting. We also began to focus more on studying content, what Japanese teachers call *kyozaikenkyu*. We also formed a Lesson Study Promotion Committee which met voluntarily once a month after school to smooth out problems, share between groups, schedule lesson study activities, and make sure we were focusing on and achieving our lesson study goal. This collaboration resulted in several lesson study open houses at both schools.

As we deepened our knowledge of lesson study, things began to change slowly at our school. Before lesson study, classes were constantly interrupted by calls from the office, visits from the nurse, teachers interrupting to ask to borrow something, and students being pulled out in the middle of mathematics classes for remediation. Teachers began to realize that a lesson is like an engaging story that should not be interrupted and even began posting signs on their doors saying, "Teaching is sacred, please do not interrupt."

Teachers also began letting their guard down and not being afraid to admit they didn't know something or ask a colleague for help. They began to organize their chalkboards intentionally and often at the end of a lesson while students were traveling to the next class, they would literally grab another teacher in the hall and say, "Come look at my blackboard. Look at the solutions my students had!" Sharing and collaboration, which had once been rare, now became commonplace.

Teachers began teaching in more powerful ways too. Instead of just explaining how to do mathematical procedures to students and then giving practice problems and assistance, they were beginning their lessons by posing mathematical problems designed to make students think and wrestle with a problem. Lessons were becoming more student centered as teachers began to encourage students to share, discuss and debate their solutions and errors. Teachers began to develop a shared vision of what good teaching looks like, and teaching began to develop greater consistency throughout the school. We also learned much mathematical content knowledge as

lesson study led us to adopt a more focused and rigorous curriculum. We even spent our summers studying how Singapore and Japanese textbooks teach different topics.

Perhaps the greatest result was the transformation we saw in student learning and thinking. Students were becoming increasingly engaged in mathematics lessons. They were learning to think through problems for longer periods of time without becoming frustrated and giving up so quickly. Instead of being satisfied with one solution method, they began to seek alternative and more efficient solution methods and learn from their peers. Instead of sitting passively and listening to the teacher lecture, they were actually discussing and debating important mathematical ideas! They also began to enjoy mathematics, a subject that most of them previously disliked, and many were saying that it was their favorite subject. You could actually see the excitement they had for learning in their eyes!

The whole environment of School 2 was literally transformed through lesson study and lesson study began to spread to other subject areas. We planned research lessons in science, social studies and language arts and saw that lesson study also helped to improve teaching and learning in other subjects besides mathematics.

This is not to say that everything went smoothly. We often experienced confusion, frustration, fatigue, bruised feelings, and other problems. We learned how to do lesson study the hard way—from our mistakes. But these mistakes were overcome by the many factors that contributed to the effective implementation of lesson study at our school. We had access to a host of knowledgeable others. We had the Japanese teachers to mentor us and collaborate with us. We had a dynamic principal who not only actively promoted and supported lesson study but actually participated, attending nearly every meeting of every group, and participated as a member of a lesson study planning team. We also had enthusiastic teacher-leaders who were willing to go the extra mile to ensure its success.

Lesson study is gaining momentum rapidly in the U.S., but new lesson study groups do not have many of the advantages that we enjoyed. They will need much guidance that may not be readily available. That is why “Leading Lesson Study: A Practical Guide for Teachers and Facilitators,” is such a valuable tool. In this book, you will learn from the combined wisdom of both lesson study experts and actual practitioners. Different schools have different situations and constraints. In “Leading Lesson Study,” you can learn from a number of schools that, in spite of obstacles, found a way not only to conduct lesson study, but to expand and improve it. It will also help you to avoid many of the pitfalls that those of us who pioneered lesson study in the U.S. had to learn the hard way.

Lesson study is the most powerful thing that I have ever experienced as an educator. It has transformed my own personal teaching and understanding of teaching and learning as well as that of my colleagues at School 2 and empowered us to make a difference as professional educators. This book can help you to conduct lesson study in an organized, deliberate, and effective way and you, your colleagues, your school, and most importantly, your students, will reap the benefits.

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