



What is Lesson Study and How can I Get Started?

¿Qué son las Lesson Study y cómo puedo empezar?

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Received: 11/07/2025 **Accepted:** 28/07/2025 **Published:** 20/10/2025

To cite this article: Lewis, C. (2025). ¿Qué es Lesson Study y cómo puedo empezar? *Contrapuntos en Educación. Revista del Instituto Universitario de Investigación en formación de profesionales de la educación*, 0(0), 79-98.

ABSTRACT

This paper describes Lesson Study, a form of teacher-led inquiry designed to improve teaching and learning through teachers' joint study, planning, observation and discussion of "research lessons." A case of school-wide lesson study in the US is presented as an example. In this 10-year ongoing case, teachers use the lesson study process to shift their mathematics instruction toward "Teaching Through Problem-solving," an approach to mathematics teaching and learning that is widespread in Japan. The opportunities provided by lesson study for teachers to jointly study curriculum and content, plan instruction, and observe and discuss instruction across grade levels supports dramatic changes in learning outcomes in a school serving students in a high-poverty community. Ideas are suggested for getting started with lesson study (in mathematics or other subjects) or with Teaching Through Problem-solving in mathematics.

Keywords: Lesson Study; School; Teacher Training; Mathematics teaching; Teaching Through Problem-Solving.

RESUMEN

Este artículo presenta la Lesson Study, una modalidad de indagación docente diseñada para mejorar la enseñanza y el aprendizaje a través del estudio, la planificación, la observación y la discusión colaborativa de "Lecciones de investigación". Como ejemplo, se expone un caso de Lesson Study a nivel escolar desarrollado en Estados Unidos. En este proceso, con más de diez años de trayectoria, los docentes emplean los ciclos de Lesson Study para orientar la enseñanza de las matemáticas hacia el enfoque de *Teaching Through Problem-Solving*, ampliamente difundido en Japón.

Las oportunidades que brinda la Lesson Study para analizar de manera conjunta el currículo y los contenidos, planificar la propuesta didáctica, así como observar y discutir la práctica docente en distintos

niveles de dificultad, han favorecido cambios significativos en los resultados de aprendizaje en una escuela situada en una comunidad de alta vulnerabilidad socioeconómica. Finalmente, se sugieren ideas para iniciarse en la Lesson Study (en matemáticas u otras disciplinas) o en la implementación del *Teaching Through Problem-Solving* en matemáticas.

Palabras clave: Lesson Study; Escuela; Formación permanente del profesorado; Didáctica de las Matemáticas; Teaching Through Problem-Solving.

1. WHAT IS LESSON STUDY? ¹

One of the things that I really love about lesson study is that it puts a professional part back in teaching that we have to battle for all the time.... Being able to say "This is like a science, and we can figure these things out and get better at them." (Jacqueline Hurd, Elementary Teacher and Coach, California).

Lesson study redefines "leadership." There used to be an unspoken assumption that teachers had to leave the classroom to be leaders. I wanted teachers to have the option to be leaders from inside the classroom (Stephanie Ervin, Founding Director of the SFUSD Teacher Leader Fellowship).

Lesson study is a simple idea: Teams of teachers conduct inquiry cycles focused on improving teaching and learning. The heart of each inquiry cycle is a "research lesson" taught by one team member and observed by the other team members, who carefully document student responses and later discuss them, drawing out implications for future teaching. Figure 1 shows one typical way to represent the lesson study cycle. (There are many reasonable ways to represent the lesson study cycle.)

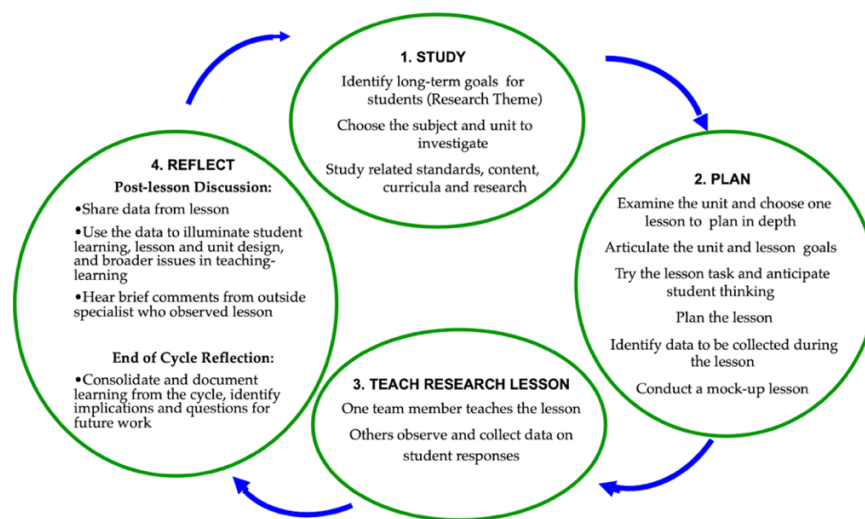


Figure 1. Lesson Study Cycle

To improve instruction, what could be more obvious than giving teachers the opportunity to study and plan together, test out their ideas in practice, make sense of what worked to support student learning, and discuss the implications for future teaching at the school? Teacher-led lesson study is near-universal in elementary and lower-

¹ Nota: Algunos fragmentos de este artículo están adaptadas con permiso del libro próximo a publicarse: Lewis, C.C., Takahashi, A., Friedkin, S.H., Houseman, N., & Liebert, S. (2025). *Teaching Powerful Problem-solving in Mathematics: A Collaborative Approach Through Lesson Study*. Teachers College Press.

secondary schools in Japan, where it is called *jūgyō kenkyū* (“lesson research” or “instructional research.”). Since the first English-language articles about lesson study appeared in the late 1990’s, lesson study has spread to at least 35 countries around the world (<https://www.walsnet.org/>). Teachers around the world value lesson study for the opportunity it provides to:

- Work with colleagues to articulate a shared long-term vision for student development
- Bring to life teachers’ shared vision in “research lessons” that can be observed and discussed with colleagues
- Observe instruction through students’ eyes and become skilled observers of student learning
- Study disciplinary content and instructional research with colleagues
- Act as leaders and designers (not just implementers) of instructional improvement
- Be authors (not just consumers) of new knowledge for the teaching profession

1.1. What I Have Learned from Lesson Study in the U.S.

When done well and throughout a school, lesson study can have enormous impact on teaching and learning. Lesson study can increase trust and advice-seeking among teachers, deepen teachers’ knowledge of content, increase job satisfaction, support profound changes in teaching, and dramatically improve student learning (Lewis et al., 2025; Lewis & Perry, 2015, 2017).

School-wide lesson study is particularly powerful, since teams of teachers throughout a school work together toward a shared vision for students’ long-term development, using the lesson study process to bring the vision to life in instruction across the grade levels (Lewis et al., 2025). We first explore a successful case of school-wide lesson study and unpack the factors that made it successful. We then suggest some ways you might explore lesson study (in mathematics or beyond). Finally, we identify some of the challenges you may face when initiating lesson study.

2. A SUCCESSFUL CASE OF SCHOOL-WIDE LESSON STUDY

John Muir Elementary School, in San Francisco (California, USA) is a public school serving a low-income community; many students are English learners and many are from historically marginalized communities. In 2012, there was one lesson study team at the school, led by teacher Sara Liebert, who was supported by a district-funded “Teacher Leader Fellowship” designed to keep experienced teachers in the classroom while nurturing their leadership of instructional improvement. Each Teacher Leader Fellow (TLF) learns to lead a lesson study team while continuing to serve as a classroom teacher. TLFs receive a salary bonus, substitute teacher funds for themselves and team members, and coaching and resources on lesson study and on their topic of study.

In 2014, funds became available (from a private foundation) for school-wide lesson study and the TLF and school principal began to consider how to spread lesson study school-wide; they knew teacher buy-in would be essential. The TLF arranged for a Japanese educator (Akihiko Takahashi) to teach a series of mathematics problem-solving lessons to her class and freed up all teachers to watch at least one lesson. Teachers were impressed by students’ thinking and participation during the lessons, but expressed reluctance to try lesson study. Faced with this reluctance, the TLF recruited just one cross-

grade team of volunteers willing to try out lesson study from Fall, 2015. The cross-grade team used lesson study to experiment with Teaching Through Problem-solving, an approach to mathematics teaching described in the next section. Over the next two school years, cross-grade team members often shared their ongoing lesson study work with the whole faculty, inviting colleagues' input. For example, at faculty meetings, team members shared strategies they were using to support student-led mathematics discussions and asked colleagues to examine student work and video clips of classroom instruction. By fall 2017, all teachers in the school were willing to join lesson study teams (organized by grade band). As one teacher on the cross-grade team recalls:

One of the things that made whole-school lesson study successful was the gradual transition—starting with teachers who were passionate to dive in and try it out. By conducting cycles we learned why this was such a powerful method of developing lessons and units, and we shared our experience with the whole school and then we became the leads. So rather than coming top-down from administrators who said “this is what you need to do,” teachers heard from colleagues about why this is such a powerful practice. When teachers are seeing and hearing from teacher-colleagues that it’s beneficial, it provides more buy-in when you transition to whole school.

School-wide lesson study continues through the present day at Muir School. Over 2015-2025, lesson study focused mainly on mathematics, but is shifting to language arts in 2025. Mathematics teaching changed dramatically over 2015-25, from teacher-led presentation and discussion to Teaching Through Problem-solving (see next section) in which students build new mathematical knowledge through whole class discussion of selected student work.

Figure 2 shows the mathematics SBAC (Smarter Balanced Assessment) scores at John Muir Elementary from 2015—the baseline year prior to beginning to build school-wide lesson study—to 2025. The two columns at the far left show state (California) and District (San Francisco Unified School District) scores. SBAC is a challenging, multi-hour assessment used in about a dozen U.S. states; it includes not only fixed response items designed to measure proficiency and skill, but also open-response items designed to measure mathematical problem-solving and conceptual understanding.

Although Muir School serves a much higher proportion of students from low-income and historically marginalized households than the district and state as a whole, Muir students are far less likely to achieve below standard (11%) than are students in the district (34%) or state (41%). On a routine district scan to identify schools that are exceptionally effective in improving achievement of historically underserved groups, Muir School was identified as a 3-sigma “positive outlier” in student SBAC math growth based on a district scan (indicating growth greater than 99.7% of schools).

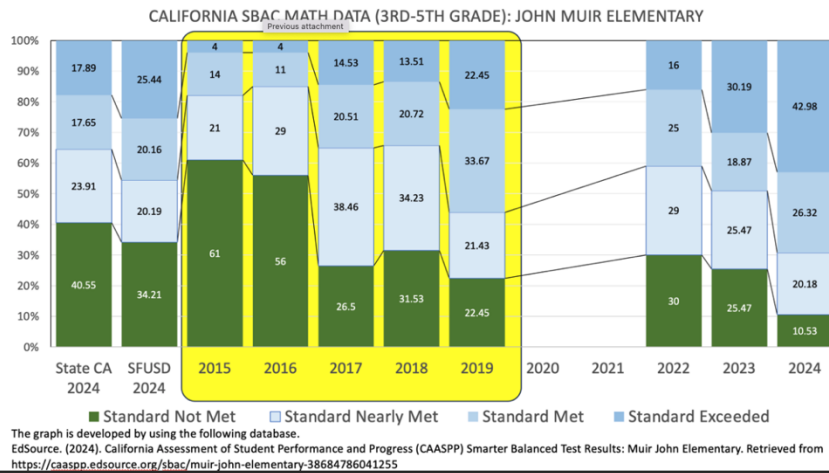


Figure 2. Mathematics SBAC Scores at John Muir Elementary: Year 0 to 9 of Schoolwide Lesson Study

Figure 3 breaks down achievement by sub-population within Muir. The clusters of columns show results for the whole school, for African-Americans, Hispanic/Latino, English Learners, and (Low) Socioeconomic Status. Comparing the black x lines for the district and district subgroups with the colored columns for the school and school subgroups reveals a very different history for teachers who attended Muir School or the district as a whole. While performance stayed flat or showed a modest increase for most student subgroups in the District as a whole, performance at Muir increased sharply. Two other schools using school-wide lesson study and Teaching Through Problem-solving showed a similar pattern of improvement that far exceeded district performance (Lewis et al., 2025).

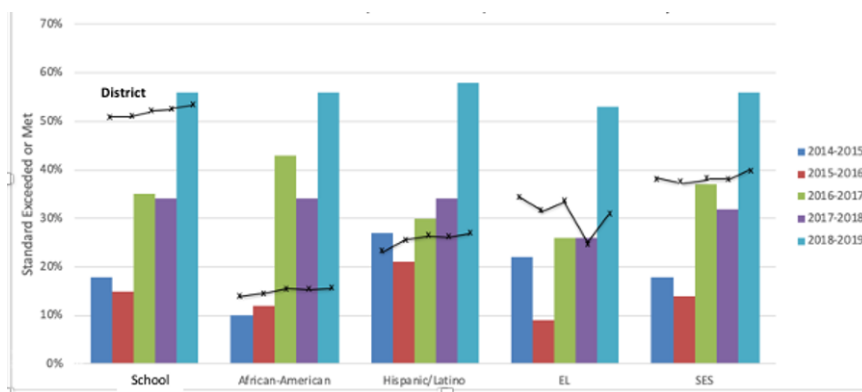


Figure 3. SBAC Mathematics Proficient or Above, John Muir Elementary School (Columns) vs. District (Lines), Year 0 (Baseline) to Year 4

3. WHY IS LESSON STUDY SUCCESSFUL AT MUIR SCHOOL?

Lesson study at Muir School has been sustained for about a decade, as of this writing, and has had a strong impact on student learning. What accounts for its positive impact and sustainability? This section highlights several key elements of the work: school-wide practice; coupling lesson study with a powerful instructional model (Teaching Through Problem-solving); teachers' leadership; and administrators' leadership.

3.1. School-wide Practice

In the U.S., many teachers have participated in a lesson study team, but very few teachers have participated in school-wide lesson study. In contrast, school-wide lesson study is near-universal in Japanese elementary schools. Typically, all teachers participate in lesson study teams (generally grade-level or grade-band teams). Each team plans and teaches one or two research lessons per year that are observed and discussed by the whole faculty; all the research lessons pursue a “research theme” (vision for students’ long-term development) that is shared by the whole faculty. Teachers develop the research theme by sharing ideas about the qualities they hope all students will have at graduation and beyond. (LSGAMC, 2022d provides an agenda for the faculty meeting to develop the research theme).

The shared research theme connects teachers to their heartfelt, long-term goals for students and joins teachers in a shared effort to reshape instruction in service of those long-term goals. For many U.S. teachers, the research theme is a welcome change from the focus on test scores and other short-term performance indicators that dominates many U.S. schools. So the chance to think with colleagues about long-term vision for student development—qualities such as love of learning, civic engagement, and reasoning capacity—can spark renewed passion for the hard work of teaching. School-wide lesson study gives a way to bring the vision to life in the classroom. As one U.S. teacher said:

A lot of schools develop mission statements, but we don't do anything with them. The mission statements get put in a drawer and then teachers become cynical...Lesson study gives guts to a mission statement, makes it real, and brings it to life.

The first Muir research theme focused on “opportunities for students to create a positive academic self-identity through engaging confidently in academic conversation, to construct viable arguments and critique the reasoning of others.” Teachers revisited this theme each year, revising it based on their learning from lesson study, and adding on a theory of action that posited, for example, that they could support stronger academic conversation through “higher order questioning and strategies to make student thinking visible.” During the “Study” phase of the lesson study cycle, Muir teams studied and discussed resources related to a wide range of topics including student academic conversations, culturally-sustaining pedagogy, mathematics teaching-learning, and mathematical content.

In research lessons taught by each grade-band team (once or twice a year), teachers were able to see and discuss new ideas about how to support academic conversations and also to see how their own instruction connected to instruction at other grade levels—for example, to notice that the understandings of fractions they thought students had developed in their grade 3 classroom did not actually hold up a year later. Teachers also noticed powerful techniques—such as beginning each math lesson with several student journal reflections from the prior math lesson—and began to use these techniques school-wide. In addition to building cohesive instruction, school-wide lesson study built community among teachers, as the following quotes from Muir teachers reveal:

Things really changed when the whole school began to observe lessons, rather than just observing your own team's lesson. As a fifth-grade teacher, I could see what students and teachers say and do in first grade, and where certain practices come from. Your planning changes based on that.
(Rashida Carter, 2023)

I grew so much through the lesson study process. I am a much stronger teacher, and I have a ton of reflections for what to do as I move forward... I also felt lesson study built community at our school, which is sorely needed.
(Joe Mannarino, 2017)

An in-depth portrait of school-wide lesson study emergence and growth at Muir is available in Lewis et al., 2025.

3.2. A powerful instructional approach: Teaching through problem-solving

School-wide lesson study creates a useful new set of routines for teachers to learn from curriculum materials, colleagues, and live practice. These routines are most powerful when paired with a high-quality instructional approach. At Muir, lesson study was used to examine Teaching Through Problem-solving, an mathematics instructional approach in which *students* develop each new mathematical concept and procedure in the curriculum by solving a mathematics problem that necessitates it. Students build mathematics much as mathematicians have built it over centuries--by devising and testing new ideas within a community that holds them accountable to explain and justify their ideas. Teachers nurture the development of this classroom community and carefully select the tasks that allow the new mathematics to be built, anticipating and strategically selecting the student work that will be the focus of whole-class discussion. Teaching Through Problem-solving (*mondai kaiketsu gakushu*) is near-universal in Japanese elementary schools. In the U.S., the aspiration that problem-solving should be the heart classroom mathematics learning goes back at least four decades (NCTM, 1980). Yet problem-solving-centered instruction has been very elusive in the U.S.; demonstration of a new procedure by the teacher (or a student), followed by practice, still dominates (Banilower et al., 2018). Figure 3 shows the flow of a Teaching Through Problem-solving lesson. How is it similar or different from instruction at your school?

Phase	What Students Do	What Teachers Do
Introduction (~3 min)	<ul style="list-style-type: none"> Recall what they learned in the previous lesson, as they read several classmates' reflections from the prior lesson. 	<ul style="list-style-type: none"> Select and present several students' reflections from the prior lesson. Encourage students to consider what they learned in the previous lesson and what they want to learn today.
Pose the Problem (~5 min)	<ul style="list-style-type: none"> Understand the problem and develop interest in solving it. Consider what they know that might help them solve the problem. 	<ul style="list-style-type: none"> Pose a problem that students do not yet know how to solve, and that embodies the new mathematics to be learned. Often the problem is first posed in a concrete way (e.g., by acting out, using visual aids, or story-telling) and then in abstract (written) form. Interest students in solving the problem and considering their own related knowledge.
Solve the Problem (~5-10 min)	<ul style="list-style-type: none"> Students independently try to solve the problem. Students are devising a solution, not simply following a solution model presented by the teacher or a classmate. 	<ul style="list-style-type: none"> Circulate, using seating chart to note each student's solution approach or "stuck" points. Identify work to be presented and discussed at the board to build the new mathematics. If some students don't get started, teacher may ask them questions to spark thinking, but does

	<ul style="list-style-type: none"> Classmates may provide input after some independent solution time. 	<p>not teach them individually; if students finish quickly, teacher may challenge them to find another method.</p>
Present, Compare & Discuss (~20 min)	<ul style="list-style-type: none"> Selected students present and explain their solution ideas at the board and are questioned by classmates (and teacher). All students actively make sense of the presented work and draw out key mathematical ideas. Students update their journals, adding insights and correcting prior thinking as needed. 	<ul style="list-style-type: none"> Listen to ensure students justify their ideas and build shared understanding of the student work and the mathematical ideas. Use “teacher moves” (questions, turn-and-talk, votes, movement of name tags, etc.) as needed to ensure all students access the key mathematical ideas. Use tension, contradiction and surprise to support motivation.
Summarize and Reflect (~10 min)	<ul style="list-style-type: none"> Consider what they learned and share their thoughts with class to help formulate class summary of learning, which they copy into journal. Write a reflection on their learning from the lesson, updating their journal as needed, to revise their own thinking and add ideas from classmates’ solutions. 	<ul style="list-style-type: none"> Ask students to summarize what the class learned today, hear many students’ summaries, and write a brief, mathematically correct summary of today’s learning on the board, based on student ideas where possible. Encourage students to write freely in their journals about what they learned (as well as any wonderings or confusions), revising their journals as needed (by crossing out and adding, not erasing), and adding “a friend’s idea” that helped them.

Table 1. *Teaching Through Problem-solving Lesson Structure* [Reprinted with permission of Teachers College Press, from Lewis et al., 2025].

Teaching Through Problem-solving places demands on educators. Teachers need strong and flexible content knowledge, so they can grasp the mathematics within student responses during the rapid flow of classroom discussions—a much more challenging job than simply presenting the correct mathematical procedures in an “I do, we do, you do” lesson. Teachers need to understand what their students know, so they can choose the right next task for their class. To build the strong and flexible content knowledge needed for Teaching Through Problem-solving, teachers need a process such as lesson study, where they study the content, anticipate student thinking, and then examine actual student thinking during a lesson.

To teach through problem-solving, teachers also need strategies to make student thinking visible and usable during instruction, such as the planned board work, reflective mathematics journals, and whole-class discussion routines found in Japanese classrooms (LSGAMC, 2022h). Teachers also need to build classroom norms and culture that support problem-solving. For example, students need to see classmates’ ideas as a valuable resource (not a threat), be comfortable sharing their own incomplete and incorrect thinking, and willing to question one another’s solutions.

From 2015, Muir teachers on the cross-grade team used lesson study to experiment with new routines in practice, see their impact, and revise them over time. These routines included student reflective mathematics journals, planned board work, whole-class discussion focused on strategically selected student work, and student-led summarization of learning.

3.3. Teachers’ Leadership

At Muir, teachers led the development of lesson study. A cross-grade team of teachers experimented with lesson study and spread it to colleagues over the next two years after

discovering its power in their own practice. They started in small ways (like sharing instructional artifacts at faculty meetings) that became more ambitious over time (like inviting colleagues to observe research lessons). Teachers from the cross-grade team went on to become facilitators of grade-level teams and to form a Lesson Study Steering Committee where they shared progress and challenges at each grade-level and adjusted the school-wide work accordingly. For example, the TLFs noticed that strategies to support academic conversations often failed to support authentic conversations, so they researched additional strategies. After noticing that interest in the research theme waned in between lesson study cycles, the Steering Committee initiated bi-weekly school-wide inquiry prompts, asking teachers to collect and share classroom artifacts in response to questions like “What do you do in your classroom to make student thinking visible?”

Improving instruction is notoriously difficult work that requires teachers to integrate many kinds of knowledge (of students, content, standards, learning theories, etc.) and apply it within the rapid flow of classroom events. It requires teachers to question, and sometimes abandon, comfortable classroom routines, and to engage in the repeated cycles of experimentation and revision of practice needed to change instruction. Teachers themselves are best situated to lead the complex, demanding work of school change on a day-to-day basis because they can notice colleagues’ experiences and constantly fine-tune the work in response to emerging challenges and successes.

3.4. Administrators’ Leadership

Administrators’ leadership establishes and protects the environment where teachers’ leadership can thrive. Site administrators hoping to grow school-wide lesson study face a basic dilemma: How do you encourage school-wide lesson study while also respecting teachers’ autonomy, so that teachers *choose* to do the work, rather than feel *required* to do it?

Several early decisions made by the Muir principal and TLF laid the groundwork for educators’ motivation and leadership of lesson study to grow. Lesson study began with volunteers, not with a mandate, and the volunteers had two years to build increasing competence with Teaching Through Problem-solving and with lesson study processes before they took on the task of supporting grade-band teams. The principal and TLF secured access to high-quality knowledge resources and outside expertise for the team, including Japanese curriculum materials, chances to visit (virtually or in-person) other sites engaged in lesson study and Teaching Through Problem-solving, and consultation with Japanese educators. As the school-wide work emerged, the site administrator created space for a new structure—the Lesson Study Steering Committee—where Teacher Leaders could share the challenges encountered at different grade levels and to identify ways to make school-wide lesson study responsive to teachers’ needs.

Site and district administrators supported Muir to host large public research lesson conferences attended by many outside educators (including teachers, administrators, content specialists, university-based educators and others; LSGAMC, 2022f). Teachers presented their content study and lesson rationale to audiences of 100 or more, positioning teachers as researchers of classroom learning, and enabling teachers to strengthen their skills and identity as professionals who research and improve teaching. Such experiences deepen teachers’ investment in the work of instructional improvement.

Some things that district and site administrators did *not* do were also important to the success of school-wide lesson study sites including Muir. Administrators did not chide teachers when there was a modest decline in standardized test scores in the first year of work—a well-documented phenomenon known as “implementation dip” that often occurs

when teachers begin to make significant changes in practice (Fullan, 2007). Such dips occurred across all the successful school-wide lesson study sites. Likewise, when teachers from Muir and several other schools questioned the district curriculum's suitability to Teaching Through Problem-solving, district administrators did not ignore teachers' concerns. Instead, administrators approved a curriculum waiver to allow use of Japanese curriculum materials and allocated district funds to study these schools, so that the district could learn from their work.

4. HOW TO GET STARTED WITH LESSON STUDY: THREE SCENARIOS

4.1. Reach out a few colleagues

Most lesson study begins with a teacher or coach who invites a few colleagues to collaborate. You might consider jointly reading and discussing with colleagues an article or book, like the fuller story of Muir's journey to school-wide lesson study (Lewis et al., 2025). One successful school-wide lesson study effort began when a teacher invited colleagues to read and discuss a brief article on lesson study, to see if other teachers in her school were interested in trying it. A small group of teachers conducted a lesson study cycle and then presented a workshop to the whole faculty based on their initial lesson study cycle. All but three teachers in the school voiced interest in trying school-wide lesson study. The principal spoke privately to the three teachers and asked them to pursue a type of professional learning they thought would work better for them than lesson study. The principal also asked them not to undermine the lesson study work and encouraged them to attend research lessons whenever they wanted to. (All three teachers joined lesson study in subsequent years, and one became a major champion of the work.)

Extensive print and online materials are now available to introduce and support lesson study, including overviews of lesson study in educators' own words (LSGAMC, 2022j), video of lesson study in action (LSGAMC, 2022a) and an in-depth portrait of schoolwide lesson study development at Muir (Lewis et al., 2025). If you're ready to try a lesson study cycle with colleagues, you can find step-by-step support online (LSGAMC, 2022b). If you are interested in mathematics lesson study, a free online course offers step-by-step support for a lesson study cycle on fractions.² It provides an example of how lesson study supports study of one mathematical topic that can be adapted to other topics.

The online materials for step-by-step support of lesson study are likely to be most useful when your prospective colleagues in the work are already interested in trying lesson study. When you are first recruiting teachers to lesson study, it is often better to start by building a shared purpose and wait to introduce lesson study later as a *tool* to advance your shared purpose.

The shared purpose for lesson study might be to address a current challenge that keenly interests you and your colleagues, for example, to:

- Unpack the classroom implications of a new curriculum or standards.
- Try a new strategy that interests you, such as student journals.
- Examine a shared challenge, such as increasing student-to-student discourse.
- Examine student learning of a persistently challenging topic (e.g., levers, historical empathy, fractions, persuasive essays).
- Explore the classroom implications of a book or article that you read with colleagues that inspired you to want to change classroom practice.

² (<https://lessonresearch.net/resources/courses/>)

Lesson study can be used in any discipline or co-curricular area; in Japan it is used not only in core academic disciplines but in areas such as civic engagement, peace education, school-wide community-building, physical education and the arts. You can find examples from many disciplines at the website of the World Association of Lesson Studies. (WALS, 2024). If your school is engaged in activities designed to build classroom and school-wide community, such as buddies classes, school-wide events, class meetings, or cross-age “family groups,” these are also good starting points for lesson study that naturally highlight the power of community and require less up-front investment by teachers in content study. Community-building activities can offer powerful opportunities for teachers to consider their school’s long-term vision for student development, how students experience current activities, and how student voice can shape the future of these activities (University of Tokyo, 2021).

4.2. Consider school-wide Lesson Study from the start

If you are fortunate to be in a school with established teacher leadership, teachers can jointly explore school-wide lesson study using free online materials (<https://lessonresearch.net/resources/schoolwide-lesson-study/overview/>). A few successful school-wide lesson study sites have started with all teachers or nearly all teachers. But it is important for teachers to undertake the work of their own free will, not because they feel pressured or cajoled. So you may want to start with volunteers and gradually build it over time, as the Teacher Leaders at Muir did. You can find several different portraits of school-wide lesson study growth in Lewis et al. (2025).

4.3. If you suspect Lesson Study is a problematic brand...

In some settings, “lesson study” is a loaded term, perhaps because lesson study has previously been introduced as an inflexible procedure or top-down mandate. Or teachers may have a well-founded skepticism of any new program, because they have repeatedly been disappointed in the past. A teacher we know who has drawn many colleagues into lesson study says she never asks colleagues to “do lesson study.” Instead, she asks colleagues to join her in “studying student thinking.” As she works with a group of colleagues to understand an aspect of student thinking of interest to them, opportunities to build in the elements of a lesson study cycle naturally arise over time.

Oakland Unified School District educator Hanna Sufrin experienced school-wide lesson study as a teacher at West School and wanted to recreate its power when she became an assistant principal at another local school. She listened for the issues of interest to teachers in her new setting and found a question shared by many teachers: How can we move away from teacher-dominated discussions and strengthen students’ capacity to build on one another’s ideas? She hosted a study group on this topic where teachers watched and discussed videos selected from the Teaching Through Problem-solving lesson site (LSGAMC, 2022j). Teachers noticed strategies to support student discussion in the videos that they wanted to try, such as organizing the board to allow students to compare different ideas easily. Teachers began to experiment with these strategies in their classrooms and bring back what they learned, laying a foundation for joint inquiry that can eventually support lesson study.

Often a low-key approach is the best way to lay the groundwork for lesson study—for example, an invitation to think together about a shared issue in teaching and learning. Opportunities to introduce other elements of the lesson study cycle will naturally arise as the work progresses.

5. STARTING LESSON STUDY WELL

5.1. Involve all teachers in developing the research theme

Whether your lesson study includes all teachers at your school or just interested volunteers, try to involve the whole faculty in developing the initial “research theme” (vision for students’ long-term development). Contributing to the research theme will give all teachers at your school a natural interest in the emerging lesson study work, even if they do not initially take part in lesson study cycles.

5.2. Cultivate Administrators’ understanding and support

At Muir and other school-wide lesson study sites, the site leaders established and protected environments where teacher leadership could thrive. For example, they supported curriculum waivers to allow use of Japanese curriculum materials and exempted teachers from some time-consuming district requirements (such as classroom observations and formative assessment) by allowing them to be fulfilled through lesson study. In San Francisco, the District’s Teacher Leader Fellowship selected and supported teacher leaders of lesson study at Muir and other schools. Lesson study has the potential to build student learning, teacher leadership, and teacher retention (ref). Administrators learn about these potential benefits and grasp the underlying principles that make lesson study successful (see final section).

5.3. Find knowledgeable allies to support your study of content and instruction

Muir and other successful school-wide lesson study sites found knowledgeable educators to recommend readings, critique draft lesson plans, and attend research lessons in the role of “final commentators” who co-observed the research lessons and highlighted key learnings for the school. These knowledgeable allies included university-based and district-based educators knowledgeable about the subject and its teaching or about some other facet of instruction (e.g., education of English learners).

5.4. Pair Lesson Study with powerful content

Lesson study changes *how* teachers learn, but you must also attend to *what* teachers learn. For mathematics, Teaching Through Problem-solving provides a powerful approach to teaching-learning that is likely to be transformative for many teachers outside Japan. Teaching Through Problem-solving materials are readily available online and in print (Leiws et al., 2025; LSGAMC, 2022h). It may take a little extra planning to locate similarly powerful resources for other subject areas. But it can be done. A series of history and social studies initiatives in Oakland, California gave teachers a chance to use lesson study in conjunction with their study of new scholarship or methods in their discipline—for example, new scholarship on the Civil War or on labor history, methods of primary source research, and advances in the teaching of writing. In science, summer courses offered at a science museum immersed teachers in first-hand scientific inquiry, and lesson study during the subsequent school year enabled teachers to redesign classroom instruction in light of their new understandings about scientific content and inquiry.

5.5. Focus on the underlying, not just the Surface features

Although many U.S. educators have tried lesson study, not many have gone on to build school-wide lesson study. Why not? Often they focus on the surface features of lesson study (like writing lesson plans) without attention to the underlying dynamics that make these features effective (like building teachers' leadership and efficacy). The top half of Figure 4 shows the visible features of school-wide lesson study: lesson study cycles, school-wide vision, and knowledge flow pathways (within the school and with the outside). Below the line are the hidden dynamics that allow lesson study to grow school wide: intrinsic motivation; collective efficacy; and integrated teacher-administrator leadership. Key elements of organizational function are not visible (Roolffs, 2024). Building the visible features of lesson study may not produce improvement, unless the dynamics below the line are also activated.

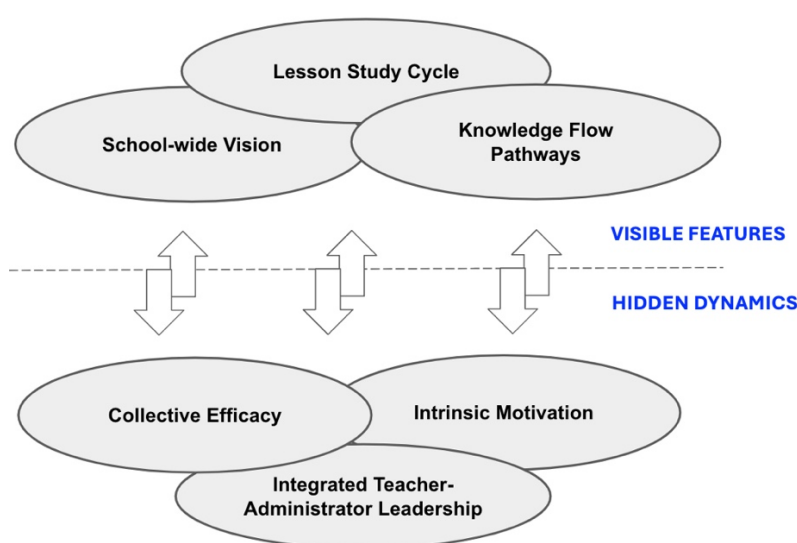


Figure 4. Visible features of school-wide Lesson Study

A full discussion of the hidden dynamics in Figure 4—collective efficacy, intrinsic motivation, and integrated teacher-administrator leadership can be found elsewhere (Lewis et al., 2025). We highlight the basic ideas here.

Intrinsic motivation is the willingness to engage in an activity for its own sake. Organizations that elicit participants' intrinsic motivation typically support three basic psychological needs of their members: autonomy, social relatedness, and competence (Deci & Ryan 1985; Ryan & Deci, 2000). Lesson study is well-positioned to support these three basic psychological needs because it values teachers' authentic questions and knowledge, brings teachers into community around a shared purpose, and allows them to experience growth in knowledge and skills. The U.S. state of Florida instituted a lesson study initiative in 2010. A follow-up study of 34 Florida districts reveals that lesson study was more often sustained in districts that (1) emphasized school and teacher ownership of lesson study (rather than district-led implementation and fidelity checks), and (2) that integrated lesson study into district instructional systems and expectations (Akiba & Howard, 2023). This finding suggests the power of situating lesson study from the start so

that it responds to teachers' and schools' ideas and needs, and so that it supports educators in fulfilling district expectations (rather than adding a new set of expectations).

Collective efficacy refers to a widely shared belief among teachers at a school that their school can positively impact student learning (Goddard et al., 2004). Collective efficacy is typically measured through responses to items such as “How much can teachers in your school do to produce meaningful student learning?” Teachers' collective efficacy is an astonishingly powerful predictor of student achievement—more than three times as powerful as student socioeconomic status, parental involvement, or student motivation and persistence (Donohoo et al., 2018). Collective efficacy is higher when teachers feel influence over instructional decisions such as professional learning and curriculum (Goddard, 2002). Collective efficacy is also enhanced by experiences that allow teachers to see the link between their collective actions and student outcomes (Donohoo et al., 2018). In addition to direct personal experiences of efficacy—for example, trying a new strategy and seeing it work with one's own students—teachers build efficacy *vicariously*, by seeing colleagues succeed (Goddard et al., 2004).

Integrated Teacher-Administrator Leadership. School-wide lesson study requires two different kinds of leadership that are hard to engineer together: teachers' leadership of the day-to-day lesson study work and administrators' leadership in protecting and resourcing teachers' work. School-wide lesson study is typically a profound cultural change, and site and district administrators need to recognize this and adjust district policies that undermine school cultural change or burden teachers at a time when they are investing enormous effort in new practices. For example, many districts evaluate teachers (and principals) on frequency of use of specific curriculum materials and instructional strategies. Yet this can undermine teachers who are trying to develop and examine more effective lessons and teaching methods through their lesson study work. District policies may assume the effectiveness of specific “research-based” strategies and require they be used, rather than recognizing the value of a school culture in which teachers investigate the effectiveness of these strategies in practice. District administrators attending lesson study events may comment unfavorably on a research lesson that focuses on “below grade level standards” rather than listening carefully to teachers' lesson rationale that explains the need for students to build a concept from the prior grade level before they can engage the grade-level content.

5. NEXT STEPS TO EXPLORE TEACHING THROUGH PROBLEM-SOLVING

If the vision of teaching mathematics through problem-solving speaks to you, here are some next steps you might take to explore it.

5.1. Experiment with teaching through problem-solving in your classroom or with your colleagues

Free online [resources](#) (LSGAMC, 2022h) allow you to learn about each aspect of Teaching Through Problem-solving and try it out in your classroom. You can find materials on reflective mathematics journals, board planning, student-led discussion, and lesson summarization; see video of these strategies in action in classroom lessons; and hear teachers and students reflect on what these practices mean to them. You can see Teaching Through Problem-solving lesson videos from school-wide lesson study sites in San Francisco, Oakland and Chicago, along with teaching-learning plans and pre- and post-lesson discussion videos. If you prefer a structured course, free self-paced online

courses are available for Teaching Through Problem-solving (LSGAMC, 2022i) and for reflective mathematics journals (LSGAMC, 2022c). Join the free Teacher Network for Teaching Through Problem-Solving (<https://www.ttp-network.org/>)

5.2. Visit a public Research Lesson

Public research lessons are a good opportunity to see Teaching Through Problem-solving in action, and to share and discuss your lesson observations with other educators. The websites of the Lesson Study Alliance, the World Association of Lesson Studies (<https://www.walsnet.org/>), and the Lesson Study Special Interest Group of American Educational Research Association (<https://www.aera.net/SIG180/Lesson-Study>) provide information about upcoming research lessons. Both organizations hold annual conferences that often include public research lessons. Public research lessons allow you to dive into a culture of teacher learning and leadership that you may find compelling, as San Francisco educator Mira Carberry did:

When I attended my first research lesson, I noticed the culture that was shaped-the lesson study team's knowledge of content and of students, how they talked about students, and how they wanted to deepen their understanding together. I had never participated in such a powerful form of professional development and I knew it was something I wanted to be a part of.

5.3. Experience Mathematical Problem-solving As An Adult

A different starting point for Teaching Through Problem-solving is to take part in mathematical problem-solving as an adult. When teachers personally experience the power and pleasure of problem-solving, they naturally want to provide similar experiences for their students. IMPULS (IMPULS, n.d.) offers in-person and online Teaching Through Problem-solving courses that start with problem-solving experiences for adult learners. They also offer intensive 10-day immersion programs to observe and discuss Teaching Through Problem-solving lessons in Japan. Over time, many educators from the U.S. school-wide lesson study sites attended IMPULS immersion programs in Japan; they often found it a life-changing experience to be within school cultures that emphasize lesson study and mathematical problem-solving.

If you are a mathematics coach, you may already have experience designing problem-solving experiences for teachers. Support for such experiences is available online, such the “mystery strip” activity in the resource kit for fractions lesson study that can support new insights into fractions (LSGAMC, 2022e; video clip at LSGAMC, 2022g). The video “How Many Seats?” (LSGAMC, 2022l) highlights a problem-solving experience teachers engaged in during a summer lesson study institute. Such first-hand experiences with problem-solving may naturally spark interest in creating similar experiences for students.

6. CONNECT WITH THE INTERNATIONAL LESSON STUDY COMMUNITY!

Lesson study is a process designed by educators for educators. Even within Japan, it takes many different forms. For example, preschool educators use a variant of lesson study (“care study”) that focuses on student-initiated play rather than on a teacher-designed lesson plan, an approach that Swiss educators have also independently pioneered (Hayashi, 2025; Clerc-Gregory et al., 2025). In Japan, different kinds of lesson study occur

in different settings—for example, at schools, in district lesson study groups, as part of local, regional and prefectural educational activity, in university-based demonstration schools, and at conferences of teachers’ organizations (Lewis, 2014, 2015). Across these settings, it may have quite different purposes, such as providing guidance for a policy change, refining textbook content, testing a new approach or topic educators hope to add to the curriculum in the future, bringing to a particular school or district an approach that been successful elsewhere (locally or overseas), advocating for a particular educational vision or disciplinary content, or building learning community in troubled schools (Lewis, 2014, 2015; Saito et al., 2015).

Educators around the world now have the chance to adapt lesson study to the challenges we all face in our local settings. We are fortunate to have an approach like lesson study that values educators as authors of knowledge for the profession and that realizes the power of teachers’ observation and discussion of live practice—rather than assuming that well-crafted new standards or shiny new teaching tools are enough to change learning. We are fortunate to live in a time when we can easily exchange ideas with educators around the world. So let’s share our successes and our struggles, connecting with each other through WALs, AERA-LS SIG, and any other means we can.

REFERENCES

- Akiba, M., & Howard, C. (2023). After the race to the top: State and district capacity to sustain professional development innovation in Florida. *Educational Policy*, 37(2), 393–436.
- Banilower, E. R., Smith, P. S., Malzahn, K. A., Plumley, C. L., Gordon, E. M., & Hayes, M. L. (2018). *Report of the 2018 NSSME+*. Horizon Research, Inc.
- Clerc-Georgy, A., Moreau, I.T., & Perez, M.G. (2025). Adapting lesson studies to activities initiated by children. In S. Breithaupt & V. Batteau (Eds.). *History of 3LS, the Lausanne Lesson Study Laboratory*
- Deci, E., & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior*. Plenum.
- Donohoo, J., Hattie, J., & Eells, R. (2018). The power of collective efficacy. *Educational Leadership*, 75(6), 40-44.
- Goddard, R. D. (2002). A theoretical and empirical analysis of the measurement
- Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2004). Collective efficacy beliefs: Theoretical developments, empirical evidence, and future directions. *Educational researcher*, 33(3), 3-13.
- Hayashi, A. (2025). The development of professional expertise in preschool teaching in Japan, China, and the United States. *Comparative Education*, 1–18. <https://doi.org/10.1080/03050068.2025.2503076>
- IMPULS (International Math-teacher Professionalization Using Lesson Study).(n.d). <https://impuls-jp.com/>
- Lewis, C. (2014). How do Japanese teachers improve their Instruction? Synergies of Lesson Study at the School, District, and National levels. *Board on Science Education Commissioned Paper*. http://sites.nationalacademies.org/DBASSE/BOSE/DBASSE_084385
- Lewis, C. (2015). What is improvement science? Do we need it in education? *Educational Researcher*, 44(1), 54–61. <https://doi.org/10.3102/0013189X15570388>

- Lewis, C., & Perry, R. (2015). A randomized trial of lesson study with mathematical resource kits: Analysis of impact on teachers' beliefs and learning community. In E. J. Cai & J.
- Lewis, C., & Perry, R. (2017). Lesson study to scale up research-based knowledge: A randomized, controlled trial of fractions learning. *Journal for Research in Mathematics Education*, 48(3), 261–299. <https://doi.org/10.5951/jresmetheduc.48.3.0261>
- Lewis, CC, Takahashi, A., Friedkin, S.H., Houseman, N., & Liebert, S. (2025). *Teaching Powerful Problem-solving in Mathematics: A Collaborative Approach Through Lesson Study*. Teachers College Press.
- LSGAMC (Lesson Study Group at Mills College) (2022a). About Lesson Study. <https://lessonresearch.net/about-lesson-study/what-is-lesson-study-2/>
- LSGAMC (Lesson Study Group at Mills College) (2022b). Conduct a Cycle. <https://lessonresearch.net/conduct-a-cycle/overview/>
- LSGAMC (Lesson Study Group at Mills College) (2022c). Courses: Try Math Journals in Your Classroom. <https://lessonresearch.net/resources/courses/>
- LSGAMC (Lesson Study Group at Mills College) (2022d). Develop a Research Theme. <https://lessonresearch.net/study-step/develop-research-theme/>
- LSGAMC (Lesson Study Group at Mills College) (2022e). Fractions Toolkit. <https://lessonresearch.net/library/fractions-toolkit/>
- LSGAMC (Lesson Study Group at Mills College) (2022f). School-wide Lesson Study. Go Public. <https://lessonresearch.net/resources/schoolwide-lesson-study/go-public/>
- LSGAMC (Lesson Study Group at Mills College) (2022g). Teacher learning video clips (First clip). <https://lessonresearch.net/teacher-learning/lspphase/study/>
- LSGAMC (Lesson Study Group at Mills College) (2022h). Teaching Through Problem-solving Overview. <https://lessonresearch.net/teaching-problem-solving/overview/>
- LSGAMC (Lesson Study Group at Mills College) (2022i). Teaching Through Problem-solving (TTP) Course Overview. [Multi-module course]. https://lessonresearch.net/course/teaching-through-problem-solving/course-overview/#course-steps-container_id
- LSGAMC (Lesson Study Group at Mills College) (2022j). Teaching Through Problem-solving (TTP) TTP in Action [Database of videos and lesson plans]. <https://lessonresearch.net/teaching-problem-solving/ttp-in-action/>
- LSGAMC (Lesson Study Group at Mills College) (2022k). What is Lesson Study? Why Lesson Study? <https://lessonresearch.net/about-lesson-study/what-is-lesson-study-2/>
- LSGAMC (Lesson Study Group at Mills College) (2022l). How Many Seats? Excerpts from a Lesson Study Cycle. [video]. <https://lessonresearch.net/content-resource/how-many-seats/>
- Middleton (Eds.), *Design, results, and implications of large-scale studies in mathematics education* (pp. 133–155). Springer.
- NCTM. (1980). *An agenda for action*. National Council of Teachers of Mathematics. of collective efficacy: The development of a short form. *Educational and Psychological Measurement*, 62(1), 97–110.
- Rolffs, D. (2024). Keys to growing healthy organizations Downloaded October 18, 2025 from <https://l3catalystgroup.com/blog/keys-to-growing-healthy-organizations>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68.
- Saito, E., Watanabe, M., Gillies, R., Someya, I., Nagashima, T., Sato, M., & Murase, M. (2015). School reform for positive behaviour support through collaborative

learning: utilising lesson study for a learning community. *Cambridge journal of education*, 45(4), 489-518.

University of Tokyo (2021). Educating the Whole Child: Tokkatsu. <https://www.p.u-tokyo.ac.jp/~tsunelab/tokkatsu/>

WALS (World Association of Lesson Studies). (2024). <https://www.walsnet.org/>