

Unlocking Potential: How Lesson Study Can Transform Teaching and Learning in Abu Dhabi

This paper explores the impact of lesson study as a catalytic model for professional development among educators in Abu Dhabi. Drawing from experiences across private and public schools, it reveals how the collaborative nature of lesson study empowers teachers to transcend traditional pedagogical boundaries, particularly in mathematics and English. Within these cycles, educators collaborate to identify instructional challenges, plan lessons, observe student responses, and engage in deeply reflective discourse. This iterative process cultivates a culture of continuous professional enrichment and fosters a shift toward more student-centered learning. By presenting nuanced examples from Abu Dhabi's educational landscape, this paper elucidates the transformative potential of lesson study to not only hone teaching strategies but to also embed a sustained ethos of educational excellence.

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Exploring the Foundations of Lesson Study in Teacher Development

As a mathematics educator, it is ironic that I dropped my mathematics course in the final year of high school, the most important year for university placement. I was taught mathematics in a strictly teacher-centered and rule-focused way, so boring and ineffective that back then, I decided to do something to contribute to the advancement of how mathematics was taught in schools, a subject I was passionate about. During my undergraduate education, I learned about innovative ways to teach mathematics and tried to implement them when I became a mathematics teacher. Nonetheless, I found myself continually searching for solutions to challenges in my teaching, often turning to books, journal articles, and researchers' insights. Then, later in my career, I was introduced to lesson study, a highly specialized form of action research. I participated in lesson study groups with other teachers and noticed how collaboration and a focus on student learning could transform teaching practices. These experiences significantly impacted my views on teachers' professional learning and practice development. If we are genuinely committed to transforming mathematics education in schools, then empowering teachers with a stronger sense of ownership and agency in enhancing both their teaching and their students' learning becomes essential.

My growing interest in lesson study is not an isolated development; it aligns with an international wave of curiosity regarding this innovative teacher professional development model. After Japanese students' success in international exams (e.g., Trends in International Mathematics and Science Study), there was an increased interest in the Japanese education system. Researchers have since partly attributed Japanese students' high performance to the widespread practice of lesson study in Japan, as highlighted by Lewis and Hurd (2011). Today, lesson study is being practiced in many countries worldwide. Teachers and researchers share their learning through conferences, publications, and websites. It has been reported that lesson study facilitates resource-sharing, the adoption of new pedagogies, building a professional learning community of teachers, and the alignment of classroom practice with broader educational goals and theories (Erbilgin & Arikan, 2021; Lewis & Hurd, 2011; Xu & Pedder, 2015).

But what exactly is lesson study? There are different models of lesson study in the relevant literature. The model that inspires my work with teachers here in Abu Dhabi is based on Takahashi and McDougal's (2016) description of lesson study (see Figure 1). According to this model, first, a group of teachers identifies a pedagogic challenge in their classroom and school context. If the challenge is widespread across a school, it may involve the entire school staff working collaboratively toward a solution. Next, the lesson study group examines and studies relevant resources. After this study phase, the group designs a lesson plan to address the pedagogic challenge. One teacher from the group then teaches the lesson while the other group members observe and collect data about student learning. Finally, the group holds a post-lesson reflection meeting to discuss how students responded to their lesson plan. They may revise aspects of the lesson plan, repeat the cycle, or plan a follow-up lesson.

Over the past few years, I have engaged in lesson study work across three schools in Abu Dhabi—a private school and two public schools. In the following sections, I present a summary of each lesson study case, including my reflections on the strengths and challenges encountered in each instance. Following this, I will share teachers' perspectives on the lesson study process and how they believe it differs from other forms of professional development activities.

Case Studies in Abu Dhabi

My first lesson study experience in Abu Dhabi was at a private school with three secondary English

language teachers. In this lesson study group, my primary contribution was guiding them through the process of conducting a lesson study. The teachers in this group decided to plan a lesson on question 5 of the General Certificate of Secondary Education (GCSE) exam, as it has been a difficult question for their students in the past and heavily influences their exam results. They chose the lesson study theme of “become independent thinkers and evaluate.”

The lesson study group studied metacognition during their study phase meeting, then planned and taught the lesson. During this five-week cycle, all the teachers expressed a strong interest in teaching the research lesson themselves, underscoring its perceived importance to their students’ success. After each teaching, the lesson plan was revised collectively based on student feedback. According to my field notes, these multiple teaching opportunities engaged the teachers in rich discussions about content-specific pedagogy, such as addressing student difficulties in comparing two pieces of text or designing teaching activities that incorporate literary devices.

One aspect that could be enhanced during the process was developing better ways to collect data on student learning during the lesson observations, which could further enrich the post-lesson discussions. Despite this, the entire lesson study cycle fostered essential conversations around refining teaching strategies to enhance student learning on a challenging topic. One successful result of this lesson study case was that the school leadership decided to include lesson study as a form of professional development for all teachers. Therefore, teachers who participate in lesson study will fulfill their professional development requirements, either in full or in part.

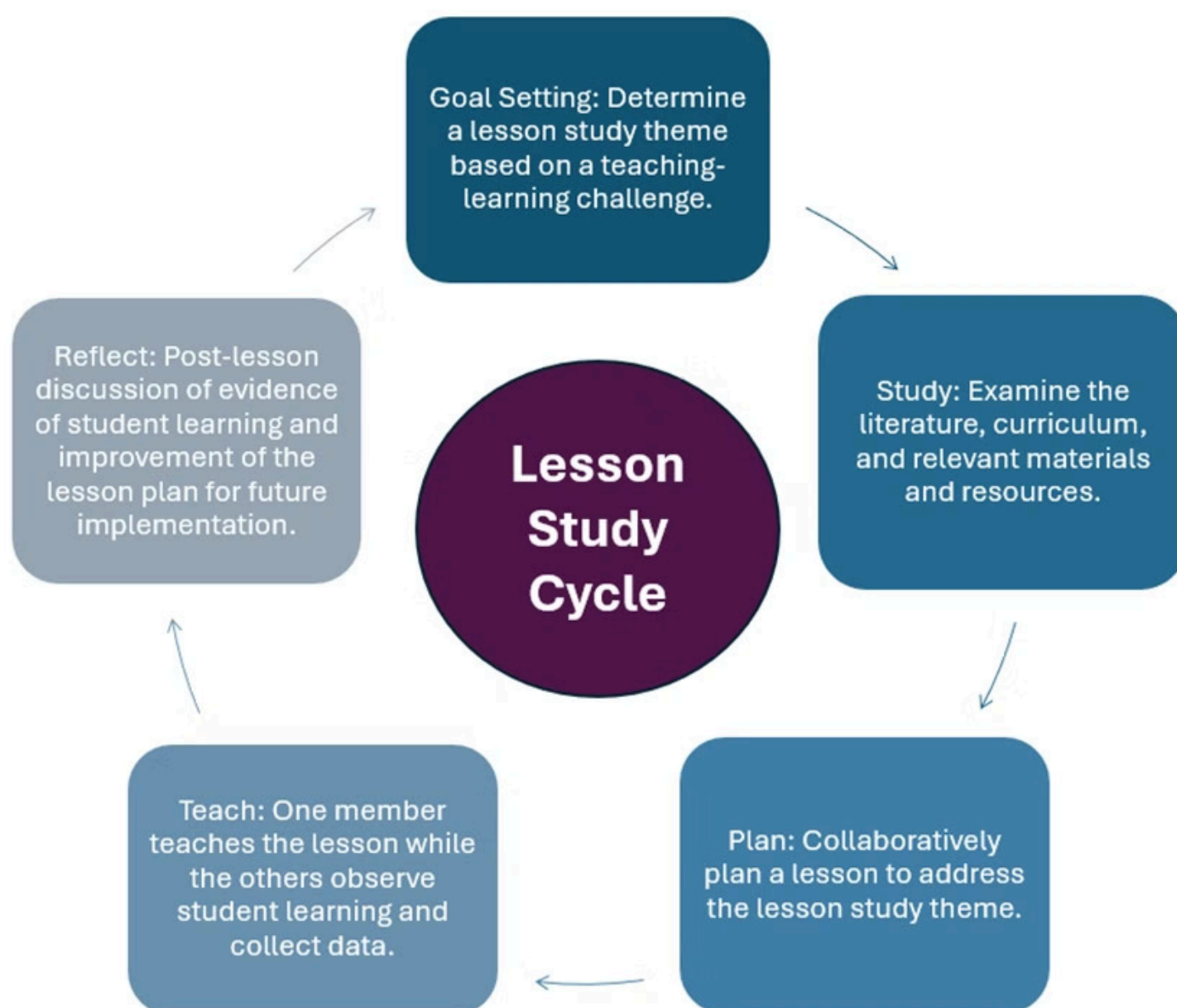


Figure 1. Lesson study cycle

Transitioning to my second experience, this took place at a public primary school and involved four teachers. My role in this experience was a participant observer. Initially, I taught them the process of lesson study, but later I became a group member, mostly due to my expertise coinciding with the subject matter of the lesson being developed. The group determined their overarching goal of the research lesson to be “improving students’ problem-solving skills in solving subtraction word problems.” During

the study phase, we discussed research findings on problem solving, engaged in problem solving to improve our own content knowledge needed for teaching mathematics, and examined teaching materials for enhancing students' problem-solving skills.

By the end of the study phase, the group decided to focus on metacognitive questioning and drawing visuals as strategies to support their students' problem-solving skills. Concentrating on these two strategies, the group planned their lesson in detail, discussing anticipated students' responses and the corresponding possible teacher reactions. One teacher led the lesson while others observed, documenting student learning through a tailored observation form—a lesson learned from my earlier lesson study experience. Each observer interviewed a student at the end of the lesson to ask what they had learned about solving word problems. Additionally, we used entry and exit tickets to assess the lesson's impact on students' problem-solving skills.

During the post-lesson discussion, we had ample data that guided our conversations. Through the collective analysis of student responses, we engaged in a reflective dialogue on areas of growth and potential adjustments for the future. The post-lesson meeting concluded the lesson study cycle for this group, as it was the end of the academic year. However, several group members voiced an eagerness to revise the lesson based on feedback and to conduct it in a different class setting—an aspiration curtailed by the academic calendar.

Recently, I have embarked on another lesson study endeavor with a team of eight secondary mathematics teachers at a public school. The teachers have formed three lesson study groups based on the grade levels they teach. Their respective focus areas—solving systems of equations, converting between polar and rectangular forms, and linear equation solutions—reflect the diversity and complexity of the mathematical challenges they face. One group has already implemented their lesson, and we convened a post-lesson meeting to examine observed student responses, assessing both the depth and breadth of their mathematical understanding. The remaining groups are still engaged in planning and will likely extend their activities into the next academic year.

Broadly speaking, each school implemented lesson study with some variations based on their needs, interests, and contextual factors. Despite these differences, all participants worked collectively with their colleagues to address pedagogic challenges. Through this iterative process of study, planning, observation, and reflection, each teacher group delved deeper into their respective content areas and honed their instructional methodologies. The reflective and collaborative problem-solving nature of lesson study empowered teachers in their professional learning and practice development.

Teacher's Perspectives of Lesson Study

So far, I have shared my own perspective on these lesson study endeavors. I also inquired about teachers' perspective on if and how lesson study contributed to their professional learning. All the teachers expressed the view that lesson study is beneficial for their professional learning and growth. They emphasized the reflective and collaborative aspects of lesson study and its strong connection to classroom practice as its main strengths. For example, one teacher said, "I like that we chose the area to address within our subject. I liked how we planned collaboratively, reflected and amended based on each other's lessons." Another teacher explained that the lesson study group shared many pedagogic ideas and teaching activities in each meeting, which provided opportunities to test them in her classroom and support her students' learning in new ways. One teacher highlighted the collaborative problem-solving aspect of the lesson study and said, "As a teacher, the most important thing about my job is find

the best teaching techniques to help my student learn as much as possible. Therefore, I felt connected to the lesson study process and invested." The only aspect teachers mentioned as a challenge in the process was the time it takes to complete a lesson study cycle.

The teachers compared lesson study to other forms of professional development. Some participants discussed the limited voice teachers have in other types of professional learning activities. For example, one teacher said, "Most professional development involves listening to someone imparting knowledge in the sharing of ideas outside of the classroom." Another teacher highlighted how lesson study allows teachers to have more control and interest in the process: "It was very practical while other professional development can be theoretical and practiced but not necessarily adopted. Also, since we all volunteered, there was focused professional discussion whilst some others we are just obliged to do, so the interest is not always the same."

Generally, the teachers found lesson study effective for both their own professional growth and for their students' learning. They appreciated lesson study for its practice-based, classroom-related, reflective, and collaborative nature. They valued its focus on real classroom experiences and the opportunity for collective reflection and problem-solving. Moreover, the teachers felt engaged in a professional learning activity where they are the main designers and developers, unlike other forms of professional learning where this may not be the case. While some other forms of professional development may include more theoretical approaches and less input from teachers, lesson study is more teacher-centered and practice-focused, making it more relevant and engaging.

Conclusion

In this paper, I have shared my journey with lesson study in Abu Dhabi. These initial trials have yielded encouraging outcomes that give hope for future implementation and spread of this professional development model. By fostering a culture of collaborative learning and reflective practice (Kager et al., 2022), lesson study has the potential to significantly enhance teacher growth. Moving forward, I aim to focus on developing a sustainable model of lesson study for schools in Abu Dhabi. By embedding lesson study as a foundational component of professional development in Abu Dhabi schools, we can achieve our overarching objective of increasing student achievement and wellbeing.

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