

Easily lost in translation: Introducing Japanese lesson study in a UK school

Luke Rolls and Sarah Seleznyov

Introduction

Lesson study is a collaborative approach to professional development that originated in Japan. Translated from the Japanese words *jugyou* (instruction or lesson) and *kenkyu* (research or study), it is a process in which teachers collaboratively plan a lesson, observe it being taught and then discuss what they have learnt about teaching and learning. In lesson study, the ‘intermediary inventive mind’ is that of the collective group; the wisdom of a teacher community that develops through the close study of children’s responses to carefully designed learning experiences.

Recent increased interest in international league tables and policy borrowing from high-performing nations has led to an increase in ‘travelling reforms’ (Steiner-Khamsi & Waldow, 2012). These reforms are borrowed from other nations to address perceived problems in performance. In the UK, Japan, Singapore and China in particular have been popular sources of policy borrowing. However, an increasing number of authors have begun to challenge the feasibility of global borrowing, highlighting issues of culture, politics and over-reliance on student data as a success indicator. Sahlberg (2011, p. 6) (who is not against global borrowing per se) describes how a ‘network of interrelated factors – educational, political and cultural – ... function differently in different situations’: he believes it is presumptuous to attribute the success of a national educational system to one aspect of its practices.

Despite these notes of caution, since Stigler and Hiebert (1999) first wrote about lesson study, it has become a popular travelling reform and its global spread is increasing. Lesson study has emerged internationally through a bottom-up

approach: numerous schools have adopted the approach in the absence of funding, direction or research findings because they perceive it to be valuable. It has been explored in countries across Europe, Asia, Africa, North and South America and several international hybrid models drawing on its practices have emerged, for example Hong Kong's 'Learning Study'. Barber and Mourshed's (2007) report on 'the world's best performing school systems' brought lesson study to the UK's consciousness and its recent popularity links to a recent national focus on promoting more effective and evidence-based models of teacher professional development.

However, if lesson study is to be adopted as a professional development approach by UK schools, it will be important not to assume that direct 'translation' of practice will be unproblematic. While recognising the appeal and power of lesson study for countries beyond Japan, Isoda (2007, p. xxiii) warns that 'moving outside of its own historical and cultural context may entail the loss of some of the powerful influences that shape and give direction to lesson study in Japan'. Similarly, Chokshi and Fernandez (2004, p. 524) state that 'lesson study is easy to learn, but difficult to master'. They fear that US educators 'focus on structural aspects of the process ... or ... mimic its superficial features, while ignoring the underlying rationale'. Isoda (2007) recognises that lesson study may undergo 'creative transformation' as it is adapted to a different culture. Murata (2011, p. 10) goes further, stating that 'modifications are expected and essential in order to adopt and use [lesson study] effectively'. However, he also highlights the danger of losing what is powerful if too many modifications are carried out.

Critical components of Japanese lesson study

In order to explore issues of 'translation' it is important to understand both lesson study's surface features and underlying rationale. Its critical components are frequently contested in the English language literature and few Japanese studies are available in translation. In fact, Japanese educators have begun to realise that there is a need for a more explicit articulation of lesson study (Fujii, 2014). Seleznyov's (2018) wide-ranging literature review puts a particular focus on Japanese-speaking authors since they describe lesson study at its source and identifies its critical components:

1. Identify focus

Teachers compare long-term goals for student learning to current learning characteristics in order to identify a school-wide research theme, which may be pursued for two or three years. Having a shared research focus supports close collaboration among teachers. In Japan the focus is often one that works across multiple subject areas, for example developing independence or curiosity.

2. Planning

Teachers work in collaborative groups to carry out *kyozai kenkyu* (study of material relevant to the research theme). This leads to the production of a collaboratively written plan for a research lesson. The detailed plan, written over several meetings, attempts to anticipate student responses, misconceptions and successes for the lesson.

3. Research lesson

The research lesson is taught by a teacher from the planning group. Other members of the group act as silent observers, collecting evidence of student learning. The focus is on observing student learning, not judging teaching.

4. Post-lesson discussion

The group meet to formally discuss evidence gathered, following a set of conversation protocols that ensure the focus remains firmly on what teachers have learned. Learning in relation to the research theme is identified to inform subsequent cycles of research.

5. Repeated cycles of research

Subsequent research lessons are planned and taught that draw on the findings from the post-lesson discussion. These are new lessons and not revisions nor reteachings of previous research lessons. In fact, Japanese authors state that since each research lesson is designed with a particular class in mind at a particular point in their learning, to teach it to a different class is unethical (Fujii, 2016). Lesson study should focus not on creating a ‘perfect lesson’ but on gradual, incremental changes to teachers’ practice that will enable improved learning for all students.

6. Outside expertise

There is input from a *koshi* or ‘expert other’ into the planning process and the research lesson. The *koshi* comes from outside the school and is either from an academic or practice background, for example a local area adviser, a university professor or a highly experienced teacher.

7. Mobilising knowledge

Networking  ss schools or through the publication of group findings.

Why lesson study?

It is clear from the critical components listed above that lesson study is not a simple adaptation of current UK approaches to professional development. So why might schools consider adopting it? In opposition to the recent Department for Education's (DfE) focus on the quality of entrants into teaching, many in the education world are keen to focus on developing the practice of current teachers, noting that teacher in-school variability is far greater than inter-school variability and that teacher quality is perhaps the greatest predictor of pupil outcomes. In Japan, lesson study is seen as a process that enables all teachers to improve their practice throughout their career. How does lesson study achieve this?

Lesson study's approach to enabling teacher improvement aligns with recent calls for UK teachers to be more engaged in and with research. Hallgarten, Bamfield, and McCarthy (2014, p. 66) distinguish between passive research-led practice, whereby teachers follow guidance that policy makers claim is rooted in research, and active research-informed practice, whereby teachers are 'empowered to find, use and apply the research that is available'. Lesson study has all the features of an effective school-based research process. It begins with an analysis of data, involves identifying a question to pursue, uses classroom practice as a concrete experience by which to analyse the success of changes to practice, requires teachers to gather evidence to inform reflection, is repeated in cycles that refine and enhance learning and involves a final analysis and reporting of findings.

This lesson study research process is a structured and iterative process of collaboration involving mutual learning, aligning with a significant focus in professional development literature on the importance of collaborative teacher learning. Lesson study mimics powerful professional development models like professional learning communities (Stoll & Louis, 2007) and communities of practice (Lave & Wenger, 1991) with its focus on establishing shared research themes, collaborative lesson planning and 'collective knowledge creation' through the post-lesson discussion, 'open-house' research lessons and publication of findings. The goal of lesson study is to produce collective intelligence through high-quality talk between teachers, transforming tacit knowledge into explicit and creating new social knowledge. Powerful collaborative conversations around shared practice build trust, encourage non-judgemental challenge and increase the likelihood of teachers changing their practices.

Finally, effective professional development needs sustained time and a long duration: 'professional development must be seen as a process, not an event' (Guskey, 2002, p. 388). Time enables teachers to surface theories of learning and ensures greater depth of learning. A lesson study research theme will last for at least two years and involve considerable teacher time.

It seems therefore that lesson study offers the potential for transforming teacher practices: in line with research evidence on effective teacher professional development it engages teachers in and with research through structured

collaboration and operates over a sustained time frame. What is important to consider therefore, is whether it can be translated effectively into the UK education system and schools.

Can lesson study be translated into a UK context?

Several researchers have written about the challenges of adopting lesson study in non-Japanese contexts but there is very sparse literature on the nature of implementation in the UK. However, the international literature raises several major concerns that are of relevance to translation into UK schools. Several international authors note timetable and workload issues as an impediment. In the UK, Godfrey, Seleznyov, Anders, Wollaston, and Barrera-Pedemonte (2019) found that when sufficient time was not allocated to lesson study, such that teachers had to commit their own time to the process, the engagement of teachers and their stated learning was considerably less. Wake, Foster, and Swann (2013) also noted that UK teachers were reluctant to devote the required time to production of a detailed lesson plan. In Japan, time is built into teachers' weekly schedule to accommodate lesson study and they are also willing to devote considerable amounts of their own time to its processes.

Why are UK schools and teachers reluctant to commit time to professional development processes like lesson study? The issue of teacher workload and its impact on recruitment and retention is now acknowledged by the DfE, but little attention has been paid to its impact on professional development. Changes to teacher practice take considerable time, and will only happen over a lengthy period of time: this belief has shaped lesson study's critical components. As an indirect outcome of accountability, workload is now acknowledged to have led to teachers in the UK spending their time on things that lead neither to changes in practice nor to improved learning, for example extensive written feedback, detailed lesson planning and data entry. This appears to leave them with little energy to commit to professional development beyond the statutory requirements of the school. Several researchers have noted that local accountability pressures mean teachers are unwilling to engage in lesson study or are heavily focused on curriculum coverage to the detriment of learning about pedagogy.

The hyper-accountability system in the UK also influences schools by putting an increasingly rigid focus on short-term measurable impact. Lewis, Perry, and Murata (2006, p. 6) compare the US response to lesson study, with researchers 'proposing randomized controlled trials and horse-race style comparisons' to Japan, where 'lesson study has been used for a century without summative evaluation'. In the UK, there is similar pressure on schools to prove impact through short-term pupil outcomes and to demonstrate value for money, with even the Educational Endowment Foundation conducting the majority of its impact evaluations over one, or a maximum of two years. Lesson study is seen as enabling a ten-year

journey towards expertise, and a Japanese school's research theme may last for several years.

Accountability in the UK has also led to a significant fear of lesson observation. Despite the fact that evidence of the impact of systematic lesson observation on student outcomes is 'generally limited' (Coe, Aloisi, Higgins, & Major, 2015) and that judging teachers through observation has been shown to be unreliable, formal judgemental lesson observation has become an engrained aspect of the accountability system in UK schools. Lesson observation has been 'done to' rather than 'done with' teachers, reducing ownership and autonomy, both key features of effective professional development, and leading teachers to see it as a threatening unsupportive process. Lesson study, on the other hand, promotes a learning approach to lesson observation; teachers take ownership of their learning and take risks in experimenting with new approaches collaboratively with their peers. Wake et al. (2013) noted that UK teachers tended to avoid conflict in post-lesson discussions by being polite (rather than constructively critical) in what one could perceive as an attempt to make the lesson observation aspect of lesson study less threatening. How can UK teachers be persuaded to rethink their fear of lesson observation as a judgemental process?

The national culture shapes the education system, which in turn shapes the professional development approach of schools. One cannot automatically assume that lesson study will be easily implemented in UK schools (see Figure 5.1).

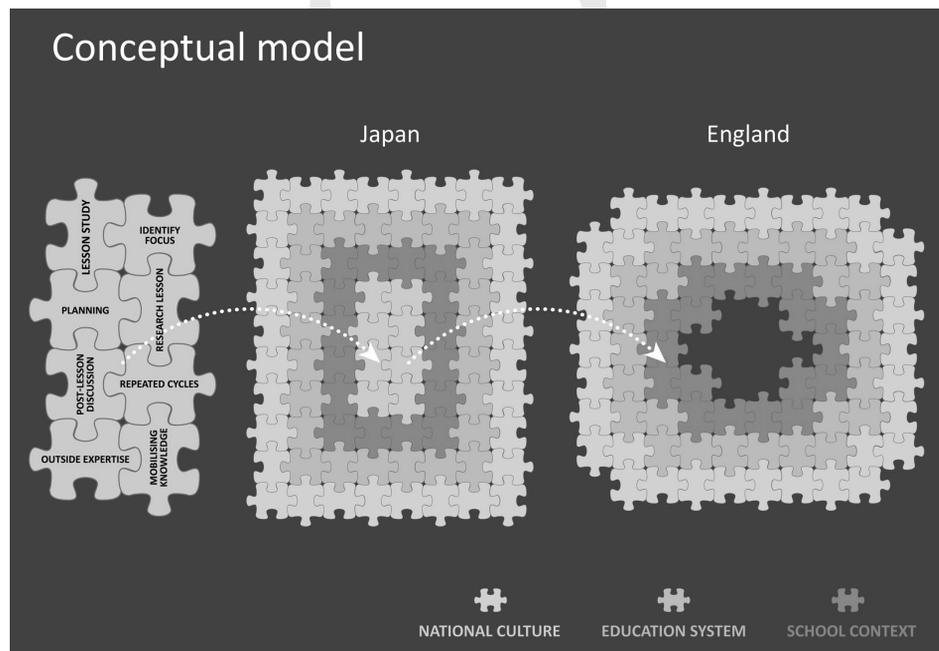


Figure 5.1 Comparison model of lesson study in Japan and the UK

A story of implementation

The following is an account of the journey of implementation of lesson study by Luke Rolls at the University of Cambridge Primary School.

Building a culture of trust

Before visiting Japan, I had experimented with lesson study over two cycles of enquiry, but realise in retrospect that I had only really taken the very first steps towards understanding the challenges of implementation in a UK primary school context. In Tokyo, I was fortunate to meet with a Ministry of Education advisor and university lecturer who specialised in researching and facilitating research lessons. He began by explaining that the first priority of lesson study is to create a trusting community of practice. He had worked in both Japan and abroad in Kazakhstan and could easily point to instances in which lesson study had been a demoralising experience for the teachers involved. For example, where teachers had not had the opportunity to make use of an expert adviser or collaborative planning group or when it came to the post-lesson discussion, many areas of weakness of the lesson were harshly evaluated by senior teachers in front of colleagues, leaving the lead teacher with a sense of failure. What became clear was that rather than there being a singular form of professional development known as ‘lesson study’ internationally, in practice it took many forms and it was the *how* of its implementation that held the key to its potential.

I returned to my own school with a moderated understanding of the principles of Japanese lesson study and faced the challenge of bringing a form of professional development that depended on a form of open professional learning culture that was almost the polar opposite to the high-stakes nature of formal observations and performance management strategies in the UK. On my side was the fact that I was working in a new school that had made a concerted effort to create a collaborative ethos among staff and to prioritise a learning over a performance culture (Watkins, 2001). Nevertheless, teachers were arriving to work at the school from difficult school contexts and they often referred to feeling scarred by the accountability-driven management strategies they had become accustomed to. So much so that several were considering leaving the profession before joining the school.

During an induction session at the beginning of the school year with our growing number of teachers, I introduced the aims, purpose and processes of lesson study. I explained that lesson study was a collaborative endeavor focused on children’s learning (not the teacher) and that there was a definite distinction to be made clear between lesson study and other forms of observation (see Table 5.1).

Table 5.1 Characteristics of lesson study

Lesson study is ...	Lesson study is not ...
Developmental for teachers	Judgmental of teachers
An opportunity to closely observe pupils' learning in a classroom environment	Judging the teacher against the Office for Standards in Education, Children's Services and Skills (Ofsted) criteria
About a jointly planned and jointly 'owned' lesson	About teacher delivery of a lesson they 'own'
Research-based and focused on evidence, including what has been seen and heard in a given lesson	About what we imagine is happening
Challenging yet supportive	Critical and unsupportive
Problem-solving together	Identifying issues for someone else to resolve
A collaborative analysis of what leads to successful learning	Demonstrating one person's formula for successful teaching
Context-specific and concrete	Generic and theoretical
A series of discussions and observations	A one-off observation
An honest and open process of collaborative planning and reflection	Planning behind closed doors and teaching in isolation
About teacher learning in relation to the research theme	About creating a 'perfect' lesson

While teachers could see its benefits, several commented afterwards that the idea of teaching in front of all their colleagues did not sit comfortably. Teachers needed to experience and gain trust in the processes of lesson study. To flip this dynamic, we decided that the head teacher and the senior leaders would teach the first research lessons of the year to model the intended process of collaborative teacher learning and research. This led to the rather unusual circumstances of newly qualified teachers feeding back to senior leaders on the quality of learning that took place in their classrooms at the beginning of the year. In this move away from performativity, teachers were situated as learning researchers, enquiring together into the gap between what is intended in teaching and what children experience. In doing so, research lessons needed to communicate through their implementation that they could be an affirming and professionalising experience for both the lead teacher, the planning team and other observers in the group. Indeed, after lessons teachers invariably thanked each other with a real sense of appreciation for the rich opportunity of observing children's responses to learning so closely. The

process of lesson study made clear to all that learning was an impossibly complex area of study, but one that benefitted from collaborative enquiry. At the beginning of the third year during a lesson study induction session, an experienced teacher commented: 'Joining the school, I was quite nervous about teaching in front of all my colleagues but it wasn't like that at all. It's a really positive experience and you learn a lot from it.' As Toshiya suggested, trust and shared professionalism were the foundations for teachers to take the leap of faith needed to invite others into their classroom. As the school has grown, we now recruit new members to the team by specifically looking for professional competencies of collaboration and self-reflexivity as key determinants of employability.

The successes of lesson study

The development of lesson study began alongside the research and development of our own curriculum model. The three pedagogical 'golden threads' of habits of mind, oracy and dialogue and playful enquiry had strong research bases but needed to be articulated with detail in their own context in order to make academic findings practicably translatable to the classroom. In striving for wider curriculum aims of creating confident, intercultural citizens, we prioritised oracy and dialogue in our school development plan for its wide-ranging potential for personal, social, cognitive and emotional development. The main strategic partners were the oracy researchers in Cambridge, whose research into effective classroom dialogue informed the planning phases of planning groups. At the end of the first year, the lesson study findings around shared practices in oracy and dialogue were brought together and formalised into the school's teaching and learning handbook. These shared pedagogies became school-wide practices that formed a common language of discussion and planning. In the second year, the lesson study cycle continued to enquire into the role of dialogue to support classroom learning and produced further shared thinking into practices in collaborative learning. While the school had always been fortunate to attract talented teachers, something began to shift; leaders and visitors started to comment that after having spent time in classrooms, they were seeing similarities in the ways children were speaking and interacting in the classroom. Norms were embedding around children giving reasons for their ideas, building on the ideas of others and querying those they did not understand; the very areas that had been focused on in the first cycles of lesson study enquiry.

For the second two-year cycle, the leadership team sought to better understand the conditions in which play might support the development of learning autonomy in children. The Play in Education Development and Learning (PEDAL) research centre at the University of Cambridge became a strategic partner for this second longer-term cycle of research. PEDAL researchers came to give teacher workshops on using evidence into effective playful learning and these discussions fed into lesson study planning work. Teachers also continued to engage with developing

dialogic teaching practices by working on a cycle of action research in their classroom with T-SEDA (see Chapter 8), which in turn fed into some research lesson designs.

Challenges with implementation

Planning research lessons

The planning phase of the research cycle provided several challenges:

Time

Lesson study requires a significant investment of time and so could not be seen as an ‘add-on’; it needed to be integrated into the design of the school’s strategic calendar but also practically timetabled allowing sufficient time for teachers to collaborate. Things of course differ in Japan, where teachers often meet for many hours over a period of months to plan their lessons; they have a common teacher staff room with desks, they work long hours even when children are on holiday and meet extensively. To match these working hours is undesirable; an effort was needed, however, on the school’s part to help facilitate time for teachers to meet and plan. The school decided to give regular staff meeting times where each research lesson would receive at least two formal collaborative planning sessions. As well as this, teachers chose to meet for working lunches, at times after school to continue their discussions and to plan during in-service training (INSET) days. One strategy we used was to plan in regular ‘check-in’ type meeting opportunities over the lesson study cycle to join the two lesson research teams in the school. In these meetings, we could share developing knowledge and steer the direction of implementation in the school; evaluating the success of its different components and collaboratively agreeing on adaptations as needed.

Use of curriculum/teaching materials (*kyouzai kenkyuu*)

For the first three years, we carried out research lessons across all subjects in the school. While much curriculum support material could be found for the core subjects of maths and English, other subjects were more challenging. For example, when teachers looked in the National Curriculum programmes of study, they would find 79 pages of guidance for English and yet only one for other subjects like art and computing. In the UK system, teachers and schools are given ‘autonomy’ by being asked to break down this knowledge into six years of study and then to expand each into a coherent sequence of learning. As a school, we subscribed to subject associations where possible but these resources themselves were of variable accessibility. The best materials used were those that supported teachers’ subject knowledge, allowing them to begin to anticipate what children’s responses and misconceptions might be, but these were unfortunately rare. Perhaps unsurprisingly, the wealth of teaching materials and textbooks available in high-performing countries produced for all subjects appear to have often been developed themselves through approaches to such lesson study. This deficit of high-quality curriculum materials remains an ongoing challenge, which we have yet to resolve.

Refining a research question

As with any form of research, homing in on the exact area of focus is an iterative process that takes time. During staff discussion, the design of the research question was identified as a key aspect with which teachers were struggling. While planning groups would begin at the outset with an idea for a research lesson, e.g. the role of play in teaching English, they needed time and discussion to refine their exact focus. In the following example, we can see how the exact type of play and specific aspect of English learning is developed and identified over time:

Version 1: What is the role of play in teaching writing?

Version 2: How can role play support the teaching of writing dialogue?

Version 3: How can children develop characterisation in their writing through the use of role play?

The planning team also became more familiar and skilled at developing questions that helped the observers to collect focused evidence on this again requires thought and calls on support from the planning team and the expert advisor as to which questions may be most pertinent.

Research questions for observers:

- What aspects of characterisation were developed through the role-play phase of the lesson?
- What evidence was there that the content of children's role play transferred into their dialogue script?
- What aspects of teacher and peer modelling were evident in children's development of characterisation skills?

Choice of research lesson subject

In the first few years of implementing lesson study, we let teachers lead on a lesson in a subject they felt most confident with but gradually moved away from this. Lesson study is ultimately concerned with exploring together gaps in teaching knowledge and practice rather than seeking to demonstrate competence (Takahashi, 2010). As the number of lesson study cycles completed increased, teachers began to teach areas they were personally interested in developing.

Outside expertise

In Japan there are three types of '*koshi*' for lesson study: subject specialists, pedagogical specialists (e.g. collaborative learning), and research lesson specialists. Takahashi (2010) lays out three core purposes of expert advisors:

1. To bring new knowledge from research and the curriculum.
2. To show the connection between the theory and the practice.
3. To help others learn how to reflect on teaching and learning.

Without the structures in place as they are in Japan, it could be considered a challenge to gain access to such expertise in England, although local authority advisors, teacher educators and educational consultants could (with guidance or training) potentially take on this role. While a university training school and having connections to pedagogical specialists from the Faculty of Education, there was no set protocol or established routes of collaboration for the school to enlist the help of researchers in this capacity. On approaching researchers, however, it was found that they were generally interested to be contacted and to have an opportunity to visit a lesson in a primary school, hinting perhaps at an untapped potential in relationships between schools and higher-education institutions across the country. Expert advisors were communicated with on their commitment to provide feedback on a lesson plan, attend the research lesson and support the post-lesson discussion.

We most commonly requested educational researchers to be expert advisors for us; some of whom were previously teachers or had involvement in teacher education. Generally we found that expert advisors had heard of but were not very familiar with lesson study. When inviting them, we would include the lesson study guidance and the specific role of the expert advisor. Where expert advisors added real value to the process was in their contribution to both the planning and post-lesson discussion phases, as an invaluable pair of outside eyes that could question assumptions or decisions made by the planning group. They often were subject specialists who could advise on the content knowledge of lessons, though often did tend to defer to teacher judgements on aspects such as pitch. Some helpfully detailed notes on the plans, asking questions of the planning group and challenging them to reconsider aspects. Sometimes their comments were aimed at clarifying the intentions of different parts of the lesson but others would also challenge the sequence of learning, choice of questions or the rationale of the planned task. Key to the sustainability and improvement of lesson study at the school has been developing longer-term relationships with these expert advisors who bring invaluable outside knowledge into the process.

Post-lesson discussion

Initially a common structure for post-lesson discussions was useful for facilitators and teachers to understand how to structure the feedback of the data they had collected. Teachers were nevertheless unfamiliar at first with which information to select and give from their observations of children in the lesson. During a staff meeting check-in, it became clear that there was a tendency to feedback on unfocused general observations rather than referring directly to the research questions. This highlighted the need for both lesson study facilitators as well as participants to have a good level of understanding about the purposes and principles of such discussions. One simple but effective device that we moved to as a school, recommended by a lesson study leader from Sandringham Primary, London, was writing the research questions on flip-chart paper before the post-lesson

discussion and then facilitators scribing on post-it notes whenever evidence was collected, sticking these on the relevant question paper. Useful for the distilling and summarising of themes at the end of the research lesson, this significantly focused discussion and made learning points clear and visible.

An interesting parallel to come out of the focus in the classroom on efficacy and productivity of dialogic interactions between children was mirrored and of equal importance for the post-lesson discussions of the teachers. The ‘ground rules for talk’, such as making sure everyone was involved, querying, elaborating and building on ideas through exploratory talk, came out during the most insightful post-lesson discussions.

Mobilising knowledge

Sharing the knowledge we gained from research lessons became more challenging as we grew as a school; for practical reasons, we moved from one lesson research group into two in the second year. We began to ask all teachers to complete a research learning summary poster. Lead teachers shared this at the following lesson study staff meeting where it was presented to the other lesson study group whose members had not experienced the lesson. This enabled some cross-fertilisation of initial findings and ideas around how children were responding to different types of lessons. The posters were also shared with teaching assistants and displayed in the staff room for governors and visitors to gain insight into some of the main themes coming out of individual research lessons. A few teachers have now begun to use their experiences of the research lessons to contribute to articles, blogs and chapters to share initial findings more widely.

The future of lesson study in the UK

Conclusion

While lesson study’s popularity as a mode of professional development appears to have increased in recent years, there is a danger that it is adopted without a critical perspective on what the conditions for its success might be. The critical features, their complexities and the ongoing challenges of their implementation need careful consideration and likely mediate whether the benefits translate into different contexts. This chapter points to some of the changes that might be implemented at individual teacher, school organisational and cultural level. Our experiences of working with lesson study have suggested significant implications for the UK’s education system:

- The priority level is sustainable and coherent professional development is given and funded in schools.
- The role of ‘experts’ within the school system and building networks between schools and expertise.

- The degree of inter-school collaboration within a fragmented, mixed system of local authority and academy schools.
- The role of government, researchers, subject associations and teachers to collaborate in developing high-quality curriculum materials for teachers to draw on.
- The dissemination of school research findings and their role in informing the development of curriculum materials such as textbooks and schemes of work.

Questions

1. How will you bring about the culture change needed for lesson study to function effectively? How will lesson study be differentiated from other performance management strategies?
2. How will lesson study fit into your strategic school and curriculum development plan?
3. What overarching research theme will guide your focus for professional learning? How will findings feed into cycles of enquiry and knowledge mobilisation?
4. What curriculum, teaching and research materials will your teachers have available to them?
5. Which external expert advisors could you work with? What training and understanding of lesson study will they need?
6. How will you schedule lesson study into the strategic and professional development calendar so that it is not considered an ‘add-on’?
7. Who will coordinate lesson study in the school? How many research groups will you have in the school and what training will the research group discussion facilitators receive?

References

- Barber, M., & Mourshed, M. (2007). *How the world's best-performing schools systems come out on top*. London: McKinsey & Company.
- Chokshi, S., & Fernandez, C. (2004). Challenges to importing Japanese lesson study: Concerns, misconceptions, and nuances. *Phi Delta Kappan*, 85(7), 520–525.
- Coe, R., Aloisi, C., Higgins, S., & Major, L. (2015). *Developing teachers: Improving professional development for teachers*. London: Sutton Trust.
- Godfrey, D., Seleznyov, S., Anders, J., Wollaston, N., & Barrera-Pedemonte, F. (2019). A developmental evaluation approach to lesson study: Exploring the impact of lesson study in London schools. *Professional Development in Education*, 45(2), 325–340.
- Guskey, T. R. (2002). Professional development and teacher change. *Teachers and Teaching*, 8(3), 381–391.
- Fujii, T. (2014). Implementing Japanese lesson study in foreign countries: Misconceptions revealed. *Mathematics Teacher Education and Development*, 16(1), 1.

- Fujii, T. (2016). *What can we learn from the Japanese model of professional growth from novice to expert?* Cambridge, UK: Centre for Mathematical Sciences, University of Cambridge.
- Hallgarten, J., Bamfield, L., & McCarthy, K. (Eds.) (2014). *Licensed to create: Ten essays on improving teacher quality*. London: RSA Action and Research Centre.
- Isoda, M. (2007). *Japanese lesson study in mathematics: Its impact, diversity and potential for educational improvement*. Singapore: World Scientific.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
- Lewis, C., Perry, R., & Murata, A. (2006). How should research contribute to instructional improvement? The case of lesson study. *Educational Researcher*, 35(3), 3–14.
- Murata, A. (2011). Introduction: Conceptual overview of lesson study. *Lesson Study Research and Practice in Mathematics Education*, 1(12), 1–11.
- Sahlberg, P. (2011). *Finnish lessons*. New York, NY: Teachers College Press.
- Seleznyov, S. (2018). Lesson study: An exploration of its translation beyond Japan. *International Journal for Lesson and Learning Studies*, 7(3), 217–229.
- Steiner-Khamsi, G., & Waldow, F. (Eds.) (2012). *World yearbook of education 2012: policy borrowing and lending in education*. London: Routledge.
- Stigler, J. W., & Hiebert, J. (1999). *The teaching gap: Best ideas from the world's teachers for improving education in the classroom*. New York, NY: Free Press.
- Stoll, L., & Louis, K. (2007). *Professional learning communities: Divergence, depth and dilemmas*. London: McGraw-Hill Education.
- Takahashi, A. (2010). Prospective and practicing teacher professional development with standards. Paper presented at the APEC Conference on Replicating Exemplary Practices in Mathematics Education, Koh Samui, Thailand, March.
- Wake, G., Foster, M., & Swann, M. (2013). *Bowland maths lesson study project report*. Retrieved from www.bowlandmaths.org/England/lessonstudy/report.html.
- Watkins, C. (2001). *Learning about learning enhances performance* (Research Matters Series No. 13). London: Institute of Education School Improvement Network.