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Lesson study: A collaborative approach to scholarship for teaching and learning in higher education

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ABSTRACT

The Scholarship of Teaching and Learning has become an important field of inquiry, focusing on the development of new and critical pedagogic approaches in higher education. It is a broad field leading to the emergence of a number of contrasting perspectives concerning the development of insights into teaching and learning. In this article, we explore the potential for Lesson Study to act as a framework for reflecting on and developing pedagogic practice in the university sector. Originating in Japan over a century ago, Lesson Study is a collaborative tool for analysing and developing understanding of student learning. This makes it an ideal tool for capturing and interrogating new and critical insights into teaching and learning. An outline framework is suggested for developing the use of Lesson Study in higher education and we discuss how it can form a positive methodology for extending the work of the Scholarship of Teaching and Learning.

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Scholarship of Teaching and Learning; lesson study; pedagogy; collaborative learning; higher education

Introduction

Since the publication of *Scholarship Reconsidered* (Boyer 1990), the Scholarship of Teaching and Learning (SoTL) has become an important, if contested, vehicle for practical activity and research into teaching in higher education. As a field, SoTL has developed conceptually, and continues to offer a fertile focus for debate concerning the place of teaching within the academy and how best to develop better, more critical pedagogic practice. One fundamental aspect of the various frameworks and philosophies which have emerged is the need for a 'serious investment' (Shulman 2000, 49) in reflecting on and understanding teaching and learning by those willing to enquire into, and change, pedagogic practice. In this position paper, we argue that Lesson Study, a method for considering the learning challenges experienced by students and exploring the pedagogic responses to them, offers great potential for augmenting the work of SoTL. In addition, we suggest that it offers a positive framework for both more informal reflection by practitioners as well as a research tool for those wanting to pursue in-depth and critical enquiry.

The scholarship of teaching and learning

Arguments for the systematic interrogation of academic and professional practice are not new and can be traced back to the work of Schön (1983, 1987) on reflective practice. Shulman's idea of a 'pedagogy of substance' (1989) and his challenge to what he calls a 'pedagogy of solitude' (1993) both focused attention on the development of a more public debate around pedagogic practice. These early perspectives

were an attempt to analyse, develop and share insights into practice development. However, it was the publication of *Scholarship Reconsidered* (Boyer 1990) that acted as the initial rallying call that led to the field of Scholarship of Teaching and Learning. At this time, SoTL was an attempt to bring a scholarly perspective to teaching and learning as a way of raising their profile within the academy. Healey (2000, 170) argued that, following a decade of interest in this emerging field, there remained questions as to how a scholarly approach to teaching might be realised:

It is suggested that teachers in higher education institutions need to learn how to adopt a scholarly approach to teaching and how to collect and present rigorous evidence of their effectiveness as teachers.

Healey also emphasised that SoTL should develop an emphasis regarding the student experience by considering and reporting insights into learning. Meanwhile, Kreber and Cranton (2000) developed a focus on the forms of knowledge and understanding lecturers should look to develop, identifying three aspects that, in their view, characterised SoTL, namely:

- (1) *Instructional knowledge*: consideration of what is taught.
- (2) *Pedagogical knowledge*: how the content should be taught to foster student learning.
- (3) *Curricular knowledge*: consideration of why elements of teaching and learning are taught in particular ways. While emphasising different elements of the debate, these examples of the early insights into SoTL demonstrate a serious search for a meaningful framework for the understanding of teaching and learning within higher education. They also demonstrate an early feature of SoTL, that of a contested field searching for both meaning and application in practice.

Advocating an activity-led approach to SoTL, Trigwell and Shale (2004) developed a model that attempted to bring together critical engagement with the act and enquiry of teaching, whilst also (as with Healey 2000) seeing student experience and learning as an imperative for research and practice, 'a concept that links teacher knowledge and student learning' (2004, 524). This led Trigwell and Shale to argue that Scholarship of Teaching should be based on a commitment to making clear in public discussion of teaching how learning has been made possible (following on from Trigwell et al. 2000). Consequently, they outline a practice-oriented framework that is founded on the active inclusion of learners within the process, resulting in 'a learning partnership, rather than an instructional relationship' (Trigwell and Shale 2004, 529). This leads to a three-part model of scholarship of teaching, which involves the use and development of:

- (1) *Knowledge*: this component of the framework outlines the nature of the knowledge base lecturers bring to the act of teaching, including elements such as prior experience of disciplinary knowledge, and conceptualisation of teaching and learning.
- (2) *Practice*: including investigation and evaluation of teaching, reflection on practice and communication of the insights gained – 'the art of teaching at the core of this model ... is the act of academic engagement in deliberate, collaborative meaning-making with students' (530).
- (3) *Outcomes*: this covers the outcomes of teacher and student collaboration, namely, their learning from the process, including artefacts created through that process. These three elements together provide the basis for the critical study of pedagogy in higher education and opportunities for the public sharing of insights from the process. Hence, SoTL takes on a practical nature, and appears to share many characteristics of action research, which has emerged as a popular methodology in HE research on pedagogy (see, for example, Burchell and Dyson 2005; Greenwood 2012).

The contributions outlined above might be characterised as focusing on activities and pedagogic perspectives that constitute a scholarly approach to teaching and learning. Consideration of the ethical and philosophic is exemplified by Kreber (2005), who develops a critical lens towards SoTL, and Skelton (2009), who emphasised the moral dimension. Kreber (2005) argues for the place of SoTL as a process of opening up the pedagogic debate to encompass a wider perspective considering the philosophical

foundations of teaching. The importance of change in practice is emphasised, particularly with respect to emancipation and empowerment as drivers to advance and open the pedagogic act to new ways of thinking. The chance that SoTL may become a closed and narrow technicist pursuit is challenged:

[T]here is a danger for scholars of teaching to pursue primarily instrumental, and perhaps interpretive or communicative rather than emancipatory, knowledge about their practice in student learning. (ibid, 402)

Kreber therefore puts forward an explicit agenda that sees change and improved action as being at the core of SoTL whilst ensuring this is achieved through a wider lens of more general change within higher education; here, teaching and learning are seen as part of a wider educational agenda. She argues that a critical postmodern lens leads to three implications for SoTL:

- (1) The need to see SoTL as 'critical enquiry', thereby calling into question how it is practised and by/for whom.
- (2) Wider considerations, including evaluating the form and content of curricula and the purpose of the university.
- (3) Based on these, a critical discussion of what curricula and pedagogies are appropriate within HE and why these are appropriate.

Skelton, focusing particularly on the concept of teaching excellence, argues for a moral stance on teaching and learning, stating that:

For me 'excellence' can only follow from a serious commitment to the reflexive development of a value-laden and morally defensible practice. (2009, 109)

This practice is defined as requiring a personal philosophy of teaching: 'the need to develop a personal standpoint on teaching is necessary...' and 'the need to live out educational values in practice' (ibid), leading to teaching excellence as a moral pursuit. Further, at institutional level, this moral perspective should foster varied cultures of debate and practice, promoting in turn the sharing and growth of ideas and practices within a supportive environment, an alternative to reliance on sets of externally generated standards. Finally, he argues that this can only occur where teaching and research are not set against each other, but are brought together to 'support a holistic notion of excellence.' (111). Therefore, SoTL may begin to take on a wider and more critical character linked to the development of pedagogic practice through an activity-based approach (Trigwell and Shale 2004), while also being critical (Kreber 2005) and moral (Skelton 2009) in nature.

Despite the wide-ranging literature on HE pedagogy, questions remain over the role of SoTL in the wider academy. Kreber (2002) discusses the complexity surrounding the meaning of SoTL and its relation to both excellence and expertise in teaching. Macfarlane critiques SoTL as actually debasing research into teaching and argues for a greater level of theorisation, policy and practice oriented work, with research and teaching as an integrated whole. He argues that,

the distinction between 'subject-based' and 'pedagogic' research is entirely erroneous. What really matters is whether a piece of research is based on sound methods, has something interesting or useful to 'say' and has been properly peer-reviewed before publication. (2011, 127–128)

The discussion and debate relating to the form and focus of SoTL is therefore still alive and keenly contested just as much as it was over two decades ago when Boyer (1990) first considered the relationship between teaching and research. However, there are interesting aspects within the work of those discussed above, which can be synthesised to build a framework to bring together some interesting aspects of SoTL. These include a commitment to understanding and extending knowledge, to generating a practice-led perspective on teaching and learning, while also ensuring a moral and critical dimension.

Kreber (2013) has also extended her critical perspective on SoTL to consider the role that evidence plays in deepening and extending our understanding and practice of teaching and learning. She critiques the notion of 'evidence-based practice' as being too narrow as it attempts to nullify the complexity and unpredictability that is the day-to-day reality of academic practice. She argues that a 'what works' agenda may also tend to focus on efficiency, but not the wider aspects of why we are engaged in a particular practice. Taking Habermas' (1971) three knowledge-constitutive interests as a starting

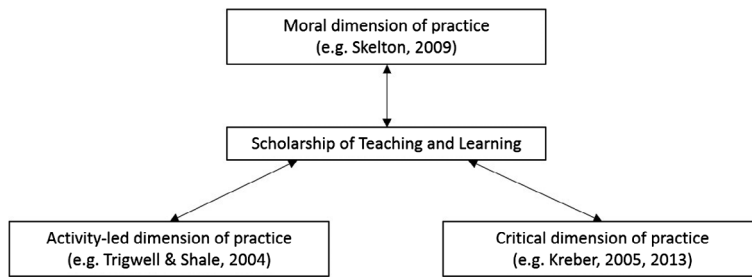


Figure 1. Multiple perspective model of Scholarship of Teaching and Learning.

point and using the work of Mezirow's (1991) three forms of learning, Kreber creates a tripartite basis for the action of teaching:

- (1) *Instrumental learning*: understanding and developing what is effective in teaching.
- (2) *Communicative learning*: understanding how students experience particular learning processes, i.e. how desirable we believe our strategies are in relation to the aims and philosophies we bring to our pedagogies.
- (3) *Emancipatory learning*: exploring assumed values, norms and traditions, as a starting point for considering alternatives. These help our understanding of the wider ramifications of the action of teaching, and our own learning. Kreber also argues that the pedagogic questions we ask ourselves are not necessarily answerable through scientific reflection alone, but must also include evaluation of the moral aspects of practice. Consequently, she argues that SoTL requires us not only to ask 'what works?', but also 'what is to be done?' and 'why?'

Drawing together the perspectives developed in the last two decades, we can begin to move towards making sense of a contested field, despite its complexity. Here, we bring together three perspectives concerning the nature of SoTL to suggest a holistic model of teaching and learning. An activity-based approach (such as Trigwell and Shale 2004), founded on an understanding of pedagogic literature as a basis for the development of practice and reflection, is augmented by emphases on personal philosophies and moral imperatives. Developing practices that are ethically defensible (Skelton 2009) and that are linked to a broader critical landscape (Kreber 2005, 2013) provides the foundation for a deep engagement with pedagogic practice and change. In addition, practices need to be developed through a critical use of research via an 'evidence-aware' perspective that sees research insights as a useful starting point for further personal development, rather than as an order to follow. This leads us to suggest a multiple perspective model of SoTL as a basis for developing collaborative study of teaching and learning in HE (Figure 1).

If models such as that in Figure 1 are to be realised at a practical level, then ways of engaging in structured activity and/or research are vitally important. One approach, whose core is based on developing an understanding of the interplay of teaching and learning, is that of Lesson Study, proposed in the next section.

An overview of Lesson Study

Lesson Study has been used as a method for improving student learning and teacher pedagogy for well over 100 years. It originated in Japan in the latter part of the nineteenth century (Nakatome 1984; as quoted in Fernandez and Yoshida 2004), where it initially grew as an informal, teacher-led approach based on developing professional dialogue, and from there developed into a more formal and national-scale approach to teacher development (Katagiri 1990, as quoted in Sarkar Arani, Fukaya, and Lassegard 2010). This long-term development in the use of Lesson Study in Japan has led to a

national culture of teacher self-improvement driven by use of the technique across the school sector, and also in some university contexts.

Due to the apparent utility of Lesson Study, the technique began to spread to other education systems in Asia, including those of China, Singapore, Hong Kong and Indonesia. In addition, following the publication of a book called *The Teaching Gap* (Stigler and Hiebert 1999), Lesson Study has also been increasingly adopted in the USA, and latterly within parts of Europe, including England, Norway, Sweden and Spain. The method has been used predominantly within a school-based context, both primary (Trapero 2013) and secondary (Cajkler et al. 2014), but has also been used in a number of different contexts within initial teacher education (Cajkler et al. 2013; Tsui and Law 2007). Its use within higher education, however, has been very limited, as outlined below.

Lesson Study is a long-established teacher-led collaborative approach that focuses on improving both the professional learning of teachers and student learning. The approach is founded on the principle that a collaborative process between teachers has the potential to bring new insights and professional development to their work. In higher education, the collaboration, in its most basic form, is structured around collaborative planning by a group of lecturers (university teachers), leading to the design of a lesson; what in higher education we shall call a 'research seminar', although this may take the form of a workshop or interactive lecture. While this seminar is taught by one of the team, the others observe, focusing on the learning of a small number of case students (Dudley 2014). This is followed by an evaluative process where all members of the team help to deconstruct and understand what has been experienced and observed during the 'research seminar'.

The point of departure for Lesson Study is a critical review of areas of difficulty in student learning, leading to the identification of a specific 'learning challenge'. It should be stressed that the learning challenge needs to focus on a relatively specific area of activity, such as a specific skill or area of subject content. This challenge might take the form of a particular approach or skill that students often struggle with, such as the writing of a first long written assignment, a concept such as understanding 'ontology' within a research methods course, or it may deal with an area of subject content. The critical foundation for choosing a learning challenge, however, is that it should be based on developing student learning, rather than being a focus on expanding the teaching repertoire of the Lesson Study group.

The learning challenge acts as the basis for developing the 'research seminar', whether a workshop, a practical or a lecture that tackles the chosen focus. Henceforth in this article, for ease of reference, we will use the term 'seminar' for the different teaching and learning contexts that can act as the sites for collaboration in Lesson Study. Most seminars will only be one or two hours long, although there is no reason why longer seminars could not be considered for developing a research seminar. The group meets to discuss the chosen learning challenge and from this discussion they build a detailed plan of the seminar to be taught. The central core of discussion in the planning meeting should be concentrated on a deep consideration of which factors the group believe are often responsible for the challenge occurring and how these factors can be most effectively addressed during the course of the seminar. This provides the basis for a relatively detailed plan (see the example in the Appendix), which outlines the order and nature of activities to be undertaken during the seminar, preferably with some indication of timings. Once this element of the planning has been achieved, the group then uses their knowledge of the students to predict the types of observable response and student learning for each stage of the seminar. At the heart of the planning process lies the Lesson Study group's discussion, which engages participants in critical consideration and sharing of ideas. This is in stark contrast to the pedagogic solitude that characterises much planning and teaching in academic settings.

Once the research seminar has been planned, one member of the group acts as the seminar teacher, whilst the others in the group act as observers. A crucial aspect of Lesson Study is that observation is focused upon students as opposed to the lecturer. This means that observers are often located at either the sides or the front of the teaching seminar rather than at the rear as it is important that they can observe student reactions (Lewis 2002), facial expressions and interactions with others. During the taught seminar, observers make detailed notes on student reactions to the activities planned, including any similarities and differences to the (expected) responses predicted at the planning phase. After the

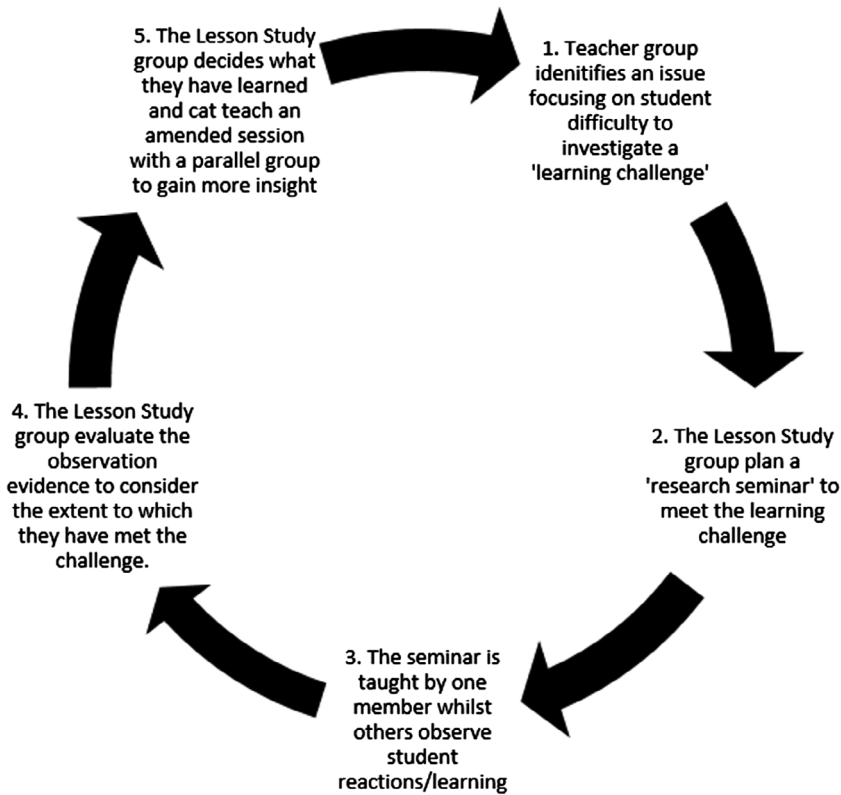


Figure 2. A basic Lesson Study cycle.

research seminar has concluded, the teacher and observers meet as a group and evaluate what has been experienced. Once again, it is important, within the philosophy of Lesson Study, that the evaluation focuses on the learning of the students rather than on the performance of the lecturer. Consequently, all members of the group, including the teacher, should be equal participants in discussing the degree to which they believe students have overcome the learning challenge on which they have chosen to focus. The principle of positive mutual regard (Dudley 2014) should govern colleagues' discussion that takes place at any point in the research cycle, but perhaps especially so in the post-seminar evaluation. Where possible, the group can also amend the seminar that they have planned, drawing insights from their observations, in order to repeat the seminar with a parallel group, where available. If possible, another member of the group teaches on this second occasion, with the remainder of the members once again observing. This creates a basic Lesson Study cycle, as shown in Figure 2.

Procedurally, the cycle may look simple, but in essence Lesson Study engages teachers in a complex iterative process. Collaboration in Lesson Study cycles opens up for detailed investigation the pedagogic black box (Cajkler and Wood 2015), offering participants rich opportunities to not only explore teaching through the eyes of case students, but also to realise more fully what it means to be a teacher who learns from teaching (Sims and Walsh 2009).

In school-based Lesson Study, groups can be quite large, with between four and seven teachers, although triads are also relatively common. In these contexts, groups may make use of an external consultant or academic acting as a more knowledgeable other (Burghes and Robinson 2009). The intention here is for an individual to act as a critical friend and source of expert knowledge concerning the implementation of Lesson Study. However, having such an external presence is not a mandatory element of the process.

Lesson Study's spread to England also brought some variations to the traditional Japanese version of the process, which were pioneered by Peter Dudley (2012, 2014). Two major elements that were developed through his work were the focusing of the observational element of the cycle, and also a greater inclusion of student reflection about the learning that occurs within the research seminar. He argued that an attempt to observe all students within the group (within a school context this might typically be approximately 30 students) leads to a dilution of the quality of the observations made. Therefore, he suggests that each observer should only attempt to observe two or three students (called 'case students'), but to do this in detail. As a consequence, he also suggests that, during the planning meeting, the chosen students for observation should be identified and that notes should be developed of the expected learning reactions of those individuals. This requires thought concerning those students who are to act as a sample, leading to the notion of 'archetypal' students, i.e. individuals who share common traits with a wider group of individuals within the seminar. These case students act as lenses through which the impact of the lesson and its approach to the learning challenge can be viewed and collectively evaluated. The choice of case students might be based on ability, level of language acquisition or any other element of student learning that is relevant to the learning challenge. Whilst shared traits help to focus observation, it has to be remembered that this does not lead to homogenous groups of students; the traits are merely indicative and helpful in framing observation activity.

The degree to which learning can be deemed to be an observable act depends upon how learning, as a process, is defined. Nuthall (2007) discusses the complexity of the process of learning, which he sees as being reliant on both interactions with the teacher and with other students, as well as individual processes, some of which might be observed (what he calls the semi-invisible layer), but others of which will not, as they are internal mental processes (the invisible layer). Likewise, Illeris (2007) identifies three dimensions to learning, the social, emotional and cognitive. Once again, much of the process of learning is internalised and is not observable. This means that any attempt to draw conclusions on the learning of students through observation alone will always be partial, at best, and at worst wholly inaccurate. Therefore, Dudley (2014) suggested the use of student interviews after the conclusion of a seminar to allow the Lesson Study group to gain direct insights into student reflections upon their own learning during the seminar. Taking these two additional elements together gives us a more nuanced and slightly different approach to Lesson Study, summarised in Figure 3.

Lesson Study, therefore, is a powerful tool for focusing on challenges that students face within their learning and the development of potential insights and solutions to help overcome those challenges. However, although Lesson Study has proved popular within education at a school-age level, there is far less use of this approach at university level.

Some research into Lesson Study does exist at university level, predominantly conducted in the USA. Cerbin and Kopp (2006), outlining in detail the approach they used, developed one of the most extensive uses of the technique at HE level through their College Lesson Study Project (CLSP). At its most extensive, 150 faculty across a number of subjects were involved in the use of Lesson Study. At the centre of their approach was the idea of an emphasis on how students learn rather than what they learn. They achieved this by using an approach they call 'cognitive empathy', which involves putting themselves in the role of the students during the planning phase in an attempt to understand the learning experience from that perspective. As such, they see a crucial element of the planning phase as being the development of seminars that make student thinking 'visible'. Cerbin and Kopp believe that Lesson Study is a very positive approach to building pedagogic knowledge as it 'encompasses the full complexity of teaching and learning in the context of a single lesson' (254).

Some researchers (Alvine et al. 2007; Becker et al. 2008) focus their studies on what they learned from being involved within the Lesson Study process, both in terms of student and faculty learning. Alvine et al. (2007) stress that Lesson Study is a very positive method for introducing pedagogic issues to young lecturers and postgraduate students involved in instruction as it helps them understand some of the basic approaches and issues relating to pedagogy. This is a view supported by work completed by Dotger (2011) with graduate teaching assistants (GTAs) in a US earth sciences faculty. Here, there was evidence that GTAs gained both new professional skills and shifting identity through their involvement

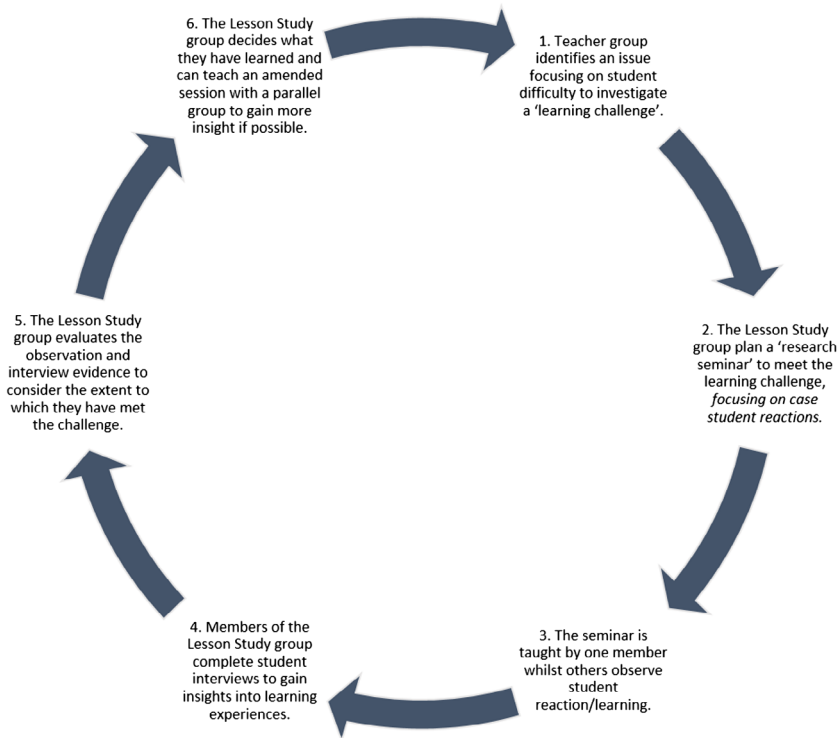


Figure 3. Augmented HE Lesson Study cycle using student interviewing and focused observation.

in Lesson Study, which moved them beyond a belief that subject knowledge was sufficient to prepare and execute well-considered learning experiences. Evidence from this research also suggested that Lesson Study encouraged the development of a teaching community amongst the GTAs and led them to consider their work from a more learning-focused perspective. This collaborative approach has similarities to the engagement of new faculty by Koch et al. (2002) in using a research-oriented approach to creating communities of scholarship.

Demir, Sutton-Brown, and Czerniak (2012) found that Lesson Study was less well-received by a small number of maths and science faculty who struggled to understand the philosophy of the approach and who also found it difficult to realign their thinking to consider learning from the perspective of the students. Even though the participants found the use of Lesson Study a beneficial experience, Demir et al. believe that it is important to help faculty understand the philosophy behind the approach, as well as securing a greater amount of time for them to engage with the process.

In a rare research project beyond the US, Christiansen, Klinke, and Nielsen (2007), working with Danish undergraduate pharmacy students, found that the use of Lesson Study improved student course evaluations, while also helping to create a more community-led approach to teaching among lecturers. They report that, by being involved in Lesson Study, lecturers drew more on each other's experiences and began to create a shared base of knowledge about teaching that ultimately led to a better learning experience for students.

These studies demonstrate that there is a great deal of potential in using Lesson Study within higher education, but that the approaches taken need to be contextually adapted and sustainable. There is no one prototypical approach to Lesson Study (Lewis, personal communication). Below, we suggest one potential basic framework for developing Lesson Study at university level, but only as an outline structure that needs to be debated and refined to meet the needs of particular local contexts.

A suggested model for adoption of Lesson Study in higher education

The Lesson Study cycle shown in Figure 3 offers a clear structure for Lesson Study in schools. However, there are important differences between that environment and those of most universities. First, depending upon the context, there may be greater local variation in the number of lecturers who can, or wish to, come together to use Lesson Study as an approach. Therefore, group sizes may vary and indeed be as small as a dyad; the crucial element in forming a Lesson Study group is that there needs to be collaborative discussion, and this is certainly possible, even with only two people. Second, in many cases there might not be the opportunity to repeat a research seminar on a regular basis or at all. In our own research on Lesson Study, we have focused on the learning of international Masters' students who function as a single group. This means that the insights we gain from cycles of Lesson Study can be used in two ways: to give us more general insights into student learning, and, as a result, to allow us to take those insights and feed them into the next cycle of Lesson Study. Therefore, rather than evaluations leading to modified versions of a single lesson, they are used to inform learning insights and to generate new approaches to addressing a variety of learning challenges in subsequent seminars.

Individual interviews

Focus groups

Cerbin and Kopp (2006) highlight the importance of attempting to make thinking visible, particularly through the use of cognitive empathy. Whilst this approach may enable us to uncover thought processes to a greater degree than usual, it is still the case that much of student learning will remain hidden within internal cognitive processes. Therefore, we agree with Dudley (2014) that the use of student interviewing, after the research seminar has finished, is an important (nay, essential) part of the process. Furthermore, we would suggest the use of stimulated recall interviewing (Lyle 2003). In this form of participative Lesson Study, students bring to the interview their notes, other products and any electronic devices they have used for discussion during the research seminar. The interview then focuses on facilitating the recall of students concerning their learning and thinking during the seminar, using the artefacts as stimuli. We accept that this is an imperfect method as students will no doubt have forgotten elements of their experience by the time the interviews are conducted, and they will only be able to reflect on thought processes they were conscious of at the time as well as any after-thoughts that emerge through the discussion. Nevertheless, the interview gives an invaluable insight into elements of their learning process that cannot be captured during the observation of activity in the research seminar itself.

Therefore, during Lesson Study cycles in higher education, a wealth of data can be collected. Data capture, for reflective and research purposes, can make use of many methods (Figure 4) to enable thick and rich analysis that can lead to enhanced understanding of the learning that takes place during a Lesson Study cycle. By using a number of data collection techniques, internal validity can be enhanced through triangulation of captured data. External validity is less of a concern as it is accepted that the degree of generalisation beyond the immediate context is limited; the lessons learned from a Lesson Study cycle are heavily contextual but may offer insights that are useful as starting points for the development of pedagogic change elsewhere.

Planning	Lesson		Evaluation	
<ul style="list-style-type: none"> • Audio record planning meetings • Plans • Resources 	<ul style="list-style-type: none"> • Observation notes • Student work • Video recordings 	<ul style="list-style-type: none"> • Individual stimulated recall interviews 	<ul style="list-style-type: none"> • Audio record of meetings • Notes of the meeting 	<ul style="list-style-type: none"> • Individual interviews • Focus groups

Figure 4. Framework of data capture opportunities in Lesson Study.

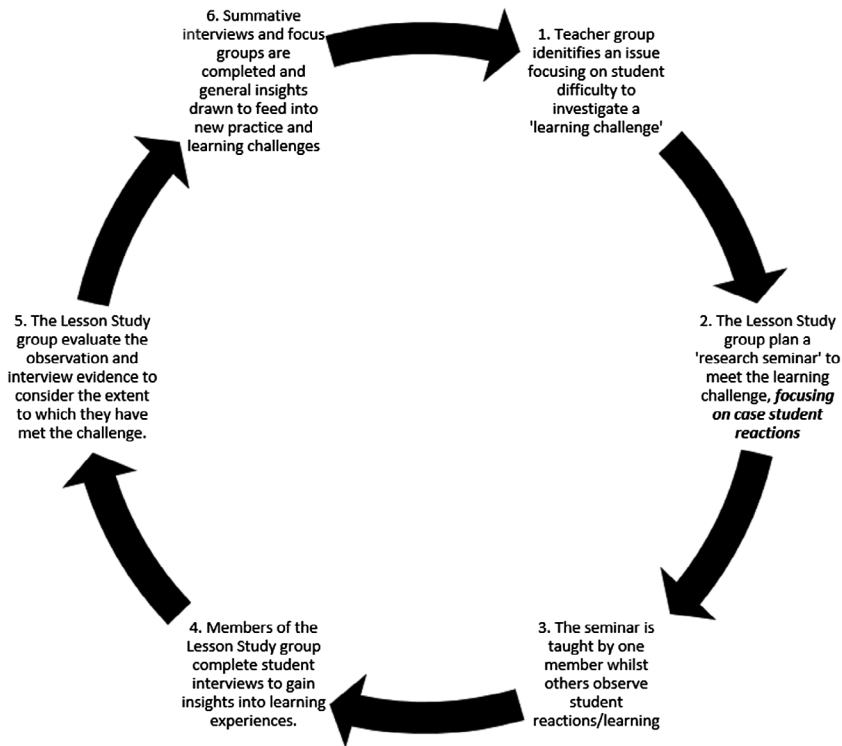


Figure 5. Outline Lesson Study framework for use in Higher Education.

This data capture framework relates to an amended Lesson Study cycle, which can be seen in Figure 5. Obviously, however, this should be seen as a general framework rather than a recipe to be followed.

Scholarship of teaching and learning as a basis for lesson study

Earlier in this article, it was suggested that Scholarship of Teaching and Learning (SoTL) might usefully be investigated through the lens of Lesson Study. Three potentially important strands of SoTL were emphasised as being central to developing a deep, critical understanding of practice in teaching and learning. The activity-led dimension of practice that is emphasised and developed by Trigwell and Shale (2004) resonates in several ways with the Lesson Study approach, including the desire to develop knowledge and conceptualisation of teaching and learning, and how this relates to disciplinary knowledge within given contexts, leading to investigation, evaluation and reflection on both teaching and student learning. However, beyond this immediate practical utility, Lesson Study also offers the opportunity to consider the wider critical aspects of pedagogic practice. Kreber (2013) highlights the need to move beyond a simple 'what works' agenda to also consider questions such as why certain approaches might be used within a wider critical and moral framework. Using her consideration of Mezirow's (1991) three forms of learning, Lesson Study has the potential not only to help understand and develop what is effective in teaching (instrumental learning), but also to consider why we see certain approaches as being desirable through understanding student experience (communicative learning), and through this to explore our own assumed values and norms as a basis for developing and realising alternatives (emancipatory learning). Such discussions will no doubt rely to a degree on a 'what works' basis, but only as a starting point for a wider discussion based upon a 'research-aware' perspective. This latter approach highlights that research should only offer initial signals and evidence

for developing rich contextually-sensitive pedagogies. This points towards the third element of our suggested model of SoTL, the need for an explicit moral dimension in practice. This is important in two ways. First, it asks us to consider our philosophies of teaching and learning as an iterative process embedded within collaborative discussion with others. Second, it forces us to confront our own ethical stance as moral agents. At a fundamental level, teaching is an inherently ethical task. Where we have the opportunity for open discussion with others concerning the development of teaching and learning through an approach such as Lesson Study, we are given the chance to consider and reflect upon our own philosophies and values. When thinking about teaching, including our philosophies, values and practice become a shared public act in Lesson Study and we find ourselves in forms of professional collaboration that begin to combat the pedagogic solitude that is a feature of many lecturers' lives. In our opinion, it is when key philosophies and values are considered and reflected upon in relation to practice by participants that Lesson Study has a potential to become transformative, rather than acting as a mere instrumental activity to bring surface change.

Whilst the opportunities offered by Lesson Study are very positive, as evidenced in some of the examples presented earlier in the present article, potential problems can occur, especially relating to time. Lesson Study can require a considerable time commitment, particularly if it is used as a research tool as well as for practice development. It is based on a model of constant incremental change and development rather than rapid, transformational change and can therefore lead to commitment over extended periods of time. However, with the current move in some higher education systems towards metrics-based measurement of teaching excellence, in some cases linked to institutional income, Lesson Study offers an approach for creating pedagogic improvement and a vehicle for sharing practice. In addition, if data is captured and analysed, the approach can also offer rich opportunities for publication. Therefore, whilst the time implication cannot be discounted, engagement with Lesson Study can not only help bring better teaching practice but also offer clear research opportunities.

Biesta (2014) talks of the need for teachers to develop educationally wise judgements over long periods of time. Such judgements can only result from an engagement with, and understanding of, the wider pedagogic literature fused with the emergence of practice based on the 'serious investment' identified by Shulman (2000, 49). This suggests the need to move beyond instrumental and narrow 'recipes' to critical and more holistic praxis. Lesson Study can be used as a relatively simple and 'shallow' approach to developing practice if followed as a predetermined method and 'given' approach to developing practice. However, by fusing this method with insights from the field of Scholarship of Teaching and Learning there is huge potential for deep, critical engagement with issues of teaching and learning. This process would allow for greater public sharing of knowledge and ideas about teaching. In the words of Hiebert, Gallimore, and Stigler (2002, 12), we argue that teachers need to 'operate in a system that allows them to treat ideas for teaching as objects that can be shared and examined publicly'. This collaborative, critical engagement could act as a basis for continued development of pedagogic practice within the wider context of changes in the aims and practice of higher education.

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Appendix. Exemplar lesson plan format.

	Teaching	Time	General Learning	Predicted learning of focus students
Connect	<ul style="list-style-type: none"> - students asked individually to note down 5 things they gained from the pre-sessional, and 3 questions it raises for them - in groups of 3-4 share and create 5 and 3 on different coloured sticky notes and post to the wall with questions, add group number 	10.00 10.10	<p>Reflection – writing down ideas and perhaps see evidence of thinking, e.g. looking up, etc</p> <p>Social learning – evidence of debate and peer assessment and analysis and synthesis in discussion. Perhaps see link between personal notes and sticky note outcomes</p>	Student A – will look at work of others as unsure; Student B – quickly write answers and then check with others
Activate	<ul style="list-style-type: none"> - all students to read through responses on wall - in groups now create an interim definition of learning. Need a scribe and a scout – only person to go to other groups and wall - comfort break and ask scribe to bring definitions to front for me to type up - as a group recap on examples of definitions 	10.25 10.30	<p>Level of engagement – where do they linger/take photos of?</p> <p>Social learning – evidence of debate and peer assessment and analysis and synthesis in discussion. Perhaps see link between personal notes and post-it outcomes</p>	
		10.45	Any informal chatter and individuals looking at board as they are written up – also noting down	
Demonstrate	<ul style="list-style-type: none"> - recap to group on the main areas covered in the pre-sessional and link to emergent ideas from their definitions - watch Russian and UK video clips after introducing matrix to complete individually - discuss ideas from video in groups - Summarise ideas from video as whole group 	10.55 11.00 11.10 11.25 11.35	<p>Listening and note taking – taking photos etc</p> <p>Listening and note taking – taking photos etc</p> <p>Listening/watching and note taking</p> <p>Discussion and note-taking etc</p> <p>Listening/watching and note taking</p>	
Consolidate	<ul style="list-style-type: none"> - students to have quick discussion and decide which questions have been answered and take down - deal with remaining questions & ask to create individual questions for afternoon 	11.40 11.50	<p>Discussion and note-taking etc and taking notes down from board (collect these??)</p> <p>Listening/watching and note taking</p>	