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Title: **Beyond Communities of Practice: investigating and developing the professional learning of trainee teachers through Lesson Study.**

Research Report to the Society for Educational Studies

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Title: Lesson Study: investigating and developing the professional learning of trainee teachers.

1. Executive summary

What did we want to learn? Our key area of interest is summarised in the following question: What is the impact of student-teachers and their mentors engaging collaboratively in Lesson Study during teaching practice placements?

Who could use this research and why? Student-teachers, mentors, schools, universities and sponsors of teacher education programmes are the likely end-users of this research. In recent years, there has been more and more emphasis on bridging the gap between theory and practice in initial teacher education programmes, while schools take more and more leadership of the process. Time for engagement in reflection can be squeezed if the focus is on 'technicist' approaches to meeting individual teaching standards (for example, DfE 2012). Holistic understanding of pedagogy is the focus of Lesson Study and we explored its feasibility and effectiveness in student-teacher school placements to enable participants to explore and develop their pedagogy.

What did we do? Twelve Lesson Study case studies were successfully completed during the course of 2102-13 in eight schools with nine mentors and 12 student-teachers completing at least two research lessons. Data were collected from planning and evaluation meetings, lessons, lesson plans and materials, end of project individual and focus group interviews. Planning and evaluation meetings, individual and focus group interviews were subjected to detailed content analysis.

What did we find? In the 12 completed projects, all participants welcomed and valued the opportunity to engage in Lesson Study. From analysis of lessons and lesson evaluation meeting transcripts there was evidence of accelerated integration into teachers' way of thinking, planning and teaching. Principal benefits were that the process engaged mentor and student-teacher as learning-partners (*mutual engagement*), so that they confronted the complexity of teaching and learning early in the teaching placement and participated from a 'we' inclusive perspective in collaborative exploration (*joint enterprise*). These perspectives are all elements in understanding the transition of student-teachers into their chosen profession, into pedagogic Communities of Practice. This research began from this perspective and concludes by arguing that a more complex understanding of the continually emergent work of the teacher can be more effectively captured through the idea of 'pedagogic literacy' (a holistic, enquiry-oriented and reflective understanding of teaching). Student-teachers began tentatively, but during the second research lesson, they worked with increased confidence (*decisional autonomy*, Hargreaves and Fullan 2012), while understanding the importance of working and learning with others (*interdependence*). Following the second research lessons, all participants reported stronger understanding of pupils' learning. This led them to explore teacher-centred approaches (shared repertoire resulting from collaboration with mentors and observation of pupils' learning¹).

What are the implications for teacher education? As a result, we are encouraged to believe that Lesson Study can be incorporated into teaching practice placements provided that the mentors are committed to explore their pedagogic literacy and that of their mentees. We believe that more case studies of Lesson Study in ITE should be undertaken to explore how the process can be most effectively implemented. In this project, there were 'time-related' challenges and four 'cases' were not completed due to workload and health issues. While Lesson Study appears to be highly

¹ To avoid confusion, trainee teachers are referred as student-teachers and their learners as pupils. The term 'student' is avoided for this reason.

formative and feasible in ITE, it requires investment of time and resources to enable its successful application.

2. Introduction

Farrell (2006, 218) argues that teacher education programmes should work on what it means to be a teacher rather than on the transmission of individual teaching competences or standards. This change of focus would involve a shift from the current 'managerialism' of observing and assessing teachers for evidence of discrete standards (O'Leary 2014), but would provide for a much more reflective and sustainably creative teacher workforce. Hiebert, Morris and Glass (2003, 202) argue that programmes should prepare new teachers for a professional life of continual learning:

..... by focusing on helping students [*student-teachers*] acquire the tools they will need to learn to teach rather than the finished competences of effective teaching.

Such a focus is essential if teachers are to cope effectively and sustainably with the unexpected and teach in learner-responsive ways. Implicit in this view is the process of becoming a 'professional', of being inculcated into a way of being and of seeing teaching as much more than a sum of parts, in this case competences. This transition of individuals into new professional groups, through a complex learning process, is the basis for the concept of Communities of Practice. In attempting to support student-teachers in making the transition into their chosen profession, and particularly in helping them develop contextualised knowledge, understanding and skills, 'Lesson Study' has been used here as a vehicle to support the development of long-term and sustainable pedagogic skills (O'Leary 2014; Stigler and Hiebert 1999; Cajkler, Wood, Norton and Pedder 2013). Lesson Study is an approach for improving pupil learning through collaborative development of lessons, commonly used by teachers in Japan but its use is growing particularly in the United States and more recently in the UK (see Dudley 2011; Galanouli 2010; Norwich and Ylonen 2012; Cajkler and Wood 2013a/b). Lesson Study is 'a systematic investigation of classroom pedagogy conducted collectively by a group of teachers rather than by individuals, with the aim of improving the quality of teaching and learning' (Tsui and Law 2007, 1294). Consequently, it has the potential, in the words of Hiebert et al above, to help student-teachers focus on 'the tools they will need to learn to teach' (ibid 202) rather than merely seeking to provide evidence that they meet the criteria for a set of individual 'finished' craft skills. Influenced by such thinking, we piloted the use of Lesson Study with student-teachers of geography and modern languages during their initial teacher education programme (Post-graduate Certificate of Education, PGCE) in partnership with twelve secondary schools. Our objectives for the research were to:

1. introduce and familiarise beginning teachers and school-based tutors with the Lesson Study framework
2. aid beginning teachers and school-based tutors to complete two cycles of Lesson Study
3. analyse the processes and outcomes of the two Lesson Study cycles in supporting professional learning and dialogue
4. report to the Society for Educational Studies and participants the main findings, using these as a starting point for wider utilisation in developing the professional learning of beginning teachers and their school-based placements.

3. Project Objectives and Theoretical Framework

Initial teacher education (ITE) can be characterised as a process of induction into a professional culture or group. This inductive process is central to the theoretical framework of Communities of Practice, an increasingly common way of understanding the development of professional expertise. However, whilst the centrifugal forces responsible for the induction of an individual into any given community of practice may be apparent, it is less clear how individuals might be aided in making more rapid and positive transitions into professional contexts and groupings.

The research project studied the feasibility of including 'Lesson Study' in ITE and its effectiveness as a vehicle for collaborative exploration of the pedagogic cycle (planning-teaching-observation of learning followed by lesson evaluation and refinement) by student-teachers and mentors as a basis for inducting student-teachers into professional communities. Typically, an LS cycle involves a small team of teachers planning a 'research lesson'. The basic method centres on a group of teachers working together to identify a learning challenge faced by pupils in response to which they plan and evaluate a research lesson in collaboration.

This learner focus is an essential feature of Lesson Study (LS). One team member teaches while the others observe for effects on pupils' learning (how the learning challenge is met), the usual focus of observation being two or three pre-identified case pupils. The lesson, not the teacher, is subjected to systematic analysis by participants, hence the name '*research lesson*'. The evaluation of the lesson draws on the observations of pupil learning in order to revise the lesson for teaching to a parallel group or prepare subsequent lessons.

The relatively few evaluations of Lesson Study in ITE, conducted to date, suggest that using LS in ITE contributes significantly to student-teacher development (for example, Chassels and Melville 2009; Myers 2012). Lesson Study, it is argued, offers prospective teachers opportunities to prepare for teaching in learner-responsive ways. Typically, a Lesson Study cycle will follow the stages presented in figure 1 below.

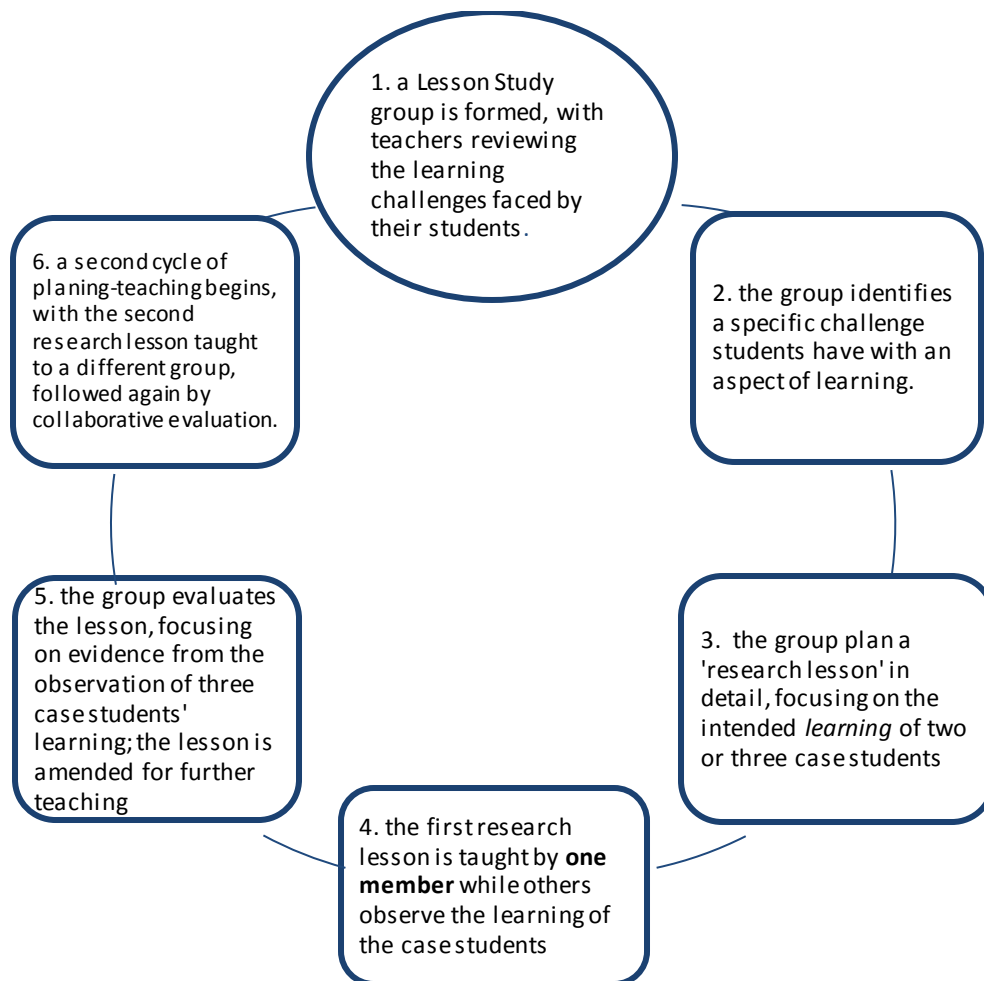


Figure 1: the Lesson Study cycle

In 2012-13, this model was implemented in a total of nine schools by twelve mentor and student-teacher teams. We used the model in the context of the Post-graduate Certificate of Education, a one-year ITE programme, in particular during teaching practice placements in partnership schools.

We used Communities of Practice as the lens through which to study student-teacher and mentor perspectives about the impact of Lesson Study, expressed in interviews, and to study their interactions in planning and evaluation meetings. In Communities of Practice, mutual engagement, interacting and thinking together (Wenger 1998), is an important guiding concept. We were interested in how student-teachers settled into their departments during teaching practice placements *in a process of mutual engagement* (Wenger, 2000), in association with a mentor, working on planning and teaching. Wenger (2000, 227) describes such collaboration as ‘doing things together, talking, producing artifacts’ to encourage and develop *shared meaning*. The result of engagement in a collaborative Lesson Study project should, if successful, lead to the student-teacher feeling part of a pedagogic community of practice. Our model of Lesson Study was set up to enable student-teachers and mentors to work together in a ‘*joint enterprise*’ (Wenger 1998, 73) with the objective of designing, teaching and evaluating ‘a set of shared resources or ‘*shared repertoire*’

(Wenger 1998, 73), in this case a cycle of two research lessons. Communities of Practice provide the framework for evaluation of Lesson Study as a vehicle for inducting student-teachers into pedagogic practices and reflection. In a school placement, the student-teacher begins as a novice peripheral member of the teaching team with the mentor as the central expert.

By engaging with Lesson Study, the intention was to aid the student-teacher to become a more central member within a pedagogic community of practice, Lesson Study acting to make the transition more rapid than has been the case in traditional 'parallel' forms of teacher education. Traditionally, the mentor acts as supervisor in a relationship characterised by observation and reflection; this is a process which often leads to student-teachers 'living' and working in a parallel space to the department, rather than becoming effectively integrated into its cultures and practices.

3.1 Introduction of Lesson Study to beginning teachers and school-based tutors

During the course of the one-year PGCE course, there are two 8-week teaching practice placements in different schools, the first (Phase A) in November-December and the second (Phase B) from March to May. Three schools engaged in Lesson Study for both Phase A and B in 2012-13, while six agreed to participate in one phase only.

Researchers met with 9 school-based tutors and beginning teachers (4 student-teachers from geography and 4 from modern languages) in mid-October 2012 to introduce and familiarise them with the format of Lesson Study and the practicalities of carrying out a Lesson Study cycle. Our framework drew on Dudley (2011) about which the participants were given guidance material. Of the nine mentor-student-teacher teams who were inducted into the Lesson Study process two withdrew shortly thereafter, leaving seven Phase A projects completed (two 11-14 middle schools and five 11-16 schools).

Cycle 1 commenced in November 2012 as planned: preparation of a research lesson, lasting 2-3 hours. Preparation meetings were audio-recorded by the seven teams. In November/December 2012, the first research lesson was taught by the school-based tutors in each school, video recorded and observed by other group members, focusing on evidence for pupil learning. Reflection on the first research lesson (audio-recorded) led to modifications to the lesson to be taught by the beginning teacher to a parallel group, thus completing the lesson study cycle (as in Figure 1). The trainees taught their research lessons and these were collaboratively evaluated with the mentor and with a visiting university tutor. Five teams achieved a cycle of two lessons; one geography team conducted a cycle of three lessons and one team managed to do two cycles of two lessons.

For Phase B (March-June 2013), eight teams were inducted in a similar way although one had to withdraw almost immediately for health reasons (11-18 school). Five cases completed the whole process (in three 11-16 and one 11-14 school) and one partially completed (an 11-14 school). Similarly with Phase A, data were gathered including end-of-project individual interviews, followed by focus group meetings of mentors and student-teachers.

4. Research Methods

For the research data analysis, we ended the year with 12 case studies in two teaching practice placements. In summary, in nine schools during the course of the year, it was possible for the mentor and student-teacher to engage in collaborative planning, teaching, observation and evaluation of two research lessons. In two placements, the process was repeated so that the trainee was engaged in the collaborative planning of a total of four research lessons. In two placements, three research lessons were completed.

Seven teams of beginning teachers and their school-based mentors engaged in the project in Phase A (October 2012 - January 2013) for the first teaching practice and five teams in Phase B (April 2013 - June 2013). Six of the cases were in geography and six in modern languages.

Unfortunately, four projects were not completed to their conclusion although aspects of the process were applied e.g. observations focused on pupils' learning. On the other hand, there were some unexpected gains. In four schools, the Lesson Study team was composed of a trio of teachers (mentor, student-teacher and other member of the department). Three student-teachers included a 'feedback-from-pupils' stage in their projects and recorded the perspectives of their pupils about the research lessons. One of the trainees (geography) produced a DVD of her experience and learning from Lesson Study and this was used in a whole-school training event to induct other staff into the process of Lesson Study.

The 12 case studies generated a significant amount of data (meeting transcripts, lesson plans, resources). Transcriptions were completed for each planning and evaluation meeting and subjected to stanza analysis (Gee, 2011) to identify the thematic episodes in each meeting and prepare the ground for much more detailed discourse analysis. Post-Lesson Study interviews with participants were conducted in January and June 2013 and transcribed for detailed content analysis. In June 2013, two focus group meetings were held to discuss experience of Lesson Study and its impact on mentors and trainees.

Our evaluation of the project and its impact on student-teacher and mentor development was qualitative and inductive, drawing on analysis of recordings of mentors' and student-teachers'

planning and evaluating research lessons, observation notes, DVDs of research lessons and lesson-plans. We explored transcripts of planning and evaluation meetings from a Communities of Practice perspective (Yandell and Turvey 2007), but were also informed by other frameworks, notably reflective practice (Schön 1983) and Pedagogical Content Knowledge (Shulman 1986). Engagement with the latter helped us to see the development of teaching as a holistic process that grows as a result of collaborative engagement in the observation of teaching and learning. At the end of the school placement, twelve individual informant-style interviews (Powney and Watts 1987) were conducted with twelve student-teachers and eleven with mentors (one withdrew before interview). These interviews (final column in Table 1 below) elicited accounts of professional learning as mentors and student-teachers were asked to recount their engagement in the process.

At the end of the whole programme in June 2013, student-teachers came together for focus group meetings during which they discussed their experience of teaching placements with and without Lesson Study. Four mentors responded to an invitation to form a focus group to review the project. This meeting was transcribed and analysed for mentor perspectives about the impact of Lesson Study on mentor and student-teacher engagement in collaborative learning.

Data generated were analysed and interpreted through the lens of Communities of Practice (Wenger 1998, 2000) with both researchers engaging in a constant comparison analysis, sweeping through transcripts to identify and compare themes (Powney and Watts 1987). The following table offers an overview of the variety of data that the lesson studies generated.

Activity	Planning Activity	➔	Lesson	➔	Evaluation Meeting	Individual Interviews Focus Groups
Methods	<ul style="list-style-type: none"> • Audio record • Save outputs • Plans • Resources 		<ul style="list-style-type: none"> • Observation notes • Pupil work • PowerPoints 		<ul style="list-style-type: none"> • Audio record • Amendments • New plan (if applicable) 	

Table 1: data collected during teaching placement Lesson Study cycles

Discourse analysis of the planning and evaluation meetings of teachers involved in the LS process was begun in June 2013 and will be continued to explore mentor-trainee discourse.

5. Findings from the project

The findings are presented under three headings:

- a) Student-teacher perspectives
- b) Mentor perspectives
- c) Structure of planning and evaluation meetings.

5.1 Student-teacher perspectives

The interviews were first divided into idea units and then each idea unit was examined for themes by the two researchers. Comparative content analysis of idea units (Powney and Watts 1987, 165-67) of student-teacher responses by the two researchers led to the identification of the following seven themes (see table 2).

	Themes	% of idea units
1	Impact on student-teacher practice development and learning	24.2
2	Teaching approaches (pedagogy)	22.6
3	Student participation and progress in lessons	16
4	Student-focused observation (engaging in observation)	12
5	Collaboration in planning and working together	12
6	Potential of Lesson Study incl. constraints	7.5
7	Summative evaluation of Lesson Study	5.5

Table 2: Themes from analysis of post-Lesson Study interviews

Discussion focused principally on the impact on student-teachers' learning and their practice i.e. pedagogy featured very strongly (themes 1 and 2). The observation of student learning in class and their responses (participation) were important themes (3 and 4), with focus on learning very strong although often somewhat vaguely expressed. 12% of the idea units focused on the nature and value of collaboration in Lesson Study and its impact on student-teachers' feelings about access to expertise and support. This related to the induction into pedagogic practices. However, was this an artefact of the idea of Community of Practice, facilitating student-teachers' movement from the periphery to the centre of the pedagogic team? In an effort to synthesise our understanding of the development of student-teachers through Lesson Study, the themes were further explored under two broad headings:

- a) integration into subject teaching roles
- b) learning about pupils and impact on pedagogy.

5.1.1. Integration into subject teaching roles

How Lesson Study facilitated integration into departments was rarely explicitly mentioned, although there was clear evidence from all twelve interviewees of engagement with mentors in the discussion and evaluation of collaboratively planned teaching. There was a clear shift as the Lesson Study projects progressed with trainees more confident and more willing to collaborate in discussions of pedagogy.

The quality of the mentor was seen as the key to the effectiveness of the collaboration. Mentors, as willing and self-critical collaborators, were acknowledged as key to the entry of student-teachers into successful pedagogic practices. All participants recognised the excellent engagement they had experienced, including the opportunity to see mentors teach the first research lesson, which 11 of the twelve saw as an example of modelling, despite their being focused on the observation of a small number of learners. The frequently expressed appreciation of the importance and value of mentor engagement and support echoes findings from previous studies (for example, Gurl 2011; Marble 2007; Myers 2012).

Interviewees described quite detailed discussion of how lessons were amended to meet learner needs, following critical evaluation:

I mean we changed one thing which was quite a major thing, which was the resource that I'd made was actually completely useless actually in the lesson. So like, we both looked at it and thought it was a really good resource and then because he did it practically we thought actually it didn't help him at all to what he did. (Geog, A).

There was evidence that insights from Lesson Study had impacted more widely, for example on how student-teachers planned other lessons:

On every lesson plan after that I then started putting an extension on the bottom so if I do things too quick I've got something that I can either start thinking about what we're going to cover next lesson or go over what we've done the last couple of lessons(Geog, E).

When engaging in discussion with mentors about pedagogy there was initial nervousness and reticence to contribute due to limited confidence and uncertainty. By the second cycle, however, there was evidence of greater assurance than at the outset, suggesting movement towards a more central form of participation in the Community of Practice :

I kind of felt a bit more confident that to make more suggestions on what I think would suit and especially in the reflection sessions, like after I'd observed J [mentor] and how I could adapt it to my group. (H, ML)

As a result, by the end of her placement, one student-teacher asserted that the process of Lesson Study had '*made it more clear what I have to do and you know about lesson structure and how to teach*' (H, ML).

This kind of progression from hesitation to higher levels of confidence and active participation was typical of the development described by the majority of interviewees and is suggestive of the centrifugal movement of individuals as they enter into a Community of Practice. Detailed analysis of second planning meeting transcripts also confirmed the accuracy of this perception in most cases.

Teaching a lesson that they had evaluated and re-planned following the mentor's teaching was seen as valuable by all participants:

I felt more comfortable teaching a lesson that I'd already seen because we'd made improvements ... But because we'd worked on it quite a lot as well, discussing ideas and things like that I felt a bit more comfortable rather than going in with something completely new. (H, ML)

Others also welcomed the collaborative shared responsibility that is the hallmark of engagement in Lesson Study:

I know it sounds silly, but it takes away the level of responsibility from one person, because if it goes disastrously you can both look at each other and go well, oh well, you know, we know what to do next time, but you don't sort of feel like a failure in that sense because it's not just on you (N, ML).

The collaboration in planning-teaching-evaluating was seen as valuable by all participants not just for its role in integrating trainees into their departments and in helping them to learn how to teach but also for its positive impacts on the learning experiences of their pupils. It also clearly shows a development and emphasis on shared meaning through mutual engagement.

5.1.2 Learning about pupils and impact on pedagogy

Observation of learners in the classroom had an impact on student-teachers' views and practice of pedagogy. Observing two or three learners proved to be a revealing experience, although not easy

or straightforward as we discuss below. Most of the trainees felt that their thinking about learners and their learner awareness changed significantly:

Because I almost felt like I was one of them because I was sitting in the class and I wasn't focussing on the teacher and it does make you think like it's a lesson and you're meant to be learning something from it but... .. You can see exactly what's going through their minds. If someone is disruptive you see why everyone suddenly hasn't got their eyes on the teacher (Geog, H).

A modern linguist expressed similar if less specific views:

So by doing the Lesson Study it made the learning of the pupils at the forefront of the planning. (A, ML)

Observations of individual pupils often resulted in revised judgements about their abilities, with some references to pupils exceeding expectations:

Yeah, it was strange at first, but then it was useful to actually see if they were working throughout and then I interviewed them to see if they actually, how they thought they worked. So one of the boys, he was quite fiddly, like playing with his pen, but then when it came to the plenary and they had to come up to the board, he was the one who was putting his hand up and going up and giving all the answers. (Geog, H)

After the mentor lesson, the evaluation meeting was considered particularly valuable as it enabled the trainees to amend the observed lesson to suit his/her learners, having seen the lesson field-tested by the mentor. In one case, the inexperienced trainee claimed to enjoy greater success than her mentor:

.....we realised that we could improve the lesson by changing the order of activities, which was good because, when it came to my lesson, it was clear that the students learnt the topic much better than in my co-tutor's lesson. (I, ML)

This suggests that the trainee was integrated into the processes and procedures expected in her community of practice and with some degree of assurance on her part. Two other student-teachers found the opportunity for observation of a small number of learners both absorbing and enlightening. A geography team had the research lesson filmed to assist the evaluation, which was fortunate given the absorbed way in which the trainee engaged in the observation.

I was so engrossed in watching what the students were doing rather than thinking right now we should be moving onto this or – I honestly couldn't tell you what went on in the first

lesson – I just had no idea and then I had to go back obviously like watch it to like write my own lesson plan for it [her teaching of the research lesson]. (Geog, R)

In general terms, despite difficulties and uncertainties about what to observe, there was a view that the observation of learners had affected thinking about teaching and led trainees to negotiating and suggesting solutions to pedagogic challenges:

It really made me think sort of wait a minute, it's all about the learners and it made me really sort of adjust how I taught them in future and when I did do like a revised seating plan getting him more involved in things... (H, ML)

The generally positive responses valued collaborative practice with the mentor in particular and were typified by the following:

I think it is the fact – you plan a lesson so closely with an experienced teacher helps in a lot of ways to – well there's a lot of things I wouldn't have thought of when I planned a lesson on my own. (V, ML)

All interviewees expressed greater confidence about planning and thinking about the learners rather than about the teaching events or resources that they might organise. Generally, they believed that the emphasis in their thinking had moved primarily towards learners and their learning rather than being focused on what they did as teachers.

5.2 Mentor perspectives

Comparative analysis of the data revealed a generally positive, although occasionally uncertain, engagement with Lesson Study from the mentors involved. After initial concerns over manageability, a number of developmental benefits were perceived, in particular in relation to collaborative planning and willingness to take independent responsibility for teaching classes. Mentors believed that the project had enhanced the quality of training by enabling them to offer more effective opportunities to understand teaching, two calling the experience of Lesson Study 'eye-opening'. All felt that it would be very good to integrate it into ITE, but the principal obstacle was one of time management to allow the process to develop. Three mentors mentioned the tension of observation when the focus was on the learning of students in class rather than directly on the performance of the student-teacher. This shift of emphasis was a challenge to some mentors, initially unsure how to tackle the change of approach that this entailed.

Our analysis of mentor interviews focused on four principal themes, although discussion ranged over numerous pedagogic issues (for example curriculum policy, expected practice, assessment pressures, inspection visits and teacher performance challenges). For this reason, the analysis of mentor perspectives was complex and time consuming and it was not possible to arrive at a

quantitative analysis of all idea units expressed. However, the four principal lesson-study related themes reported were:

- Mentor styles of engagement with student-teachers
- Observing learners in the classroom
- Impact on student-teachers
- Mentors' own classroom practice as teachers.

5.2.1 Mentor styles of engagement with student-teachers

For some mentors, there was an initial challenge involved in the change of role that engagement in Lesson Study brought about. Two modern language mentors found the teaching of the first collaboratively planned lesson something of a strange experience, for example:

I remember thinking that it felt a bit strange teaching something that wasn't exactly, didn't exactly have my stamp on it. (ML Mentor L)

In one case, there was greater understanding of the challenge facing trainees in teaching placements:

The difficulty for any student-teacher when they go into a school is they teach somebody else's lessons. They have to take something and interpret it a certain way. (Geog Mentor P).

Analysis of meeting transcripts revealed that collaboration varied in its type with some mentors much more directive than others (as discussed in section 5.3 below). Some mentors were very keen not to be too leading, offering opportunities for their mentees to participate and contribute ideas and resources. However, three described how they were very directive at the outset gradually diminishing their leading role (a pattern of behaviour confirmed when we studied preparation meeting transcripts). In one case, this meant that the student-teacher was integrated into a departmental project for development of more effective language teaching:

Yes. The first cycle, I'd already kind of decided it before. So it was my decision really and H didn't have that much choice, but I talked to her about it and asked if she was happy with that..... (ML Mentor J)

This particular mentor managed to include two research lesson cycles in the 8-week placements and for the third and fourth research lesson she believed that the trainee was a much fuller partner in the enterprise:

She was a bit nervous I think in that first session, which is why it was quite nice to do the second cycle because she was a lot more confident in the second cycle definitely. Obviously she'd had more experience behind her as well because it was quite early on when we planned that first one. (ML Mentor J)

Another geography mentor was quite open about her directive role but believed that the project still had important benefits for the trainee. The move from mentor-telling to collaborative engagement in a shared enterprise was a frequently reported perception in the interviews. Our analysis of planning meetings (section 5.3. below) indicated that room was found for the passing on of advice, often in the form of rehearsal of how pupils in the classroom might react to different stages of the research lesson. Perceptions, reported here, were on the whole positive about the effects of Lesson Study on the student-teachers.

5.2.2 Observing learners in the classroom

What was surprising in mentor accounts was frequent reference to the fact they had rarely had the opportunity to observe small numbers of learners in the classroom:

It was difficult because I've never done anything like that before I've never ever just sort of cornered myself off and just focused on the pupils. (ML Mentor M).

This rarity of being able to observe learners at close hand was repeated by all mentors. This led two of them to speculate about the effectiveness of current assessment for learning procedures which may only give a superficial view of what is being done in class:

That's interesting because you don't ever have an opportunity just to observe learners. Um, it made me realise that you need to be checking more than we perhaps do. (ML Mentor L)

Mentors, like student-teachers, were often surprised by the observations with some pupils exceeding the expectations that teachers held. There was, thus, some learning in collaboration with student-teachers about possibly hidden features of children, including ways in which pupils can mask difficulties:

You could have thought because she's quiet and because she's trying she's got this and actually she perhaps needed a method of signalling to the teacher, you know through a traffic light card system or whatever she perhaps needed to signal that she perhaps hasn't quite grasped everything. (ML Mentor L)

Observing different types of learners alerted mentors to the challenges of working out just what learning takes place. The social and emotional dimensions of learning (Illeris 2007) are much easier

to identify than the cognitive dimension. One mentor realised just how the view from the front could be misleading following his observations of what three pupils were doing during the research lesson taught by his trainee:

It was quite fascinating because it was different. It was, I thought that I knew every single pupil in the class and I thought I knew what they were doing at every single given moment.
(ML Mentor M).

These revelations were not uncommon indicating that Lesson Study was not just a vehicle for supporting the growth of student-teachers into the Community of Practice but also an opportunity for the development of the mentor's own pedagogic literacy (see below for further discussion). To complement the observations, four Lesson Study groups included interviews with case pupils (as advised in Dudley 2011) to seek greater understanding of pupils' learning in the research lessons.

5.2.3 Impact on student-teachers

Mentors believed that the inclusion of Lesson Study, while time-consuming, had proved of benefit to student-teachers making them more responsive to learners, more confident and more effective members of their teaching community.

She came up with the things and she actually spotted things which I think was much better because it was later on in her training and her confidence had grown and she's learned a lot more about what it takes to be in front of a class and to plan lessons. (Geog Mentor P)

Moving from uncertainty to ever-increasing levels of assurance was a theme in all interviews with mentors. This had an impact on trainee participation. The initial research lesson being taught by the mentor was considered significant in this respect:

I think perhaps having seen it played out once before it's almost like that dress rehearsal that you give yourself mentally before a big lesson um, it's almost like she's had a walk through perhaps by seeing it trialled already. (ML Mentor L)

The same mentor felt that the process had enabled her and the trainee to engage in structured activity that allowed for experience of a wide range of pedagogic skills:

Again it's quite strange I could see how the process is useful though. I could see how from her point of view perhaps early on in the practice, it's things like timings, it's things like transitions, it's classroom management as well as the actual lesson and getting across all of your different activities and the settlement of time, it's sort of practicalities and things like

that as well and I think that was perhaps useful for her to see me, the type of language you use to direct those activities. (ML Mentor L)

This resulted in the mentor feeling that the student-teacher was more professional, more a member of the teaching community than had previously been the case with trainees in the traditional model and that the integration into the role of teacher had been achieved more effectively than in the past:

..... it felt like you were having a professional conversation with a colleague rather than telling a student-teacher how it should be. (ML Mentor L)

Frequently, mentors reported that the second lesson taught by the trainee was more effective than the first research lesson (taught by the mentor!). A geography mentor was particularly enthusiastic about the design of the second lesson and its impact on pupils:

And I was raving about how much it has changed and how much the children enjoyed that lesson because they were engaged, it wasn't us rushing through things and saying you've got to learn this. It was how they learned by themselves basically by just observing, analysing looking and interpreting information which gave them and I asked that group later, how do you think about geography? They loved it. (Geog Mentor P).

Evaluation and re-planning for a parallel group appeared to strengthen the lessons while the fact that trainees had participated in the planning and in the observation of the first lesson was considered to have contributed to richer learning experiences for pupils in the revised lesson. This was not the case in all of the pairings but in general the experience of mentor-led Lesson Study was considered to be fruitful both for participants and for pupils in the classroom.

5.2.4 Mentors' own classroom practice

All mentors reported that their own practice and perspectives about learners had changed as a result of participation in Lesson Study. For example, a geographer offered the following summative comment after a year in which he had used lesson studies with two trainees in both Phase A and B placements and introduced the process to his department as part of their work in CPD trios:

But it has definitely been a sort of an injection of education for me to say I'm excited about the way that we can approach things and make it work for us. (Geog Mentor P)

Geography Mentor M advised that an observing collaborating teacher (in his early 50s) had not had the opportunity for such focused review of pupil learning:

It was the first opportunity he'd had to actually just sit and watch students (Geog Mentor M)

Collaborative planning was also valued as a prompt to reflecting on one's practice. The same geography mentor reported being affected by the experience:

It shakes you up a little bit and makes you a little uncomfortable because it's not, it's not what you'd normally do, especially when you've done it for a long time, you get into patterns of doing things and expectations and it's perhaps good to be challenged. Um, I think the co-planning is quite good because I've never really co-planned with a trainee teacher. (ML Mentor L)

As a result of participation in the project, a geography mentor introduced more learner-led approaches in his classroom. He had introduced interviews with pupils into the work of his department and also during classes they had begun to use 'buddy checks' so that pupils would focus together on evaluating what they had learned. He believed that new approaches, with a much stronger focus on trying to understand learning, had had an impact on take-up of geography as an option in his school, ascribing this to more learner-responsive classrooms resulting from engagement in Lesson Study not only with his student-teacher but also with the other teachers in his department:

Teachers do less of the hard work, children do more of the nice work. (Geog Mentor P)

Lesson Study had led this mentor to become a voice for change in the school as had five other mentors for whom the use of Lesson Study with trainees had been a liberating and energising experience, leading not only to more effective mentoring practice but also to review of their practice more widely. Therefore, six mentors had taken steps to introduce Lesson Study in their departments or schools and two other mentors had introduced consultations with learners about lessons as a result of insights gained from the process.

For all participants in the project, there was detailed engagement with pedagogy and a growth in what we call 'pedagogic literacy' (discussion to follow), particularly for trainees as they grew into their roles and became effective and confident members of their departments.

5.3 Planning and evaluation meetings

Analysis of planning meetings revealed a number of approaches to collaborative planning (see tables 3-5 below). Planning meetings had no fixed structure although there were signs that they were influenced by a school's expectations for lesson planning and for currently promoted approaches to lesson planning, notably the tripartite (starter-main-plenary) approach to the structuring of lessons widely adopted since the National Numeracy Strategy was introduced in 1998. Another influence was the TEEP structure, *Teacher Effectiveness Programme* (<http://www.teep.org.uk/>), which many schools have adapted or accepted as a template for their lessons. Typically, a lesson begins with a

'connect' phase, a starter activity followed by the sharing of learning outcomes. The second part is called 'activate' which presents the new learning; the third is a 'demonstrate' phase (sometimes called 'apply to demonstrate') in which students engage in activities that demonstrate their ability to use skills to work with the new learning. The 'consolidate' phase (plenary) involves review of learning and reflection upon the new learning. Some of the projects inducted the student-teachers into this model particularly in geography. In the following extract from a geography lesson, the student-teacher's emerging familiarity with this framework can be seen, although her contributions are very brief. This demonstrates the extent to which she had quickly accommodated to the professional ways of thinking and planning expected in her department, even though the exchange ends with mentor advice about how to prepare for her research lesson:

- M: *At least. They've got a, so that leaves us with, if we only have something like four minutes for the starter...*
- St-T: *35.*
- M: *So that leaves us with 35 minutes. We want the majority of that time to be on the...*
- St-T: *Demonstrate.*
- M: *Demonstrate section, so we've got 35, 25, we almost just want 10 minutes.*
- St-T: *10, yeah, then...*
- M: *So what have we got? That's four, six, so... Activate is just, what did we say, 10 minutes?*
- St-T: *10, yeah.*
- M: *And that leaves 25 minutes...*
- St-T: *For demonstrate.*
- M: *For the demonstrate, 25 minutes. Right, those timings will go out of the water because it's a first lesson on the Thursday; depends on everybody getting up here on time and starting. Tables are already set out; you'll need to think about your own lesson; how you want the tables done the week after.*

Some co-building (*mutual engagement*) could be identified but we have to acknowledge that this was heavily nurtured by the mentor, using key questions and offering opportunities for reflection to the student-teacher. The first planning meetings typically involved student-teachers in a lot of listening. There was also a significant amount of advice, prediction and rehearsal, leading to modelling by the mentor (*expert-novice relationship*). Student-teachers' suggestions, while few,

were welcomed, evaluated and often accepted. When suggestions were made that the mentor deemed 'inappropriate' the mentor might advise the trainee of the dangers or alternatively invite reflection on the suggestion. Issues discussed during planning meetings included objectives, scaffolding, differentiation, assessment for learning, approaches to teaching and linguistic/geographical content. Student-teachers, it could be argued, began as peripheral participants but by the end of the LS cycles had moved towards the centre of the community of practice.

Macro-analysis of modern language lesson preparation meetings revealed a range of structures. The following modern languages planning meeting followed the canonical tripartite lesson structure (starter-main-plenary), with the central part of the lesson about activities consuming 49% of the discussion:

Stage driven preparation meeting

Stanza 1	Establishing the focus and topic	2%
Stanza 2	Setting objectives	19%
Stanza 3	Identifying/clarifying content	14%
Stanza 4	Lesson structure: starter	9%
Stanza 5	Main activities phase	49%
Stanza 6	Planning plenary final stage	5%
Stanza 7	Final check	2%

Table 3 Stanza analysis of a stage-driven lesson

This meeting allowed for limited discussion of pedagogy but inducted the student-teacher into the expected planning of lessons and relatively little discussion of the learner challenge. There is a danger in this approach of a technical adherence to current structures, without developing greater pedagogic literacy. However, two geography mentors who followed the TEEP four-stage approach to lesson planning were able to engage trainees in discussion of pedagogy while following the four stages of their school's preferred model.

Other mentors engaged in what we term plan-driven preparation in which the structure of the school's lesson plan acted as a tool for framing the discussion.

Plan-driven preparation meeting

Stanza 1	Setting the scene for the lesson	8.5%
Stanza 2	Presenting vocabulary	11.5%
Stanza 3	Moving into tasks (1294)	35.4%
Stanza 4	Conversation activity	12%

Stanza 5	AfL discussion	3.5%
Stanza 6	Mentor advice phase	8.7%
Stanza 7	Review of lesson	8.3%
Stanza 8	Final checks: using lesson plan format	12.1%

Table 4: Stanza analysis of a plan-driven lesson

This process allowed for more discussion of pedagogic issues and in the above case (modern languages) included a mentor advice phase inducting the trainee into ways of seeing how pupils might respond in class, for example:

So you must make sure you're well prepared by that time so that there's not that temptation of, 'Oh, you know, pair work. Miss is talking to them over there. We'll just have a chat', and that's when your room scanning comes in and positioning yourself in places at the side of the room. So even though you might be listening to X and here, and however here, you position yourself there. And although your head is down to listen, you actually probably wouldn't make eye-contact with them. You'd be scanning your room constantly so that you're multitasking, and although you're listening, you're raising eye-brows or just eye-balling anybody that may be off-task, to send a message that 'I'm listening'. (ML, L)

It would be interesting to explore the extent to which such detailed context-sensitive advice is offered in traditional mentor-trainee collaborations that do not involve the collaborative and intensive study of pedagogy afforded by engagement in Lesson Study. This type of advice was a characteristic of the discourse of planning meetings in the project.

Other lessons in both geography and modern languages had superficially less structured approaches to the discussion. Discussion was more open and exploratory, what we term a straddled-exploratory approach to planning. However, more detailed analysis revealed that these discussions were structured around a range of pedagogic issues. In these discussions, there was more overt talk about the learning challenge than in plan-driven approaches.

Straddled exploratory approach to planning

1.	Establishing the learning challenge	4.5%
2.	Starter	28%
3.	Objectives check (what are we teaching?)	7.4%
4.	How to present content/ideas swapping/rehearsal	7%
5.	Ideas for the plenary	1.4%
4.	How to present content/ideas swapping/rehearsal	10.2%
6.	Discussion of tasks/use of questions	16.1%

7.	Linguistic objectives check (cf. 3)	4.2%
6.	Discussion of tasks/use of questions	12.7%
8.	Review against pupil ability levels (learning challenge)	7.3%
9.	Closing comment (mentor)	1.2%

Table 5: Stanza analysis of straddled exploratory planning meeting

In this type of meeting, discussion was cyclical and recursive, with topics straddling one another rather than being linear in their progression through stages of a plan. While they were facilitated by mentors who used frequent key questions to elicit ideas, the content was dominated by the learning challenge and how to teach, perhaps more in keeping with the expectations of collaborative Lesson Study. Such discussion was more common while planning the second research lessons. Student-teachers asked questions about content and lesson structure (exploring pedagogy), not feeling intimidated:

I felt comfortable and confident.... I felt that my opinions would be valid (ML, E)

There was also quite wide divergence of practice in relation to the writing of the lesson plan. In some cases, co-writing of the plan could be heard to occur while in others the writing of the final plan was delegated to the student-teacher for completion following the planning meeting. The plan was then the focus of a further meeting which 'tweaked' it as necessary.

Evaluation discussions were similarly led by mentors but student-teachers gained in confidence. A very evenly shared discussion took place in a post-mentor geography lesson review and planning meeting that involved the following stages:

Stanza 1:	recall of first lesson and review	12.9%
Stanza 2:	planning of second research lesson; starter and objectives	12.1%
Stanza 3:	planning of second research lesson: possible amendments from first	6.5%
Stanza 4:	planning tasks for the main part of the lesson	33%
Stanza 5:	discussion of key words	8.1%
Stanza 6:	(after 16 second pause): review of planned activities (in 4 above)	25%
Stanza 7:	review of time allocations for tasks.	2.4%

Table 6: post-mentor lesson evaluation and planning meeting

This particular discussion was characterised by quite lengthy periods of silence to allow for the writing up of resolutions or amendments to the lesson plan. Evaluations generally focused on the participation and engagement of learners with less certainty in the discussion about exactly what had been learned. In most cases, however, the discussion focused on trying to identify what had been learned or not learned, as in this extract from a mentor during a geography lesson evaluation:

But they didn't really respond to that and I noticed people across the room were joining in with that much more quickly than the three I was looking at. Um and then when it came to answering those points of course they weren't confident enough then to answer because they weren't sure what they'd got really. (Geography P).

Another Geography evaluation meeting following the mentor's lesson focused on tweaking the lesson prior to the student-teacher's research lesson but was focused on what they had learned about the pupils and predicting how they might respond. This involved the student-teacher making an informative analysis and suggestions for the lesson, followed by advice from the mentor (M):

ST-T: So I'm thinking by now they might not necessarily know loads about population but actually we're not starting anything yet. This is sort of activating it right at the start. But we can see what they do know and see how far they can expand their answer. So they might say I've chosen New York as my most crowded and then their expanding will be why do they think this and why that might be? So there's definitely an area where they could...

M: I agree. I'd be tempted again bringing that structure before you can get them to rank the places you could just show them a picture of the North Pole and get them to use evidence from the picture. Again using them, training them in that structure PE, is this place likely to be crowded or empty? We haven't built in the keywords yet; you might want to introduce the word densely when explaining it potentially or sparsely. Is it a densely or sparsely populated place?

However, there were lesson evaluations in which the focus of discussion was on the shape and content of the teaching with relatively little to say about learners but focusing on lessons learned and what needed tweaking before the trainee taught the lesson. For example a modern languages mentor and student-teacher negotiated modifications to the plan and approach:

M: For those kids that, 'Well where do we get help from Miss?' Those that aren't actively independent enough.

ST-T: Probably work better, wouldn't it?

M: I had to go round didn't I and help a lot of them get on-task even now?

ST-T: So giving them the right page number to have on the slide all the time.

M: So that might be another little tweak that we make. Objectives.

The focus was on teacher activity but this demonstrated that the student-teacher was a more active contributor to the discussion than in the initial planning meeting in which she said much less.

In a geography planning meeting for the second research lesson, there was evidence of co-building of the approach to addressing the learning challenge. The mentor led but sought agreement and elicited suggestions from the trainee:

M: Yep. So that's that, and then I can use the video again, maybe. Right, now, this lesson two and three, it's the same day. No it's not. That's the same day. The lessons aren't together; not like your other class. So then is the decision, concept-mapping?

St-T: Yeah.

M: *So we're giving them three or four options.*

St-T: *Yeah, and they have to decide.*

M: *Given three or four options and then concept-mapping it?*

St-T: *Yeah. Also as well, so if you give them background information, the hard and soft, I think a newspaper article, and you know where you can do them, so there's different views? So there are five, like, say four different viewpoints. So say a local, the counsellor...*

M: *Stakeholders.*

St-T: *Yeah.*

Analysis of planning and evaluation meetings suggested that mentors and student-teachers engaged in and valued collaboration (*mutual engagement*). Analysis of preparation meetings revealed that mentors led the process (often taking up much of the discourse) but there were exchanges that involved exchanges of mentors' and student-teachers' thinking about pedagogy (*sharing of solutions*). Both student-teacher and mentor were focused on the explicit goal of improving pupils' learning with observation in action and reflection (*joint enterprise*) evident in the discussion. This led us to conclude that the Lesson Study process provided an effective interactive opportunity for the development not just of teacher competences but also of greater sensitivity to learners' needs and to making teaching learner-responsive. As an initial step in framing a holistic view of how trainees become teachers in a Community of Practice, we suggest seeing and ultimately evaluating the development of teaching and teachers in terms of 'pedagogic literacy'. People in general have some degree of pedagogic literacy, which is a feature of our cultural inheritance. Lesson Study, with its focus on teaching as a complex holistic activity, meant that mentors and student-teachers could explore what it means to be a teacher (Farrell, 2006) who is continually learning and thus building on pedagogic literacy. This means seeing ITE as something much richer than the meeting of a set of craft competences or standards, further discussed below.

6. Discussion

What became apparent early in the project was that Lesson Study reveals the complexity of teaching and learning and lays it open for investigation by both experienced and inexperienced teachers engaging in a collaborative exploration of pedagogic approaches. Important gains were reported from the collaboration by participants particularly by school-based tutors, some of whom described the process as an eye-opening experience that had a marked effect on trainees' confidence and expertise. Analysis of data from both Phase A and B placements suggested that the process

contributed to student-teachers' effective induction into the pedagogic Community of Practice at departmental level. For instance, school-based tutors reported that integration into departments and their working practices was more rapid than in the past. This was reported in Phase A placements and confirmed in Phase B. This suggested to us that Lesson Study, through its structured process of mutual engagement (Wenger, 2000: 227), was effective in facilitating the transition into a Community of Practice. Through this co-operative form of teacher inquiry with a supporting mentor, student-teachers reported feeling supported and boosted in terms of confidence and competence. This induction into a Community of Practice takes many forms including a fostering of a 'we' inclusive perspective even though mentors clearly lead and scaffold the process. A teaching placement that includes Lesson Study is a collaborative approach to student-teachers' work rather than an individualistic pursuit of the teaching standards prescribed by the Department for Education (DfE, 2012), and provides an integrated approach to teacher education more relevant to student-teachers' teaching than the traditional approach in which the student-teacher works in parallel under the supervision of a mentor but tends to plan and teach alone.

Interviews with participants suggest that Lesson Study allows for participative discussion about learning and teaching and opportunities for a collaborative approach, in a supportive community in which both mentors and student-teachers are learners focused on the improvement of pedagogy, not just the 'performative' (Ball, 2003) training of a prospective teacher to meet a list of standards. What we term 'pedagogic literacy' is the holistic network of knowledge, skills, values and beliefs and attributes relating to teaching and learning present in all individuals. It differs in all people and in teachers but changes in form, extent and depth over time due to experience, practice and exposure to new ideas and influences. Lesson study offers opportunities for development to the trainee and to the mentor and contributes to the development of learner-responsive teaching, the consequence of a growth in participants' overall 'pedagogic literacy'.

As stated in Section 3 (Project Objectives and Theoretical Framework) Communities of Practice are characterised by particular characteristics such as *mutual engagement*, interacting and thinking together (Wenger 1998). This *joint enterprise* leads to the development of *shared meaning* leading to a '*shared repertoire*'. All of these features are evident in the data from this study. Mutual engagement occurs through the act of collaborative planning, observation and evaluation. The creation of learning opportunities occurs through collaborative exploration (*joint enterprise*) but importantly, as described below, allows for participant agency through differential development of 'pedagogic literacy'. By working alongside trainees in an openly developmental and critical approach, classroom pedagogy is seen as a holistic complex process which is confronted and seen as requiring professional interdependence with a strong focus on understanding student learning as integral to the process of teaching.

The situated learning which is described here is regarded within the Communities of Practice framework as a social construct. Individuals learn through group interaction, in this case through mentors exposing trainees to the cultural and pedagogic understandings within their context. This emphasises learning as a change in identity over the generation of explicit 'knowledge'. However, this focus on the social can lead to the danger of losing the agency of the individual, as Billett states:

..... data from workplaces of different kinds, over time, consistently emphasises the importance of dualities that comprise both contributions or affordances of the workplace and the bases by which individuals elect to engage with what is afforded them and the relationships between them (2007, 59).

The agency of the individual needs to be seen as relational to the group; the development of both is relational and negotiated, leading to the need to understand both the life history of the individual and the nature of the negotiation. Even in developing collaborative approaches, the mentor and trainee (or any other collaborative group more generally) will bring individually negotiated meanings and experience, and likewise will take away different lessons from the collaboration. Again, Billett argues:

While a phenomenon may have some common meaning, its construal by individuals will be shaped by particular sets of values, subjectivities and the discourses to which they have access. (2007, 65)

Whilst the participants in this project all reported the utility that Lesson Study had provided in developing their practice, all took away different ideas, concepts and pedagogic insights as they all developed through individual negotiation within the collaborative process. This is clearly demonstrated in sections 5.2.3 (Impact on student-teachers) and 5.2.4 (Mentors' own classroom practice) above where the individual lessons learned are related through the collaborative process but are fundamentally different in focus, relating to the differences between participants in their pedagogic literacies.

To understand this individual development within the collaborative process, we propose the continuum of 'pedagogic literacy', recognising that this idea of a conceptual continuum for the understanding of what it means to become a teacher who is continually learning requires further clarification and developed. In future work, we will seek to develop a conceptual framework for pedagogic literacy and for its application in ITE.

Pedagogic literacy is constituted of a wide repertoire of teaching-related knowledge, skills, values, dispositions and attributes. Looking at teacher preparation from the perspective of pedagogic literacy and its growth offers a counter-view to the prevailing culture in ITE which sees teaching as a

set of discrete competences to be acquired and ticked off as student-teachers progress through their programmes. Pedagogic literacy, on the other hand, sees teacher development as a continuum, including teacher skills that are general in nature but, with the aid of reflective practice, continually evolving for example:

- understanding of learning and learners
- respect for learners and colleagues
- teacher beliefs and values
- philosophies of teaching.

In addition, it includes context-related skills such as knowledge of the school and departmental cultures and their working practices, including approaches to team-work and collaboration. It also includes pedagogic content knowledge (Shulman, 1986). Specific but interdependent professional skills such as lesson-planning, use of questions and understanding of a huge variety of teaching approaches contribute to pedagogic literacy as do attributes such as commitment to professional development and engagement in reflection on practice (Schön 1983). Within the collaborative context of Lesson Study, teacher knowledge, skills and competences are experimented with and extended, including the ability to make learner-responsive decisions during lessons.

Seeing teacher development in relation to this emergent holistic concept implies a comprehensive dynamic vision of how teaching quality develops, in a dynamic continuum composed of learning from a very long and wide range of experiences, including critical reflection on one's own learning experiences in instructed and non-instructed settings, through to the acquisition of theoretical understanding in teacher education programmes and reflective practical teaching skills from school placements early in one's career.

However, the lessons which mentor and student-teacher take from a common activity such as Lesson Study are potentially very different as their individual levels of pedagogic literacy are so different. Collaboration in Lesson Study offers an opportunity to work together on growing pedagogic literacy through holistic exploration of teaching which, we argue, is what is crucial to securing quality in the preparation of teachers to meet the challenges of a rapidly changing world.

7. Conclusions and Recommendations

In conclusion, this project confirms our view that teaching and learning how to teach need to be returned to teachers (Biesta, 2012), to their Community of Practice, and that Lesson Study offers one

approach. Even in the confines of eight-week teaching placements, it equipped student-teachers with the planning and observation tools to develop their pedagogic literacy.

Lesson Study is a structured exploration of pedagogy and all its complexities, appropriate for the initial development of pedagogic literacy and its continuing refinement as individuals and groups foster a growth agenda in their professional practice. Evidence from this project suggests that it leads to collaborative engagement that promotes learner-responsive teaching. Our thinking is at an early speculative stage, but these are ideas that we will seek to refine as we analyse in more depth all of the data emerging from our lesson studies to date.

The quality of the contribution of mentors is crucial to the successful use of Lesson Study in ITE programmes. For ITE, Lesson Study appears to be at its most effective when experienced and critically engaged mentors support the growth of student-teachers in a collaborative enterprise. The professional learning process present in this project can be characterised as social, situated learning at one level; this is why Communities of Practice has become the theoretical framework of choice in a small number of published and unpublished Lesson Study accounts (for example Parks, 2008, 2009; McGraw, Arbaugh, Brown and Lynch (2003). However, the agency and role of the individual must not be lost in the analysis of this social construct. The mentor and student-teacher bring different perspectives and levels of prior knowledge and understanding, and as a result, they develop their pedagogic literacies in different ways. In this sense, the concept of pedagogic literacy is both prior to and a consequence of the collaboration within the context of a Community of Practice.

The quality of pedagogic thinking and practice of mentors needs to be well developed and they need to be open to change and new ideas, that is to say, to a pursuit of ever-increasing levels of pedagogic literacy. The collaborative nature of Lesson Study opened up professional cultures for student-teachers: talking and creating together were very useful and were part of the engagement in the pedagogic community, leading to a productive interplay between collaboration and personal reflection in order for student-teachers to grow their pedagogic literacy. However, in the words of one of our mentors, space and time are needed to shift the emphasis to learning how to research pedagogy and allow for teacher research by both mentors and trainees in programmes of initial teacher education:

..... you need a school where they take research by staff seriously from the bottom upwards rather than 'this was a good idea and we want you to do it' because it doesn't work but it needs space (Geog Mentor M).

He believed that school cultures and educational policy more widely should allow for the process to take effect. In this sense, a commitment to developing teachers' individual pedagogic literacy can be developed through an engagement in a Community of Practice, which is free to make its own

professional decisions in extending and innovating pedagogic practice. It is important to acknowledge the effect of individual agency within the Community of Practice and the role that differential pedagogic literacies play as they are both simultaneously co-constructive of Community of Practice narratives and yet emergent from them. This takes us beyond Community of Practice as a model, seeing situated learning as a complex process occurring at different levels but leading to social and individual growth for the participants in a positive collaborative relationship.

Such collaboration has the potential to allow for sustained investment in the development of teaching from an organisational to an individual level.

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