Teacher Talk in Lesson Study Contexts: How teachers learn.

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Introduction

Lesson Study (LS) evolved in Japan 130 years ago. It came to attention of educators in the west in the 1990s when researchers investigated what lay behind Japan’s success in the 1998 TIMS Survey. During LS groups of teachers collaboratively plan, teach, observe and analyse pupil learning and teaching in ‘research lessons’. They record their findings. Over a cycle of research lessons they may innovate or refine a pedagogical approach which will be shared with others both through public research lessons, in an open house and through the publication of a paper outlining their work.

1There were two phases to the research. The first involved a two year pilot. This was aimed at establishing the degree to which Lesson Study, might be worth pursuing in England. The pilot involved 20 primary and secondary schools from 8 local authorities. Additional support and funding for the involvement of the teachers and schools was provided by NCSL and CIBT.

Phase 2 set out to shed important light on the ‘black box’ of teacher professional learning and to discover what happens when teachers engage in classroom based collaborative enquiry based learning through Lesson Study.


Participationist, acquisitionist and knowledge creationist theories do, however, all hold that language plays a key role – either in enabling mental manipulation of concepts or through learning as social interaction. The aim of the study was to find out what a close analysis of the talk of two groups of teachers involved in LS planning and post lesson analysis and subsequent interviews revealed about:

- what they learned,
- the ways they learned it,
- what kinds of knowledge they drew upon and created
- how pupils’ learning changed as a result.

A second aim was to examine the implications for sustainable use, development and leadership of LS within schools and wider systems.

Research questions

1. How do teachers learn through Lesson Study’s linked processes of collaborative enquiry, lesson design, joint observation and post lesson discussion?
2. Is there a distinctive contribution by Lesson Study to teacher learning?

Methods

A double case study was conducted in two primary schools with contrasting locations, pupil populations and levels of affluence. One Lesson Study focused upon the use of open questions and paired talk in mathematics. The other focused upon use of oral rehearsal techniques, role play, and self assessment in developing writing.

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1 Between 2003 and 2009 the researcher was a TLRP Research Training Fellow leading a project entitled: ‘Lessons for Learning: Using Lesson Study to innovate, develop and transfer pedagogic approaches and metapedagogy’. This fellowship was linked with the TLRP 2002-2005 project ‘Learning How to Learn in Classrooms, Schools and Networks.’
Planning and analysis discussions in each were videotaped by teachers and 7 hours of discussion were transcribed by the researcher. A coding system was developed using a broadly inductive approach identifying ‘Interaction Functions’ of participants. As these emerged Mercer’s (1995) three types of ‘disputational, cumulative and exploratory’ talk were cautiously applied helping to generate categories of the talk in use, to which two further transactional categories were added – ‘managing understanding’ and ‘structuring conversation’. A second coding system of Knowledge Types mapped the way participants drew upon pedagogical knowledge, subject knowledge, pedagogical content knowledge - PCK (Shulman 1986, Ball et al 2008), knowledge of pupils and knowledge derived from Research Lesson observations, as they planned or analysed lessons. These codes were validated twice by practitioners conducting blind and then mediated coding exercises on sections of transcript. Agreement ranged between 66% and 99% and overall IF codes achieved a 76% match, Talk Types 87% and Knowledge Types 81%. Finally, points at which teacher learning became visible were identified along with episodes of talk leading up to these points. Some were small steps – others considerable leaps. These were validated during the second testing.

Interviews were later conducted with members of the Lesson Study groups and with the head teachers in order to explore perceptions of the LS process from their role perspectives and also to capture longer term perceptions.

Findings

Qualitative analysis of the planning discussions revealed that LS groups were generative of reciprocity in exchanging knowledge and ideas. Early focus on the contributions of individual group members was diminished by growing focus on the research lesson and the attention to finely detailed ‘micro-planning’ to meet the needs of ‘case pupils’ and the others they typified. As groups became more absorbed by the need to get the research lesson ‘right’ for learners they suggested, challenged, hypothesised, justified, reasoned and made proposals. Reduced ego involvement lowered affective barriers to learning (Black and Wiliam 1997) and increased risk taking. The game was raised by the knowledge that their work would be shared with their peers. Analysis of post lesson analytical discussions revealed swift engagement with and attention to data gathered from observations and conversations with pupils (including formal interviews). The talk focused on the learning of the case pupils, all pupils and then drew on the teaching which had contributed (Fig. 1). Joint ownership reduced fear of blame for any element of a lesson failing. Strong contrasts were made by participants with the experience of formal observation in performance management or inspection contexts.

Fig.1. Discussion flow in post lesson discussion

The post Research Lesson discussions were dominated by close attention to and discussion of the evidence gathered of pupil learning, in relation to that which was anticipated in their plans. This evidence frequently confounded previous assessments of pupils’ abilities, levels or modes of operating. The evidence also challenged teachers’ beliefs about pedagogical approaches such as open questions, how pupils learn through talk and making learning explicit. These analyses shaped subsequent research lessons and also shaped subsequent teaching approaches for those specific pupils - and more widely.
In the planning and post lesson analyses there was a sustained focus on the micro steps in teaching – on teaching moments. The deliberate process of LS was felt to move the groups swiftly into periods of exploratory talk where recursive sequences of interactions helped to envision, test out and build the research lesson or the subsequent analysis of pupil learning. Certain Interaction Functions were more prevalent in the episodes and points where group members were observed to shift their beliefs and adopt new knowledge positions in Knowledge Generating Interaction Sequences, (Fig 2).

A communicative short cut to tacit knowledge was used extensively by all members of both LS groups to explore possible pupil learning and to reify teaching. This involved ‘Rehearsal’ or ‘Simulation’ of precise teaching moments. Group members code switch rapidly in and out of role as teacher, and LS group member as they test out a way of teaching with the teacher’s voice – listening with pupils’ ears.

An analysis of the use of Talk Types prevalent in episodes of observed teacher learning, compared with their frequency across all talk in the LS discussions, reveals that while LS discussions are rich in exploratory talk, the frequency of exploratory talk interaction functions increased in both the case studies in episodes of observed learning (Fig 3).

The rehearsal function was used both in the initial brainstorming phases and hypothesis testing phases of Knowledge Generating Interaction Sequences. It gave the group access to precise pedagogical moments in action and enabled co-construction of practice knowledge – or co-application of theoretical practice knowledge to a planned lesson.
Analysis of the knowledge types drawn upon and created, reveals that teachers in Lesson Study discussions focus strongly on PCK. Knowledge of pupils contributes significantly to planning discussions but is largely replaced in post lesson analyses by the knowledge gained from observations of pupils made in Research Lessons. In both cases – and in many cases in the pilot study – teachers’ views of pupils and their capabilities were challenged by evidence gleaned from research lesson evidence. Multiple perspective observations both reveal detail not usually seen in a busy classroom by slowing teaching down (Gallimore & Stigler, 2003, p. 33) and also triangulate knowledge hypotheses. In all but one case, teachers discovered they had under-estimated the capabilities of pupils and subsequent teaching was adjusted to help them make better progress. Triangulated, and repeated evidence of pupils learning in Research Lessons proved powerful in changing teachers long held beliefs and adopting new practices (Fig. 4).
The immediacy of these observations temporarily over-rides prior knowledge of pupils. However, evidence from the study shows that unless a Research Lesson is analysed through group discussion *within a very short time*, most of this knowledge is never realised. Even when new practice knowledge is realised over a LS cycle, it remains vulnerable to erosion as teachers revert to former beliefs. The process of passing the new practice knowledge on – through presentation, publication, coaching or public teaching was seen to ‘fix’ this knowledge more permanently.

Both sets of teachers drew upon external knowledge available through published research and national guidance to inform their Research Lessons. Nevertheless, the discussions were susceptible to ‘groupthink’ at times. In neither session was an external moderator present although in School 1, one member of the group was an experienced local ‘leading teacher’.

Both sets of teachers also involved pupils formally in the LS process consulting them on the teaching and formally eliciting their views and perceptions within lessons and after the event.

**Conclusions**

This study has revealed how teachers use discussion devices in the component parts of Lesson Study in order to freeze-frame, play and replay micro teaching and learning moments of the research lessons they are analysing or creating and through doing this they create or re-create the pupil learning moments between them. A recent study of talk in coaching (Lothhouse, Leat and Towler, 2010) revealed many common features of teacher talk and interaction functions between pairs of teachers involved in coaching sessions. There was evidence of co-construction in these conversations as well but they were rare. LS seems to afford many opportunities and a climate conducive to co-construction through such techniques as ‘rehearsal/simulation’ (which was not reported in Lofthouse’s et al.’s study). LS, however, does not require an expert coach to be present. Evidence from this study suggests that without a group member experienced in collaborative classroom based teacher learning, or with as good knowledge of teaching in the subject area, the process may be more vulnerable to groupthink or poor quality knowledge inputs. Access to high quality knowledge and attentive leadership of the process in school can guard against this.

LS uses the features of the SECI learning model proposed by Nonacha et al., 1995 p. 43): socialisation, externalisation, combination and internalisation. However, this study suggests that two further features are added where Lesson Study is concerned: Simulation and Articulation. The ‘imagining together’ of simulation (Engestrom, 1995) is so important as to be planned for and incorporated as a process in its own right.

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<th>Table 1. SECI model plus Simulation and Articulation of Lesson Study learning (adapted from Nonacha et al 1995)</th>
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<td><strong>Socialisation</strong> of the knowledge</td>
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<td><strong>Externalisation</strong> of the knowledge</td>
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<td><strong>Combination</strong> of the knowledge</td>
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<td><strong>Simulation</strong> of imagined knowledge in action</td>
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In all cases of LS, both in the pilot and this subsequent study, teachers have commented upon the dramatic impact it has had on aspects of their learning and practice. Teacher R (below), explains how LS enables the development and internalisation of practice knowledge which works for pupils and regrets the fact that she has too often in the past, internalised practice which may well have been ineffective, having not been developed through a LS type approach.

‘[Lesson Study] is valuable because it develops the teacher. It develops your techniques. Definitely. And you don't normally have that luxury of taking a lesson and pulling it to pieces and analysing every little word and things. You normally just ..you just get going don't you and so. And once you've done that [i.e. just got going] a few times, for a few lessons, you learn those techniques’. Teacher R.

The affordances to teacher learning offered through learning in LS contexts suggest that there are implications from this study for the models of teacher learning which are developed for practicing teachers. In addition, there are implications for models of initial teacher training and for the induction year. Edwards and Protheroe (2003) lamented the fact too often, practices from cultural pasts can be reified in reformed cultural presents (in the way in which teachers revert to modes of teaching they experienced as pupils accounting perhaps for ‘the sheer staying power of recitation as the default mode of British and American pedagogy’ (Alexander, 2004, p. 37). Use of ‘rehearsal simulation’ allows teachers to explicate, manipulate and modify PCK in imagined action. Sharing, vivid, recent observations of pupils’ learning seems to cut through or over-ride elements of reified historical cultural views teachers have of the capabilities and needs of pupils, enabling them to be seen for a short while, along with their learning and the implications for their future teaching ‘in a new light’. This new knowledge can improve the subsequent learning of pupils but it fades swiftly. It is, however, capable of being fixed more permanently through formally passing on the new knowledge to others.

References


