

Subject expertise and teacher knowledge of pupils in Lesson Study

I was pleasantly surprised last year to find that a large randomised study carried out by the DfE comparing the effectiveness of a number of pedagogical and curricular interventions in closing achievement gaps showed that Lesson Study (LS) had the second overall highest impact on raw test results and a modest effect size. (You can see it on the right in Fig. 1 below labeled RLS¹).

Figure 1. SAS score points reduction in attainment gaps. *Closing the gap: test and learn,* (DfE 2016).



I was surprised because Lesson Study is not a pedagogical or a curricular intervention. LS is an *andragogical* intervention designed to enhance teacher (*adult*) learning. Obviously one would expect that teacher professional learning should ultimately impact on the progress of the children they are teaching – though perhaps not instantaneously. My hopes for this trial had therefore not been high. I did not think that measuring a teacher learning approach would reveal anything much by way of immediate impact - especially when it was up against a selection of pedagogical/curricular interventions that were operating directly on pupil learning.

It might have been more informative to look at the curricular/pedagogical interventions with or without LS. However, if Numicon or GM (which both had positive gap closing scores) had been evaluated with and without LS and then the same thing had been done with two of the other interventions above that had negative comparative effects on closing the gap, I am still not sure what the results have told you about LS. David Weston's blog of 10 November makes some similar points very well in relation to findings of another more recent RCT <http://tdtrust.org/author/david-weston> .

Gaps in expert knowledge of subject or curriculum

¹ When I first introduced LS I called it 'Research Lesson Study' or RLS (Dudley, 2003, 2005) but dropped the word 'research' in 2008 when we introduced LS into the National Strategies on advice that it might put people off).

And this goes back to my initial concern. LS is a process for teacher learning and for developing practice knowledge as a result of improving teachers' understanding *of their pupils as learners*, or of the subject they are teaching. Or more usually a they develop a combination of both: a better understanding of how to teach that subject knowledge in the light of improved understanding (created by the lesson study) of how their pupils were learning or failing to learn the subject and what could be done next time to improve it.

In carrying out the Closing the Gap study CUREE decided to focus on disengaged pupils whose teachers thought of them as 'Really Here In Name Only.' The research lessons teachers designed aimed to help them to understand the nature of these pupils' disengagement by treating them as 'case pupils' who were carefully studied in the research lessons. This helped teachers to diagnostically assess them and to devise improvements – affective as well as cognitive – to support their learning in the next research lesson. The materials that CUREE provided to teachers also guided them in key aspects of subject and 'pedagogical content knowledge' needed for the learning– something Catherine Lewis has also done in similar trials with 'content knowledge packages' in the US.

In fact when Jean Lang and I experimented with LS in the National Strategies (2008 -9), we also included subject experts in the mix. We worked with 'coasting schools' who were allocated 'leading teacher' specialist coaches. They worked with year six teachers on either English or mathematics. Half the leading teachers (around 400) were trained to use a LS approach. The other half used traditional 'leading teacher' strategies of demonstration and modeling. Hadfield et. al. in their review of this work (DfE 2011) showed that the improvement in KS2 test scores made by schools with the LS approach was around double that of those using the traditional leading teacher approach which themselves had improved ahead of the national rate.

So I agree with @PhilippaCcuree who recently stressed that when a teacher subject knowledge gap is causing a pupil learning problem, the inclusion of a subject expert in a Lesson Study group is a must. In fairness, most schools using LS get this and use their subject leaders as LS group members accordingly. The same is true at organisational level. So if you want to improve learning in a subject aspect in which no one in the school – not even the subject lead - has expertise, it makes sense to bring in an expert in the knowledge gap area to advise or even better to join the lesson study group: a 'knowledgeable other' in Japan.

Gaps in teacher knowledge of 'these' pupils

The unique strengths of Lesson Study are not in 'magicing' subject or other pedagogical/curricular knowledge into the heads of teachers. They are in helping teachers to see their learners with fresh eyes and to better understand: what the pupils know, how to connect that to the new knowledge in hand and how to diagnose what might be creating barriers to the pupils in doing this (Warwick, et. al. (2017).

The deliberate LS process of jointly predicting what a case pupil's learning will be when planning, and then checking what is actually learned through close, joint observation in the research lessons, is one of the ways that lesson study reveals previously unseen aspects of the learning of case pupils and others in the class. Most LS groups discover 'unknowns' about at least one pupil in the class almost every research lesson. And you can respond to that discovery the very next time you teach them.

LS groups also form such close, reciprocal relationships through their shared endeavour and focus, that they are able to draw upon and utilize their members' vital but mercurial *tacit knowledge of practice* which in most other CPD contexts is unknowable and unreachable (Dudley, 2013).

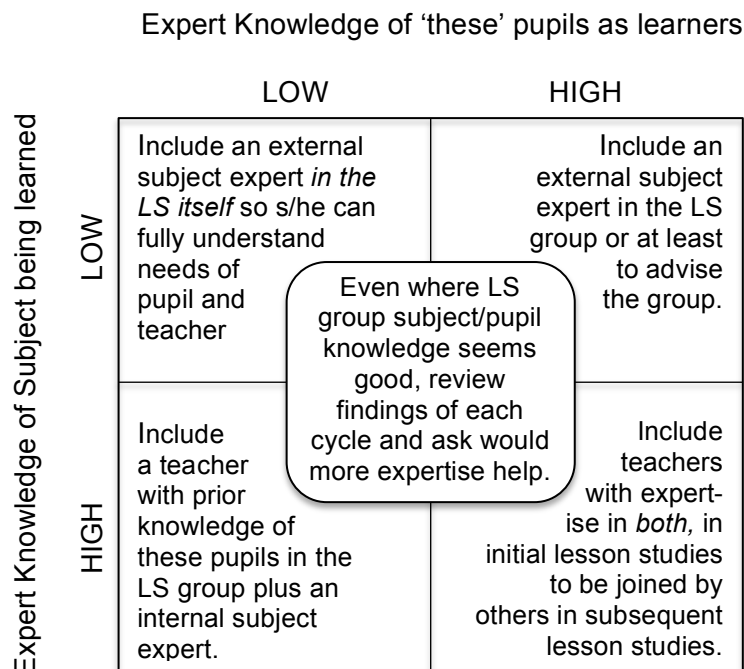
In dealing with teacher subject knowledge gaps, we are usually dealing with *known* unknowns. But when it comes to what we don't know about our pupils-as-learners, we are often dealing with *unknown unknowns*. It is unknown unknowns that Lesson Study is particularly adept at making visible.

So if the gap in the expert knowledge in school concerns pupils with particular needs, the same may well apply. I first used a lesson study approach 30 years ago with teachers who were encountering children learning EAL for the first time. Even those with the most expert subject knowledge did not know the pedagogical approaches that best support beginners in English or those pupils whose basic interpersonal communicative skills in English were good but who still needed to develop more complex and hidden cognitive and academic language proficiency – which often has subject specific genres.

In such cases inviting experts in specific aspects of learning disability or difficulty into the school to join or advise a lesson study group is just as important as inviting experts in a subject or intervention. Lesson study will then help unlock and transfer that knowledge into your teacher population enabling further distribution of the knowledge and practice through involvement your new internal experts in in-school lesson studies.

Analysing the distribution and strength of such expertise in a school is seldom cut and dried, and will require judgment calls. There are of course other issues to consider in assembling the most effective LS group for any particular situation as well – experience, personalities, availability and capacity. Figure 2 below suggests a rubric to help leaders weigh the options in relation to the subject expertise v pupil expertise question.

Figure 2. Analysing gaps in expert knowledge of subject and of pupils as learners



In summary

'Lesson Study organises the known components of effective teacher professional learning, highly effectively and reflectively and reflexively.' (Xu and Pedder, 2015).

LS is in use now not only in schools but in early years settings, FE colleges and universities; by subject experts and specialists in learning difficulties and disabilities. Clinical psychologists now use Lesson Study to explore how brain traumas have affected children's learning and how best to respond pedagogically.

Lesson Study will not help approaches that don't work work! Nor, in my view, should LS be seen as a treatment to be wheeled out occasionally for use with one off interventions. But plumbed into the rhythms and processes of your school, LS will help you both to optimise what is working and to introduce and embed proven practices from elsewhere. LS is a professionally healthy and fulfilling way of continually sharpening teaching, practice knowledge and learning community in response to the evolving demands of learning itself and the ever changing needs of learners – whether they are children or professionals.

Pete Dudley
November 2017

References

Dudley, P. (2013) *Teacher learning in Lesson Study: What interaction-level discourse analysis revealed about how teachers utilised imagination, tacit knowledge of teaching and fresh evidence of pupils learning, to develop practice knowledge and so enhance their pupils' learning*, *Teaching and Teacher Education*, 34. (2013) 107-121.

Hadfield, M., Jopling, M., Emira, M. (2011) *Evaluation of the National Strategies Primary Leading Teachers Programme*, London, Department for Education.

Warwick, P., Vrikki, M., Vermunt, J., Mercer, N., and Van Halem, N. *Connecting observations of student and teacher learning: an examination of dialogic processes in Lesson Study discussions in mathematics*. *ZDM Mathematics Education*, DOI 10.1007/s11858-015-0750-z

Xu, H., and Pedder, D. (2015) *Lesson Study: an international review of the research*, in Dudley, P (Ed.) *Lesson Study: Professional Learning for our time*, London, Routledge, pp. 24-47