



The role of pupil voice as a trigger for teacher learning in Lesson Study professional groups

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4 *NB On advice from the editors, all sections including changes are noted in red. All changes are*
5 *explained in the response to the reviewers.*
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11 **Abstract**

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13 This paper focuses on the role of pupil voice as a trigger for teacher learning and for improving
14 teaching quality. We investigate this in the context of Lesson Study (LS), a professional
15 development model which can systematically incorporate pupil voice into teachers' collaborative
16 reflections on lessons. Data come from two LS groups of mathematics teachers in London (one
17 primary and one secondary school). Video-recorded pupil interviews and teacher discussions
18 were transcribed. Episodes of teacher discussions were coded for reference to pupil input and
19 subsequent impact on future plans. Qualitative analysis of discussions examined whether some
20 pupils' input was favoured over others. Results are significant in pointing to LS as an explicit
21 mechanism for attending to pupil voice. In so doing, we suggest that pupil input provided a
22 challenge for teachers in considering their interpretations of pupil learning, evaluating lessons
23 and planning, and in thus contributing to teacher learning from LS.
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41 **Keywords:** Lesson Study; pupil voice; teacher learning
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1. Introduction

Interest in pupil voice has increased in recent years (Morgan, 2011). A significant early catalyst in turning attention to the importance of pupil voice was the United Nations Convention on the Rights of the Child (1989). This stipulated that young people should have some say on matters affecting their lives (Flutter, 2007), including ‘the right to express a view and the right to have the view given due weight’ (Lundy, 2007, p. 931). In addition to its adoption in other sectors (i.e. health, welfare - see, for example, Willow, 2002), this idea was given particular prominence in the United Kingdom (UK) education sector through the policy initiative ‘Every Child Matters’ (DfES, 2003), which led to the Children’s Act of 2004 (Government of the United Kingdom (UK), 2004). The Act stated five main aims for every child and provided clear frameworks for how they might be achieved in different public sectors. These included the idea that children should have the right to make positive contributions to their lives, giving support to earlier advocates of the idea that the views of children relating to their education should be given due attention (Rudduck, Chaplain & Wallace, 1996; Rudduck & Flutter, 2000).

Thus, the social justice imperative of enabling young people to have a say on the issues affecting their lives seem both clear and well-supported. In terms of schooling, the ‘pupil voice imperative’ has particularly been seen enacted in relation to developing teaching and learning. Whilst it can be argued that educators have always been interested in understanding the school experiences of their pupils (e.g. Stenhouse, 1975), it is clear that over the past 20 years or so pupils have been increasingly expected to have a say in how schools operate in the UK (Barber, 1994; Cook-Sather, 2006; Witty & Wisby, 2007), and this includes a say in the character and content of their learning experiences. Indeed, a clear focus on pupil voice is currently evident in the Office for Standards in Education (Ofsted) inspection guidelines in England, in which ‘[i]nspectors must

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3 take account of the views different groups of pupils express' (Ofsted, 2015, p. 50), including on
4 matters to do with the quality of teaching and learning. Perhaps Rudduck & McIntyre (2007,
5 p.26) put it best: '...we are unapologetic about focusing our concern here on the benefits that
6 pupils and teachers can gain through the latter consulting the former about classroom teaching
7 and learning.'

14 **2. Literature Review**

15 **2.1. Pupil Voice**

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17 In this paper we focus on the role of pupil voice as a trigger for teacher learning and as a catalyst
18 for improving the quality of teaching and learning in schools. Specifically, we consider how
19 teachers use their observations of pupil talk in lessons, together with data from their interviews
20 with pupils, in planning and reflecting on 'Research Lessons' in a Lesson Study (LS) cycle. We
21 do not, therefore, address some of the wider concerns of those interested in the ways in which
22 pupil voice, in providing a commentary on the learner experience of schooling, may be seen as a
23 democratizing influence in school structures and educational systems (Arnot & Reay, 2007).
24 Similarly, we do not focus on literature that studies the potential value of pupil voice and various
25 stakeholders' views on this value (e.g. McCallum, Hargreaves & Gipps, 2000; Wall, Higgins &
26 Smith, 2005), or on ways to incorporate pupil voice in daily teaching practices (e.g. Morgan,
27 2011). For this reason, we do not consider the extensive use of pupil surveys to inform school
28 decision making that has been in place for several decades in the UK (e.g. Murdoch & Coe,
29 1997). Rather, as we indicated in the introduction, we focus on pupil voice as it relates directly to
30 teaching and learning in classrooms, additionally considering the relationship of this to teacher
31 learning. As Rudduck and Flutter (2003) found in their work over several years, 'hearing what
32 pupils have to say about teaching, learning and schooling enables teachers to look at things from
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3 the pupil perspective [... and] being able to see the familiar differently and to contemplate
4 alternative approaches, role and practices is the first step towards fundamental change in
5 classrooms and schools' (p. 141). Specifically, we conceptualise a cyclical relationship between
6 pupil voice, teacher learning, changes in teaching and, consequently, pupil learning (Figure 1).
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17 *[Insert Figure 1: The cyclical relationship between pupil voice, teacher learning and changed*
18 *practice]*
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25 Figure 1 suggests one way in which pupil voice can have an impact and lead to changes in
26 teaching. In this paper we show how (LS, as a professional development model, may be a
27 mechanism through which pupil voice may be systematically incorporated into teachers'
28 reflections on lessons and into their subsequent planning. Here, we examine the first part of the
29 cyclical model, namely how pupil voice can lead to teacher learning.
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39 **2.2. Pupil Voice and Teacher Learning**

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41 In section 2.3 we report on studies by Dudley that connect pupil voice and teacher learning in the
42 context of LS (Dudley, 2003a 2003b, 2011). Such work is rare, and the same is true of wider
43 studies, beyond the context of LS, that indicate an impact of pupil voice on teacher learning.
44 Indeed, pupil voice studies tend to examine pupils' views without pursuing whether these views
45 are being considered by teachers, how they are being considered and whether they make a
46 difference to teacher learning and subsequently practice. As an example, Hopkins (2010) used
47 group interviews with 132 pupils aged 11-14 in three secondary schools in the UK, deriving
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3 thirteen 'classroom conditions' that they felt were significant in securing effective learning.
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5 Whilst Hopkins uses an interesting methodology to establish very clearly what pupils want in
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7 terms of classroom conditions for learning, from the perspective of this paper the next part of the
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9 puzzle - how this impacts on teacher practices - is not evidenced.
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13 One study exploring the impact of pupil voice on teacher practices was conducted by McIntyre,
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15 Pedder and Rudduck (2005); it examined how six Year 8¹ teachers (two in each of English,
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17 Mathematics and Science) in England used pupil ideas. The study was carried out in three
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19 phases. In Phase I, six pupils from each class were interviewed about their ideas on classroom
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21 teaching and learning. Teachers' reactions to these ideas were subsequently examined through
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23 interviews. In Phase II, which lasted six weeks, teachers' use of pupil ideas was investigated and
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25 teachers' and pupils' evaluations on this were sought. In Phase III, which took place six months
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27 later, the lasting impact of pupil ideas on teachers' practice was examined. Despite being
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29 articulated differently by different pupil groups, pupils' views about what helped their learning
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31 seemed to be consistent across classes, subjects, teachers and schools. In particular, pupils
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33 appreciated interactive teaching, contextualised learning through connecting new ideas with
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35 familiar ones, independence and autonomy in their learning, and peer collaboration. The authors
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37 also examined the criteria that teachers used in order to evaluate the pupils' recommendations
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39 and make decisions on what might be acted upon, and how. Teachers considered the validity of
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41 classroom realities; the practicability of ideas in relation to the curriculum, assessment, available
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43 time and resources; and whether the ideas would be attractive to all students and enhance all
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45 pupils' learning.
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56 ¹ In England, pupils in Year 8 (aged 12-13 years) are in secondary education.
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3 Having chosen some ideas to implement in their teaching (and it is important to emphasise here
4 that whilst pupil voice implies that all pupil ideas will be considered, it does not suggest that all
5 ideas will necessarily be acted upon), teachers were interviewed to determine whether the
6 implementation was successful and sustainable. While some teachers were able to implement
7 pupils' ideas successfully or increasingly successfully, others had problems. In fact, the teacher
8 interview data revealed what the authors' called 'comfortable learnings' for teachers and
9 'uncomfortable learnings' (McIntyre, Pedder, & Rudduck, 2005, p. 166). Comfortable learnings
10 took place in settings where pupils' comments were highly consensual, in line with teachers' own
11 views and derived from teachers' practices, suggesting that existing practices were being valued.
12 Uncomfortable learnings, however, refer to contexts where pupils' suggestions did not take into
13 account the complexities of teaching; and contexts where the implementation of pupil
14 suggestions involved change in the balance of classroom power and, consequently, in student
15 responsibilities.

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34 Flutter (2007) reported on a school that had taken pupil voice a step further, establishing a
35 sustained programme of pupil consultation relating to teaching and learning. In this school, a
36 small team from the pupil school council conducted a small-scale investigation, as part of a
37 research project, in order to examine pupils' views on what makes a good lesson. Starting with
38 focus group discussions, the team produced a model of a good lesson. Their findings, along with
39 some suggestions on improving aspects of teaching, were presented to the school's staff. With
40 the staff's generally positive response, this process was then embedded into the school system
41 and pupils were expected to attend teacher meetings and present findings from their ongoing
42 small-scale investigations. Flutter (2007) indicates that this programme had 'led to profound
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3 changes in teachers' thinking and practice' (p. 347), but did not set out to report specifically on
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5 teacher learning or changes in teaching practice.
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9 Finally, Thompson (2009) asked 20 secondary school teachers of various subjects to experiment
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11 for one academic year with their students' written feedback on their learning. At the end of the
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13 year, the teachers and a sample of their students were interviewed about the value of pupil
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15 consultation and to the extent to which it had an impact on the quality of teaching and learning.
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17 The data showed three types of consultations: 1) 'proactive', where teachers had a collaborative
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19 relationship with their students, using their feedback for their own self-reflection; 2)
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21 'managerial', where teachers used pupil consultation as part of behaviour management; and 3)
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23 'constrained', where typically inexperienced teachers had difficulties responding to pupil
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25 feedback due to certain constraints (e.g. time pressure). Thompson (2009) reported that
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27 'proactive' approaches 'had the potential to transform classroom activity systems' (671), but
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29 'managerial' and 'constrained' approaches had a smaller impact.
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35 Given the very limited research evidence of pupil voice having an impact on teacher learning, the
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37 present paper specifically examines this in the context of teacher professional development; it
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39 particularly considers the integration of pupil voice into Lesson Study protocols in schools
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41 developing the new National Curriculum for Mathematics in England² (DfE, 2014).
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47 ***2.3. Pupil Voice in Lesson Study***

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51 Lesson Study (LS) is a model of school-based teacher professional development, which
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53 originated in Japan in the 1870s, but has recently been adapted in different parts of the world
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56 ² Other countries of the UK have their own curricula.
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(Dudley, 2013). The core model involves teachers, typically within a school but sometimes between schools, planning ‘research lessons’ together and then reflecting on them. They are characterised as research lessons because, through them, teachers aim to pursue some kind of enquiry or address a collective problem. The adaptability of Lesson Study across different subject matter, year groups and contexts, and its collaborative nature, has placed it as an increasingly adopted professional development model over several years (e.g. Fernandez, 2002).

Figure 2 presents an adapted structure of the LS model, one which has been the most widely adopted in the United Kingdom³. This Research Lesson Study model was developed by Dudley between 2001 and 2005 on the basis of repeated design study cycles of development and implementation (Cobb, Confrey, diSessa, Lehrer, & Schauble, 2003), informed over a two-year period by six reflective, analytic co-design sessions with the teachers involved in the design development (Dudley, 2003a, 2003b, 2011, 2013). It was during the first of these design studies that the practice of interviewing selected pupils immediately following each research lesson was added to the prototype, Japanese-inspired model. The principal reason for this addition lay in a study conducted by Dudley (1999) that had examined the degree to which pupils, as young as five years old, are capable of conveying informed insights into their experiences of learning and teaching.

In the study reported here, having planned and delivered the research lesson (where one teacher teaches and the others observe), teachers interviewed selected ‘case pupils’. Case pupils are selected as a focus for observation in the lesson by the teachers on some defined basis at the

³ Where LS is used as a professional development model in the UK, the Research Lesson Study model is the most prevalent structure. It is used in all UK countries but is most popular in England and Northern Ireland, following its promotion by Lesson Study UK, the National College for School Leadership, the Economic and Social Research Council’s Teaching and Learning Research Programme, and the General Teaching Council in Northern Ireland.

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3 planning stage of LS; for example, case pupils may be chosen to represent different groups in the
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5 class, as defined by their prior attainment. After each research lesson, these pupils are specifically
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7 asked about what they enjoyed most about the lesson, what they had learned, which aspects of
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9 the teaching worked best for them, and what they would change if the lesson were to be taught to
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11 another group. The interviews were informal in character, guided by these broad topics but open
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13 to pursuing individual responses in more detail; they might thus be seen as merging an interview
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15 guide approach with a more informal conversational approach (Patton, 1980). Clearly there are
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17 questions of ethics and power relationships in any interview, and these are explored in Section 3.
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22 Following the interviews, the reflection meeting enabled teachers to consider the data from their
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24 own lesson observations and from the pupil interviews, leading to subsequent lesson planning.
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26 Within this process, therefore, pupils *potentially* have an important role in developing teachers'
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28 understanding of what works and, consequently, transforming the teaching experience.
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36 *[Insert Figure 2. Lesson Study model as used in the UK (Dudley, 2013)]*
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42 In Dudley's work, pupil views were observed to contribute perspectives and insights that more
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44 traditional approaches and measures did not replicate. These led to innovative improvement
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46 actions (often at classroom level and simple to enact) that would not otherwise have been taken.
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48 There was evidence of: (i) these pupil perspectives revealing interpretations and insights that the
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50 teachers had not been aware themselves; and (ii) these perspectives then directly informing the
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52 design of subsequent research lessons and practice. Teachers overwhelmingly reported that the
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54 pupil interviews were valuable for the same reasons (Dudley, 2003a, 2003b, 2011).
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3 To connect to teacher learning, in our previous work we identified two types of learning
4 processes that teachers can be observed to engage in, when participating in LS discussions
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6 (Authors, 2017). These are *descriptive learning processes* and *interpretative learning processes*.
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8 When engaged in descriptive learning processes teachers explicitly co-construct knowledge at the
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10 level of representing what is known. Information of what is known may come from their own
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12 observations during the research lessons, but also from information they gather from the pupils.
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14 Interpretative learning processes take place when teachers attempt to go beyond what is given,
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16 unpicking this information by, for example, evaluating teaching, evaluating pupil learning,
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18 diagnosing pupil errors and misconceptions, and drawing on insights from teaching experience to
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20 consider the ‘next steps’ for individuals or groups. Descriptive and interpretative learning,
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22 therefore, are largely based on observations and explicit information; and pupils’ views are a
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24 central part of the information available to teachers reflecting upon a research lesson. For this
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26 reason, we have adopted this conceptualisation of teacher learning in devising an analytical
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28 framework for our data (Section 3.3), whereby interpretative learning processes are manifest in
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30 the interpretation of observations and pupil voice input, in broader lesson evaluation and in
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32 resultant lesson planning.
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43 **3. Methodology**

44 **3.1. Research Focus**

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48 In order to study the role of pupil voice in teacher learning in the LS context, three research
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50 questions were formulated. Whilst the first aims to establish whether there is any evidence of
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52 pupil voice in LS discussions, two additional research questions aim to determine its nature and
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54 influence on teacher learning. The research questions are:
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3 1) Do teachers take pupil voice into account in LS discussions?
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6 1a) Does pupil voice influence teacher intentions for future lessons?
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9 2) From the case pupils, whose 'voices' are considered in teacher discussions?
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12 2a) What content do teachers carry forward into evaluation and teacher planning?
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15 16 17 18 **3.2 The Larger Project Context** 19

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21 Data come from a two-year (2013-2015), large-scale project that was a collaboration project
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23 between the School Improvement Services XXXX and the University of XXXX, UK. The
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25 overall aim of the project was to introduce LS in the context of the teaching of mathematics, as a
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27 new National Curriculum (2013) was being introduced. A total of 59 primary, secondary and
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29 special schools across London participated at some point in the project (Years 5-8, pupils aged
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31 from 10-13). During the project, six phases of Dudley's three-cycle LS (see Figure 2) took place
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33 (three each school year). For each phase, teachers had to form small LS groups (usually 3-4
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35 teachers) and conduct the LS cycles. Two conference days each term helped the teachers
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37 immerse in the process of LS and explore the content of the new mathematics curriculum they
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39 were planning to tailor to their pupils through the LS process. A workbook prepared by the
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41 XXXX team had a similar purpose, with questions that teachers were asked to use to guide their
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43 LS meetings.
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49 During the project, teachers were asked to video record their LS reflection and planning meetings
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51 (not the research lessons themselves) using school equipment. This data constituted the primary
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53 data-source for the wider project. There were two sources of pupil voice data on which the
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55 teachers could potentially draw in these discussions. The first of these was observational data,
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3 comprising what the teachers had heard the case pupils saying about the lesson tasks and their
4 own learning during the course of the lesson; here, the pupils may have been talking to their
5 peers, to the lead teacher or to teaching assistants. **Two main caveats need to be made about this**
6 **source of pupil voice: i). these were self-selected observations made by the teachers and they**
7 **were not systematically recorded (unlike the pupil interview data, the second source of pupil**
8 **voice data); ii). the teacher's representations of students' statements during LS reflection sessions**
9 **may have been inaccurate, may have been 'cherry picked' for specific purposes, or may not have**
10 **fully represented the students' views. However, this data source is included because it was used**
11 **quite extensively by teachers (see Table 3), and because the focus of this paper is on what pupil**
12 **voice data were actually selected and used by teachers in the context of developing their practice**
13 **through LS.**

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29 The second source of data was that derived from short interviews conducted with the case pupils
30 after the lesson; as we have stated in Section 2.3, the focus of these interviews was on what the
31 pupils enjoyed most about the lesson, what they had learned, which aspects of the teaching
32 worked best for them, and what they would change if the lesson were to be taught to another
33 group. Using these topics as a guide, the teachers engaged in broadly conversational interviews
34 (Patton, 1980). It is, of course, important to acknowledge that there are almost always
35 asymmetries of power in an interview, as it is not usually a reciprocal interaction between peers
36 (Kvale, 1996); this is particularly the case where the interviewer is a teacher and the interviewee
37 is a pupil, where the latter may well be trying to anticipate the response that they feel teacher
38 would like to hear. Steps taken to mitigate this issue included the interviewing teacher not being
39 the teacher who led the lesson; very clear re-assurances to the pupils that they were being
40 interviewed because the teachers had a genuine interest in their perspectives on the lesson (in line
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3 with Arskley & Knight, 199, p.53); and the fact that all of the pupils involved were informed of
4 their right to opt out of this part of the LS process without a need to provide any explanation.
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6 Thus, though there would inevitably be a difference between the more informal ‘in situ’
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8 comments made by the pupils as they were observed and their ‘post facto’ interview responses,
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10 the teachers did all they could to ensure that the interviews did not become formalised ordeals for
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15 the pupils.
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21 **3.3 Data**

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23 Data for this paper come from one primary school and one secondary school which participated
24 in Phase 4 of the wider project. One LS group was formed in each school, with three teachers
25 participating in each group. The primary reason for selecting these two schools was that they
26 provided a full dataset of the LS cycle, including video-recordings of pupil interviews. In line
27 with the LS cycle (Figure 2), each group sent us videos of a total of nine teacher discussion
28 sessions: three planning sessions, three reflection sessions and three pupil interview sessions. We
29 focus here on the data related to 6 of the sessions per teacher group, excluding those sessions
30 where the relationship between pupil interview data and subsequent teacher planning could not
31 be assessed (for example, the first planning session for each teacher group did not include any
32 reference to pupil voice). Table 1 presents the focus sessions that were transcribed in full
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[Insert Table 1. Session sequences]

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3 Schools participating in the project were free to organise these sessions as they saw fit,
4 considering their available time and resources. As expected, organisation differed between
5 schools and this is reflected in our sample of two schools. Specifically, the secondary school
6 teachers chose to reflect on the research lesson and, based on that, plan the following research
7 lesson as part of the same meeting. The primary school teachers chose to follow the LS model
8 (Figure 2) more closely and have the two types of meetings separately. Additionally, the
9 secondary school teachers chose to have focus group interviews with their four case pupils, while
10 the primary school teachers interviewed their three case pupils separately.
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25 **3.4 Developing Codes**

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28 To examine our research questions, we iteratively developed six codes organised in three
29 categories: Reporting, Interpreting and Evaluating/Planning. The Reporting category illustrates
30 teachers' representation of pupil input in LS discussion, with two codes differentiating for the
31 source of this input: the pupils' interview data or the teachers' observational data. The
32 Interpreting category illustrates teachers' interpretation of pupil input, again differentiating for
33 the source of the data. The Evaluating/Planning category distinguishes between instances of
34 teachers using pupil input to evaluate teaching and learning in the research lesson, and of
35 teachers using such input in planning for subsequent work. Thus, the first two categories are
36 about acknowledging the *potential* value of pupil views, whilst the last category illustrates where
37 pupil voice influences teachers' lesson evaluations and intentions for subsequent lessons. Table 2
38 presents the six categories.
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[Insert Table 2. Coding categories]

The six codes were tested for reliability. Specifically, two coders coded 10% of two transcripts (one from the primary school and one from the secondary school) separately. The inter-coder agreement test indicated high agreement, with the kappa for each coding category ranging from .60 - .88. Appendix 1 presents an example of a coded transcript, in which all three coding categories are present.

3.5 Analysis Approach

Each transcribed teacher discussion was analysed for teachers referencing pupil views. These references were coded using the categorisation system presented above. Each reference was identified as being part of an episode of interaction between the teachers, with a defined start and end point. An initial reference to a pupil's evaluative input (either from the interviews or the observed lesson) would signify the beginning of an episode. The episode would continue for as long as the teachers would discuss this input and finish when the teachers start discussing something else. This approach revealed the ways in which pupil voice was evidenced in our Lesson Study teacher discussion data, and the extent to which their use featured as reports or as the basis of interpretations.

We were then interested to see the relationship between the pupil interview transcript data and the teachers' discussions; whether some coding categories were mutually exclusive or mutually dependent; and which pupil voices influenced teacher evaluations or subsequent planning. As a first step, pupil interview data were mapped onto the transcripts of teacher discussions, revealing those elements to which teachers had and had not attended. With respect to pupil input derived

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3 from teachers' observational data (where pupils made evaluative comments during the research
4 lessons), we rely entirely on what the teachers brought to their own discussions, acknowledging
5 that this is likely to be strongly influenced by the teachers' own pedagogical and epistemological
6 frameworks. In the terms defined by McIntyre et al. (2005), this may mean that teachers only
7 brought 'comfortable learnings' (from pupils' comments on learning in lessons) to their
8 discussions, ignoring those pupil comments that may in some way be more challenging. It may
9 also be possible that relationship history with a teacher, or pupil gender, class, race or appearance
10 were factors in what the teachers saw as significant in both the observational and interview data
11 at their disposal; however, we did not explore this with the teachers.
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24 **4. Results**

25 *4.1 Results for RQs 1 & 1a: Do teachers take pupil voice into account in LS discussions?*

26 *Does pupil voice influence teacher intentions for future lessons?*

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28 This first research question aimed to examine whether pupil voice was evidenced in teacher LS
29 discussions, indicating a contribution to teachers' reporting or interpretation of the lessons. From
30 this, we were concerned to see whether, and how, such acknowledgement of pupil voice was
31 extended into lesson evaluations, and where this influenced intentions for subsequent lessons.
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42 Table 3 presents a summary response to these questions (with episodes named to facilitate ease
43 of recognition in later discussion). A total of 19 episodes of references to pupil voice were found
44 in the data, 13 in the primary school teachers' LS discussions and six in the secondary school
45 teachers' discussions (we return to this issue in the discussion). We do not consider the frequency
46 of statements referenced within a particular episode as we were interested in whether such
47 references occur and whether this seems to have a consequence for evaluating and planning.
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[Insert Table 3. Summary coding per episode (RL= Research Lesson)]

Table 2 (Section 3.4) presented the coding categories. In Table 3 we show that the majority of pupil voice input came from the pupil interviews. Where any pupil voice input was reported, it was used in the teacher discussions in some combination of interpretation, evaluation and incorporation into planning. Thus, in seven episodes (Table 3: rows 3, 6, 12, 13, 14, 15, 16) teachers both reported and interpreted the input, but did not incorporate it into subsequent evaluation or planning. In a further seven episodes, teachers used their reporting and interpretation to contribute to evaluation and/or planning (Table 3: rows 1, 2, 4, 5, 7, 8, 19).

The episode labelled ‘Independency’, listed No. 1 in Table 3, is shown below. It demonstrates how the primary school teachers firstly reported on pupil input from the Research Lesson, then interpreted input from both the lesson and the interview, and used this to evaluate their teaching (Episode 1⁴).

Episode 1 - ‘Independency’

1	PT1	What did [Sophia] ⁵ say? Did she say she made progress?
2	PT2	Yes.
3	PT3	We didn’t ask that. Well, we asked, ‘What did you learn?’ and I felt hers was really interesting; she wrote ‘independency’.

⁴ PT=Primary Teacher

⁵ All student names that appear in this paper are pseudonyms.

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4 4 PT1 Independency?
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6 5 PT3 Yes, which I think, for her, means that she can have a go at
7 something mathematical herself, because that used to be a huge
8 barrier for her. She'd need adult guidance the whole way.
9
10
11 6 PT1 I think that word 'investigate' helps with that. We're not
12 asking for an answer, we're asking you to have a go at
13 something.
14
15 7 PT2 I think that's where the big paper came in as well, because she
16 was able to put some of her ideas down without feeling that it
17 was...
18
19 8 PT3 ... going to be marked wrong or right.
20
21
22 9 PT1 Marking freaks them out as well sometimes, doesn't it,
23 especially in maths, because they don't see it as improvement;
24 it's a 'yes' or a 'no'.
25
26 10 PT3 Yes.
27
28 11 PT1 So progress for Sophia is about feeling independent in
29 investigating?
30
31 12 PT3 Yes.
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38 In this episode, PT3 reports on line 3 that Sophia wrote the word 'independency' in her book
39 when asked what she had learnt. PT3's interpretation of what Sophia meant with this word (line
40 5) is that she felt able to 'have a go at a something mathematical herself'. The teachers then
41 reflect on aspects of the teaching that may have helped Sophia feel more independent.
42 Specifically, they comment on the use of the word 'investigate' by the teacher as a way of
43 signalling an activity that may not have a specific outcome, and the use of 'big paper' for pupils
44 to put their ideas down without being marked, which they indicate might close down an activity.
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3 Importantly, not all reported pupil input required an ‘interpretation phase’ before being used in
4
5 lesson evaluation or incorporated into subsequent lesson intentions. In four episodes (Table 3:
6
7 rows 9, 10, 11, 17), teachers used pupil input immediately for evaluation or planning after
8
9 reporting it, without taking time to *articulate* an interpretation between the members of the LS
10
11 teacher group. Episode 17, presenting an example of this, comes from the secondary school
12
13 teachers’ discussion on the Lesson Study Workbook question that asks which aspects of teaching
14
15 need to be adjusted in order to improve pupil progress.
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20 *Episode 17 - ‘Make it harder’⁶*
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- 23 1 ST1 What shall I write here? What aspects of our teaching could be adjusted
24 next time to improve the progress of our case pupils and all pupils?
25
26
27 2 ST2 I would go off what they’ve said, which is, Oliver went, ‘Oh no, don’t make
28 it harder.’
29
30
31 3 ST1 (Inaudible) more variety at the beginning.
32
33
34 4 ST2 James said more variety and Oliver said, ‘No, you can’t change it for me.’
35 That is probably our differentiation of having the option to change it but not
36 asking them to and can we do it then? So, can we say, ‘Do a three by three,
37 now draw another grid,’ and leave it open, but still allow Oliver to draw
38 another three by three?
39
40
41 5 ST1 OK.
42
43
44 6 ST2 Because most of our questions there were really open, but, at the very
45 beginning, we gave them two reasonably close starting points, didn’t we?
46
47
48 7 ST1 So, in that lesson we were really focused on the explanation, but, maybe we
49 should think a little bit more about how we’re differentiating the maths?
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51 No.
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56 ⁶ ST=Secondary Teacher
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4 8 ST2 No. I'm reluctant to do that in the sense that that's not our objective and you
5 don't want to fall under the trap of trying to teach maths as well.
6
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10 In this episode, in order to discuss which aspects of the teaching could change in order to help
11 pupil progress, teachers consider input from two pupils. Whilst Oliver asked for problems of the
12 same difficulty, Joel asked for more variety. In light of these comments, the teachers evaluated
13 the teaching by pointing out that most of their questions were really open but that the explanation
14 was tightly focused; so, they considered that perhaps they should give more thought to the ways
15 in which tasks have been differentiated for future lessons. The reluctance of ST2 to do so derives
16 from the overall intention of the work for these research lessons, namely to promote
17 mathematical reasoning around solvable problems; thus, this teacher seems to be arguing that the
18 level of problems for different groups within the class is already differentiated in a manner that
19 enables reasoning to be developed by each group.
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34 The question of the relationship between reporting, interpreting and evaluation and/or planning
35 will be considered in the discussion; but it is worth noting here that interpretation does not
36 always precede lesson evaluation or future planning in the dialogue of the teacher groups. Rather,
37 there are occasions where lesson evaluation comments, or comments on future intentions, are
38 presented and discussed using reports alone.
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49 ***4.2. Results for RQ 2 & 2a: Which 'voices' are considered in teacher discussions? What***
50 ***content do teachers carry forward into evaluation and teacher planning?***
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3 Here we consider an analysis of frequency and purpose (in terms of our coding categories) of the
4 use of pupil voice in teacher discussions, the extent to which all pupils might be said to be
5 'contributing' and, in addition, differences between primary and secondary teacher groups.
6
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10 Tables 4 and 5 present an overview of which pupils feature in teacher discussions for each
11 episode that references pupil voice, and how their contributions were used (here it is worth
12 recalling that several episodes are drawn from the teacher discussions around a single lesson).
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16
17 Table 4 (Primary) shows that seven of the 13 episodes reference input from Sophia, three
18 reference Olivia's input, and only one references input from Kanu; one episode (6) references
19 input from a non-case pupil and one (11) references input from multiple non-case pupils during
20 the lesson.
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30 *[Insert Table 4. Pupil voice contributions to teacher discussions - primary school]*
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38 Interestingly, where one case study pupil is referenced in an episode, no reference is made by the
39 teachers to input from the other two. This may be because there is some overlap in what the
40 pupils are saying, which is evident in parts of the pupil interview data; it may be because of time
41 constraints affecting the teacher discussions; or it may be that the teachers focus on 'comfortable
42 learnings' (McIntyre et al., 2005), those that seem to support their established practices and ways
43 of working. Among the episodes we found several examples of such 'comfortable learnings',
44 with both the primary and the secondary teachers referring to positive feedback from their pupils
45 on teaching. One example is episode 4 (Kind of proud), where one of the case pupils from
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3 primary school states that she felt proud of herself because she had understood the mathematics.
4
5 This learning outcome for Olivia confirmed the success of a very specific intention for her in this
6
7 lesson. As one of the teachers states: ‘In fact, she is the one the lesson was written for.In
8
9 retrospect, every single thing took her.’
10
11

12
13 An alternative proposition, at least with respect to the number of episodes where Sophia’s ideas
14
15 are referenced, may be that teacher attention is directed towards the perspectives of pupils who
16
17 have struggled in previous work. In this context it should be noted that, in reflecting on research
18
19 lesson 2, one teacher states that ‘she’s come from that support group’; so the strong focus on her
20
21 comments may signal a concern to focus on previously low-attaining learners (Ylonen &
22
23 Norwich, 2012; Norwich, Dudley, & Ylonen, 2014). However, input from a pupil with current
24
25 language difficulties, Kanu, is only once the focus of attention. Perhaps this is because he has
26
27 difficulty articulating his views in the interview, although when he raises an issue of ‘making
28
29 numbers trickier’ (Episode 8) it is seriously evaluated by the teachers.
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34 Table 5 shows that, in the discussions amongst the secondary teachers, there was a more even
35
36 spread of comment uptake from different case pupils across the episodes. There are fewer
37
38 episodes featured here as the reflection and planning sessions were combined, and because,
39
40 overall, there was less reference made to pupil voice in the discussions than in the primary
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42 teacher groups.
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49 *[Insert Table 5. Pupil voice contributions to teacher discussions - secondary school]*
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3 It is interesting that the secondary teacher discussions combined lesson reflection with next
4 lesson planning, and this is perhaps a reason for fewer episodes occurring where pupil voice
5 input was considered. In contrast to the primary teachers, where there is a spread of pupil voice
6 input drawn from the interviews and from pupil statements in the lessons, the majority of pupil
7 voice input considered by the secondary teachers comes from the pupil interviews (Episodes 14
8 and 18 are exceptions, and here Episode 18 features comments from multiple non-case pupils
9 drawn from the lesson). Only three episodes in the secondary discussions feature the carrying
10 forward of pupil voice content into lesson evaluations or plans. In Episode 17, there is some
11 discussion around Mary's suggestion that 'I would probably change, instead of numbers, you can
12 make it decimals'. The teachers evaluate the lesson in relation to their overall intention of
13 promoting reasoning, but decide that the use of decimals will cause complications for many
14 pupils; as one teacher states in the discussion, 'actually, changing the numbers doesn't really
15 make it any more difficult. It makes it longer and more complicated, maybe, but actually what
16 you're doing isn't more difficult.' In Episode 19, the teachers bring forward James's idea about
17 the difficulty of language, but again after discussion feel that the increasing complexity of the
18 mathematics language as the task progresses is appropriate for the overall intentions of the lesson
19 sequence. Episode 18 is interesting for two reasons - it leads to a change in future teaching
20 intentions for research lesson 3 and it features the voices of multiple non-case pupils,
21 commenting on their learning during the lesson. Here, the teacher discussion evidences the
22 learning experienced by the pupils as a result of greater flexibility in teaching to accommodate
23 their ideas, an idea that will be carried into planning for the next lesson. And the teachers
24 attribute this directly to pupil voice:
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3 “I also think, in terms of development of teaching, ... what I learnt from watching you
4 was we’re not going to introduce anything ourselves; we’re rather going to use student
5 voice, ... on the board or getting students to write things on whiteboards and holding them
6 up and sharing ideas, and everything is going to come from them as opposed to me
7 saying, ‘Right, now I think you should see a link ..., and I think this number is $N+10$.’”
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18 **5. Discussion and Conclusions**

19 In this paper we have considered the contribution that a focus on pupil voice might make to
20 teachers’ LS reflection and planning discussions, specifically by considering four questions:
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25 1) Do teachers take pupil voice into account in LS discussions? 1a) Does pupil voice influence
26 teacher intentions for future lessons?
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30 2) Which ‘voices’ are considered in teacher discussions? 2a) What content do teachers carry
31 forward into evaluation and teacher planning?
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36 **Our findings indicate that, where teachers take pupil voice into account as they reflect on their LS**
37 **research lessons, it can be seen to contribute to both their descriptive and interpretative learning,**
38 **with some pupil input directly influencing future intentions for lessons.** In our analysis, 12
39 episodes feature 15 instances of a direct link being made between reporting pupil voice input,
40 either from classroom observation or interview, and interpreting that input. In terms of teacher
41 learning processes, this represents a link being made between teachers’ descriptive learning and
42 interpretative learning (Authors, 2017). This interrelationship is shown in Figure 3, where Code 1
43 (reporting from interviews) links to code 3 (interpreting input from interviews), and where Code
44 2 (reporting from observations) links to Code 4 (interpreting input from observations).
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6 *[Insert Figure 3: The interrelationships between the coding categories across 12 episodes]*
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12 However, such a pattern is not always evident (see Table 3). Two episodes (1 and 18) feature a
13 'jump' to interpretative learning without evidence of prior descriptive learning in the teacher
14 discussions. This is presumably because the teacher speaking does not feel a need to report
15 before interpreting. And four episodes (9, 10, 11 and 17) show evidence of descriptive learning
16 without subsequent interpretative learning. Interestingly, all four of these latter instances lead
17 directly to wider lesson evaluation (shown in Figure 3 as a retrospective activity) and/or the
18 linking of this learning to planning (a prospective activity). This adds strength to the assertion by
19 Authors (2017) that, whilst descriptive learning processes may influence interpretative learning
20 processes, they should be seen as of equivalent value to the professional learner.
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34 Despite reporting and/or interpreting pupil voice input, the activity of evaluating lessons more
35 broadly or adapting planning in the light of such input is limited. There are perhaps two issues
36 here. The first is that teachers inevitably have a far broader and more informed knowledge of
37 mathematics, didactics and pedagogy than pupils (Jaworski, 2001; Jaworski & Huang, 2014);
38 they thus might be expected to understand the intentions and placing of a particular activity, or
39 the reasons for not, for example, using more complex numbers (see Section 4.2), more fully than
40 a pupil. However, pupil voice should be seen less as a source of concrete suggestions that might
41 be acted upon directly and more as a source of challenge to teacher ideas from the perspective of
42 the learner. As Leftstein (2010) points out with respect to dialogue, it is the situated nature of an
43 ideal in the context of schooling that should determine our view of its validity in that context.
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3 Teachers cannot take account of all pupil views, but must consider them in the light of their
4 professional knowledge. What the incorporation of pupil voice into LS procedures seems to
5 achieve is: i). ensuring that this is more likely: and ii). the provision of a mechanism where the
6 perspectives of more than one teacher can be brought to bear on what pupils have to say.
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12
13 With respect to ‘Whose voice is heard?’ and ‘What ideas are carried forward to broader lesson
14 evaluation and subsequent lesson planning?’, some differences between the approach in primary
15 and secondary schools were evident. Rather than considering input from across the four interview
16 questions, the secondary teachers focused almost exclusively in their discussions on responses to
17 the final workbook prompt - ‘What would you change if I were to teach the lesson again?’ This
18 focus may be a response to the fact that the interviews in secondary schools were group
19 interviews conducted with all the case pupils, rather than the individual interviews conducted in
20 the primary school. In such a situation, contrasting views are juxtaposed, as they were in
21 responses to research lesson 2 (see below), causing the teachers to focus more sharply on what
22 may need to be changed for future lessons:
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36 James - “Make things simpler. When we go towards the end - the explaining part - the
37 wording gets harder”
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41 Depak - “Nothing. It was enjoyable and fun”.
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44
45 Alternatively, it may be that the secondary teachers felt that ideas expressed by pupils about
46 future changes were at the core of the purpose of the interviews; certainly, pupil voice comments
47 included in teacher reporting, interpreting and lesson evaluation tended to be summated in the
48 comments about what might be changed for the future. The age of the pupils involved, the
49 confidence of the participating teachers with mathematics, or the level of commitment of the
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3 teachers to LS, may all be playing a part here. Whatever the reason, it seems apparent that the
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5 choice of group or individual interview has a direct bearing on the extent to which pupil voice is
6
7 used in providing alternative perspectives on the learning experience.
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11 *Though it is impossible to know from the data, no single gender or category of academic*
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13 *achievement amongst the pupils seems to be given undue weight by the teachers. However, in the*
14
15 *case of Sophia and Kanu (Section 4.2) it seems that focusing on pupils who have been the focus*
16
17 *of previous attention regarding their wider learning, or who are currently a focus of current*
18
19 *attention, may have differential effects on the attention paid by teachers to their ideas.* In our data
20
21 the outcomes in terms of ‘carry over’ to broader lesson evaluation or planning were highly
22
23 context specific. Again, in the teacher discussions, what pupil voice seems to contribute primarily
24
25 is a challenge to teachers to incorporate novel viewpoints into their learning from LS and, as a
26
27 result, challenge their assumptions of ‘what works’ in the classroom.
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32 From this analysis it is apparent that incorporating pupil voice systematically into LS procedures
33
34 can add to the central intention of this UK model of LS, which is to try to consciously view the
35
36 classroom experience from the perspective of the learner. Pupil voice data is, of course, an
37
38 adjunct to the wider observational data collected during the LS, such as pupils’ learning
39
40 behaviour, engagement and output; and the LS case study pupil approach is designed to identify
41
42 pupils about which something is known, so that their progress can be tracked in relation to
43
44 expectations. Thus, teachers have other data on which to draw in moving forward their
45
46 discussions about pupil progress and future lesson design. Nevertheless, this study shows clearly
47
48 that, where pupil voice data is available, teachers will draw upon it in a number of way that we
49
50 specifically articulate. This paper therefore suggests pupil voice input to teacher LS discussions
51
52 has the potential to contribute significantly to the observations that adults make of case pupils in
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3 their classrooms, bringing to bear their direct experience of pupil perspectives to lesson analysis
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5 and sometime challenging teacher assumptions about the learner experience of lessons.
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8
9 In recent years, and in a wide range of countries, Assessment for Learning strategies have
10
11 gradually become embedded as a way of enabling teachers to access pupils' understandings of
12
13 lesson content and of their own metacognitive learning strategies (Black & Wiliam, 2009). As a
14
15 result, teachers have become increasingly familiar with having deliberate 'learning
16
17 conversations' (a term usually used for professional interactions - see GTCE, 2004) with their
18
19 pupils. This strong stimulus to understand pupil perspectives on learning has become embedded
20
21 in many classrooms, so it seems that there is a fertile environment for the incorporation of pupil
22
23 voice into professional development through LS. The importance of a systematic approach to
24
25 this, through the incorporation of pupil interviews for example, seems key (see Norwich et al.,
26
27 2014, with regards to this with children with learning difficulties).
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31
32 In terms of further research, the following possible lines of inquiry for research spring from the
33
34 work undertaken here:
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36

37
38 i). The use of classroom video data to connect subject learning with teacher discussions would
39
40 provide valuable additional perspectives when examining the connections between 'rhetoric and
41
42 reality' in teacher LS discussions; and recording of case pupils in LS lessons would enable
43
44 researchers to examine the extent to which these pupils' comments on their own learning are
45
46 incorporated into teacher LS discussions.
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49
50 ii). Some examination of the different character of responses to individual and group interviews
51
52 in this context would be interesting.
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3 iii). Looking more widely, similar research might focus more tightly from the outset on the
4 characteristics of the case pupils, from perspectives such as gender and attainment.
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8 iv). Finally, in considering pupil voice interview data, our research group would have valued the
9 opportunity to discuss the pupil interview transcripts with the teachers, teasing out still further
10 the reasons why some pupil comments and not others were the focus of the LS discussions, and
11 whether the teachers valued 'comfortable learnings' over 'uncomfortable learnings' (McIntyre et
12 al., 2005). More generally, such stimulated recall interviews with teachers would enable the
13 testing of the hypothesis that the prime function of pupil voice input in the context of LS is to
14 provide a challenge from the perspective of learners to the broad assumptions made by teachers
15 about the planning and teaching of their lessons.
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30 study for their collaboration on the project.
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Appendix 1. Example of a section of coded transcript.

Quotes from student	Transcription teacher discussion (three teachers)		Codes					
	Line	Contribution from teachers	1	2	3	4	5	6
SI from interview with case student (name) after RL1: "I enjoyed that, when we were doing the lesson, I could express myself on the paper. I did not have to keep putting my hand up and showing the whiteboard. It was just nice to write it down and then (teacher's name) telling me what a good job I did."	86	A: <i>Ok. How did the teaching thing develop? Well. I think it helped her, because she said in her feedback about having the opportunity to use the paper.</i>	x		x			
	87	B: <i>The (0:07:14.7) helped her more than the cubes, didn't it?</i>					x	
	88	A and C: <i>Yes</i>						
	89	B: <i>I think paper and felt tips</i>					x	
	90	A: <i>Some of them used the cubes. I think, even if they did not choose to, it is good to have the option for them. They can choose whether to use it.</i>					x	x

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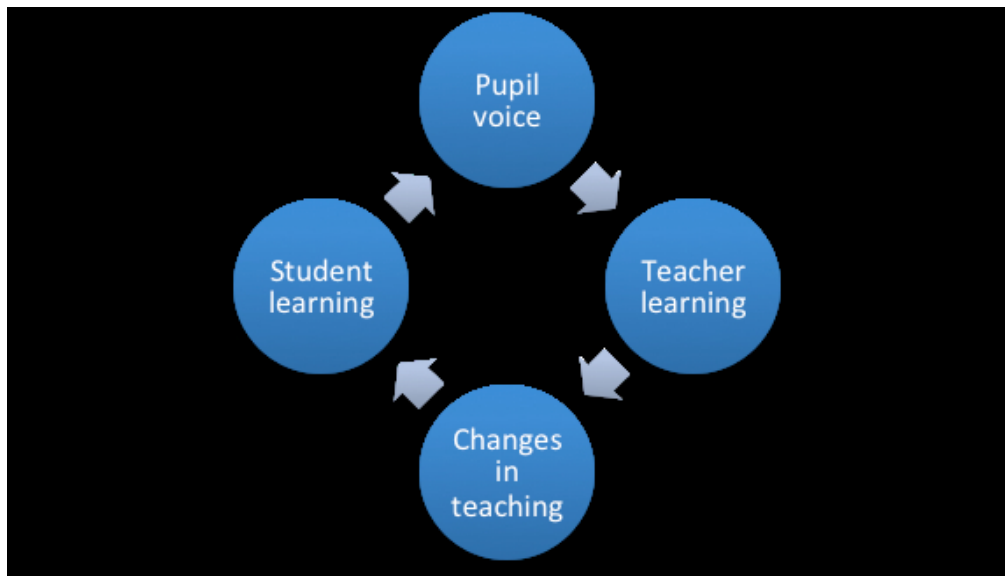


Figure 1: The cyclical relationship between pupil voice, teacher learning and changed practice

120x68mm (120 x 120 DPI)

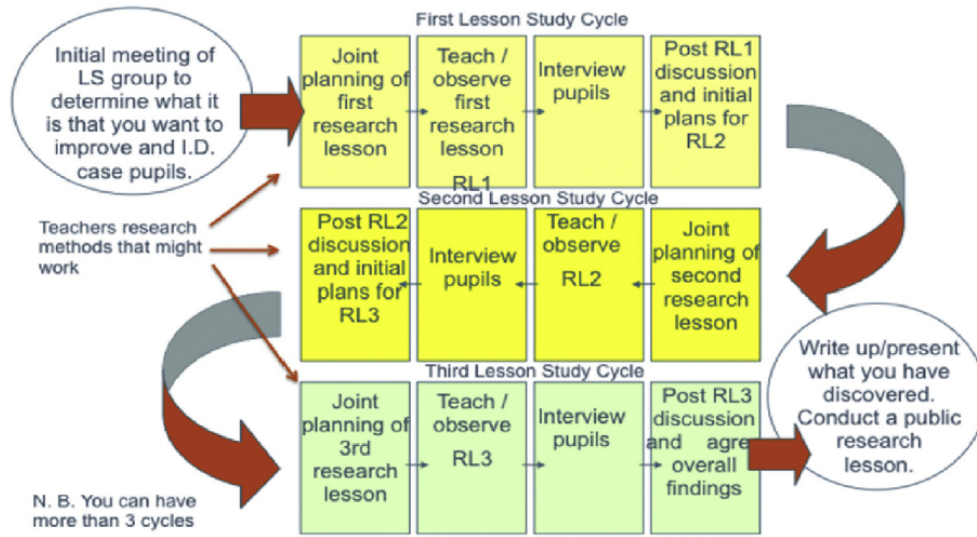


Figure 2. Lesson Study model as used in the UK (Dudley, 2013)

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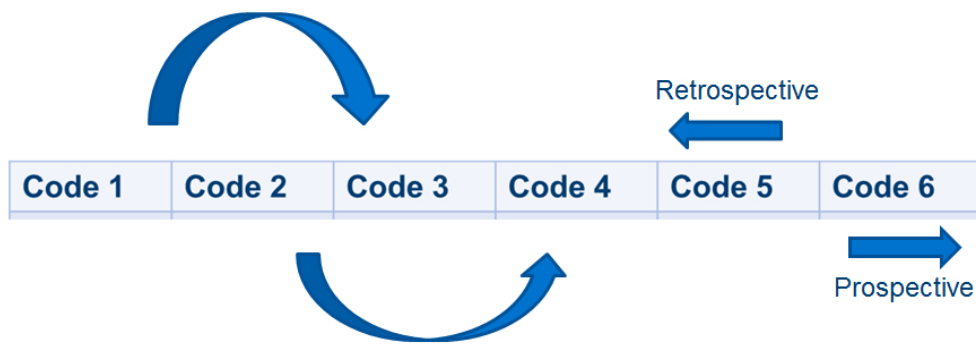


Figure 3: The interrelationships between the coding categories across 12 episodes

186x75mm (120 x 120 DPI)

REPORTING CATEGORY		INTERPRETING CATEGORY		EVALUATING/PLANNING CATEGORY	
Code 1	Code 2	Code 3	Code 4	Code 5	Code 6
Teachers reporting on pupil input from interviews	Teachers reporting on pupil input from research lessons	Teachers interpreting pupil input from interviews	Teachers interpreting pupil input from research lessons	Teachers linking the reporting or/and interpretation of pupil input to evaluation of teaching	Teachers linking the reporting or/and interpretation of pupil input to planning (for individuals or wider groups)

Episode Number	Episode Name	Type of meeting: Planning (PL) or Reflection (RE)	Coding Categories					
			Reporting (PI=pupil Input)		Interpreting		Evaluating	Planning
			1	2	3	4	5	6
			PI from interview	PI from RL	PI from interview	PI from RL	Based on code 1-4	Based on code 1-5
PRIMARY SCHOOL								
1	Independency	RE		x	x	x	x	
2	Using paper	RE	x		x		x	x
3	No clue	RE	x		x			
4	Kind of proud	RE	x		x		x	
5	Sitting next to me	RE	x	x		x	x	
6	My brother	PL		x		x		
7	Read to someone	RE	x	x	x		x	x
8	Tricky numbers	RE	x	x		x	x	
9	The anchor	RE	x					x
10	Express myself	RE	x				x	
11	Envelopes	PL		x			x	
12	Happy	PL		x		x		
13	Figure it out	PL	x		x			
SECONDARY SCHOOL								
14	Other people say	together (RE+PL)	x	x	x	x		
15	How to do it	together	x		x			
16	A+C	together	x		x			
17	Make it harder	together	x				x	x
18	Really think	together		x	x			x
19	Engaged	together	x		x		x	

Teachers' discussions	Number and name of episodes		Codes 1-6					
			Reporting SI from Interview (1) RL (2)		Interpreting SI from Interview (3) RL (4)		Evaluating/ Planning based on codes 1-4	
			1	2	3	4	5	6
Reflection after RL1	1	Independency (Sophia)		x	x	x	x	
	2	Using paper (Sophia)	x		x		x	x
	3	No clue (Olivia)	x		x			
	4	Kind of proud (Olivia)	x		x		x	
	5	Sitting next to me (Sophia)	x	x		x	x	
Planning for RL2	6	My brother (not a case student)		x		x		
Reflection after RL2	7	Read to someone (Sophia)	x	x	x		x	x
	8	Tricky numbers (Kanu)	x	x		x	x	
	9	The anchor (Olivia)	x					x
	10	Express myself (Sophia)	x				x	
Planning for RL3	11	Envelopes (multiple non-case students)		x			x	
	12	Happy (Sophia)		x		x		
	13	Figure it out (Sophia)	x		x			

Teachers' discussions	Number and name of episodes		Codes 1-6					
			Reporting SI from Interview (1) RL (2)		Interpreting SI from Interview (3) RL (4)		Evaluating/ Planning based on codes 1-4	
			1	2	3	4	5	6
Reflection after RL1+ planning for RL 2	14	Other people say (Depak)	x	x	x	x		
	15	How to do it (Depak)	x		x			
	16	A+C (James, Oliver)	x		x			
	17	Make it harder (James, Melanie)	x				x	x
Reflection after RL2+ planning for RL3	18	Really think (multiple non-case students)		x	x			x
	19	Engaged (James)	x		x		x	