



**University  
of Brighton**

**Promoting and sustaining Lesson  
Study as a form of effective  
professional learning: an  
investigation of the practices  
enacted by teacher, school and  
system leaders**

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## **Abstract**

### **What kinds of teacher, school and system leadership practices successfully promote and sustain Lesson Study as a form of effective professional learning for teachers?**

This research project emerged from professional problems associated with introducing and sustaining effective Lesson Study, initially within one and subsequently across a cluster of eleven primary schools in England. Lesson Study is a form of inquiry-oriented, collaborative teachers' professional development that originated in Japan and has increased in popularity across the world in recent years. There is a dearth of literature about the practices enacted by leaders in their efforts to introduce Lesson Study successfully in their schools. This inquiry therefore aimed to analyse and understand the practices enacted by leaders in their efforts to implement and sustain effective Lesson Study within their own schools and across a number of schools.

The research took place in two phases between 2014 and 2021, utilising a design reflecting significant changes in the researcher's professional role as headteacher of an individual school and later the leader of the group of schools involved in the study during that time. Phase One was centred on the researcher's leadership of a single school between 2014-2016. Phase Two focused on a period of system leadership within a network of primary schools which had started as a group of seven and grown to eleven schools by the end of the project.

This was interpretivist, qualitative research. A crystallisation methodology was used to synthesise findings from iterative, thematic analyses of a broad range of data collected over several years. These data included ethnographic field notes from participant observation, thirty-one semi-structured interviews, narrative and reflective writing derived from my professional experience and documents and artefacts related to Lesson Study.

The crystallised findings illuminate the nature and orientation of leaders' Lesson Study macro- and micro-practices and suggest key priorities relating to ways in which leaders work with Lesson Study participants to establish supportive conditions, cultures, processes and structures. Where Lesson Study implementation was sustained and successful, patterns and categories of practice emerging from analysis reflected leaders' understanding and knowledge of key characteristics of Lesson Study, teachers' professional learning and of theories of change and improvement leadership. They highlighted the importance of providing dedicated time, skilled facilitation and of securing characteristics of effective teacher inquiry and professional learning and development within a Lesson Study framework.

Although context specific and filtered through an interpretive lens, these findings suggest priorities for leaders' intentional practices which may support their efforts to ensure the success and efficacy of Lesson Study as a form of school and classroom-based teachers' professional development. They may therefore have implications for policy and professional practice in teacher education and be of interest to educational leaders concerned with teachers' ongoing professional development and learning.

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## Glossary of Japanese Lesson Study Terms

<b>Bansho</b>	Classroom board work.
<b>Hatsumon</b>	The problem or question put by the teacher at the beginning of the lesson.
<b>Jugyou Kenkyuu</b>	Loosely translated as instruction or lesson research or study.
<b>Kikan-shido</b>	The period of a lesson when the teacher monitors progress.
<b>Koshi</b>	An external specialist or adviser who may contribute specialist expertise during Kyouzai Kenkyuu, support research lesson planning, and/or take part in the post-lesson discussion.
<b>Kounai Kenshuu</b>	The continuous process of professional development that Japanese teachers engage in throughout their careers.
<b>Kyouzai Kenkyuu</b>	A period of study of curriculum or pedagogical guidance or research literature relevant to the LS inquiry focus, undertaken by the LS group over an extended period of time prior to planning the LS research lesson; often supported by a Koshi and/or a LS Facilitator.
<b>Matome</b>	When the teacher summarises and reviews the lesson.
<b>Neriage</b>	When the teacher facilitates discussion and draws out key concepts.

## Acronyms

<b>CLR</b>	Collaborative Lesson Research
<b>CPDL</b>	Continuing Professional Development and Learning
<b>ELE</b>	Evidence Lead in Education
<b>EYFS</b>	Early Years Foundation Stage Reception class in primary school: pupils aged 4-5 years
<b>HLTA</b>	Higher Level Teaching Assistant
<b>IDZ</b>	Inter-mental Development Zone
<b>KK</b>	Kyouzai Kenkyuu
<b>KS1</b>	Key Stage 1: first phase of statutory, primary schooling in England; Years 1 and 2– pupils aged 5-7 years.
<b>KS2</b>	Key Stage Two: final four years of primary schooling in England; Years 3-6: pupils aged 7-11 years.
<b>LCK</b>	Leadership Content Knowledge
<b>LfL</b>	Leadership for Learning
<b>LS</b>	Lesson Study
<b>NIC</b>	Networked Improvement Community
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OH</b>	Open House (Research Lesson)
<b>PCK</b>	Pedagogical Content Knowledge
<b>PLC</b>	Professional Learning Community
<b>PPA</b>	Planning, Preparation and Assessment
<b>RIPL</b>	Research-Informed Professional Learning
<b>RIPPLE</b>	Research Informed Practice, Professional Learning and the use of Evidence.
<b>SECI</b>	The SECI model of knowledge creation (Nonaka et al 1996) Socialisation, Externalisation, Internalisation, Combination.
<b>SLE</b>	Specialist Leader in Education
<b>TAR/I</b>	Teachers' Action Research/Inquiry
<b>TIMSS</b>	Trends in International Maths and Science Study
<b>ZPD</b>	Zone of Proximal Development

## **Dedication**

For my mum and dad, Robert and Sheila Carter; for keeping the faith.

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## **Author's Declaration**

*I declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the original work of the author. The thesis has not been previously submitted to this or any other university for a degree, and does not incorporate any material already submitted for a degree.*

*Signed*

A handwritten signature in black ink, appearing to be 'S. A. R.', written over a light grey rectangular background.

*Dated 18<sup>th</sup> September 2022*

# **1 Introduction**

## **1.1 Professional context and background to the inquiry**

This EdD thesis is a qualitative inquiry into the practices enacted by teachers (including teacher leaders), school leaders and system leaders in their efforts to implement Lesson Study (LS) as a mode of teacher professional learning across a network of primary schools in England. It explores LS teacher participants' and leaders' perceptions of LS leadership, alongside my own observations and reflections as a senior system leader with responsibility for all the schools in the network, and as a participant researcher throughout the study. In this introductory chapter, I explain my professional context, the background to my study and what LS is. I clarify my understanding of the professional problems presented by inconsistencies in LS implementation and engagement in an English primary school context and outline the purpose and aims of my inquiry. I describe the research setting, and summarise and explain my research design and methodology. The chapter ends with an outline of my thesis.

My motivation for embarking on this inquiry originated in the central professional challenge I faced, that is, to facilitate sustainable and continuous improvement in the quality of teaching. Originally as a headteacher, but latterly as a system leader responsible for a group of primary schools – developing and sustaining high-quality teaching that enhances the quality of pupils' learning outcomes has been my overarching professional mission. This requires opportunities for teachers to engage in effective processes of professional learning. The provision of such processes for teachers and leaders has been a significant aspect of my work since embarking on headship in 2006.

I was a headteacher of a small village primary school from 2006 until 2017. From 2010 onwards, I also worked as a system leader as part of a Teaching School network. This involved working with colleagues beyond my own school, and promoting and facilitating school improvement in neighbouring schools with the aim of improving educational outcomes for children (Gu et



al., 2015; Hill, 2011; Hopkins, 2007; 2009; Hopkins and Higham, 2007;). Working with colleagues, I commissioned, developed and provided professional development opportunities for teachers and leaders to support school improvement priorities. This is when my interest in promoting research engagement and evidence-informed teachers' continuing professional development and learning (CPDL), pedagogy and practice began, and when I first encountered LS.

In 2016, my school joined with six other local schools to form a charitable educational trust and I became the Trust's leader. The school I led as headteacher and four other schools had worked closely together as members of the Teaching School alliance; two were new to the group. The Trust has grown since 2016 to eleven primary schools. Throughout this thesis, I refer to the Trust as the network or the group of schools.

As a headteacher, I worked with teachers in contexts of LS to promote professional learning and practice change. As a system leader, I have collaborated with middle and senior school leaders, headteacher colleagues and curriculum subject specialist system leaders to promote system-wide, school improvement – activity intended to impact positively on pupils' learning outcomes and experiences. An important aspect of this work has involved developing approaches to continuing professional learning, development and support for teachers with the aim of effecting positive change in the quality of classroom teaching and learning, so that pupil learning also improves.

Throughout my school leadership career, I have been especially interested in developing ways in which teachers and leaders could engage *with* and *in* educational research to inform improvements in pedagogy. I intended such approaches to bring about evidence-informed change which might contribute to enhancements in the quality of teaching and learning and so to wider school improvement. There are difficulties inherent in effecting and sustaining such change, so I was keen to develop approaches to teachers' professional learning that would provide iterative opportunities for teachers to put learning from CPDL sessions into sustainable practice in classrooms.

Since first learning about LS, I have endeavoured to adapt and further shape CPDL policy and practice at school and system level, towards a fuller engagement among teachers with the internal, external, collaborative and research orientations promoted by LS (Opfer and Pedder, 2011a). I developed LS in my own school, supported its development across the networks to which my school belonged and, more recently, across the Trust, as one of several systemic mechanisms that may contribute to achieving school improvement goals.

## **1.2 What is Lesson Study?**

Lesson Study is a form of teachers' CPDL and inquiry which originated in Japan over a century ago and remains a core tenet of teachers' professional learning there today (Lewis and Perry, 2014; Xu and Pedder, 2015). It has grown in popularity in other countries over recent years (Groves and Doig, 2014; Saito, 2012). LS involves teachers working together in small groups to learn more about an aspect of pedagogy or curriculum they have identified as problematic. They engage with relevant authoritative guidance or research literature, often with support from an external specialist. After a period of study, during which they refine the LS inquiry question or research topic, they collaborate to plan a research lesson in detail. One teacher teaches the lesson while the other members of the group unobtrusively observe and note pupils' responses. Following the research lesson, the LS group meets to discuss these observations, using the data they collected to inform their discussions. Sometimes this cycle is repeated, with second or third research lessons; sometimes this is not necessary. Research findings from this process are recorded and shared with colleagues in a range of ways, depending on the context and the local approach to knowledge mobilisation (Dudley, 2014; Lewis and Hurd, 2011; Seleznyov, 2018; Takahashi and McDougal, 2016). More detail about the process of LS is provided in 2.1 and 2.2.

I first encountered LS in 2011. I heard Dr Pete Dudley and Professor David Pedder speak about it at a CPDL event, where I was inspired to learn more about it and to implement it in my school.

Early plans to introduce LS were supported by grant funding for two projects involving LS in 2011 and 2012. It seemed to offer an approach to teachers' professional learning that had the potential to promote engagement with research literature and specialist expertise. It provides teachers with opportunities to collaborate in learning how to put new knowledge into practice in a non-threatening and iterative inquiry context. However, there were significant differences in the extent to which schools and their teachers succeeded in engaging productively in LS during these early projects. This led me to question what variation there might be in the ways in which leaders introduced, led and supported LS in their schools. I wondered whether there might be common and characteristic features of successful implementation. Leading the implementation of LS across the network provided me with an opportunity to explore the practices and perceptions of LS participants, teacher leaders, senior school leaders and system leaders as they engaged in this work.

### **1.3 The professional problem leading to the inquiry**

Reviews of research relating to teachers' professional learning suggest effective teachers' CPDL is focused on pupil learning, sustained over time, inquiry-oriented, situated in practice, research-informed, evaluative and evaluated, collaborative, supported by specialist expertise and promoted and prioritised by school leadership (Cordingley et al., 2015; Department for Education, 2016; Desimone, 2009; Guskey, 2000; 2002; Kennedy, 2016; Opfer and Pedder, 2011b; Robinson et al., 2009; Sims et al., 2021; Timperley et al., 2007).

LS is an approach to professional learning that opens up scope for each of these characteristics to be realised in a common practice framework. It provides multiple opportunities for teachers to consider new learning together and to apply it, collaboratively, in planning and practice. Moreover, sustaining LS as a core component of a school's professional learning offer for teachers is likely to contribute to continuous pedagogical improvement (Ermeling and Graf-Ermeling 2016). These features distinguish it from other forms of CPDL

and persuaded me that LS might provide a vehicle which could support productive, research-informed teacher learning at school and system level.

My experience of leading the implementation of LS in my own school, and of working with colleagues to facilitate its adoption in other schools, suggested that there may be significant inconsistencies in approach, depending on school context. Inconsistencies included the extent to which school leaders were involved, interpretations of LS, its processes and procedures and whether it was valued by teachers and by leaders as a mode of CPDL. These inconsistencies manifested in wide variations in the resources allocated to LS in different school contexts. Leaders and participants also had different perceptions of its success in achieving whatever aims and purposes individual schools had intended for it.

Effective professional learning needs to be construed not merely as a key element in enhancing classroom practice, but as an essential ingredient in the culture of the intelligent school (MacGilchrist et al., 2004). Teachers cannot be expected to develop effective professional learning processes unaided by intelligent school supports, cultures and leadership strategies (Opfer and Pedder, 2011b). This is where my professional biography intersects with the body of research literature I have been reviewing and thinking about throughout my professional studies. There is persuasive evidence to suggest that LS offers much potential as a powerful mode of professional learning which can support improvements in both teachers' and pupils' learning. For this reason, leaders are justified in trying to introduce and adapt LS in their school settings in ways that reflect the characteristics of effective CPDL suggested in the research reviews referred to at the beginning of this section. They are justified in encouraging its implementation at scale by increasing the numbers of staff involved and willing to participate in LS collaborations, and to promote it and resource it as a whole school strategy for pedagogic improvement and research-informed CPDL. I was keen to explore what leaders might do to embed and encourage the spread of LS in ways that reflect research-informed criteria for effective CPDL, to impact positively on teacher learning, pedagogy and pupil learning in an expanding number of classrooms in schools across the network.

## 1.4 Development of the researcher role

In the early phase of my inquiry, from 2014 -2016, I was headteacher of a single school with some system leadership responsibility. My professional context changed substantially from 2016 onwards. During 2016-2017, I was both headteacher and Trust Leader; this gave way in 2017 to the full time Chief Executive position with accountability for seven schools. Having established some experience in school improvement as a headteacher and as a system leader, my role as Trust Leader placed me in a strong position to influence the development of teaching and learning across the organisation. I was able to influence leaders at all levels to design and implement network-wide strategies to establish LS as a vehicle for effective teachers' professional learning and teachers' engagement *with* and *in* educational research (Dudley, 2011; Godfrey, 2016; 2017).

The nature of my leadership position means that I have been able to investigate the development of LS leadership, initially in my own school, and later across the other ten schools in the Trust. I have worked with colleagues in all eleven Trust schools, supporting them to adopt, adapt and sustain LS to improve teachers' professional learning, classroom pedagogy and pupils' learning processes and outcomes. During this experience, I recognised the challenges school leaders face in introducing, establishing and sustaining LS. I encountered teachers and leaders who were exceptionally enthusiastic about LS, seemed to value their experience of it and were keen to re-engage. Others were less keen; some were negative in their reactions to LS participation and one or two were actively hostile. The idea for this inquiry emerged from my desire to investigate leaders' actions and practices as they engaged in LS implementation. I wanted to explore my own experience as a leader of and participant in LS, as well as the practices and perspectives of other leaders and those who are led in contexts of LS. My professional role provided a unique opportunity for me to investigate my own leadership and participation in LS as headteacher of one individual school, and later as a network leader, to investigate how I could lead the promotion of LS across a closely-connected network of eleven schools. This network provided the context and setting for my inquiry. However, throughout this study, it has

been important to remain alert to the risks inherent in the connections between my role as the most senior system leader in my organisation and my role as researcher. Throughout this thesis, I maintain transparency about the dilemmas this has posed, addressing issues of authority and power in relation to my interactions and relationships with research participants, and of personal bias as an overt advocate for LS in my professional sphere. In the next section, I explain my justification for the study.

## **1.5 Rationale for this study**

The direction of travel in national education policy in England has been influenced by an evolving school-led, self-improving system narrative for some years (Hargreaves, 2003; 2010; 2011; 2012a; 2012b). I operate as a system leader in an educational landscape which has been experiencing significant structural reform, ostensibly stemming from this narrative. Demands have been made of leaders to contribute to major structural change as UK government initiatives have attempted to move schools away from local government control to a system of multi-academy trusts. These are structures in which schools come together in groups under central leadership structure and charitable educational trust governance, accountable directly to the UK government's Department of Education. The momentum for this change has stalled recently, leaving a fragmented system struggling to make provision for high-quality professional learning in the face of increasingly constrained education budgets. This has contributed to an appetite for the development of school-based, collaborative approaches to school improvement and teacher professional learning, exemplified in system leadership and school-to-school support strategies for improvement (Early and Greany, 2017; Cousin, 2018) Hargreaves, 2003; Hill, 2011; Hopkins, 2007; 2009; and promoted through teaching school alliances, multi-academy trusts (DfE 2010) and through CPDL strategies which reflect research findings about effective CPDL, such as coaching, Research Learning Communities and LS (Godfrey and Brown, 2019; Sims et al., 2021; Weston and Clay, 2018 ). There has also been a growing interest in ways in which increased engagement in educational research might support improvement in pedagogy (Brown 2015; Godfrey and Brown, 2019). This has provided a

research-informed rationale for school leaders keen to implement such CPDL approaches. However, there is little in the educational research literature about leadership from a practice perspective. My professional problem related to leadership practice rather than leadership competence; I was interested in what leaders *do* to establish the supports required for effective LS to thrive. My study was designed therefore to illuminate teacher, school and system leadership practices which might support the successful development of LS that closely and consistently reflects the characteristics of effective CPDL, and contributes to improving teachers' and pupils' learning across a group of primary schools in central England.

Research which focuses on exploring leadership practices oriented towards the implementation of effective forms of CPDL, such as LS, within the constraints of the English education system in a primary school context, could support leaders keen to optimise the efficacy of LS in their schools.

Moreover, my professional situation provided a unique research perspective. I have experienced LS as a participant, as a headteacher and senior system leader interested in and accountable for the leadership of teachers' professional learning at school and system level. My professional context and responsibilities have offered the opportunity to engage in a longitudinal study of LS leadership both in an individual school and across eleven primary schools in an integrated network. My inquiry evolved from an ethnographic, close-up perspective of a complete participant researcher. It widened over time to consider the perspectives and experiences of a range of teachers, leaders and system leaders in different school and classroom contexts, relating to the phenomenon of leadership practice in contexts of LS. My research has been planned to develop findings and insights that may be useful to school and system leaders considering implementing LS in their school and/or network. In the following section, I outline the purpose and aims of my inquiry.

## 1.6 Purpose and aims of the study

The aims of my study are:

- to analyse and evaluate the leadership practices of teachers, school leaders and system leaders which facilitate the implementation of effective\* LS, in individual schools and across an integrated network of primary schools in England;
- to examine the extent to which organisational conditions, structures, processes and cultures established by teachers, school and system leaders support the implementation of LS reflecting the characteristics of effective CPDL;
- to investigate what kinds of leadership practices are valued by teachers as they participate in LS and why.

*['Effective' in this context indicates LS which achieves its purposes (Biesta 2020) see 2.1]*

## 1.7 Research setting

Data for this inquiry was collected between 2014 and 2019 across a group of eleven primary schools situated in central England. The schools involved in the study range from very small village primaries with fewer than 100 pupils, to larger town primary schools with around 400 pupils on roll. Most of the schools are located within a short drive from one another; the longest journey between two schools is approximately forty minutes. The participating schools had a range of LS experiences before joining the Trust; some very little, one none at all, one quite extensive, some positive and some less so.

**School A: committed and sustained engagement with LS.** School A is the school of which I was headteacher between 2006 and 2017; a small village primary school, with several years of consistent engagement with LS, and varying degrees of success in the early stages. LS had become more embedded in the school's CPDL and improvement systems over time. Following the change in my role LS continued.

**School B: early but superficial promise.** School B had participated with School A in the two funded projects referred to in 1.2, and had continued with



LS afterwards. However, the leader responsible for implementing LS had moved to another role, which stalled the process. Subsequently, some teachers seemed to have developed a negative attitude towards LS. I was interested in exploring what factors might be influencing this change of disposition.

**School C: experienced LS leadership in a school new to LS.** School C had not engaged with LS at all until the arrival of a new headteacher in 2016. The new headteacher had led LS in their previous school and was keen to establish it in the new school as a vehicle for promoting teachers' collaborative professional learning and research engagement. The headteacher led CPDL for other schools interested in introducing LS in their settings and was an enthusiastic LS advocate.

**School D: intermittent engagement and differences in interpretation and leadership of LS.** School D, had also participated with Schools A and B in the two funded projects and had continued to engage intermittently in LS afterwards. A new headteacher had recently re-launched LS, so I was interested to understand what changes had been made and what teachers thought about the range of approaches they had experienced.

**School E: superficial early engagement, pause and re-introduction.** School E had signed up for the first of the two funded projects, but not the second and had not engaged in LS again until the arrival of a new headteacher in 2016. The new leader had decided to re-introduce it. I was interested in exploring why it had not taken off originally and how the re-introduction was progressing.

**School F: disrupted LS leadership.** School F had taken part in the funded projects, but had subsequently gone through a period of leadership turbulence and not engaged in LS since. A new Executive Headteacher took over in 2016 and introduced LS as part of a whole school rapid improvement plan, in partnership with School I.

**School G: re-launching LS after a break.** School G joined the group in 2018. I had been commissioned as a system leader to work with the leadership team of this school before it joined the Trust. Part of that school

improvement work involved using LS to provide CPDL for teachers on the teaching of reading. I interviewed the teachers and leaders involved in participating in LS during this period as part of my inquiry. Two years after that school improvement project finished, the school joined the Trust. During the interactions with the school as a new member of the Trust, I learned that LS had not been sustained. I was interested in exploring this further.

**School H: LS leadership for school improvement.** School H joined the group in 2018 with no previous experience of LS. Trust system leaders introduced LS here as part of a rapid school improvement plan to promote collaborative teacher professional learning and research-informed practice.

**School I: LS system leadership to build professional relationships.** The Executive Headteacher of schools F and I (and later School K) implemented LS as a form of CPDL and as a strategy to build professional relationships between colleagues in all three schools.

**School J: LS leadership in a school with no previous knowledge of LS.** School J joined the group in 2017 with no previous experience of LS and very little awareness of research-informed approaches to CPDL.

**School K: LS system leadership.** School K joined the group in 2019, as part of a small schools cluster, sharing joint executive leadership with schools F and I. The staff had no previous experience of LS, and embarked on a partnership with two other small schools whose staff had engaged in LS for three years.

## **1.8 Summary of methodology and research design**

To understand leadership practice, research needs to attend to both the intentions and practices of leaders, as well as the interpretations of that leadership by those being led (Pring, 2015; Spillane, 2006). A key element of my research design was an empirical focus on and disciplined reflection about my own leadership goals and aspirations, strategies, practices, beliefs and perspectives alongside those of other teachers and leaders with responsibilities and roles related to LS promotion and implementation within their own school or across other schools in the network.

My inquiry examines data collected through a pragmatic bricolage of qualitative methods (Kincheloe, 2001; 2005; Lincoln, 2001; Denzin and Lincoln, 2005; Levi-Strauss, 1966). Through ethnographic and narrative inquiry, I generate leadership stories from field notes of my observations, experiences and reflections as a complete participant researcher promoting and participating directly in LS, first in my own school and later, as a leader and observer of LS implementation across the network. Responding to the changes in my professional role during my study, I conducted phenomenological, semi-structured Pictor interviews (King and Horrocks 2010) with teachers and school leaders engaged in promoting and participating in LS from ten of the eleven schools, and with system leaders leading LS implementation across the network. I employed a crystallisation methodology to synthesise evidence from this data bricolage (Ellingson, 2009; 2014; Kincheloe, 2005; Richardson, 2000). I combined different accounts which reflect multiple participants and perspectives towards richly-storied, polyvocal understandings and representations of LS participation and leadership in different contexts (Thody, 2006). This resulted in a crystallised montage which weaves ethnographic narrative between reports of an inductive, thematic analysis of semi-structured interview responses and the voices of my research participants (Ellingson, 2009; 2014; Kincheloe, 2001; 2005; Mann and Warr, 2017; Richardson, 2000; Thody, 2006). Next, I summarise my approach to securing the ethical integrity of the study.

### **1.8.1 Securing ethical integrity**

My researcher role is entwined with my leadership role and my intentions as a senior system leader. This professional stance brings an obligation to be transparent about my own inherent personal and professional values and the impact that these may have, not only on my own interpretations, but on the interpretations, perceptions, actions and interactions of my research participants. My study relies on describing and interpreting my own and my research participants' thoughts and beliefs about the ways in which the phenomenon of LS leadership is practised, constructed and construed by actors in the research field, including myself. Details of the procedures I

undertook to secure the ethical foundation for this study are outlined in 3.3. While I have taken rigorous steps throughout the investigation to ensure its integrity, authenticity and validity, I have undertaken a qualitative study, founded upon interpretivist assumptions and human idiosyncrasies. I am interested in the constructions and construals of participants acting in complex, human and social environments in school settings. Its findings may be useful to others interested in LS leadership in similar educational contexts. The inferences I draw in my conclusions are not replicable, but they may resonate in other similar settings and suggest commonalities and patterns of practice supportive of others interested in LS leadership. The research also has wider relevance to leaders engaged in the implementation of other collaborative forms of teachers' CPDL, including teachers' professional and research learning communities.

## **1.9 Research questions**

A crystallised research design facilitated the collection of pertinent data with which to explore my overarching research questions:

*In a network of eleven English primary schools:*

- *how do leaders influence the implementation of effective and sustainable Lesson Study?*
- *what kinds of leadership practices do teachers (including teacher leaders) school and system leaders perceive to promote organisational conditions, cultures, processes and structures which establish and sustain effective LS within and across schools?*

The changes to my professional role and context during the study necessitated the development of a flexible and responsive design. Some elements of the research design were planned deliberately at the outset. Others were planned in advance of each subsequent research phase. However, some data were generated as a result of my professional work, such as LS-related documents and artefacts. I have included these throughout my inquiry in a pragmatic way, recognising their value to my study during the unfolding and reflexive development of the research

process. It is this bricolage aspect of my study which suggests a crystallisation methodology that weaves together ethnographic narrative inquiry, a phenomenological interviewing strategy and other relevant LS data. In the next section, I summarise the structure of my thesis.

### 1.10 Thesis outline

I have structured my thesis as follows:

- **Abstract**
- **Tables of Contents, Tables and Figures**
- **Glossary of Terms and Acronyms**
- **Dedication and Acknowledgements**
- **Chapter One: *Introduction***, provides an overview of the inquiry and explains the context and the setting for the investigation.
- **Chapter Two: *Literature Review***, presents my review of the literature which contributed to the conceptual framework for my inquiry. I explore studies of the development of LS from its origins in Japan to its establishment in the West. I move on to examine theories of learning, focusing on the extent to which they are reflected in studies of teachers' professional learning. Finally, I consider research literature about educational leadership and reflect on its application to my professional context and inquiry. I explain how my analysis and synthesis of findings from these three strands contributed to the theorisation of my inquiry focus and research design.
- **Chapter Three: *Methodology***, presents the philosophical foundation for my inquiry. I explain how my professional context and evolving role has contributed to a methodological bricolage and a decision to employ crystallisation to weave together evidence from data collected over time through a range of qualitative methods. These data include transcripts of thirty-one semi-structured Pictor interviews, ethnographic, narrative writing derived from my professional experience recorded in notes taken

in the field throughout my inquiry and documents relating to LS and its leadership in the context of my inquiry.

- **Chapter Four: Data Analysis and Findings** presents a detailed description and explanation of my three-phase analytical approach and associated research findings.
- **In Chapter Five: Summary and Concluding Discussion**, I discuss my overall conclusions about the practices of LS leaders at teacher, school and system level. I present my reflections on my findings, the utility of my research to fellow LS leaders and researchers, and the contribution it makes to knowledge in this field of inquiry.
- **References**
- **Appendices** include ethics information and consent forms, examples of Pictor Interview charts and extracts from interview transcripts and LS artefacts.

This chapter has provided a synopsis, rationale and outline of my thesis. I have explained the problem which prompted the idea for my inquiry, outlined the context to my professional challenge and outlined the structure of the text. In the next chapter, I present my review of research literature in which I synthesise empirical findings related to LS, teacher learning and educational leadership and explain how this contributed to the conceptual framework for my inquiry.

## 2 Literature review

The purpose of this study is to analyse, understand and evaluate the practices enacted by teacher, school and system leaders which influence the sustainable implementation of effective Lesson Study in a network of eleven primary schools in central England.

This chapter presents my review, evaluation and synthesis of research literature pertinent to my inquiry. Since LS began to spread beyond Japan, Kim (2021) suggests that global LS research has focussed mainly on its introduction and implementation, strategies for improving it and exploring its background in Japan. This meta-analysis, conducted from the perspective of a Korean stranger in Japanese classrooms, revealed three further categories of LS research which are pertinent to the leadership of LS. These are the administrative and institutional backdrop to LS; the 'grammar' for LS (the language used by teachers and leaders to discuss LS) and collaborative values underpinning efforts to improve teaching and learning (Kim, 2021, p.58). Leaders concerned with the successful implementation of LS must secure its effective organisation and administration, think carefully about the language they use to communicate their intentions and meanings to participants and consider how to promote effective collaboration in LS situations. My professional problem pertains to LS leadership practice, so, to conceptualise this phenomenon and to develop a theoretical framework for my study, I have structured my literature review around four research themes

**Section 2.1:** Lesson Study as a form of teachers' Continuing Professional Development and Learning (CPDL) and inquiry.

**Section 2.2:** Conceptualisations of learning, specifically:

- socio-cultural theories of learning;
- teachers' professional learning and inquiry;
- learning cultures.

**Section 2.3:** Conceptualisations of educational leadership, specifically:

- individual, collective and distributed models of leadership;
- leadership of teachers' professional learning and inquiry;
- leadership of organisational learning cultures, school improvement and change;
- leadership from a practice perspective

**Section 2.4:** Complexity theory, in relation to educational leadership and LS leadership practice.

These four themes, and the sub-themes within them, interweave to create a synthesis of concepts and ideas which contribute to the theoretical framework (illustrated in Figure 6, p.97) which informs my research design outlined in 3.2.

In the following section, I evaluate and synthesise findings from research literature to conceptualise effective LS and to understand its place in the educational professional learning landscape.

## **2.1 Lesson Study: a form of teachers' CPDL and inquiry**

To develop a theoretical framework for my inquiry, in this section I review and synthesise findings and conclusions from a wide range of research literature pertaining to LS as an effective form of teachers' continuing professional development and learning (CPDL) and teachers' action research and/or inquiry (TAR/I) (Murata, 2021; Sims et al., 2021).

### **2.1.1 The origins of Lesson Study**

Stigler and Hiebert (1999) presented LS to a western world as an alternative form of collegial, reflection-oriented, practice-based teacher professional development (Kim, 2021). They argued that its presence provided an explanation for the success of mathematics teaching in Japan, revealed by the Trends in International Maths and Science Study (TIMSS) (Stigler et al., 1999). They describe the Japanese process of *Kounai Kenshuu*. the



continuous process of professional development that Japanese teachers engage in throughout their careers. For many this involves *Jugyou Kenkyuu*, loosely translated as instruction or lesson research or study.

Successive researchers continued to clarify the process of LS and the sequence of steps involved in developing teacher pedagogical content knowledge (Ni Shuilleabhain, 2015; Shulman, 1987) and understanding of effective lesson design, connected to broader educational goals (Choksi and Fernandez 2004; Fernandez 2002; Lewis et al., 2004; Takahashi and Yoshida, 2004). LS is framed as a complex process, involving collaborative goal setting, careful data collection on student learning and protocols that enable productive discussion of pedagogic and educational issues (Dudley, 2011; Lewis and Tsuchida, 1999; Fernandez and Yoshida, 2004). Teachers' discussions arise from opportunities to reflect and learn collectively, building knowledge and skills required for effective teaching. LS offers mechanisms which may promote professional, contextualised and socially supportive collaboration which can motivate teachers to engage in inquiry and promote professional learning and development, effecting sustainable practice change (Cordingley et al., 2015; Desimone, 2009; Fullan, 2000; 2015; 2016; Hargreaves and O'Connor, 2016; Kennedy, 2016; Opfer and Pedder, 2011a; Porritt et al., 2017; Sims et al., 2021; Timperley et al., 2007).

Takahashi and McDougal (2016) revisit an authentic Japanese model of LS to highlight aspects they consider missing from western adaptations. These include emphasising the LS cycle's research purpose and a substantial period of study prior to research lesson planning. This study phase is known as *Kyouzai Kenkyuu* in Japan and its importance may be poorly understood in western adaptations of LS (Wake and Seleznyov, 2020). The literal translation of the Japanese term is *kyo – instructional, zai – materials* and *kenkyuu – study*. During *Kyouzai Kenkyuu*, the LS group may study curriculum guidance and research evidence relevant to the LS research purpose or pedagogical problem formulated by the LS group. Knowledgeable others or *Koshi*, such as subject specialists, play a significant role in supporting the group throughout the research cycle (Cheng, 2019; Fujii, 2016; Seleznyov et al., 2021; Takahashi, 2013). The central purpose of the

LS cycle is more clearly focused on the acquisition of new pedagogical content knowledge (PCK) rather than refinement of a single lesson (Ball et al., 2008; Berliner, 2004; Shulman, 1987; 2013). LS participants write a clear research proposal and share their findings with colleagues, often in the context of an open research lesson. This Collaborative Lesson Research (CLR) version of LS is presented as a more authentically Japanese model, compared to models '*lost in translation*' during its adoption in western education systems (Selezniov, 2018 p.1; Takahashi and McDougal, 2016, p.514). It may also reflect characteristics of improvement science, including a disciplined approach to inquiry, and mechanisms associated with effective professional development seeking to improve teaching in ways that improve pupil learning (Bryk et al., 2015; Lewis, 2015; Sims et al., 2021). These insights into aspects of LS as practised in Japan may have crystallised as a result of unsuccessful attempts to establish it based on superficial early understandings of its authentic, Japanese practice. As LS was increasingly translated and interpreted beyond Japan, clarity emerged through the study of non-examples, where there has been consensus among researchers that an activity may resemble but does not encapsulate the core features of LS (Fujii, 2014; Hervas and Medina, 2020; Takahashi and McDougal, 2016). The increase in interest in LS beyond Japan led LS researchers to interrogate more closely the characteristic features of LS. They sought more precise definitions of LS and questioned the point at which so many changes may have been made to structures and processes that the result might no longer accurately be described as LS. Miyoshi and Komatsu (2021) suggest western interpretations of LS, with iterative attempts to define procedural steps, have retained the overall aim of LS (to improve teaching in ways that improve pupil learning) but narrowed the definition of the types of activities which characterise LS from its Japanese beginnings, which originally encompassed '*all activities related to the lesson improvement*' (p.193).

In this study, I am interested in how leaders respond to the tensions and opportunities presented by the transposition of LS in their school and network context, so I move on here to explore literature relating to

adaptations made to LS as it has grown in popularity and spread beyond Japan over the last twenty to thirty years (Xu and Pedder, 2015).

### **2.1.2 Development of Lesson Study beyond Japan**

Fujii suggests LS is *'like air'* to Japanese teachers (2014, p.66). LS-based teacher education can take various forms underpinned by the primary objective of improving the quality of teaching and pupil learning. Lewis and Takahashi (2013), for example, differentiate four distinct models of LS: school-wide, district-level, national school-based and association-sponsored. However, LS may be interpreted with much more flexibility in Japan than elsewhere. In countries adopting LS over the last twenty years, educators appear more anxious about maintaining fidelity to a defined process and about what can and cannot be construed as LS (Kawaguchi and Iwata, 2021).

Differences in national cultural characteristics may also have contributed to variation in LS interpretation outside Japan, including in England (Seleznyov, 2019; Seleznyov et al., 2021). Studies have prompted critical reflection about components key to LS in Japan which had hitherto remained part of tacit understandings and practice. Misconceptions about aspects of LS protocol in Japan, amplified by local cultural practices and assumptions, and lack of explicit guidance about authentic LS practice in Japan, may have changed LS implementation elsewhere in the world, fundamentally altering processes and undermining its core values (Fujii, 2014; Saito, 2012).

During the last thirty years, efforts have been made to dispel misconceptions about the intent of LS and its practice, for example that its primary purpose is to refine and perfect a single specific lesson, or that Western structural and cultural constraints may inhibit the implementation of LS (Choksi and Fernandez, 2004). Its practice spans the direct and didactic, where the latest pedagogical thought is disseminated to teachers for application in practice in a research lesson, to a much more teacher-led, action research model (Smith, 2021). Perry and Lewis's (2009) case study of the development of LS in the USA over a period of four years documents some key features of a *'maturing LS effort'* (p.365) including deployment of external expertise to

challenge participants' thinking and provide feedback, leadership distribution and access to written guidance. Attempting to transpose a Japanese model of CPDL into an English primary school context presents a range of tensions and opportunities for teachers and leaders. Yoshida (2012) suggests barriers identified by LS researchers since its introduction to the West include process misconceptions, teacher knowledge deficits, inadequate support, resource and systems for the implementation of effective LS, poor improvement planning and a lack of time for CPDL.

The potential of emerging western models of LS to support powerful teacher professional learning may not have been fully realised in the early years of adoption (Fernandez, 2005). LS can support teachers to develop their subject and pedagogical content knowledge but this may not always happen (Ni Shuilleabhain, 2015). Fernandez suggests further research to explore whether a '*teacher of teachers*' (2005, p.284), a '*knowledgeable other*' (Takahashi, 2013, p.2) or '*Koshi*' (Takahashi, 2006, p.27) could facilitate research engagement and challenge, consolidate and redirect thinking. The role of facilitation and the contribution of external pedagogical and curriculum expertise from a Koshi is an important area of interest in my study, both in relation to supporting teacher engagement in the LS process and procedures and in facilitating effective professional learning. The importance of a period of study or Kyouzai Kenkyuu, embedded within a LS cycle, undertaken before research lesson planning, and supported by a Koshi has attracted increased interest from researchers in recent years (Seleznyov, 2018; Takahashi and McDougal, 2016; Wake et al., 2014).

In the context of my inquiry, I wanted to understand how LS leaders in primary school contexts in England might engage external specialists to support Kyouzai Kenkyuu. I was also interested in the systems and strategies leaders might devise to provide more procedural facilitation, alongside the extent to which this aspect of leadership might be distributed. For this reason, in the next two sections I synthesise research relating to LS facilitation and specifically to the role of the Koshi in supporting teacher learning during Kyouzai Kenkyuu. I begin by clarifying the purpose and contribution to LS of Kyouzai Kenkyuu.

### 2.1.3 Kyouzai Kenkyuu

External western accountability mechanisms seeking evidence of LS's short term impact on pupil outcomes have hampered understanding of its potential for long-term, incremental pedagogical improvement (Seleznyov, 2019). A robust period of study of research literature and/or instructional materials pertinent to each specific LS inquiry, as a precursor to research lesson planning is frequently omitted from common early models of LS used in the UK. This may have diluted its efficacy. Knowledgeable others such as experienced university researchers and/or subject specialists might support teachers to problematise issues of practice, formulate the LS focus and engage in an extended period of inquiry in the early stages of a LS cycle. They can explore and source literature and/or authoritative curriculum guidance on the subject matter to be taught, understand how best to teach it to students and how to integrate a research lesson learning objective within a wider sequence of lessons.

This study phase, known as Kyouzai Kenkyuu (KK), may be essential to effective LS (Sarkar Arani, 2016; Takahashi and McDougal, 2016; Wake and Seleznyov, 2020; Watanabe et al., 2008). Fujii (2015), Choy and Lee (2021) and Seleznyov (2018) stress the importance of a period of knowledge-generating study related to the chosen research focus ahead of lesson planning. Kim et al (2021) describe Kyouzai Kenkyuu as both a practice and a teacher disposition which is embedded in Japanese teachers' routine practice. Kyouzai Kenkyuu is used as a conceptual tool in its own right, central to the development of teachers as lifelong students of teaching and ultimately as curriculum designers and builders of field-based teaching theory (Twiselton, 2002). In Japan, its practice is not confined to LS but is embedded in pedagogical practice. It defines Japanese teachers' engagement with educational theory, curriculum guidance and subject text books to inform lesson design (Shinno and Mizoguchi, 2021).

Takahashi (2006) suggests that embarking too early on research lesson planning, immediately after formulating the focus for the LS inquiry, risks missing out important opportunities to engage with relevant curriculum

guidance and research. Integrating Kyouzai Kenkyuu into the LS process is gaining traction in countries beyond Japan as more recent LS adopters seek to implement increasingly effective, maturing models (Kim et al., 2021). Sarkar Arani's (2016) qualitative study of the impact of Kyouzai Kenkyuu on the quality of teaching found positive changes in teachers' engagement with instructional materials and their use in lesson design.

Kyouzai Kenkyuu is a collaborative, supported process which may help teachers to place new theoretical learning into the context of practice. Provision for this occurs through engagement with research and authoritative guidance, integrating new learning in collaborative planning and preparation for a research lesson, enacting, observing and subsequently discussing and reviewing the lesson. This latter part of the cycle re-connects practice to the new theory encountered in Kyouzai Kenkyuu. This is an important feature of effective CPDL which Korthagen (2017) contends is often neglected. The Kyouzai Kenkyuu process has the potential to help teachers take the developmental step from curriculum delivery to professional curriculum design, securing their understanding of concept and skill development (Twiselton, 2002). Kyouzai Kenkyuu may be an essential characteristic of effective LS which achieves its core purpose of enhancing teacher learning in ways that improve pupil learning and as such it is an important focus of my study (Choy and Lee, 2021). With this in mind, in the next section, I summarise research about the role of facilitation and external expertise in supporting Kyouzai Kenkyuu and consider how they might be reflected in non-Japanese educational contexts.

#### **2.1.4 LS Facilitation and the Koshi or knowledgeable other**

Bentley defines facilitation as:

the provision of opportunities, resources, encouragement and support for the group to succeed in achieving its objectives and to do this through enabling the group to take control and responsibility for the way they proceed.

(2000, p.36)

In my study I was interested in the relationship between LS facilitation and LS leadership practice, how facilitation might support the LS group to experience successful LS and to extend their knowledge of the focus of their inquiry during the cycle. I was also interested in any tensions that might arise between facilitation and LS participant agency, because I had observed occasions where the facilitator risked over-direction and partiality. I wanted to understand how facilitation is enacted and the extent to which it might be external or internal to the LS group. For these reasons, I include here a review of literature relating to the procedural facilitation of LS and to the role of the Koshi in supporting knowledge generation in LS.

Where the role of the facilitator in collaborative professional development groups focuses on how the participants work together, the facilitator remains detached from the outcome of the collaboration, but interested in maintaining the quality of the group's work, helping participants avoid the perils of groupthink and other pitfalls of ineffective collaboration (Perkins, 2003). A skilled facilitator can support the group to manage and mitigate potentially difficult moments arising from affective responses, challenging aspects of the LS process and practical considerations, for example, mistrust or bias, dominance, rivalry, defining the research problem, complexity, time management and efficiency and ultimately promoting productive collaborative learning (Dogan and Adams, 2018; Schuman, 1996). A Koshi, on the other hand, might support the LS team during *Kyouzai Kenkyuu* by introducing and explaining new theory or authoritative guidance, facilitating access to current research, presenting new subject knowledge, or guiding participants in aspects of lesson planning. Allen et al (2019) found some resistance to the contribution of an external specialist, but concluded that they could promote new learning and challenge entrenched views and practice. A LS facilitator may also take on the role of Koshi without compromising teacher agency (Choksi and Fernandez, 2004). However, there are inherent challenges in making wider provision for this kind of external LS support in English primary schools, relating to budget constraints, availability of appropriate specialists, time during the school day

for LS participant engagement with them and more. How leaders navigate those challenges was relevant to my study.

Mynott (2018) found the facilitation of LS to be under-explored in the literature and identified the management of constructive dissonance to be a significant facilitator role in LS group contexts. Perry and Boylan (2018) suggest facilitation of teachers' professional development may be a role particularly suited to teacher leaders and may incorporate inter-related functions such as listening, mediation of expertise, critical friendship, coaching and mentoring, teaching and specialist subject knowledge. Clivaz and Clerc-Georgy identify four over-lapping and inter-linking categories of university-based LS facilitator:

the convenor... the teacher-trainer... the researcher...the  
group member...

(2021, p.86)

I was open to the possibility of finding evidence of these roles inter-connecting and over-lapping in my inquiry. Convenors may be chairing meetings and facilitating professional dialogue and balanced discussion; teacher-trainers may be contributing as Koshi to Kyouzai Kenkyuu, providing CPDL pertinent to the LS research focus. The facilitator as researcher might support the group to adopt an inquiry perspective or observe the LS process as a participant. Ultimately, facilitation embedded within the LS group itself could be more sustainable, but this could depend on the extent of LS experience. This resonates with Somekh's (2006) analysis, suggesting that all roles adopted by teacher action researchers are valuable and individual participants bring differing strengths and therefore conduct different roles.

Lewis and Hurd (2011) discuss the contribution made by facilitation to LS participant engagement with subject specialist expertise, both directly with a Koshi, and/or indirectly through the use of written guidance and research literature. This reflects Fernandez' (2004) suggestion that engagement with external expertise can promote the generation of new pedagogical content knowledge which might inform the LS inquiry. Lim et al's 2011 study surveyed teachers and leaders in Singapore schools to investigate the



conditions that supported the implementation and sustainability of and participation in LS. The findings emphasise the significance of a 'resource person' (p.364) to support *both* the sustainability of the process *and* teachers' access to specialist subject knowledge. This person facilitates the organisation of meetings, arranges for visiting subject specialists to engage with the group, provides feedback on their work and advice about relevant research or pedagogical guidance.

This growing recognition of the importance of LS facilitation resonates across the field of action research and inquiry (Somekh, 2006) and is continued in the work of De Vries and Uffen (2021), who found the role of the school-based facilitator supportive of early LS implementation with inexperienced participants. Fulfilling two purposes – the creation of a psychologically safe space and securing participants' understanding of the LS process - facilitators helped LS teams to adopt and maintain an inquiry stance and to engage in exploratory rather than cumulative talk (Mercer, 2000). They helped to establish psychological safety and relational trust, by agreeing rules of engagement and disciplined collaboration. They coached participants about the LS process, supported them to refine an effective research question and mediated access to relevant literature and guidance for Kyouzai Kenkyuu. De Vries and Uffen (2021) also suggest a key facilitator responsibility is to develop self-reliance in the LS Team, so that with growing experience of the process the team becomes less reliant on the facilitator, more able to absorb the role within the group. Furthermore, Morago and Bauer (2021) found facilitation to contribute to LS effectiveness from a procedural standpoint. They discuss learner-centred LS facilitation, undertaken from a constructivist perspective, in which facilitators avoid providing explicit solutions. They are detached from engagement in the study itself but support participants to maintain a research inquiry stance, share ideas within the safety of the group and reflect on their collective learning.

The significance of these types and aspects of facilitation in supporting early implementation with inexperienced LS participants and sustaining it over time is very relevant to my inquiry. The eleven schools in the study were at different stages in their adoption of LS. Most schools experience varying and

continual rates of teaching staff turnover. It is therefore likely that there will often be teachers and/or leaders and/or administration staff in schools who are unfamiliar with LS and who will require training, support and help to understand LS principles and procedures. I paid particular attention in my study to the influence of facilitation in schools at different stages of their LS implementation journey. I was interested in the purpose and orientation of facilitation, for example whether it related to LS procedures, research roles, the formulation of a pertinent inquiry focus (Somekh, 2006), or the management of group relationships and trust building (De Vries and Uffen, 2021), or engagement with specialist curriculum or pedagogical guidance and/or generation of new knowledge as part of Kyouzai Kenkyuu (Fernandez, 2004; Lewis and Hurd, 2011), or a combination of all of these. I wondered whether support would be provided by the same person, or different people according to context or the needs of the LS participants or whether there would be any facilitation at all.

Maturing models of LS outside Japan increasingly emphasise the importance of Kyouzai Kenkyuu, the support of curriculum specialists *and* skilful facilitation of the LS process. These features echo recent findings about the characteristics of effective continuing professional development and learning (CPDL), namely engagement with research evidence, access to specialist expertise and support from school leadership discussed in section 2.3.5 (Cordingley et al., 2015; Jensen et al., 2016; Opfer and Pedder, 2011a; Porritt et al., 2017; Sims et al., 2021). I move on now to develop a conceptualisation of effective LS.

## **2.2 Conceptualising effective LS**

Because I am interested in the implementation of LS models perceived by leaders to make a positive contribution to the improvement of teaching and pupil learning, I have made a deliberate choice to include the word 'effective' when referring to LS throughout this study. An explanation may therefore help the reader to understand my conceptualisation of 'effective' in this context. Biesta (2020) defines effectiveness as a process value, only meaningful when the aims and purposes of the activity are specified and

clear. Yoshida (2012) suggests effective LS leads to learning for both teachers and pupils and professional learning communities in which participants thrive. I use my literature review to define LS, to conceptualise its primary purposes and to develop a valid theoretical framework to inform an evaluation of leadership practices pertaining to its implementation. In relation to my research questions and study aims, there are two aspects of effectiveness at play. The first pertains to whether the LS promoted and established by leaders is achieving its purposes. The second pertains to whether teacher, school and system leadership practices oriented towards LS succeed in achieving their purposes.

LS may be viewed as a process supporting teacher research and inquiry or as a system of CPDL (Murata, 2021; Stigler and Hiebert, 2016). However, Porritt et al (2017) suggest a distinction between professional learning and professional development and offer LS as a model with the potential to facilitate both. Hiebert and Morris (2012) present a strong argument for concentrating resources on improving teaching, not teachers, in order to improve the quality of education, and suggest that LS may provide a context in which this happens. Yoshida understands:

high-quality and effective lesson study as the practice of lesson study that helps teachers enhance their content knowledge and pedagogical content knowledge to improve instruction in classrooms, develop good “eyes” to see and analyze student learning, and ultimately to produce better student learning.

(2012, p.141)

Hiebert and Stigler (2017) extend this argument, advocating LS as a system for the enculturation of new teachers into the practice of improving teaching. Cheng (2019) argues that LS provides ‘*ba*’ (Nonaka and Konno 1998, p.40) - a space with the potential to nurture conditions for organisational learning which echo the SECI model for knowledge management (Nonaka et al., 1996; Nonaka et al., 2000). I explore the concept of *ba* in relation to professional learning and knowledge-building cultures in the SECI model in Section 2.3.4.

Viewing LS through a complexity lens and as a form of effective CPDL, suggests that a wide range of supports such as school cultures that nurture teacher inquiry, collaborative lesson planning and participation in research-informed professional learning may be essential to sustaining it. Key components may be careful facilitation of collaboration and procedural implementation, including *Kyouzai Kenkyuu*, contributions from Koshi, and the use and co-creation of associated artefacts (Hervas and Medina, 2020). Integrating these aspects within my study's theoretical framework helped me to organise my data collection and analysis in ways likely to illuminate the practices of leaders oriented towards these types of supports (explicated in Chapter 4).

Elliott (2019) conceptualises LS as a pedagogical science and as a methodology for teacher professional development situated in local practice. Lewis (2015) frames it as an example of improvement science in action in education (Bryk et al., 2010; 2015). Iterations of LS since it began to spread further than Japan have reflected characteristics of cyclical teacher action research and inquiry *and* collegial, democratic professional development and learning. These characteristics may contribute to teachers' agency to bridge the knowing/doing gap by building new knowledge and integrating it in their classroom practices (Murata and Kim Eng Lee, 2021). LS is a form of professional development that embodies mechanisms such as collaboration, cooperation and critical reflection, conducive to promoting teacher learning to maximise pupil learning and releasing teachers from isolation so that they can take a leading role in their own professional development (Biesta et al., 2015; Sims et al., 2021). Moreover, it may offer a form of CPDL with the potential to incorporate cognitive, emotional and motivational dimensions of teacher learning (Korthagen, 2017).

Smith (2021) identifies similarities between teacher self-study and LS – both involving identification of a professional problem, an opportunity to study what is known about the problem, plan and implement action, collect and analyse data, evaluate, publish and mobilise new skills and knowledge. All reflect characteristics of teacher inquiry and place LS within an action research paradigm (Brown et al., 2021; McNiff and Whitehead, 2005;

Timperley, 2011; Wake and Seleznyov, 2020). However, Smith (2021, p.225) suggests that, despite clear core principles including *'teamwork, co-planning, collegial observation and critical reflection'*, the wide variety in LS approaches beyond Japan implies that there is no common conception of what LS is. This supports the argument that there is no such thing as authentic Japanese LS; effective LS is defined by its core purpose, to provide a context in which teaching can be improved in ways that enhance pupil learning (Biesta, 2020). This idea provides a particular challenge for me in my study – to allow this ultimate purpose to inform my data collection and analysis, and to avoid the potential for distraction from concerns about instrumental and procedural compliance with the latest accepted definition and procedural steps.

Godfrey et al (2018) adapted Guskey's (2002) model of evaluation of teachers' professional learning to develop a framework for evaluating LS. It reflected a developmental evaluation approach and a complexity lens (Patton, 2011) and used Guskey's (2016, p.32) *'five critical levels of evaluation'* to evaluate the impact of LS on teachers' reactions, their professional learning, the school's CPDL model, the extent to which teachers' could use new knowledge and skills, and pupil learning outcomes (Godfrey et al 2018). This study reveals the role of leaders in promoting the sustainability of LS and suggests integrating evaluation, across all five levels but particularly of pupil learning (level 5) from the outset. Leaders might also use pre- and post-LS cycle pupil assessments specific to the LS inquiry question to sharpen the inquiry focus and optimise impact on its core purpose.

Synthesis of LS research investigating adaptations to LS beyond Japan suggests a number of essential features (Seleznyov, 2018; Takahashi and McDougal, 2016; Wake and Seleznyov, 2020). The research focus should be precisely formulated and aligned to long term goals for teaching and learning improvement. Teachers should use new knowledge derived from an extended period of Kyouzai Kenkyuu to inform their collaborative and detailed LS research lesson planning. A member of the LS team should teach the research lesson while other members observe unobtrusively and

collect data pertaining to pupil learning. The LS team should engage in a post-lesson discussion during which they analyse the data collected during the research lesson. It may or may not be appropriate to engage in subsequent cycles of research which draw on that data analysis. External expertise should be involved – LS or subject specialists, university experts or experienced, expert teachers.

Finally the knowledge generated from the LS cycle should be shared with colleagues within and/or beyond the school in some way. When one or more of these elements is omitted, the integrity of the process may be compromised and its primary aims undermined (Seleznyov, 2018; Takahashi and McDougal, 2016; Wake and Seleznyov, 2020).

Goei et al (2021), in their research into the essential features of LS required to adapt it successfully for remote, digital contexts during the Covid 19 pandemic, identified five big ideas that define LS. These involve teachers' collaboration to improve their lessons, the integration of research and practice, and a focus on student learning and engagement in iterative cycles of inquiry. Many of the features researchers attribute to effective LS also reflect critical elements of effective professional learning communities suggested by Fullan (2016), for example reflective dialogue, de-privatisation of practice and a collective focus on student learning and collaboration. These features also echo characteristics of effective professional learning and development suggested by several research reviews (Cordingley et al., 2015; Desimone, 2009; Jensen et al., 2016; Kennedy, 2016; Opfer and Pedder, 2011a; Sims et al., 2021; Timperley et al., 2007). Incorporating theories of professional learning communities and teachers' professional learning within my conceptual framework would help to illuminate these aspects of leadership practice during data analysis.

### **2.2.1 Summary**

In this section, I have explored a range of literature to conceptualise LS and to understand the factors and features that contribute to its efficacy. I began with its origins in Japan and considered research into adaptations made as it spread across the globe in the last twenty years. If LS efficacy relates to the

extent to which its purpose is fulfilled (Biesta, 2020), then it must be important for leaders and participants to be clear about the purpose they ascribe to it. Literature suggests this is far from straightforward. LS could be a form of professional development, or professional learning, or both. It could also be a form of teachers' action research (Murata, 2021; Porritt et al., 2017; Stigler and Hiebert, 2016; Wake and Seleznyov, 2020). It might serve the purpose of enculturating early career teachers into the profession, or provide a space to nurture improvement science or organisational learning (Hiebert and Stigler, 2017; Cheng, 2019; Lewis, 2015). It might simply be any activity intended to improve lessons (Miyoshi and Komatsu, 2021). It might need to follow certain rules and include strictly defined procedural steps, or reflect big ideas (Goei et al., 2021; Seleznyov, 2018; Takahashi and McDougal, 2016). Anxious to ensure they follow an authentic Japanese model of LS, western adopters may over-complicate or over-simplify their interpretation of LS; they may expect too little of it, or too much. Retaining a clear sense of the purpose they intend it to fulfil, in the contexts in which it is practised, may help leaders to evaluate its efficacy in more meaningful and useful ways.

In the next section, I explore theories of learning, teachers' professional learning and the development of organisational learning cultures, further to conceptualise ways in which the practices of leaders keen to establish LS in their schools might support teachers' CPDL, inquiry, improvements to pedagogical practice, pupil learning and cultural change.

### **2.3 Conceptualisations of Learning**

This section is organised in three parts: learning, professional learning and organisational (school) learning cultures. First, I explore literature relating to individual and social learning from the perspectives of socio-cultural and cognitive science research to understand the ways in which LS might promote teacher learning. Secondly, I consider research findings about teaching quality and teachers' professional learning to understand why LS might support leaders' related aims. In the third section, I consider research into the development of professional learning cultures in education contexts, to contribute to an analysis which might illuminate leaders' practices enacted

with this goal in mind. I conclude by synthesising findings from across these three strands to contribute to my conceptualisation of the conditions required to nurture effective LS and the practices leaders might usefully enact in their pursuit of it. Here, I begin with a discussion of ways in which socio-cultural theories of learning developed by Vygotsky, Bruner and Mercer may explain why teacher engagement in social, professional discourse and inquiry in LS contexts might promote their individual and collective professional learning.

### **2.3.1 Socio-cultural learning theories**

Vygotsky (1978) describes the mediating role of language in social activity which creates human intelligence and thought. Opportunities for learning offered by dialogic LS contexts with external specialist support resonate with Vygotsky's conceptualisation of a zone of proximal development (ZPD), the gap between individual, unsupported learning and the learner's capacity for learning when aided by a more knowledgeable other. Mercer (1995) also identifies talk as key to human thinking and co-creation of new knowledge. He defines an 'inter-mental development zone' (IDZ) (Chapter 6.4), where teachers and learners use a shared communication space in which new learning can emerge. Bruner (1996) emphasises the importance of a learner agency (4.4.3), coupled with personal investment in learning and an understanding of its context and relevance (Takaya, 2008). Combining these perspectives suggests learning may be most effective when learners are supported in their community to participate, collaborate and construct meaning through dialogue and in practice. This resonates with the role of the Koshi or LS facilitator. Teachers' perceptions of their autonomy and control over their learning, the importance they attach to a sense of ownership of the focus of inquiry and the impact of this on their motivation to engage in the LS process may influence their learning. Moreover, these aspects of agency may be significant in the development of a positive learning culture within the LS team and in the wider organisation (Biesta et al., 2015; Priestley et al., 2015).



The collaborative, dialogic processes of LS, with its facility to 'slow down action' (Dudley, 2013, p.109) and promote exploratory talk and collective thinking about pupil learning, may promote sustainable teacher learning (De Vries and Uffen, 2021; Dudley, 2010, 2011; Mercer, 1995). LS provides opportunities for teachers to engage in meaningful talk - in deep, but not simply 'congenial conversations' which may constitute a critical condition for learning in LS contexts (Nelson et al., 2010, p.176). Exploration of teachers' and leaders' perspectives about how leaders facilitate professional dialogue and access to expertise is therefore a fruitful line of inquiry in my study.

Socio-cultural theories of learning contribute to a conceptual framework which could explain learning in LS contexts and inform any analysis and evaluation of the processes supporting LS in schools and networks and the learning outcomes emerging from its practice. In addition, LS facilitates collaborative engagement in the study and development of cultural artefacts such as lesson planning structures and curriculum materials, as well as direct observation of learning and curriculum references in the classroom. All these may mediate teacher learning during the planning, observation and evaluation stages of LS. To understand how LS might promote teachers' individual learning, and learning that might emerge from their social interactions within the LS group, I considered Salomon and Perkins' (1998) research about social and individual learning. I explain the relevance of this research to LS and its leadership in the following section.

### **2.3.2 Individual and social learning**

Salomon and Perkins (1998) contrast the conception of individual learning as acquisition, understood as the reception of knowledge taking place within a learner's mind (Sfard, 1998) with that of social, communal learning as a situated and participatory process. The relationship between critical conditions for learning and social learning systems is relevant to my study (Salomon and Perkins, 1998). Six types of social learning are delineated for the purposes of conceptual clarity which may be reflected in LS contexts and LS leaders' practices.

In *social mediation for individual learning*, a person or team helps an individual to learn, and the facilitating agent and primary learner to form a joint learning system. This is a feature of LS contexts where a less professionally experienced teacher might learn as a result of an interaction with another member of the LS group, or with an external facilitator or Koshi.

In *social mediation by cultural scaffolding*, the learner engages in an intellectual partnership with cultural artefacts or tools. In the Kyouzai Kenkyuu phase of a LS cycle, participants study research literature, curriculum and subject specific guidance relevant to their inquiry.

In a *social entity as a learning system*, learning is situated in practice and involves teams, organisations, cultures and collectives, reflecting LS as a collective endeavour situated in the professional practice space.

In *learning to be a social learner*, learners learn how to learn and how to learn collaboratively. As well as the tacit learning that may arise from group participation, this is reflected in the facilitator's role in helping LS participants to understand metacognitively how their engagement in the LS process may promote their professional learning.

*Social mediation as participatory knowledge construction* is an essential feature of effective LS, when teachers participate in collaborative inquiry to engage with and co-construct new knowledge about pedagogy, subject content and pupil learning. This aspect resonates with the socialisation aspect of the SECI model of knowledge creation (Cheng, 2019; Nonaka et al., 1996) – see section 2.3.4.

In *learning social content* learners build human interaction and group social resources. Issues of power, authority and organisational hierarchy may often present hurdles to true collaboration, but structures such as LS which promote social discourse may contribute to teacher learning and school improvement (Biesta 2020; Hargreaves and Fullan, 2012; Leana and Pil, 2006).

LS has the potential to reflect aspects of these six typologies of social learning, which may be important features of spaces ('*ba*') which nurture

learning cultures and effective professional learning (Cheng, 2019, p.39; Lewis, 2009; Nonaka and Konno, 1998, p.40; Salomon and Perkins, 1998;). I was interested to understand whether leaders' practices may aim to provide conditions to promote opportunities for the types of individual and social learning suggested here. Next, I discuss the role of social interaction and implications for teacher learning in LS contexts.

The collective work intrinsic to LS relies on challenging forms of social interaction to contribute to learning and change (Salomon and Perkins 1998). Well-intentioned collaboration may yield merely pleasant conversation (Nelson et al., 2010) but still promote the social resources of a group, thus strengthening the networks of human relationships. Social support may predict organisational performance and be a key pre-condition for fruitful collaboration related to learning and practice change (Leana and Pil, 2006; Pedder and McIntyre, 2006; Sims et al., 2021). It may also help to build relational trust between teachers, directly influencing their learning, especially in professional learning contexts such as LS which require teachers willingly to expose professional vulnerabilities to colleagues (Tschannen-Moran, 2014). I explore research relating to the connection between trust and cultures of learning in sections 2.3.6 and 2.3.8.

Within social contexts of '*polite, congenial*' discussion (Nelson et al., 2010, p.175), opportunities may be missed to develop teacher knowledge and deliberate, iterative practice in new ways of working (Brown and McIntyre, 1993; Shulman,1987). Social implies sociable, but LS participants may benefit from challenge and the avoidance of '*groupthink*' and the dissonant dead end of negative '*down-spiralling*' – (Perkins, 2003, p.151). The conventions of polite, social interaction and pressures relating to group power dynamics might inhibit genuine debate and productive, professional disagreement. The challenging task of providing reliable support for several teachers to engage in sustained, constructive, dialogic and professional collaboration and the development of artefacts to facilitate learning in a social space, may be a key mechanism for effective professional development (Sims et al., 2021; Wake et al., 2016). This challenge is magnified for system leaders intent on developing LS across networks of schools, making

allowances for different starting points in relation to the effectiveness of social structures, and especially in an education system which is subject to significant and continual change (Hargreaves, 2012a, 2012b; Greany, 2017). A desire to understand the social implications for teachers' professional learning informed my intention to attend to ways in which leaders secure positive professional learning cultures and address issues of group social interaction and support, relational trust and the management of dissonance. LS may provide a professional and social learning context rich in mechanisms which support the systematic development of teacher knowledge (Sims et al., 2021). Next, I consider learning in LS contexts from the theoretical perspective of cognitive science.

### **2.3.3 Perspectives from cognitive science**

Kirschner et al (2006) describe learning as a change in long-term memory. Willingham (2008) suggests that memory may be the residue of thought and that the more something is thought about, the more likely it is to be embedded deeply in professional understanding and practice. Nuthall and Alton-Lee (1993) and Nuthall (2007) suggested learners were more likely to internalise a new concept after the third encounter. However, teaching is a complex craft which requires opportunities for teachers to connect theory to practice and practice to theory, with support to surface the reflections so important to sustained behavioural change (Korthagen, 2017). Changes in cognition do not always translate directly to changes in practice. Opportunities for deliberate practice may promote improvements in teaching (Ellison and Woods, 2016; Macnamara et al., 2014; Marzano, 2010). LS provides iterative opportunities for teachers to learn and retain new subject and pedagogical content knowledge (PCK) (Shulman, 1987; 2013), to understand implications for pedagogy, to discuss new pedagogical ideas and approaches together, to put them into practice in live lesson contexts and to re-visit them following facilitated collaborative evaluation and reflection. It may offer a professional learning context which supports the acquisition and retention of learning, and opportunities to practise implementing changes to ingrained cultural practices in iterative, supportive contexts. These aspects of

learning theory are reflected in Sfard's (1998) metaphors for learning, outlined below.

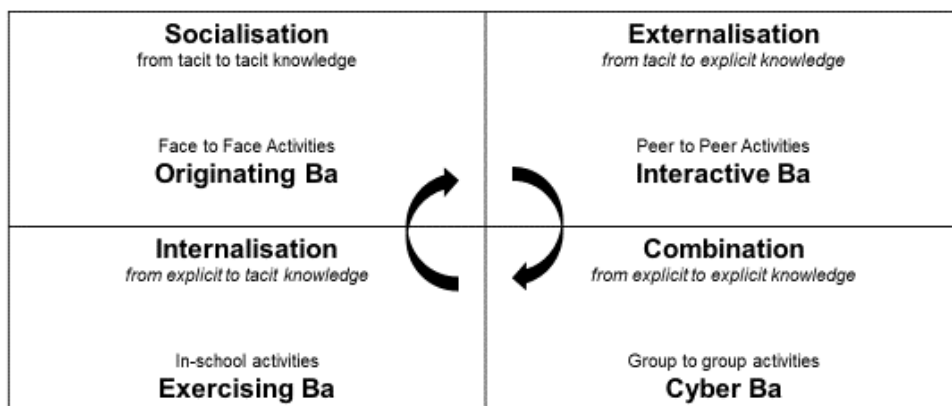
Sfard (1998) presents two metaphors for learning and warns against the dangers of over-reliance on one. The first sees learning as acquisition and the second as participation, each offering something that the other cannot. New knowledge germinates in old knowledge and *'the most powerful research is the one that stands on more than one metaphorical leg'* (p.11). Paavola et al (2004) suggest a third metaphor of knowledge creation. This synthesises Sfard's metaphors, emphasising collective knowledge creation oriented towards shared objectives and foreshadowing Cheng's (2019) contention that LS offers a context supportive of knowledge creation and management.

In collaborative, reflective, socially supportive and participative contexts such as LS, dialogue may promote new knowledge acquisition and the transfer into long term memory (and so into tacit classroom practice) of new subject knowledge or PCK gained in *Kyouzai Kenkyuu*, mediated by a *Koshi* (Kirschner et al., 2006; Willingham, 2008). Leaders may need to secure iterative opportunities in which teachers can engage in productive dialogue and apply new professional learning in classroom situations. Spaces are needed in which LS can nurture all three learning metaphors so that learning can thrive. In the next section, I consider ways in which Nonaka et al's (1996) SECI model offers a theoretical explanation for the organisational creation and management of knowledge, and specifically how Cheng's (2019) research into the implications of this model for LS has relevance for inquiry and analytical themes in my study.

#### **2.3.4 The SECI model of knowledge creation**

Cheng (2019) discusses the potential for LS to provide a space for knowledge management. This reflects the SECI model of knowledge creation, illustrated in Figure 1, which theorises how knowledge might be created and shared through a series of *'ba'* (Nonaka and Konno, 1998, p.40), or shared spaces in which knowledge is constructed and managed (Cheng, 2019; Nonaka et al.,1996). During socialisation (S) in Originating Ba, tacit

knowledge is transferred from person to person. In a LS context this could happen as teachers interact together without explicitly articulating the learning taking place. Externalisation (E) happens in Interactive Ba, when learning is explicitly articulated, for example, when teachers consider the application of research in the context of their lesson plans, or take account of data collected in a research lesson to inform their evaluation of the lesson design's efficacy. Combination (C), in Cyber Ba – an online, digital or virtual environment - involves converting new knowledge into a form supportive of wider organisational learning – for example, in LS reports or written guidance or presentations for staff meetings. Internalisation (I), in Exercising Ba completes the cycle – this is the point at which the new knowledge created becomes so embedded that it becomes part of the learner's repertoire of embedded, tacit knowledge (Cheng, 2019). Cheng (2019) suggests LS directly reflects features of the SECI model. This theory integrates with others synthesised in my theoretical framework and has informed my data collection and analysis, directing my attention to evidence of leaders' practices oriented towards promoting conditions and processes required for knowledge creation and management in LS.



**Figure 1: SECI model of knowledge creation and Japanese concept of Ba**

*(adapted from Nonaka et al., 1996, p.835; Nonaka and Konno, 1998, p.40; Cheng, 2019, p.29)*

Next, I consider literature relating to studies of teaching expertise and teachers' professional learning.

### 2.3.5 Teachers' Professional Learning

This section is in three parts. The first interrogates research literature explaining the importance of teachers' CPDL. Secondly, I consider how teachers' CPDL and inquiry are conceptualised in research literature. I conclude by placing LS within the teachers' professional learning and inquiry research landscape.

The Organisation for Economic Co-operation and Development (OECD) asserts:

Teaching is in fact, the mother of all professions. It is the starting point for successful professionals, engaged citizens and influential leaders. Teachers are also key agents of educational equity and inclusion. To fulfil these roles, teachers need to be learning experts who base their everyday practice on a regularly updated and integrated knowledge base, informed by research and practice.

(Ulferts, 2021, p.9)

Research has established that teaching expertise correlates strongly to school quality and pupil achievement (Rivkin et al 2005). Other studies explore the knowledge, skills, beliefs and attitudes contributing to teachers' success in the classroom, and the conditions that might develop their expertise (Ball et al., 2008; Berliner, 2004; Hanushek and Rivkin, 2006; Hattie, 2003; Rivkin et al., 2005; Shulman, 1987; Ulferts, 2021). It therefore seems sensible to suggest that the development of teacher expertise is central to school effectiveness, where pupil learning and achievement is a core organisational mission (Desimone, 2009; Robinson et al., 2009). I therefore introduce this section by reviewing literature relating to the rationale for prioritising teachers' professional learning throughout their careers and reflecting on the implications for leaders' LS-related practices.

Berliner (2004) discusses the nature of teaching expertise, suggesting exemplary teachers better understand and navigate complexity. He differentiates between competent and expert status, suggesting that the latter may take between five and seven years to achieve, since it requires domain-specific knowledge and expertise, knowledge of students and the

ability to implement organisational routines. There may be implications for teacher education policy including provision for classroom observation, coaching and practice lessons – all of which are offered in LS contexts.

Shulman (1987) introduced the idea of pedagogical content knowledge (PCK) '*...that special amalgam of content and pedagogy that is uniquely the province of teachers...*' (p.8), linking subject content and issues relating to expertise in teaching subject content to students, and distinguishing the subject expert from the teacher of the subject. Ball et al (2008) suggest further research into forms of professional development which enhance teachers' PCK and advocate a teacher preparation curriculum grounded in professional practice, knowledge and skill. Organisations such as the UK's Education Endowment Foundation and Evidence-Based Education, and the USA's What Works Clearinghouse provide accessible, concise and evidence-informed guidance to inform teachers' CPDL (Coe et al., 2019; McCrea, 2018; Sims et al., 2021). If the quality of teaching has a profound impact on pupil learning, then it is reasonable to suggest that a leadership focus on professional learning provision that aims to secure high quality teaching by developing teachers' pedagogical content knowledge is worthwhile and necessary (Rivkin et al., 2005).

Strategies that emphasise enhancing the quality of teaching and student learning rather than the initial qualification and professional entry requirements of teachers may be more fruitful avenues to educational improvement (Hiebert and Morris, 2012; Kennedy, 2016; Lewis et al., 2012; Stigler and Hiebert, 2017). This entails finding and establishing professional development mechanisms and supports (such as LS) that allow teachers, throughout their careers, to continue to learn new ways of teaching the things students need to learn.

A wide range of terms are used to describe teacher learning and development. Teacher learning is referred to with a plethora of acronyms, including Continuing Professional Development and Learning or CPDL (Cordingley et al., 2015), Professional Development or PD (Timperley et al., 2007; Sims et al., 2021), Professional Learning or PL (Timperley, 2011) and



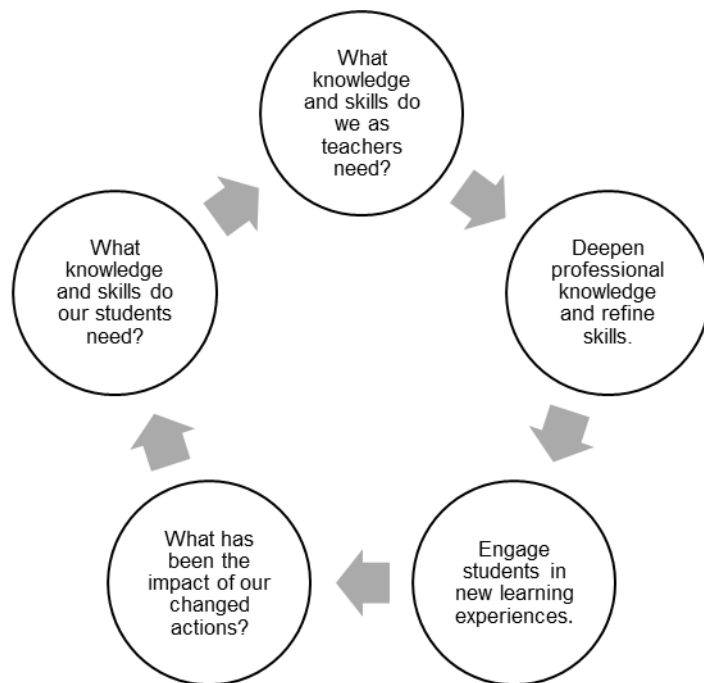
Professional Development and Learning or PDL (Porritt et al., 2017). Porritt et al. (2017) distinguish professional learning from professional development, suggesting that development requires opportunities to embed new learning in practice, and over time. On that basis, LS, offering opportunities to acquire new knowledge in collaboration with colleagues during *Kyouzai Kenkyuu* and to embed that new learning in practice in live lessons with pupils, may combine both professional learning and development. Leaders' practices might aim to make provision for both.

Several researchers have contributed to conceptualisations of effective CPDL (Clarke and Hollingsworth, 2002; Cordingley et al., 2015; Desimone, 2009; Jensen et al., 2016; Kennedy, 2016; Opfer and Pedder, 2011a; 2011b; Pedder and Opfer, 2011; Sims et al., 2021; Stoll et al., 2012; Timperley et al., 2007). Their successive conceptualisations coalesce around a consensus about the characteristic features of effective CPDL, including coherent alignment of inquiry-oriented CPDL with objectives related to the improvement of student learning. In addition, CPDL should encompass professional collaboration; specialist curriculum guidance and subject content; input from credible experts; sufficient resource and time for teachers to participate and engage with research evidence, gather evaluative data about pupil learning and apply new learning strategies in practice-based, social, supportive and sustained contexts.

Authors differ in their positioning of LS in the CPDL landscape. LS can be conceptualised as a teacher action research or practitioner inquiry methodology (Cochran-Smith and Lytle, 1993; McNiff and Whitehead, 2005; Timperley et al., 2007; Townsend, 2010), or as a form of CPDL (Kim, 2021; Stigler and Hiebert, 2016; Sims et al., 2021; Yoshida and Matsuda, 2021) or as a combination of both (Brown et al., 2021). LS may provide a space in which teachers' new knowledge about curriculum, pedagogy and assessment can be made explicit, communicated, practised, managed and mobilised within and across schools and the wider system (Cheng, 2019; Lewis et al., 2004; Nonaka et al., 1996). The learning pathways offered by LS broadly reflecting the Collaborative Lesson Research model (Takahashi and McDougal, 2016) and Seleznyov's (2018) seven steps, may reflect

features characteristic of effective CPDL (Cordingley et al., 2015; Desimone, 2009; Jensen et al., 2016; Kennedy, 2016; Opfer and Pedder, 2011a; Sims et al., 2021), while also incorporating iterative opportunities for observing students (Lewis et al., 2004), making connections between theory and practice (Brown et al., 2021), for teacher inquiry and knowledge building (Timperley et al., 2007; Timperley, 2011), and building teacher motivation and self-efficacy within a professional collegial community (Levine, 2010).

Timperley et al (2007) and Timperley (2011) describe a teacher inquiry and knowledge building cycle which echoes the sequence of a LS cycle described in the introduction to this thesis (1.2). The cycle is illustrated in Figure 2.



**Figure 2: Teacher inquiry and knowledge-building cycle**

*(adapted from Timperley et al., 2009, p.232)*

Engaging in this cycle may develop teachers' critical inquiry mind-sets *and* rely upon them having one. Teachers may be more likely to sustain evidence-informed dialogue in contexts such as LS which reflect not only the features of effective CPDL but may also promote inquiry habits of mind, relationships of respect and challenge and the use of relevant data relating to pupil learning (Guskey, 2000; Timperley, 2011).

Where teachers can access collaborative, inquiry-oriented professional learning opportunities characteristic of effective CPDL, such as LS, this may contribute to school cultures which promote and celebrate professional learning (Weston et al., 2021). Next, I consider theorisations of organisational learning cultures as they relate to education.

### **2.3.6 Learning Cultures**

Here I consider the significance in school contexts of discernible learning cultures which may support teachers' individual and social learning. Walker defines a learning culture as:

‘the synergistic effects generated through the establishment and embedment of a set of interrelated conditions that promote and encourage learning as a way of professional life’

(2010, p.180)

William (2016) suggests that every teacher needs to improve simply because they can, and to facilitate this schools should create a culture of continuous learning and improvement. Establishing this culture requires leaders to provide conditions in which teachers embrace continual individual and collective learning (William, 2016). Schipper et al's (2020) study indicates the potential inherent in LS for promoting positive professional learning cultures in schools, supporting my argument that paying attention to cultural aspects of LS leadership is a worthy focus of my inquiry.

### **2.3.7 Conceptualisations of culture**

Schools, like churches, amount to nothing without their human populations. For this reason, I use an anthropological definition of culture as a way of living and being, influenced by concepts of communication and human interaction and by the tacit assumptions about the world, shared by a group of colleagues and which determine their thinking, behaviour, norms and values (Hodkinson et al., 2007; Schein, 2017). School culture reflects a group consensus about how best to solve problems and is likely to be resistant to change (Schein, 2017; Walker, 2010). Understanding learning

cultures is key to understanding the relationship between how and where people learn (Hodkinson, 2007). The successful leadership of teacher learning and development may require a culture that nurtures and sustains the conditions for effective teachers' professional learning (Fullan, 2015; Louis, 2017; Robinson et al., 2009).

Hodkinson et al. (2007) use Bourdieu's (1985) concept of field as a theoretical metaphor to define a dynamic socio-cultural system in which learning is complex, continuous and changeable. There may be many cultural learning fields in school contexts, over-lapping, interconnecting and influencing one another. These include middle leadership development groups and subject networks, or professional networks of teachers and leaders in small schools who shoulder more than one strategic responsibility. The boundaries between them are porous and imprecise, which can mean that learning cultures are stable and positive for extended periods of time, but subject to unpredictable change, creating disequilibrium at short notice. Learning cultures can facilitate development as members become more experienced and skilled and move from one nested, connected culture to another (Walker, 2010). Learning cultures go through a process of iterative evolution as they influence and are influenced by the learners within them (Hodkinson et al., 2007). The cultural contexts in which teachers work and learn may be influenced by a complex and interconnecting myriad of factors including the actions, attitudes and interactions of teachers and pupils, the place itself, the resources available, the curriculum, the social values and practices of the organisation and of wider society. Teachers bring cultural influences with them; their own cultural scripts for teaching are likely to have been established long before their professional training and to be largely unconscious (Senge, 2006). The norms and values held by school learning cultures are influenced by factors from within the organisation and those outside it, from wider society, local, regional and national cultures and through international, inter-cultural exchange (Hodkinson et al., 2007; Hofstede et al., 2010; Seleznyov et al., 2021). LS may have the potential to influence school culture, while at the same time being influenced by the culture already in place. Originating in Japan and spreading across the globe

over the last three decades, it is unsurprising that its norms and routines have adapted and changed from place to place during that time (Seleznyov, 2018; Seleznyov et al., 2021; Xu and Pedder, 2014).

Schein (2017) defines three levels of culture. The first relates to artefacts, tangible phenomena such as mission statements and policies, and including climate as an indication of culture. The second encompasses espoused beliefs and values of the members of a culture – their ideologies and rationalisations. The third relates to basic underlying, unconscious assumptions. Culture at this level is linked to identity and self-esteem and explains why the idea of culture change can create anxiety. Establishing relational trust and psychological safety may be central to establishing the conditions for a culture that nurtures learning and change and which LS, where it is well-led and implemented, may promote (Walker, 2010). Next, I consider the implications for my study of research pertaining to the importance of trust to the leadership and development of professional learning cultures of improvement.

### **2.3.8 Trust**

Kruse and Louis (2009) identify the presence of professional learning community, organisational learning and trust ('PCOLT', p.9) as core characteristics of school learning cultures. The importance of relational trust is central to conclusions drawn from many studies of effective educational, organisational leadership (Bryk and Schneider, 2002; Lee and Louis, 2019; Robinson, 2010; Tschannen-Moran, 2006). Moreover, lack of social trust may be a central underlying cause of failure in school improvement policy initiatives at national level (Bryk and Schneider, 1996; Fink, 2016).

Cummings and Bromiley define trust as:

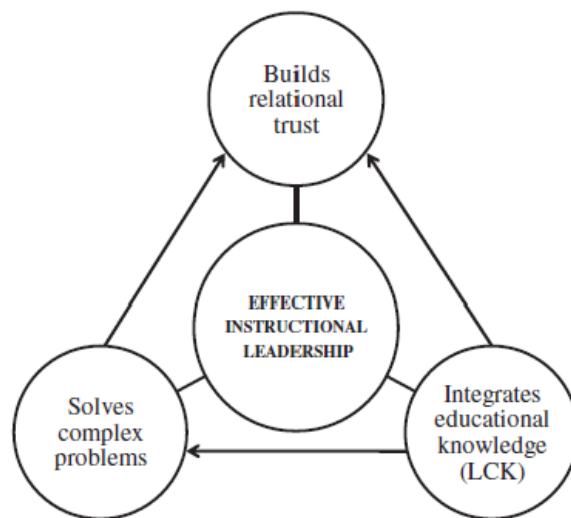
...an individual's belief or a common belief among a group of individuals that another individual or group (a) makes good-faith efforts to behave in accordance with any commitments both explicit or implicit, (b) is honest in whatever negotiations preceded such commitments, and (c) does not take excessive advantage of another even when the opportunity is available.

(1996, p.303)

Leaders have a central role to play in connecting school culture to improvement, building capacity for learning and change by promoting trustful cultures and relationships and developing the school as a learning organisation (Louis, 2017; Louis and Murphy, 2016; Senge, 1990; 2006). School improvement and innovation are unlikely without attention to culture. Establishing cognitive trust in behavioural predictability and professional competence, affective trust in leaders' integrity and genuine care for the wellbeing and success of others may be central to this work (Mayer et al., 1995). It seems likely that trustful relationships between adults underpin positive organisational behaviour and school improvement and that establishing such relationships may require emotionally intelligent leadership. Successful school cultures provide safe places in which to adapt and learn and in which staff reach broad agreement about what constitutes learning, understand individual students' needs and assume collective responsibility for whole school success. In these schools, classroom practice is deprivatised and staff engage in deep, collaborative dialogue about learning (Lee and Louis, 2019; Louis and Murphy, 2017; Tschannen-Moran, 2014). Caring leadership from credible leaders whose actions reflect their rhetoric is central to effective cultural leadership, exemplifying commitment to sustaining continuous learning as the central work of the school. Formal policies and informal social structures codifying the norms and values of a culture may promote predictability and develop trust which embodies benevolence, honesty, openness, reliability and competence (Fullan, 2011). Trust takes root as behaviour becomes predictable (Louis, 2017; Mayer et al., 1995). Robinson's (2010, p.36) model (Figure 3) illustrates how building relational trust, alongside the ability to solve complex problems and use leadership content knowledge (LCK) may be a core capability of effective, learning-centred leadership. The existence of trustful relationships may be an essential condition for productive and collaborative school improvement efforts (Bryk et al., 2004; Leithwood et al., 2019; Lencioni, 2002). Trustworthy, credible leadership, where leaders are willing to share their vulnerability with staff, lies at the heart of productive schools (Munby and

Bretherton, 2022; Tschannen-Moran, 2014). This suggested that I should be alert to evidence of visible vulnerability, trust and credibility being reflected in leaders' full participation in LS.

Robinson's (2010, p.21) model (Figure 3) represents three capabilities of effective instructional leadership and illustrates the interplay between trust, problem-solving and knowledge generation. LS can provide a context which supports all three capabilities.



**Figure 3: Three capabilities for effective instructional leadership**

*(Robinson, 2010, p.36)*

Associating organisational trust with psychological safety, predictability and cultural familiarity, Schein (2017) describes the use of 'cultural islands' (p.109) to nurture trustful organisational cultures. These are psychologically safe contexts which suspend hierarchies and working norms so that new practices can be discussed, tacit assumptions and values explored and learning anxiety mitigated. This concept resonates with the capacity for LS to provide a space in which colleagues collaborate on an equal footing, regardless of seniority and experience, to explore new classroom practices. Moreover, there is evidence in professional learning literature that teacher engagement in professional collaboration may contribute to the efficacy of CPDL and to school learning cultures (Fullan, 2015; Hargreaves and O'Connor, 2016). Conversely, professional learning and sustained practice change may require a positive embedded learning culture founded on collaboration (Fullan, 2015; Hollingsworth et al., 2017). LS may have a role

to play as a space in which this cyclical, reflexive interplay between collaboration, trust-building and positive learning cultures can bear fruit.

Social trust may grow from the professional dialogue taking place in collaborative contexts such as LS (Bryk and Schneider, 1996). Dialogue as purposeful, exploratory talk may be intrinsically linked with collaborative learning (Dudley, 2011; 2013; Mercer, 1995). Both collaboration and dialogue may be more productive when well-structured and facilitated, avoiding the perils of ‘coblaboration’ – or superficial, purpose-less dialogue (Perkins, 2003, p.147) and ‘congeniality’ – pleasant, but unproductive social discourse (Nelson et al., 2010, p.176), both of which may imperil trustful relationships. Trustful, professional collaboration may also promote collective responsibility, a key attribute of school learning cultures (Hargreaves and O’Connor, 2018; Louis, 2017).

School leaders might wonder whether a school needs a trustful, collaborative, learning and inquiry culture before introducing LS, or whether LS could be a useful tool for contributing to the development of such a culture. LS may offer a professional learning context which supports the development of trustful, collaborative cultures for school improvement, a characteristic of effective CPDL identified in pertinent literature and professional CPDL standards (Cordingley et al., 2015; Department of Education, 2016; Fullan and Quinn, 2016; Schipper et al., 2020). Such a culture may also promote teacher engagement, motivation for learning and agency.

I devote a significant section of this review to research relating to trust, because of its centrality in my findings to LS leadership, and to the success of schools’ improvement and change efforts. Trust is a connecting thread between many aspects of leadership practice and all categories of LS support considered in this study. I discuss it in the context of my analysis in Chapter Four (4.3.4) and in Chapter 5 in sections 5.4.1 and 5.4.4. Next, I consider literature relating to teacher agency in the context of school learning cultures.



### 2.3.9 Teacher agency

Emirbayer and Mische (1998) explain that the ambiguous concept of agency (Robb 2010) has its origins in Enlightenment debates about instrumental rationality and human freedom of thought and expression. Debates about teleological versus instrumental conceptions of action, effort and free will, resonating with agency, continued during the twentieth century, but scant attention was paid to temporal influences until Emirbayer and Mische (1998). They argue that agency was conceptualised instrumentally as goal-oriented effort, habitualised and taken for granted. They frame the concept around three temporal dimensions of past – the *iterational* dimension, present – the *practical-evaluative* dimension, and future – the *projective* dimension. Biesta and Tedder (2007) built on this theorisation in their ecological view of agency, countering a lack of conceptual clarity and connecting teacher agency to teacher learning. More recent research also roots agency in a theory of action, sees it as situated and emerging from social relationships and a synthesis of individual effort, resources and context (Priestley et al., 2015; Robb, 2010). Agency is always informed by the past, influenced by the future and enacted in concrete situations in the present (Biesta and Tedder, 2007; Emirbayer and Mische, 1998; Priestley et al., 2015). Biesta and Tedder's (2007) ecological conception of agency recognises that agency is not a capability that teachers have, rather it is something they can achieve. Their achievement of agency is influenced by the interplay between their past experiences and learning - their cultural script or habitus (Bourdieu, 1985), their vision, imagined goals and aspirations for the future and the present context in which they are situated, encompassing their professional and social relationships and ways in which leaders resource and value their work. The extent to which these three dimensions interact and support the achievement of agency influences motivation, engagement and investment in change initiatives at classroom, school and network level (Priestley et al., 2015). Leaders should therefore attend to teachers' current experiences and learning, since they are destined to become integrated within their past experiences. This has implications for leaders who aim to establish organisational supports for the development of agentic capacity, motivation

and engagement in professional learning and improvement endeavours such as LS. In my professional practice and in relation to the theoretical framework for this study, it is this ecological conception of agency which is relevant to teachers' engagement in LS, and which may have implications for the contribution LS could make to their achievement of agency. Professional learning which prioritises capacity building and professional reflection may contribute to equipping teachers with evidence-informed principles, supporting them to act on their own judgement and help them to achieve agency (Priestley et al., 2015). Moreover, teachers who work in schools with positive social relationships such as those that LS can nurture, may achieve higher levels of agency and organisational performance (Leana and Pil, 2006; Priestley et al., 2015). Teacher agency, therefore, may have an important role to play both in teachers' receptive learning in LS, and in the contribution LS might make to the school's wider learning culture.

Agency and autonomy are terms and concepts that are often used interchangeably. However, autonomy may not necessarily be a universally positive influence on school learning cultures. Autonomous teachers risk isolation and may repeat entrenched habits as a result of limited exposure to change influences (Priestley et al., 2015). Agency can also be exercised in opposition to leaders' improvement and change efforts, if teachers hold fast to deeply held values and resist change (Priestley et al., 2012; Priestley et al., 2015). However, the interplay between agency, social interaction and professional learning resonates with notions of teacher leadership (Frost, 2012). Somekh and Zeichner (2009) contend that teachers' engagement in action research promotes agency, suggesting that LS, as a vehicle for CPDL and/or teachers' action research, may offer a productive, collaborative context nurturing teacher agency and building constructive social learning cultures (Leana, 2011; Priestley et al., 2015; Somekh and Zeichner 2009). Teachers exercising agency could identify with and contribute to a community of teacher leaders and learners, influence others towards improving their practice, and contribute, as teacher leaders, to a school learning culture (Katzenmeier and Moller, 2009).

Teacher agency may also be connected to teacher leadership and wider leadership distribution, and to ongoing educational reform (Frost and Durrant, 2010; Harris, 2003; Harris et al 2018). Agentic, distributed teacher leadership also echoes Bryk et al's (2015) suggestion that teacher participation in networked professional communities with a rigorous focus on sustainable improvement through disciplined inquiry and evaluation leads to increased agency, collective efficacy and improvement. LS may offer experiences which promote teachers' self-efficacy and inquiry dispositions that impact positively on their agency (Lewis et al., 2009; Schipper et al., 2020; Xu and Pedder, 2015).

Being alert to expressions of teacher agency in participant responses was an important strand of analysis which I discuss in 4.4.3. Leaders who make provision for the development of teacher agency, in contexts such as LS, may be contributing to the conditions required for organisational learning cultures – explored further in the next section.

### **2.3.10 Creating conditions for learning**

Hodkinson et al (2008) explore individual learning within a conceptual framework constructed around a socio-cultural theory of learning. Their analysis provides interesting possibilities for understanding conditions and contexts conducive to successful learning within collaborative groups such as LS teams. In my analysis of leaders' practices in promoting LS as a mode of teachers' professional learning, I was interested in whether features of social and cultural learning processes and contexts that promote effective individual learning were attended to (Hodkinson et al., 2007). The construction of social learning by individual teachers in a LS team is of particular relevance to my professional challenge. I wanted to explore whether leaders enact practices to develop systems to enhance teacher learning and development in order to impact positively on pupil learning.

Hodkinson (2007) suggests linking *learning through participation* and *learning as acquisition* in a new concept of *learning as becoming* (Sfard 1998). This conceptualisation supports my contention that LS may provide a context which promotes both initial learning of new subject knowledge or

PCK and the opportunity to embed new pedagogies in classroom practice over a series of LS cycles, Teachers might establish ways of resolving specific issues of pedagogy and learning through participation in LS.

Furthermore, if learning is relational (Lave and Wenger, 1991), then the quality of the learning culture developed in a LS team may relate to critical conditions required for social and individual learning in LS contexts. The context and prevailing conditions in which learning takes place may have far-reaching effects on teacher learning and professional growth, since the extent and pace of teacher improvement may correlate to supportive organisational and cultural norms, conditions, structures and practices (Kraft and Papay, 2014).

To understand further the ways in which teachers might influence and be influenced by strong cultures of learning, I move on to explore community theory as it relates to learning cultures and LS.

### **2.3.11 Professional learning communities and cultures**

To understand how theories relating to professional communities might pertain to LS, I begin with Cochran-Smith and Lytle's (1993) and Lave and Wenger's (1991) early work on communities of practice, research and inquiry. This leads on to Stoll and Louis's (2007) research on teachers' professional learning communities (PLCs). Next, I consider Nelson et al (2010)'s work on the role of dialogue in professional inquiry groups and finally, Levine's (2010) theorisation of inquiry communities.

Cochran-Smith and Lytle (1993) list factors influencing teacher-led learning and inquiry in schools which remain relevant thirty years after publication. Issues of time, including the significance for effective CPDL of the duration and quality of the time available to teachers for unhurried discussion, remain highly topical and resonate across national, cultural contexts:

...teachers in the US have little time to engage in professional dialogue; times when teachers do come together are most commonly staff meetings, professional development events and hurried lunch breaks.

(Nelson et al., 2010, p.175)

Legitimate peripheral participation relates to the induction of new learners who need to learn a socially and historically defined competence held by a community of practice and established over time (Lave and Wenger, 1991; Wenger 2000). A LS group in a school may contrast with more conventional contexts for professional learning because a group of learners are encouraged by protocol to come to the process as relative professional equals, all seeking a new and better way of teaching a problematic area of learning, constructing new learning collectively. Lave and Wenger's (1991) theories relating to learning contexts and the idea of 'situatedness' (p.31), promoting learning in communities in the workplace, may explain the importance of teachers developing their understanding of their influence on their pupils' learning in lessons. LS may support the development PLCs in which professional discourse that supports individual and collective learning can thrive (Dudley, 2011, 2013; Stoll and Louis, 2007). Stoll and Louis (2007, p.2) assert 'you will know [a learning community] exists when you can see a group of teachers involved in sharing and critically interrogating their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, growth-promoting way.'

Effective PLCs may promote and sustain teachers' CPDL with the aim of improving pupil learning, because they provide supportive contexts in which teachers can engage fruitfully with evidence-informed practice to expose, create and internalise new knowledge (Cheng, 2019; Godfrey, 2016; 2017; Stoll, 2017). Networked Improvement Communities (NICs) are an extension of PLCs informed by improvement science (Bryk et al., 2015). Moreover, NICs offer a social framework within which to focus participants' attention on specific problems and exploit the potential for disciplined inquiry to find solutions to complex school improvement problems (Russell et al., 2021).

Levine (2010) makes explicit the subtle but significant differences between types of learning community which have particular relevance to LS. In a *Community of Learners*, schools promote learning for adults as well as children. This may contribute to the situative factors essential to the effective and functional working of the LS group; it takes issues of time provision and critical conditions for learning within its scope. The existence of a learning

orientation (Watkins, 2010) in the school as a whole may have a significant impact on the LS group's functionality.

In a *Teacher Professional Community*, shared norms, routines and beliefs affect teachers' work with colleagues. Issues relating to teachers' shared beliefs, values in their professional learning (Pedder et al., 2005) influence consideration of the interaction between differing cultures of learning across the boundaries between schools.

In a *Community of Practice*, people learn from seeing, discussing and engaging in shared practices. This is relevant to LS, particularly in relation to participants' learning how to learn together.

Learners learn together by asking questions in a *Community of Inquiry*. This is a key feature of a LS group. A cycle often starts with a question, 'How can we improve pupils' learning in (or by)..?' Learners are involved in a joint endeavour to construct new knowledge about teaching and learning. Construing LS as a process and a form of CPDL and teacher inquiry, providing for learners to collaborate in a socio-cultural context to ask inquiry questions and co-construct answers seems to lie at the centre of my professional challenge. Godfrey suggests 'the most advanced research-engaged schools have a strong organisational culture of learning; they encourage collaboration, collegiality, risk taking and enable existing practices to be challenged' (2016, p.315).

Levine's clear delineation of these three aspects of learning communities helps to clarify the singular place LS holds in the PLC landscape, providing a community context which promotes learning and inquiry. Where leaders attend to systems intended to promote distributed and collaborative opportunities such as LS, in which teachers can put their new learning into practice, research-engagement and the development of research-informed pedagogies may emerge. Leaders' commitment to promoting LS to enable teachers to learn and implement research-informed classroom practice may represent a practical and tangible contribution to a school culture of continuous improvement (Brown et al., 2020; Cain, 2019; Morris et al., 2020). Godfrey and Brown (2019, p.92) envisage schools as a '*third space*' with the

potential for bridging the research/practice gap between academia and the classroom. Along with other joint practice development models such as teacher research communities, engagement in LS may support teachers to collaborate in ways that promote the development of positive learning cultures and professional learning communities in which they can use theories of action to integrate research and evidence into classroom practice in ways that lead to improvement in teaching and pupil learning (Godfrey and Brown, 2019; Schipper et al., 2020).

### **2.3.12 Summary**

In 2.3, I have brought together research findings which relate to the conditions, cultures, processes and structures leaders may need to establish to promote teacher learning in LS. To further understand the task of LS leaders, I extended the conceptualisation of LS developed in 2.1 and 2.2 to consider LS as a form of teachers' professional learning and inquiry.

I began with socio-cultural theories of learning, which explain how individual and social learning might take place through professional dialogue and inquiry in collaborative LS groups when facilitated and supported by external specialists. I synthesised findings from Salomon and Perkins (1998) research into individual and social learning, with research about individual learning from cognitive science literature and Cheng's (2019) work on LS as a space which might reflect Nonaka et al's (1996) SECI model for organisational knowledge creation and management. I reviewed research about organisational learning cultures to understand LS as a context which might require a positive school learning culture to thrive, but also one which might contribute to school cultures of professional learning and inquiry, providing safe spaces in which teachers can connect theory and new learning to classroom practice. Research about the role of relational trust in school cultures suggested that successful LS might simultaneously require and generate trust, which might be important to LS leadership. My conceptualisation of LS as a form of teachers' professional learning and inquiry was developed from a synthesis of much research into the characteristics, features and mechanisms of effective CPDL and teachers'

action research and inquiry over the last twenty years. This section of my review combines theories of learning, learning cultures and professional learning to contribute to a conceptualisation of LS as a vehicle for teacher learning with the potential to contribute to organisational learning and the development of cultures of professional learning (Schipper et al., 2020). Bringing together research findings from these strands, with evidence from literature about LS itself, explored in 2.1 and 2.2, helps to explain the conditions, cultures, processes and structures leaders may need to establish for LS to succeed, and contributes to a broader conceptualisation of the phenomenon of LS leadership practice.

The nature of my professional challenge requires a deep understanding of the ways in which different aspects of leadership might be reflected in my inquiry, for example through leaders' capabilities, motivations and practices. In the next section of this chapter, I explore theories of leadership with a particular focus on the types of educational leadership which may be significant in LS implementation.

## **2.4 Educational Leadership**

In this section, I consider theories of leadership which contribute to my conceptualisation of the phenomenon of LS leadership practice, synthesised from my literature review and integrated into the theoretical framework used to inform my research design. I structure my synthesis of leadership literature from two standpoints. First, I consider leadership from a competency perspective, exploring research literature about instructional principal leadership and system and teacher leadership typologies. I go on to consider distributed leadership and how leaders might use '*leadership content knowledge*' to configure leadership in and across schools to optimise student learning (Gronn, 2010; Stein and Nelson, 2003, p.1). Secondly, through the lens of practice, I explore research into leaders' actions as they go about '*doing*' leadership in their daily work (Alvesson and Sveningsson, 2003a; 2003b, p.1). These perspectives illuminate manifestations of leadership which may be relevant to LS leadership in individual schools and across a network of schools. I finish the section with an exploration of literature



relating to the leadership of school improvement and change and its relevance to the leadership of teaching and learning improvement in LS contexts.

#### **2.4.1 Leadership from a competency perspective**

The study of leadership through the lens of competency appears to have emerged in the 1970s from managerial research and to have dominated educational leadership research since (Bolden and Gosling, 2006; McClelland, 1973). Continuing research has led to terms emphasising behaviours manifested by individual leaders which characterise successful performance (Bolden and Gosling, 2006), and captured in leadership typologies such as instructional, learning-centred, charismatic, transformational, transactional, distributed, contingent, managerial, authentic, spiritual, servant and moral leadership (Bush, 2010; 2020; Bush, 2019; Bush and Glover, 2014; MacBeath, 2003; Robinson Hickman, 2012). Gronn (2010) suggests that the days of the heroic individual leader began to diminish towards the end of the 20<sup>th</sup> century as realisation dawned that the leadership task is too big for one person. Distributed leadership became the normative, pre-eminent model in education, but this too may be evolving towards one of leadership hybridity and configuration, requiring specialised, domain-specific knowledge to configure a wide variety of leadership tasks and practices collectively focused on maximising student learning. Here, I consider competency-oriented models of instructional, teacher, distributed and system leadership which may coalesce in my practice as a senior system leader endeavouring to establish LS across the network of eleven schools in this study and in the practices of headteachers and other system leaders endeavouring to implement and sustain effective LS in their own schools and across a number of schools.

## 2.4.2 School principal leadership

Leadership is a process of influence leading to the achievement of desired purposes. Successful leaders develop a vision for their schools based on their personal and professional values. They articulate this vision at every opportunity and influence their staff and other stakeholders to share the vision. The philosophy, structures and activities of the school are geared towards the achievement of this shared vision.

(Bush and Glover, 2003, p.5).

Educational leadership literature reflects a consensus that the quality of leadership is central to successful efforts to improve schools in ways that improve pupil learning (Bush, 2010; Bush and Glover, 2014; Leithwood et al., 2019). A moral dimension to educational leadership, enacted across dimensions of influence, values and vision, and requiring communities of committed followers who share a moral imperative is a consistent theme throughout the literature (Bush and Glover, 2014; Fullan, 2003; Sergiovanni, 2007). Sustainable leadership actions are intentionally oriented towards learning and grounded in values linked to moral purpose (Bush and Glover, 2014; Hargreaves and Fink, 2006). Leadership involves embedding learning in headteachers' work, stressing a shared mission to develop pupil learning and articulate core values that hinge on learning and pay public attention to teaching (Knapp et al., 2003). Woods et al (2018) consider the leadership of personalised, effective CPDL to be one of the most significant aspects of successful schools. There is a wealth of literature relating to typologies of educational leadership which focus on leadership competencies (Bush, 2019; Bush and Glover, 2014; Hickman, 2011; MacBeath, 2003). Of these, instructional leadership (or leadership for learning), teacher leadership, distributed and system leadership seem most pertinent to the leadership of LS at school and system level. If improving student learning is the core purpose of leadership (West-Burnham, 2010) then the implementation of LS, expressed through leaders' competencies or practices, may communicate an explicit leadership message across school communities that attention is being paid to the development of teaching that improves learning.

I begin here by considering research relating to leadership competencies which may characterise the types of leadership that succeed in improving student learning.

### **2.4.3 Instructional leadership**

Robinson et al (2009) found that leaders who promoted and participated in teachers' professional learning had the greatest impact on pupil learning outcomes. These findings echoed those from a substantial canon of research literature relating to the efficacy of instructional, learning-centred leadership and an acceptance that school leadership should be oriented towards to central goal of improving student learning by improving the quality of teaching (Bush, 2010; Bush and Glover, 2014; Bush, 2019; Leithwood et al., 2019). This suggests that an instructional model of leadership, focused on pupil learning and research-informed approaches to teachers' professional learning and incorporating the key characteristics of collaboration, inquiry, sustainability over time, situated in practice and evaluative, might be particularly effective (Cordingley et al., 2015; Jensen et al., 2016; Opfer and Pedder, 2011a).

Leadership for Learning (LfL) was the basis of the international Carpe Vitam project (Swaffield and MacBeath, 2009). It appears to share features with learning-centred, principal, moral and transformational leadership and, in particular, instructional leadership (MacBeath and Dempster, 2009). An extension of instructional leadership, LfL represents a continuous focus on learning and attention to conditions favouring learning and shared and accountable leadership (Bush and Glover, 2014). Learning and leadership are conceived as linked activities (Swaffield and MacBeath, 2009). The suggestion that

...connecting leadership and learning will derive greatest value from studies which go beyond the quantitative and venture deeper into the hidden curriculum and the under life of the school...

(Swaffield and MacBeath, 2009, p.37)

has influenced my qualitative research design. Gronn (2010) suggests the complex work of educational leadership is distinguished from other types of leadership because of its intrinsic connection to learning. Domain-specific '*leadership content knowledge*' may be required (Stein and Nelson, 2003, p.1), such as the capacity to solve complex problems, build cognitive and affective relational trust and understand how to configure leadership roles to maximise student learning (Gronn, 2010; Louis, 2017). Leadership practices oriented towards the promotion and sustenance of LS as a form of CPDL may reflect instructional, learning-centred leadership within and across networks of schools and be enacted by leaders at a range of levels, such as teacher, middle and senior school leadership, as well as principal and system leadership. In the next three sections, I consider teacher, system and distributed leadership as connected forms of leadership which involve an extension of leadership influence beyond the individual's sphere. I begin with teacher leadership as an initial tier of leadership development.

#### **2.4.4 Teacher Leadership**

In my system leader role, I am engaged in supporting system-level changes in the professional development culture in our schools that impact significantly on teachers' professional learning, their classroom practice and their pupils' learning. I focus on improving the quality of *teaching*, not *teachers*, or on what teachers *do*, rather than on what and who they *are* (Frost 2012; Hiebert and Morris 2012). LS can provide a mechanism for achieving that aim. Perry and Lewis (2009) suggest that LS also provides a context which might support the distribution of teacher leadership and so sustain LS over time. Lieberman and Miller (2005) argue that teaching is intellectual work which incorporates leadership with the potential to make a positive difference to schools. Teacher leaders:

lead within and beyond the classroom; identify with and contribute to a community of teacher learners and leaders; influence others towards improved educational practice.

(Katzenmeier and Moller, 2009, p.6)

Harris (2003) broadens the definition to encompass leadership enacted by leaders at all levels, links teacher leadership to agency and considers it central to leadership distribution. Harris et al (2018) argue that by participating in structures that support collective action and collaboration, such as LS, teachers are taking the lead in educational reform. Cheng (2019) suggests that LS has potential as a structure and process which supports practical knowledge creation and promotes teacher leadership development, contributing to an emerging theory of innovation alongside culture and knowledge building. By providing the appropriate support, structure and organisational conditions which allow teacher-led innovation to flourish, LS may enable teachers to lead innovation, build professional knowledge, develop their leadership capacity, and influence colleagues and practice in and beyond their schools (Frost, 2012).

I have found little explicit mention in the literature of teacher leadership that relates to collaborative learning developed within and across LS teams or the ways in which teachers exercise their agency and leadership in this context. I referred earlier (2.1.4) to studies which have found the presence of a 'resource person' and/or someone perceived as an insider taking a lead to be useful in sustaining LS (Lim et al., 2011, p.364; Perry and Lewis, 2009). A study such as this one, attending to the leadership practices enacted by teachers in LS contexts, may illuminate their potential for distributing teacher leadership in ways that promote the growth of LS in schools and impact positively on pupil learning outcomes. Indeed, Frost and Durrant's (2010) research suggests teacher leadership is central to school improvement efforts, to which LS may contribute. Teachers' commitment to their schools may be strengthened when leadership is distributed, and reflected in their increasing leadership influence beyond their own classrooms (Hulpia and Devos, 2010). This is relevant to my study because of the contribution LS might make to school learning cultures. Teachers' leadership beyond their classrooms echoes distributed, system-level leadership for learning beyond individual schools and may represent an initial tier in the development of system leadership (Bush and Glover, 2014). The role of system leader as external specialists or Koshi in the promotion, implementation and facilitation

of LS within schools and across a network of schools may represent an extension of teacher leadership and is explored in the following section.

#### **2.4.5 System Leadership**

Although there remain many individual schools that are not part of networks, named systems or groups of schools, collaboration in these contexts may be an essential characteristic of a system leadership framework emphasising the quality of teaching (Greany, 2017; Hopkins, 2007; Hopkins and Higham, 2007). Hargreaves (2003) argued for the development of a lateral transfer system to spread disciplined innovation. He recognised system leadership as a distinctive feature of partnership competence (Hargreaves, 2012b). Fullan (2011, p.3) argues that collaboration and capacity building are '*right drivers*' for change and advocates professional collaboration, unafraid of productive dissonance, which moves beyond congeniality to nurture professional dialogue leading to deep learning (Nelson et al., 2010; Marton and Booth, 1997; Pedder and Opfer, 2012; Vermunt and Endedijk, 2011). Hargreaves and O'Connor (2018) extend the concept of collaboration for system improvement, suggesting established and mature professional collaboration can evolve to become *collaborative professionalism*:

Collaborative professionalism is normative... is about how teachers and other educators transform teaching and learning together to work with all students to develop fulfilling lives of meaning, purpose and success. It is organised in an evidence-informed, not data-driven way, through rigorous planning, deep and sometimes demanding dialogue, candid but constructive feedback and continuous collaborative inquiry.

(Hargreaves and O'Connor, 2018 p.4)

This type of collaboration, embedded at school and system level in contexts such as LS, provides opportunities for leaders and LS participants to lead on pedagogical and school improvement beyond their own classrooms and schools (Hargreaves and O'Connor, 2018).

Instructional leadership (2.4.3) may be influential in improving student outcomes (Robinson et al., 2009). However, there appears to be a gap in the

literature about how system leaders ensure that the knowledge created as a result of instructional leadership and professional learning is shared across and between schools. This is a led process and I hoped that this study would provide insights into the practices of school leaders and system leaders that facilitate this knowledge mobilisation. Such insights are outlined in 4.5.3. Evidence in my data suggests that this complex mix of shared moral purpose, distributed leadership and followership, supported by and promoted in LS contexts, offers some validation of LS as an effective tool for system leaders to occasion the distribution of leadership for learning and the mobilisation of new knowledge across school networks. This finding is highlighted in 5.3.

Although LS is acknowledged as an innovative research-practice model and a system of CPDL which might contribute to system reform (Godfrey and Brown, 2019; Porritt et al., 2017), there appears to be little reference in system leadership literature to ways in which system leaders develop opportunities for collaborative teacher professional learning in contexts such as LS. My research has presented an opportunity to illuminate the practices of system leaders deployed in the new roles of Research or Evidence Leaders and subject Specialist Leaders as a strategy to implement effective LS across the group of schools, contributing to growing numbers of research-engaged schools (Godfrey and Brown, 2019).

LS is a system of professional learning and development with the potential to effect positive change in teaching at school and system level, and involves a complex interplay of distributed teacher, school and system leadership to sustain it within and across schools. This distribution of leadership is the subject of the next section.

#### **2.4.6 Distributed leadership**

Leadership distribution is a feature of both teacher and system leadership. Sustaining effective LS within individual schools and across a network of schools may require leaders to establish research-informed improvement of teaching quality by promoting teacher learning *and* teacher leadership of

learning (Brown et al., 2020; Gorard, 2020; Timperley, 2011). This task is likely to be too large to be undertaken solely by individual leaders and aspects of it are likely to be shared and distributed across leaders at various levels of seniority. Inter-connected, shared leadership, united in common values and aims, may be a pre-condition for effective distributed leadership which focuses on collective rather than individual action (Bush and Glover, 2014; Gronn, 2010; Leithwood et al., 2007). Spillane (2006) suggests that leadership distribution is present throughout organisations, for better or worse. Revisiting the efficacy of distributed leadership, Leithwood et al (2019) conclude that, despite some critical voices, there is clear empirical evidence that 'leadership can have an especially positive influence on school and student outcomes when it is distributed.' (Leithwood et al., 2019, p.9)

Leadership of LS, distributed across individual schools and across a group of schools, may contribute to the development of an eco-system for research-engaged schools by promoting research-informed practice at micro-, meso- and macro- levels of the educational system (Cain, 2019; Godfrey and Handscomb, 2019; Godfrey and Brown 2019). Hargreaves (2012b) defines distributed system leadership, in which school leaders take responsibility for leadership beyond the scope of their own school, as a significant feature of a mature self-improving system. The amplification of leadership influence that may result from the wider distribution of instructional leadership echoes the idea that the more leaders give away influence, the more they may acquire (Leithwood and Mascall, 2008; Swaffield and MacBeath, 2009). This expansion of leadership foundations may contribute to the cultural change required to achieve successful implementation of PLCs, such as LS groups (Dimmock, 2019). LS may have the potential to foster reciprocity, a more organic, distributive symbiosis, and distinguished from delegation (MacBeath, 2005).

Discipline, developed and nurtured through shared purposes, may also be an essential feature of successful organisations with distributed leadership cultures. It involves disciplined people, (no need for hierarchy) disciplined thought, (no need for bureaucracy) and disciplined action (less need for



control) (Collins 2001). The scope of LS to support the development and distribution of leadership, disciplined through shared vision, purposes and contexts of inquiry, might contribute not only to the quality of teacher learning but also to the extent of leadership density in a school (Galdin-O'Shea, 2015; Sergiovanni, 2007). It may not be enough, however, to hope for effective leadership to emerge without intentional action and practice.

Gronn (2010) offers an extension to the concept of leadership distribution to encompass the ideas of leadership hybridity and configuration (p.71). He suggests that binary perspectives too often and unhelpfully pervade the leadership literature; leadership is either individual or distributed, actors are either leaders or followers, whereas in reality, single and shared leadership cohabit. In practice, leadership may be a configuration of hybrid and diverse modalities – embodied in a range of networks and inter-relationships and requiring leaders to have specialised, domain-specific 'leadership content knowledge' (Stein and Nelson, 2003, p.1) to understand how to configure roles and responsibilities to achieve optimum student learning (Gronn, 2010). Designing a study which facilitates observation of leaders' actions, and the collection and analysis of the perspectives of participants with lived experience of those actions, may illuminate ways in which that knowledge may manifest in leaders' day-to-day adaptive practice (Chia, 2004).

Understanding leadership as intentional, configured *and* distributed offered a perspective from which to understand the leadership practices of all research participants in my study, not just those in formal leadership roles (Gronn, 2010; Spillane, 2006).

School principals have opportunities to create and articulate a clear sense of policy and practice direction. Their domain-specific knowledge of classroom practice and teaching quality improvement and how that is networked and spread across and beyond the school, contributes to leadership processes. Headteachers and senior leaders of professional learning can bring a research-informed, strategic approach to this practice development, using their leadership content knowledge effectively to configure leadership roles

and responsibilities to achieve distributed and effectively-configured leadership which facilitates LS implementation (Gronn, 2010). I found little research that relates specifically to this area and therefore paid attention to it in my inquiry, discussed in 5.4.3.

Improvement in the quality of teaching and learning in individual classrooms and across schools is oriented towards effecting systemic change. Next, I consider theories of change and improvement leadership which may be pertinent to the theoretical framework for my study.

#### **2.4.7 Leadership of change and improvement**

I understand two main ways in which the challenge of change leadership may be relevant to LS. First, the initial introduction of LS as a form of CPDL may represent a significant change in a school's approach to professional learning. Secondly, the essence of LS is to effect and sustain pedagogical change in ways that enhance pupil learning and wider school improvement. In this section I review a range of influential theories of change which have influenced the educational change arena and may have relevance to both aspects of the change leadership challenges facing LS leaders. I begin with Lewin (1947), then discuss Kotter (2011; 2012) and Handy (1995), before moving onto Fullan (2001; 2011; 2016; 2018; 2020) and Robinson (2017) to concentrate my focus on education and school change. From there I pivot from change to improvement, considering Bryk et al's (2015) research on improvement science and revisiting Lewis's (2015) discussion of improvement science in the context of LS. Synthesising their findings, I consider ways in which LS might provide professional learning contexts in which leaders can put change and improvement theories into practice. Schein (1996) suggests planning change is better understood as managing learning, that cultures are changed through a positive process of development growth which emphasises learner involvement. He describes how Lewin's (1947) influential three-step model of behavioural change has informed his work on organisational change.

A successful change includes therefore three aspects: unfreezing (if necessary) the present level L1, moving to the new level L2, and freezing group life on the new level. Since any level is determined by a force field, permanency implies that the new force field is made relatively secure against change.

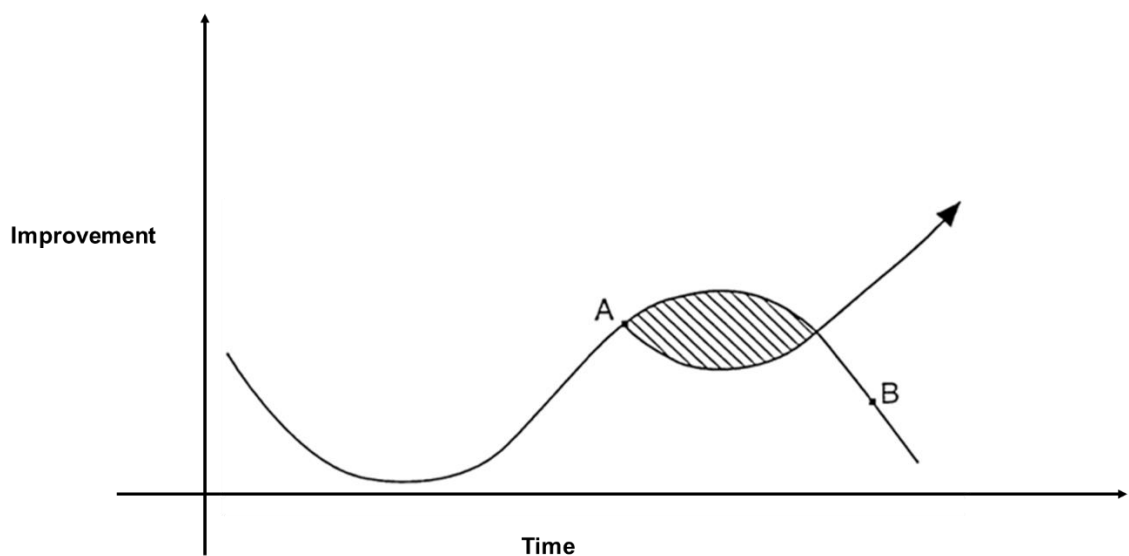
(Lewin, 1947 p.35)

This initial unfreezing phase might be represented in a LS context, as a period of unlearning embedded, tacit behavioural habits and encountering and incorporating new data, ideas and practice change until they become internalised, or re-frozen in newly habitual practice (Burnes, 2020). Schein (1996 p.62) suggests that the primary challenge faced by leaders at the unfreezing or '*motivated to change*' stage is to create sufficient psychological safety to counter learning anxiety – a predictable and defensive response from change participants attempting to maintain equilibrium by resisting disruption. In the initial phases of implementing LS for the first time, leaders may need to commit significant resource to helping participants to unlearn old approaches to professional learning and to understand the rationale for and the processes supporting the new one. Once established, LS leaders enact practices which secure LS as a safe space in which participants can encounter and implement new, research-informed pedagogical content knowledge as part of planned professional learning and in situ practice change. Schein (2017) sees crises (such as adverse school inspections) as particularly pertinent to the creation and transmission of organisational cultures because of the impact they can have on the depth of learning and the motivation to learn and change. He discusses the importance of leaders creating temporary 'cultural islands' (Schein, 2017 p.111) of psychological safety in which members of a culture can suspend hierarchies and come together to generate change. On the island they can leave their pre-existing cultural assumptions behind, and engage in a facilitated dialogue, echoing ancient cultures where decisions were made around a campfire. Differences and new ways of working can be explored, theories of change and rationales for action unpicked and understood. Construing LS as a cultural island where leaders and teachers can collaborate and engage in dialogue about

challenging topics regarding pedagogical improvement and practice change, sees LS contributing to cultural and change leadership,

Kotter's (2011; 2012) twelve-step organisational change model could support leaders planning to introduce LS. Confronting difficult realities about pupil learning outcomes in a school in difficulties, following an adverse inspection result for example, could provide the urgency required to motivate teachers to engage in LS as a new form of CPDL. Leaders might also find the other steps useful scaffolds to inform their implementation plans and manage the process: distributing and configuring LS leadership effectively to build a guiding coalition; creating and over-communicating their vision and rationale for change; empowering participants to engage in practical and motivational ways; planning for short-term evidence of success; building on and consolidating those successes and finally embedding the sustainable implementation of LS into the professional learning culture of the school.

Handy (1995, p.51) uses the sigmoid curve (Figure 4) to illustrate organisational growth and decline, suggesting that proactive, pre-emptive improvement action can start a new growth curve before the previous one begins to decline.



**Figure 4: The Sigmoid Curve**

*(adapted from Handy, 1995, p.51)*

He suggests the best time to intervene to effect change is at point A, when improvement remains on an upward trajectory, capacity for implementing change is strong, outlook is optimistic, and the chances of success are high. Trying to implement change once an organisation has reached point B is likely to be much more challenging; skilled staff have already abandoned ship, morale is low, the risk of failure is high. The leadership of change oriented towards improvement may involve iterative and complex processes of evaluation, analysis and strategic action which are intrinsically connected. Frost (2012) suggests teacher leadership in contexts of CPDL may have potential to contribute both to school improvement through innovation and to system change. Embedding LS as part of a strategic approach to CPDL and pedagogical improvement may represent pre-emptive, sustained intervention at point A on Handy's sigmoid curve, contributing to a culture of continuous learning and improvement that may help to prevent deterioration at Point B. Next, I consider other implications for LS leadership practice of school improvement research.

#### **2.4.8 Leadership of school improvement**

Fullan (2001; 2016) and Fullan and Quinn (2016) argue that to create coherence from the complexity of change, leaders need to understand change leadership and should integrate essential theoretical elements of it into their practice. Fullan (2011, p.11) suggests the 'right drivers' for positive change (improvement) include capacity building, collaboration, pedagogy and systemness.

Systems thinking may be a key characteristic of learning organisations engaged in improvement leadership (Senge, 2006). Authentic school improvement is likely to involve practices that effect positive changes to pupil learning outcomes and educational experiences. Fullan and Quinn (2016) suggest that a coherent approach to school improvement should involve the setting of clear goals, building of collaborative cultures, an emphasis on deepening learning and internal accountability. Setting these goals in LS might be undertaken by teacher participants or leaders, or collectively

between them – chiming with research about teacher, system and distributed leadership discussed in 2.4.4, 2.4.5 and 2.4.6. Where leaders bring these understandings to their implementation strategies, LS may contribute to the coherent leadership of pedagogical change.

If a key aim of teachers' professional learning is to enhance pedagogy and effect change in classroom practice which improves pupil learning, then school leaders who lead and facilitate this process are engaged in the leadership of change, improvement and implementation (Bryk et al., 2015; Fullan, 2016; Robinson, 2017; Seleznyov et al., 2021). These purposes may be enhanced by securing disciplined professional collaboration and inquiry, building capacity, focusing on pedagogy and developing sustainable systems which promote distributed leadership at all levels of the organisation (Bryk et al., 2015; Fullan, 2016). LS may provide an inquiry context and mode of collaboration among teachers that is conducive to their learning and continuing development (Dudley, 2013; Lewis et al., 2006; Lewis et al., 2012; Lim et al., 2011; Porritt et al., 2017). When well-led in ways which incorporate sufficient mechanisms to secure characteristics of effective CPDL, LS may have the potential to build capacity and facilitate teacher engagement with educational research, specialist support, evaluative inquiry and criticality in relation to children's learning and achievement (Fullan, 2016; Greany, 2017; Porritt et al., 2017; Sims et al., 2021; Timperley, 2011; Weston and Clay, 2018). This may improve teachers' classroom practices, pedagogical and subject knowledge. Moreover, LS's potential to nurture professional dialogue, teacher inquiry and agency may promote mutual understanding of individual LS participants' theories of action and the co-construction of positive and sustainable change, or re-freezing, through professional collaboration (Hargreaves and O'Connor, 2018; Lewin, 1947; Robinson, 2017). The aim of all school-based professional learning activity, including LS, is to effect positive changes in the pedagogy and practice of teachers in order to improve the quality of pupil learning. In this context, LS may be a vehicle for school improvement (Lewis, 2015; Stigler and Hiebert, 2016). Securing its integration within organisational professional development, learning and improvement systems could allow leaders to

leverage collaborative cultures to build capacity, support pedagogical development and drive change (Fullan, 2016; 2020). Next, I explore literature which suggests that LS reflects features of improvement science.

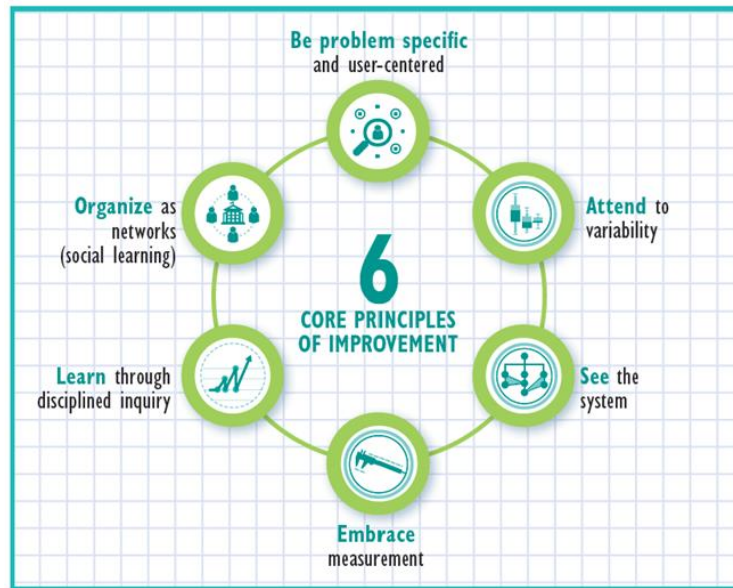
#### 2.4.9 LS as improvement science

If there is one piece of advice we might offer to those wishing to study and improve lesson study it would be to develop more connections to the broader world of quality improvement and improvement science. Lesson study is a good example of improvement science, as noted by Huang, Gong, and Han...[2016] But it seems to us that it could benefit even more from applying the principles of improvement science that have developed across numerous industries, health care, as well as work in education that has developed independently of the lesson study tradition.

(Stigler and Hiebert, 2016 p.578)

Stigler and Hiebert (2016) recognise, like Lewis (2015), that LS may exemplify six core principles used across the broader terrain of improvement science (illustrated in Figure 5) to describe and scaffold the work of Network Improvement Communities (NLCs) (Le Mahieu et al., 2017; Bryk, 2018; Lewis, 2015; Stigler and Hiebert, 2016). Bryk (2018) suggests that a core principle of school improvement science is to ground improvement work in empirical methods, to '*be problem-specific*' (p.2). In LS, teachers can problematize their work in ways specific to their practice, their pupils and their LS inquiry focus. A second principle is to '*attend to variability*' (p.2). In their data analysis as part of inquiry and action research in LS, teachers may pay attention to sources of variability in pupil learning. Reflecting the third principle, '*see the system*' (p.2), LS participants may attend to systems associated with the LS inquiry focus. The fourth principle, '*embrace measurement*' (p.2) is reflected in LS in the evaluation of practice changes participants intend to make at the research lesson planning stage of the LS cycle. Implementation of inquiry protocols in a systematic and disciplined way is an integral part of LS and reflects the fifth principle of improvement science, '*learn through disciplined inquiry*' (p.2). Finally, LS requires professional collaboration, deprivatisation of classroom practice and knowledge sharing within individual LS groups and across networked

communities within and across schools, echoing the sixth principle, ‘*organise as networks (social learning)*’ (Bryk et al., 2015; Bryk, 2018 p.2).



**Figure 5: Six Core Principles of Improvement**

*(Bryk 2018, p.2; original in colour)*

In this study, I frame school improvement as the achievement of successful change in the complex work of schools. A key aim of school improvement work should be to develop the knowledge required to implement well-founded reform ideas and disseminate effective new strategies widely and rapidly in collaborative, networked contexts. In this study’s networked context, improvement is formally construed at policy level as the problem of improving teaching and learning with the aim of improving pupil learning outcomes across the full gamut of the primary curriculum. With careful refinement of a problem specific to the work of LS participants, facilitated by LS facilitators and/or Koshi, this approach reflects characteristics of disciplined inquiry associated with NICs. Leaders and LS participants pose inquiry questions relating precisely to the pedagogical or curriculum improvement they want to achieve. They study guidance and research during Kyouzai Kenkyuu to establish a well-founded theory of action before deciding what change they will trial in a research lesson. Finally, evaluation of the extent to which the change they make represents pedagogical improvement should conclude the LS cycle. In this context, LS may contribute to a



complex 'causal cascade' (Bryk, 2009, p.598; Bryk et al., 2015, p.15), where LS participants work on a very specific problem which is relevant to their classroom practice but which may be a small aspect of a larger improvement priority, identified by leaders with the aim of achieving even broader whole school or system improvement goals over the longer term (Bryk et al., 2015).

Whether leadership is viewed as individual or collective, distributed or configured, transformational, heroic or instructional – the models and theories discussed here view leadership through the lens of competency. However, understanding what one needs to be able to do or to achieve, does not necessarily translate directly into the actions leaders carry out in their routine, day to day work. Important to my thesis is how leaders enact their leadership to secure successful outcomes for pupils and colleagues, not necessarily their competencies. This is also a strong resonance here between the perspective of LS to focus not on the teacher but the teaching – *the doing* - and its impact on pupil learning.

I conclude 2.4 by shifting my perspective on leadership from competency to practice.

#### **2.4.10 Leadership from a practice perspective**

Typologies of leadership discussed so far represent a competency-framed approach to understanding and analysing educational leadership. Weaknesses in the competency-based approach may include genericism and an assumption of consistency and applicability across domains, that those who excel in the same role behave in the same way, and that the behaviours advocated can be learned (Bolden and Gosling, 2006). Lack of a leadership competency does not necessarily equate to poor performance, but leaders may need a metacognitive and theoretical understanding to be intentional about their leadership actions (Bush and Glover, 2014). School leadership is necessary to promote learning and involves building collaborative cultures, capacity and capability (Fullan, 2016; Fullan Quinn, 2016; Swaffield and MacBeath, 2009). Connections may need to be strengthened to show the particular leadership practices that create the conditions which enable teachers to influence student learning in a positive

direction (Robinson et al., 2009; Robinson et al., 2008). There is less research that focuses on leaders' actions and practices – what leaders *do* in their enactment of their leadership values, responsibilities and tasks (Carroll et al., 2008; Denis et al., 2010). A study of the leadership practices enacted to implement effective LS may reveal indirect connections to pupil learning through an emphasis on teacher learning. Leaders who can synthesise and apply features of selected leadership theories such as distribution and configuration, flexibly in their leadership practices at the right time and in appropriate situations, may harness teachers' best efforts and enhance school improvement (Bush and Glover, 2014; Gronn, 2010).

Denis et al (2010) explore educational leadership as a dynamic, situated, collective and dialectical phenomenon and from a praxis perspective, focussing on organisational leaders' sometimes mundane but significant actions and practices as they enact the tacit, everyday practical reality of strategic leadership (Alvesson and Sveningsson, 2003a; Carroll et al., 2008; Chia, 2004; Chia and MacKay, 2007). They argue that, viewed through a dynamic phenomenological lens, even the most micro-level practices may lead recursively to consequences which can be substantive, symbolic or political in nature, and may lead to tangible, structural change, the emergence of new stakeholder understandings or change among the leaders themselves. Practices are embodied in individual actions which lead to events, situations and outcomes, and may be revealed only over the long term, such are the difficulties of linking individual actions to macro-outcomes (Chia and MacKay, 2007). Seen as a collective phenomenon, leadership may be untenable without an aligned coalition (for example between teacher, school and system leaders), coordinating actions, making the most of individual specialisms, sharing out the work and contributing collective resource. As a situated phenomenon, leadership is practically enacted within place and time (Salaman, 2004), with tacit, micro-practices which may be best understood in relation to Bourdieu's (1985) concept of habitus, (the internalised, tacit actions intrinsic to automatic mastery, exhibited in schemata of action or the proficient performance of a task) and from observation of leaders' actions in situ (Chia, 2004). As a dialectic

phenomenon, study of leadership practice may also reveal the interplay between opposing ideas and forces, such as control and resistance, consent and dissent. Praxis, practice and practitioner form three strands of practice theory which span the complex inter-relationships between the micro, '*situated doings of human beings*' (Jarzabkowski et al., 2007 p.7) and macro, socially-normative practices. Strategy-as-practice research illuminates the tacit micro-routines, procedures and situated activities enacted by leaders and managers as they go about their daily, mundane work. Chia and Mackay (2007) argue that while strategy is sometimes planned in advance, more often than not it happens unconsciously and in the moment, requiring skilful, improvised and situated leadership and management 'coping' (Chia and Holt, 2006 p.635). This emergence of strategy from reflexive consideration of my own LS leadership practices and those of teacher, school and system leaders is evident in the ethnographic field notes I recorded as participant researcher and in my narrative writing in my crystallised research design, outlined in Chapter Three.

#### **2.4.11 Summary**

In this section I have synthesised theories of leadership which might help to explain the phenomenon of LS leadership practice rather than competency and contribute to the theoretical framework for my research design. I have considered leadership through the two lenses of competency and practice. From a competency perspective, leaders intent on implementing LS as a form of inquiry-oriented CPDL may require competencies in instructional leadership and an understanding of the importance of connecting leadership to learning. A recognition that the improvement leadership task is too big for one person eschews a binary view of leadership and brings distributed, hybrid and configured models into scope, encompassing teacher leadership beyond teachers' own classrooms and system leadership beyond individual schools and across school networks. LS may promote teacher leadership of pedagogical improvement at grassroots level, and LS may encapsulate essential characteristics of improvement science, supporting the leadership of educational change and contributing to wider school improvement.

Gronn (2010) recommends more ethnographically-framed research into the practice of leadership, mapping practice through longitudinal data-gathering to capture leaders' improvisations, assess their effectiveness and understand better how leadership is configured in schools to promote student learning (Chia, 2004). This focus on practice rather than competency is a central feature of my research. Walker (2010) calls for greater understanding of the connections between research about learning, organisational conditions which promote it and leadership practice. Investigating the phenomenon of LS leadership from a practice perspective allows me to capitalise on opportunities to study the '*situated doings*' of LS leaders in the context of their work (Jarzabkowski et al., 2007, p.7). A qualitative, crystallised research design incorporating ethnographic elements, allowed me to explore over an extended period of time what leaders actually do as they go about their efforts to introduce and sustain implementation of effective LS. This informed my research design and is explained in detail in 3.2.2. Other key ideas examined in this section that have informed my data analysis include being alert to indicators of teacher agency and/or autonomy, to any evidence of the application of principles of improvement science, the leadership of improvement and change and to leadership practices as they might be framed by leadership competencies and typologies.

A research emphasis on leaders' tacit and nuanced micro-practices and how they are understood by research participants through multiple interactions in multiple contexts over an extended period of time requires an appreciation of theories of complexity and an understanding of its influence on my research arena. This emphasis reflects a complexity perspective. I therefore turn now to a brief discussion of complexity science research as it pertains to education and the theoretical framework for this inquiry.

## 2.5 Complexity

Human relationships, played out across interconnected and overlapping social and professional fields of action, are complex and unpredictable. Education, school learning cultures and their leadership are therefore similarly complex and challenging topics for discussion and suitable subjects for consideration from the perspective of complexity science (Davis, 2008). Davis and Sumara (2008) make a case for complexity as an authentic educational theory, unlike theories they see as borrowed from other domains and disciplines. For leaders of LS, questions of culture contribute to challenges they face in navigating a coherent path through a complex maze of conditions, cultures, processes and structures required to achieve sustainable and effective implementation. LS may require the synchronisation of established cultures of systematic teacher inquiry, research-informed CPDL and collaborative lesson planning routines (Hervas and Medina, 2020) . For these reasons in the following section, I include a short review of literature about complexity theory to explain how ideas of complexity have contributed to a theoretical framework for my inquiry (Byrne, 2005).

Byrne (2005) suggests that while some may understand complexity to be more metaphor than theory, it is central to explanations of phenomenological emergence in complex, non-linear environments such as human, social systems. Complexity is an ontological concept – it explains how things are and come to be. Although there are dangers inherent in over-simplification (Byrne 2005), the essence of simple complexity may focus on what new phenomena can emerge from a collection of relatively simple components, simple elements of a system interacting in simple ways may lead to rich variety of realistic outcomes. A generalised interpretation of complexity sees complex systems encompassing extensive and uncontrolled elemental networks and agents, leading to complex, collective actions and outcomes from multiple but still essentially simple individual and different interactions (Johnson, 2007; Mason, 2008; Mitchell, 2009). Human individuals embody complex systems, so the infinite variety of nested and overlapping situations schools present, in which complex individuals interact, may lead to the

complex emergence of an infinite number of possible and unpredictable, collectively-constructed phenomena over the immediate, short, medium and long term and along the temporal continuum in between (Byrne and Callaghan, 2014; Mason, 2008).

Byrne (2005) advocates generalised complexity as a framework for social science research and Mason (2008) explores the relevance of a complexity frame of reference specific to school improvement contexts. Mason (2008; 2009) suggests attention to apparently small, outwardly trivial factors, such as the nuanced minutiae of leaders' tacit daily practices, since these apparently insignificant interactions could contribute to the emergence of something significant later in the chain. He argues that understanding school improvement from a complexity standpoint encourages leaders to approach it from as many different angles and levels as possible and at the same time. Understanding the work of improvement leaders from a complexity perspective in this way resonates with a crystallisation research methodology, allowing exploration and analysis of a range of evidence from multiple perspectives and in multiple ways. On the one hand complexity suggests unpredictability; on the other leaders can use well-founded research and evidence and attention to conditions of emergence (Davis and Sumara, 2006) to mitigate the unpredictability of complex emergence and manipulate it towards more predictable and desirable outcomes. These conditions include:

- '*internal diversity*' (p.138) of the systemic factors – this resonates with the nuanced adaptations that take place in approaches to LS from cycle to cycle, school to school, network to network and culture to culture;
- *internal redundancy* (p.139), allowing new agents to take over as others relinquish activity or fail – exemplified in the impact on LS of staff turnover and the need for iterative training in the process for new participants;
- *neighbour interactions* (p 142) of ideas through dialogue and collaboration – exemplified in LS in its collaborative characteristics, especially when LS groups include teachers from different schools;

- *decentralisation of control* (p.144), through leadership distribution – and in LS contexts demonstrated through teacher, school and system leadership, the role of the Koshi and the LS facilitator;
- *randomness* (p.147) or unexpected disruption – as this pertains to LS in the reality of school life – the arrival of a global pandemic, for example;
- depth of systemic *coherence* (p.147) – for LS, the extent to which procedures are systemised in policy across the school or group of schools;
- systemic control through *negative* and *positive feedback loops* (p.151) – the impact on LS participants motivation and engagement of their perceptions of the success of their LS inquiries;
- *means to preserve information* (p.151) through recording and codification – this resonates in the context of LS in the multiple ways in which LS outcomes are shared;
- *stability under perturbations* (p.151), reproductive instability (p.151) or equilibrium and disequilibrium - a certain amount of which may be a precursor to creativity and innovation (Pascale et al., 2001) – this has been evident in responses to the Covid-19 pandemic (March 2020 - June 2021) as LS leaders and participants developed new, digital and virtual approaches to LS.

The transdisciplinary features of educational practice, and the extent and depth of connectivity, through discourse in professional networks and communities and the scale of the system, may also contribute to complex emergence (Davis and Sumara, 2008; Mason, 2008; 2009).

Cilliers (2005) urges the embrace of complexity's uncertainty, and acceptance that knowledge is unlikely to be complete or unambiguous. He argues that researchers can make testable predictions, but should remain cautious and modest in their claims and open-minded in their expectations. This uncertainty is reflected in the iterative and continuous inquiry aspects of LS – new knowledge is always incomplete, simply a contribution to an iterative process of reflexive knowledge-generation.

Godfrey et al (2018) acknowledged the implications of complexity in their application of Patton's (2011) developmental approach to LS evaluation (2.2). Developmental evaluation, as distinct from formative and summative evaluation, recognises complexity in contexts of innovation and change, such as LS. LS reflects characteristics of a complex system. It takes a non-linear approach to pedagogical improvement. Outcomes are uncertain; they emerge from adaptations arising from self-organising interactions between participants, pupils, leaders and the environment, and feedback from evaluative processes is intrinsically connected and contributes to ongoing changes and adaptations (Patton, 2011).

Bringing a complexity perspective to my conceptual framework provided a helpful lens through which to synthesise the wide range of factors suggested by research literature to influence leaders' practices (Byrne and Callaghan, 2014). Developing a holistic research design, underpinned by a methodology such as crystallisation, which resonated with complexity and developmental evaluation perspectives, illuminated such a synthesis. It also directed attention to influences I exerted as researcher on the field of my inquiry and was a useful methodological direction to pursue (Davis, 2008). On that note, I move on here to weave together the strands and themes of my literature review into one theoretical framework with which to conceptualise LS leadership practice and inform my research design.

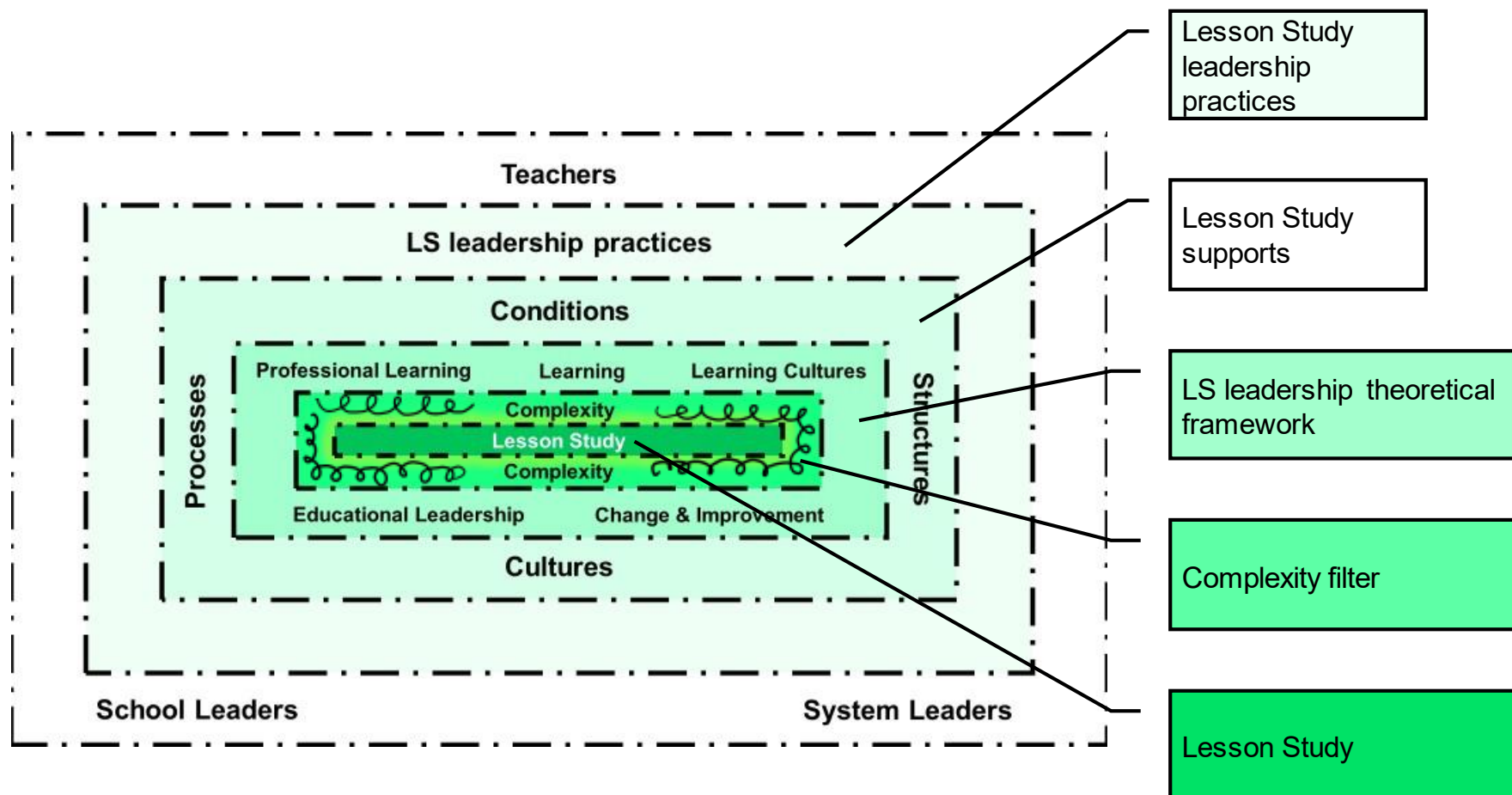
## **2.6 Theoretical framework to research design**

I conclude this chapter by reflecting on how the themes explored in my literature review combine in my inquiry's theoretical framework. I illustrate this in Figure 6. This diagram aims to show how leaders' practices might influence LS supports and, with features suggested in the LS, learning and leadership literature, might combine in complex, interconnected and difficult-to-predict ways, contributing to the complex emergence of effective LS. The concentric rectangles illustrate the nested-ness of research fields: research participants; their practices; the LS supports towards which their practices are directed; the possible and desired outcomes of their practices, namely teachers' professional learning, pedagogical change and improvement,



organisational cultures of learning and leadership and the filter of complexity through which all these influence must pass in order to engender the emergence of successful LS. I have used perforations to illustrate the porous boundaries between these fields, in order to show how interactions, connections and research actors might overlap and interconnect one with another, spanning these boundaries and further contributing to complexity (Williams, 2002). My study aims to illuminate leaders' practices, connecting teachers, school and system leaders to the LS supports they aim to establish.

Figure 6: Theoretical framework for this inquiry



(Leadership practices yet to be defined through data analysis; original in colour)

Facilitating teacher learning that has an impact on pupil learning to bring about authentic school improvement is central to my professional work. Conducting this review of literature for my research study provided an opportunity to develop a theory of action for an inquiry into my professional problem – to understand more about the practices enacted by leaders in their efforts to implement and sustain successful LS. Reflecting principles of development evaluation (Patton, 2011), leaders have adapted the model implemented within and across the schools in this study as a result of a reflexive and interactive research process. Systems for knowledge mobilisation and sharing outcomes in the schools in this study have become more disciplined and refined and continue to develop. School leaders in the schools studied are increasingly aware of the importance of devoting more time at the beginning of a cycle to research engagement and study or *Kyouzai Kenkyuu*. This reflects the iterative and reflexive nature of this inquiry – the study has influenced professional practice, which has influenced the study, and so on. This development and maturation of LS leadership practice and its impact on the enactment of LS is evident in research participants' responses and researcher reflections, outlined in detail in Chapter 4 and discussed in Chapter 5.

In the context of my study, leadership practice may lie in the eyes of the beholder. What seems a rational leadership practice to one participant may be an annoying imposition and barrier to agency and self-efficacy to another. Teacher-leaders may assume perspectives which differ from those in formal leadership roles. Understanding the nature of their interactions in LS contexts may be vital to understanding contingent leadership practices (Bush and Glover, 2014; Gronn, 2010; Spillane et al., 2004). My aim has been to explore the interpretations and construals of school and system leadership practice from the perspective of the leaders and followers at teacher, senior leader and system leader level.

Interactions take place in the relationships between leaders and followers, in formal and informal roles and in planned and unplanned situations. They may differ between participants depending on the subject area or the focus

of the leadership practice. They may be evidenced in the dialogue and in the nuanced, tacit interactions that take place between participants, but it is also feasible that they may not be; people do not always say what they think or do what they say (Scribner et al., 2007). It has been important to distinguish carefully between leaders and followers, since the roles taken by participants, or the roles which participants construe others as taking, may be fluid and inter-changeable according to the direction and intention of the leadership practice, the situation or the group in which it takes place. Understanding this lay behind my decision to choose the Pictor interview technique, which I explain in detail in 3.2.4 and 3.2.5. There may be fine nuances of inter-changeability in this regard which an insider role helped me to observe and interpret (Gronn, 2000; 2008; Spillane, 2006). Moreover, since a distributed perspective does not necessarily favour leadership which exerts a positive influence on outcomes desired by leaders, it would be essential to remain alert to leadership practices which might undermine implementation efforts or LS efficacy, intentionally or not (Hargreaves and Fink, 2006; Harris, 2008).

Practice may be enacted in the context of a range of supports for LS, such as conditions, processes, routines, structures, contexts, events, groups and organisational activities. Viewing LS through a complexity lens may reveal situations emerging from the interactions between leaders and followers which then become new contexts for the enactment of leadership practice (Spillane, 2006). Alternatively, leadership practices may be intentionally directed towards subjects (King and Horrocks, 2010), oriented towards developing pedagogy within a LS research lesson or towards the expansion of LS as a process across a network of schools.

My synthesis of the literature included in this review has helped to conceptualise my research problem and to crystallise my argument that since LS may provide a structure that supports teacher learning within collaborative, professional inquiry communities, it seems feasible that leaders seeking to effect school improvement may find the implementation of LS beneficial to teacher learning and so to pupil learning. Synthesis of research about LS and theories of learning and leadership, led me to

conclude that in order to study how leaders influence the promotion and embedding of LS across my network of primary schools, my research design should acknowledge the complex synthesis of a range of contributory factors and allow me to explore leadership practices related to LS and found in the interactions between people and in the situations in which they interact. To this end, I formulated the following research questions:

*In a network of eleven English primary schools:*

- *how do leaders influence the implementation of effective and sustainable Lesson Study?*
- *what kinds of leadership practices do teachers and leaders perceive to promote organisational conditions, cultures, processes and structures which establish and sustain effective LS within and across schools?*

In the following chapter, I address the research philosophy and methodological rationale underpinning my study. I explain my research design, explain how I addressed ethical considerations and outline my approach to the analysis of a varied dataset which reflects the complexity of the inquiry arena.

### **3 Methodology**

In this chapter, I re-visit my research problem and re-state the purpose of my study. I detail aspects of the methodological literature that have influenced my inquiry and a summary of my research design. Acknowledging the philosophical and theoretical underpinnings of my inquiry, I explain how I arrived at a crystallisation methodology with ethnographic, phenomenological and narrative influences and I discuss the risks and affordances of this approach. I outline how a theoretical perspective influenced by complexity and phenomenology is reflected in my investigation of the phenomenon of LS leadership and how this informed my decision to utilise an approach to semi-structured interviewing known as the Pictor technique, adapted from health research (King and Bravington et al., 2013; King and Horrocks, 2010). I reflect on the impact of changes in my professional role on the scope of the study and outline the phases of my investigation.

I move on to explain how I paid conscientious attention to the ethical issues relevant to my inquiry, carefully considering my role in data collection, specifically my position as a figure of power and authority in my professional role and my collection of data through audio recording of my field-notes and Pictor interviews (King and Horrocks, 2010). I explain the ways in which my research design evolved to embrace aspects of participant observation (Spradley, 1980), phenomenology and narrative research (Cresswell 2009; Clandinin, 2013; Clandinin and Connelly, 2000). I describe the development of my field notes, the reasoning which informed my choice of the Pictor semi-structured interviewing strategy and my decision to adopt crystallisation as an over-arching methodology which reflects the complexity of my researcher role, my research arena and varied dataset (Ellingson, 2009; 2014; Richardson, 2000).

#### **3.1 Inquiry context**

My professional problem lay in finding ways to establish LS as a mode of teacher professional learning, at first in my own school and, over time, across an integrated network of eleven English primary schools. An assumption that informs this research and my leadership practice is that

collaborative, research-informed professional learning and development, such as LS, in classroom contexts, can provide an effective means to improve the quality of classroom practice in ways that enhance learning for both teachers and pupils (Opfer and Pedder, 2011a). LS is characterised by each of these features of professional learning and so there are reasonable grounds for promoting it with a degree of optimism. Although LS is a simple enough idea, its practical adaptation in specific school and classroom contexts raises significant challenges for teachers and leaders, and therefore places considerable demands on their expertise. As discussed in the previous chapter, the practices of leaders involved in the implementation of LS within and across UK primary schools are an important but neglected area of research and are the main focus of my study.

### **3.1.1 Aim of the study and delimitations**

My research aimed to analyse and understand the kinds of practices enacted by leaders at teacher, school and system level as they work to implement LS within and across schools. Leadership practices encompass strategic decisions, actions and behaviours – the ‘*situated doings*’ (Jarzabkowski et al., 2007, p.7) enacted by leaders which, when revealed and made explicit through inquiry, can facilitate understanding of their implications for the success of LS and the perceptions of those they lead (Pring, 2015).

A key element of my research design was an empirical focus and disciplined reflection on my own leadership aspirations, strategies, intentions, actions, decisions, practices, beliefs, dispositions and perspectives alongside those of other teachers and leaders with responsibility for promoting and participating in LS within their own school or across other schools in the network.

My researcher role was intimately entwined with my leadership role and my intentions as a senior organisational and system leader. This professional stance brought an obligation to be transparent about my own inherent biases and the impact that these may have had, not only on my own interpretations, but on the interpretations, actions and interactions of my research participants. My interest and motivation lies in a desire to implement and

sustain effective LS in the schools in this study. It would be important to remain alert and receptive to leadership practices which participants perceive to undermine this intent, as well as those which support it. This study relies on describing and interpreting the ways in which the phenomenon of LS leadership is practised, constructed and construed by actors in the research field, including myself. While I have taken rigorous steps throughout the investigation to ensure its integrity, authenticity and validity, explained in 3.6, it is a qualitative study, founded upon interpretivist assumptions and human idiosyncrasies and interested in the constructions and construals of participants. Its findings may be useful to others interested in LS leadership in similar, UK educational contexts. The inferences I draw in my conclusions may resonate in other similar contexts and suggest commonalities and patterns of practice which may support other leaders interested in this area of leadership. However, since this study is focused on a human, social phenomenon, findings are unlikely to be directly replicable or generalisable in a scientific, positivist sense (Thomas, 2017).

### **3.1.2 Research questions**

*In a network of eleven English primary schools:*

- *how do leaders influence the implementation of effective and sustainable Lesson Study?*
- *what kinds of leadership practices do teachers (including teacher leaders) school and system leaders perceive to promote organisational conditions, cultures, processes and structures which establish and sustain effective LS within and across schools?*

The main influence on the shaping and development of the study were considerations about what kinds of data would best help me to address my questions and what methodological approaches and methods of data collection and analysis would be most helpful in collecting them. A pilot study carried out between December 2014 and July 2015 and my reading of conceptual, methodological and research literature also influenced my research design.



### **3.2 Research design**

My aim has been to develop detailed and richly contextualised understandings of the leadership practices associated with the implementation of LS in a network of eleven primary schools in central England, with particular emphasis on the practices and perspectives of those directly involved. I sought to evaluate how my research participants understood and interpreted the practices and actions of leaders oriented intentionally and unconsciously towards LS leadership which they construed as influential. I wanted to understand which practices and actions LS leaders and participants perceived to be oriented towards leadership goals and likewise how they might have constructed meanings related to leadership which could influence their enactment of and participation in productive LS. I also needed to consider my own position as a serving leader and the importance of attending to my own personal and professional understandings and interpretations of leadership, my beliefs and values and my leadership practices and actions in different contexts of LS promotion.

I worked both as a school leader involved closely and directly in the leadership of and participation in LS with both school leaders and teacher participants. These roles provided an opportunity for me to understand leadership and learning practices from their particular perspectives and contexts of practice, to understand how teachers and leaders construct meanings related to leadership and influence in LS contexts. Reflected here is a set of interpretivist and phenomenological perspectives. Leadership practices reflected in distributed and instructional leadership frameworks are inherently interactive. Paying research attention to the interactions between colleagues which may be affected by the practices of leaders situated both within and outside the group, reflects social constructionist assumptions. In short, my research interest lay in understanding the phenomenon of leadership practice as it pertains to the implementation of LS within individual and across a group of primary schools. An interpretive inquiry with a phenomenological but pragmatic theoretical perspective suggested a research design that would facilitate the collection of a range of qualitative data which may contribute to addressing my research problem (Biesta, 2020;

Bryman, 2012; Cresswell, 2009; Crotty, 1998, Denscombe, 2010; Denzin and Lincoln, 2005; Pring, 2015; Thomas, 2017).

As my inquiry developed, so did my professional and leadership role. This had a significant impact on my role as a researcher in my field of study and the nature of my participation in my research field. I made changes to my research design and data collection methods as a result. I began in 2014 as a researcher completely immersed in direct participation in LS in my own individual school, with some influence as a system leader over the development of LS across a local network. As my leadership role developed, I moved away from direct leadership and complete participation as a substantive headteacher, to senior organisational and system leadership over a number of schools. I was no longer participating directly in LS, but working with school leaders and system leaders to influence the development of LS at system level across our network of eleven primary schools.

This is a research context underpinned by an ontological world view which sees knowledge and meaning as constructed and construed according to human, cultural interpretation. This suggests an inquiry grounded in an interpretivist paradigm and a social constructionist epistemological stance. It incorporates a phenomenological and pragmatic theoretical perspective (Biesta, 2020; Crotty, 1998) and indicates an interpretivist, open-ended and exploratory inquiry, which draws upon multiple data sources, across several contexts and over time (Cresswell, 2009; Crotty, 1998; Pring, 2015; Thomas, 2017; Tracy, 2020). It is a world view compatible with a pragmatic philosophical perspective supporting inter-related qualitative methodologies.

At the beginning of my investigation, I worked ethnographically as a participant observer immersed in the field, participating directly in LS alongside teachers and middle leaders in my own school. This is explained in detail in 3.4. As my inquiry progressed and my own leadership activity became orientated more towards the level of system rather than school, my researcher perspective became increasingly phenomenological, as my focus shifted to the leadership practices, actions, intentions and interactions of school and system leaders. My research design therefore developed in

response to my changing professional role. I needed an open-ended and exploratory design which would enable me to combine multiple sources of qualitative data collected from my professional setting. I also needed to keep a focus on participants' meanings and to include my own interpretation as a participant researcher, while suspending my own pre-conceived, cultural assumptions (Crotty, 1998). By combining a pragmatic, phenomenological theoretical perspective with ethnographic and narrative, autobiographical characteristics, I could make meaning from two key phases of my inquiry with an autobiographical and narrative account of my own story as a leader, practitioner and researcher. A crystallisation methodology (Ellingson, 2009; 2014; Richardson, 2000; Tracy, 2020) would enable me to use my own narrative writing as an analytical and presentational tool with which to weave together strands of evidence from four main qualitative datasets:

- recorded field notes;
- narrative writing generated through ethnographic participant observation;
- Semi-structured, phenomenological and narrative Pictor interviews;
- Meeting notes, documents and artefacts relating to LS leadership practice, collected in the field throughout the inquiry.

What follows is a summary of my research design. I move on now to explain my adoption of a crystallisation methodology, combining ethnographic, phenomenological, autobiographical narrative influences to provide a flexible and open-ended design frame for my research, reflective of a complex research arena.

### **3.2.1 A complexity-thinking perspective**

A review of literature relating to Complexity Theory and its relevance to this study is summarised in 2.5. Viewing my research field through a complexity-thinking lens suggested a methodology which would reveal complex, non-linear interactions influencing LS participants and the nested nature of teacher learning and leadership (Opfer and Pedder, 2011a).

The methodological challenge from a complexity thinking perspective is to sustain a holistic interest in complex systems. Research designs need to illuminate multiple causalities, multiple perspectives, and multiple effects that constitute complex activity within and between complex systems and subsystems from the perspectives of interacting agents.

(Opfer and Pedder, 2011a p396).

There may also be synergies between qualitative research in a complex environment and developmental evaluation which are pertinent to my study. Developmental evaluation acknowledges complexity, and features of complex, dynamic systems and contexts reflected in LS, such as non-linearity, hyper-sensitivity to small changes, emergence from ongoing adaptation, uncertainty, self-organisation and co-construction (Patton, 2011). Understanding LS and my study in this way led me to consider crystallisation as a methodology which would resonate with complexity thinking and a developmental evaluation perspective. Crystallisation would afford reflexive opportunities to incorporate multiple datasets and participant voices which could reveal the situated micro- and macro-practices of leaders at all levels as they undertake to implement and sustain effective LS.

**Table 1: Summary of Research Design**

Summary of Research Design						
Research Aim						
To understand the kinds of leadership practice enacted by leaders at teacher, school and system level as they implement Lesson Study within their own schools and across a network of primary schools in the UK						
Research Questions						
In a network of eleven UK primary schools:						
<ul style="list-style-type: none"> <li>• how do leaders influence the implementation of effective and sustainable Lesson Study?</li> <li>• what kinds of leadership practices do teachers (including teacher leaders) school and system leaders perceive to promote organisational conditions, cultures, processes and structures which establish and sustain effective LS within and across schools?</li> </ul>						
Constructivist Ontological Stance + Interpretivist Paradigm > Qualitative Research Design						
Coe et al, 2021; Cresswell, 2009; Crotty, 1998; Denscombe, 2010; Denzin and Lincoln, 2005; Lincoln and Guba, 1985; Pring, 2015; Thomas, 2017; Tracy, 2020						
Epistemology	Theoretical Perspective	Methodology		Methods	Data Analysis	Research Text (Data Chapter / Discussion)
<b>Social Constructionist</b> Bryman, 2012; Cresswell, 2009; Crotty, 1998; Denscombe, 2010; Pring, 2015; Thomas, 2017; Tracy 2020	<b>Pragmatism</b> Biesta, 2020; Bryman, 2012; Crotty, 1998; Dewey, 1938	<b>Bricolage</b> Denzin and Lincoln, 2005; Kincheloe, 2001; 2005; Lincoln, 2001; Yardley, 2008  <b>Crystallization</b> Coe, 2021; Denzin, 2012; Ellingson, 2009; 2014; Mann and Warr, 2017; Richardson, 2000; Tracy, 2010; 2020	<b>Ethnographical</b> Bryman, 2012; Hammersley and Atkinson, 2007; Cresswell, 2009; Denscombe, 2010; Thomas, 2017; Wolcott, 2010	<b>Participant Observation</b> Denscombe, 2010; Hammersley and Atkinson, 2007; Spradley 1980; Thomas, 2017; Tracy, 2020	<b>Inductive / thematic analysis</b> of fields notes, interview transcripts, documents and artefacts:  Denscombe, 2010; Denzin, 2012; Denzin and Lincoln, 2005; Dey, 1994; Geertz, 1973; Gibson, 2010; Ponterotto, 2006; Saldana, 2016; Thomas, 2017; Rubin and Rubin, 2004	<b>Crystallisation</b> Coe, 2021; Denzin, 2012; Ellingson, 2009; 2014; Mann and Warr, 2017; Richardson, 2000; Tracy, 2010; 2020
	<b>Phenomenology</b> Bryman 2012; Cresswell 2009; Crotty 1998; Pring 2015; Thomas 2017; Tracy 2020		<b>Phenomenological</b> Cresswell, 2009; Crotty, 1998; Denscombe, 2010; King and Horrocks, 2010; Maggs-Rapport, 2000; Thomas, 2017; Tracy, 2020	<b>Semi-Structured, Pictorial Interviews</b> Butt, 2001; 2008; Butt and Parton, 2005; Hargreaves, 1979; Hobson and Townend, 2010; King et al 2013; King and Horrocks, 2010; Ross, 2005; Ross et al., 2005		
	<b>Complexity</b> Davis 2008; Davis, Sumara 2006; 2009; Byrne 2005; Byrne, Callaghan, 2013; Mason, 2008; 2009. Patton, 2011.		<b>Narrative</b> Clandinin, 2013; Clandinin and Connelly, 2000; Cresswell, 2009; Thomas, 2017	<b>Writing</b> Clandinin, 2013; Clandinin and Connelly, 2000; Richardson, 2000; Thody, 2006; Wolcott, 2010;		

Given the centrality of my leadership role in promoting and embedding LS in my own school and across my network, I needed to develop ways of working as close to LS developments as possible, especially with regard to the promotion and gradual embedding and scaling up of LS within and across different schools under my leadership. Teasing out key moments and critical incidents in relation to this endeavour is a key research challenge, requiring a flexible and responsive research design and approach. As my change in role removed me from direct participation in LS and largely involved leadership of LS at system level, I recognised that my research design was increasingly phenomenological, focused on the ways in which I and other people interpret the leadership practices and actions enacted by school and other system leaders. Phenomenology is interested in the ways in which agents construct and interpret social life and create order and in how they share their understandings with others. It acknowledges multiple realities and accepts that human interpretation and subjective construction of meaning can mean that things are understood in different ways by different people at different times and in different circumstances (Bryman, 2012; Denscombe, 2010; Pring, 2015; Thomas, 2017; Tracy, 2020). Since my role entailed leading LS and researching its leadership, and the evolution of my access to data and the changing and varied nature of the data I could collect, I recognised that a crystallisation methodology which could combine my early ethnographic approach, with a phenomenological interviewing strategy and my own narrative writing could enhance the validity of my research by enabling me to present a more rounded perspective of my research field (Ellingson, 2009; 2014; Richardson, 2000). A design for a credible research study developed reflexively which allowed me to explore my research question in contexts of LS at school and system level, while:

- acknowledging transparently my professional stance in the study;
- reflecting on my interpretations of the effects of my own and others' leadership practices and perspectives;
- revealing the constructions, interpretations and construals of my research participants;

- drawing on multiple sources of data to generate a woven crystallised narrative account which might provide some dependable and confirmable information which may be useful to others interested in this field (Lincoln and Guba, 1985).
- illustrating the ways in which reflexivity and developmental evaluation in my dual role of leader and researcher, as it is affected by local and national policy and practice contexts, influence my professional policy and practice and in turn, my inquiry;
- using theory to conceptualise my research problem in a pragmatic way to inform the understandings I construed from my data analysis.

As my researcher role changed alongside the changes in my professional role, I collected four main datasets:

- field notes recorded following observations;
- narrative writing generated from ethnographic participant observation and iterative reflection and analysis;
- artefacts and documents relating to the leadership and implementation of LS throughout my inquiry;
- Pictor interviews undertaken to access the perspectives of research participants. (Examples of Pictor interview charts and interview transcripts are included in the appendices.)

These sources of data provided a multi-layered bricolage from which I could weave together perspectives and inferences to develop crystallised understandings of my research problem (Kincheloe, 2001; 2005; Lincoln, 2001). Each facet of this bricolage emerged as my research context and observational stance developed and changed throughout the study, as I adapted my approach to accommodate the prevailing circumstances.

In the following section, I outline the principles and rationale of a crystallization methodology and explain my decision to adopt this methodological approach in my inquiry.

### 3.2.2 Crystallisation

Crystallisation as a qualitative research methodology was introduced by Richardson (2000) in Denzin and Lincoln (2005). She suggests that in ethnographies that are produced through creative analytical practices, including narrative writing – there are more than three sides from which to approach understanding the world. Rather than attempt to triangulate findings in such inquiries, researchers should instead crystallise. She uses the metaphor of the crystal to illustrate the many perspectives from which to consider research data and suggests that crystallisation can offer ‘*a deepened, complex and thoroughly partial understanding of the topic*’ (Richardson, 2000, p.963).

Ellingson (2009; 2014) expounds crystallisation in detail. She suggests that crystallisation offers a pragmatic and responsive methodology with which to integrate a range of qualitative methods and provides a context for presenting research texts which span a range of genres. It is consistent with a social constructionist epistemology and can be adapted to the objectives of a wide range of practices, methods and views. Crystallisation offers a flexible way for qualitative researchers to explore connections across the continuum of methods from interpretivist, through the social constructionist centre ground to realist and positivist positions, and between systematic analyses and creative genres of representation (Ellingson 2009; 2014). Crystallisation seeks to generate understandings through a deepened and complex interpretation, providing a wide-angled view of a phenomenon and reflecting several contrasting ways of knowing. Crystallised texts can offer thick descriptions (Geertz, 1973; Ponterotto, 2006) and interpretations of meanings about a phenomenon. They can utilise more than one genre of data, (for example, narrative and report) and include reflexive attention to the researcher’s self and their roles in research design, data collection and representation. Crystallisation acknowledges complexity and is compatible with reflexive, developmental evaluation (Patton, 2011), discussed in 2.5. It views knowledge as partial, situated, constructed and intrinsically entwined in power relations and is a methodology with which I could present, analyse, evaluate and respond to my data with an open acknowledgement of my role



as a network authority figure in my inquiry, maintain my researcher integrity and, through reflexivity, see subjectivity as an opportunity for dialogue rather than a threat to validity (Finlay, 2002).

Ellingson (2009) presents two forms of crystallisation – *integrated* and *dendritic*. Integrated crystallisation can be either woven or patched. A woven, integrated crystallised text is one in which small pieces of two or more genres are layered together in a complex mix, whereas in a patched text, larger sections are juxtaposed in series. Dendritic crystallisation results in separate texts. I planned to use my own reflexive, autobiographical narrative inter-woven with data derived from ethnographic participant observation and from phenomenological, narrative Pictor interviews to produce a woven, integrated crystallised research text (presented in Chapter 4).

### **3.2.2.1 Affordances of crystallisation**

Through the integration of different genres and types of data, crystallisation offers a framework to study complex social worlds of participants and stories, showing the same experience from different perspectives and in so doing create ethical and less naïve representations (Neves et al., 2021). It enables researchers to engage with participant narratives across several dimensions while retaining systematic research methods. It allows more freedom to revisit events, practices and construals, and to demonstrate that no one genre offers absolute truth (Ellingson, 2009; Neves et al., 2021). In my case, crystallisation offers a framework for presenting and analysing data from three main datasets collected during an open-ended, exploratory and extended inquiry, while at the same time maintaining my participant researcher voice and telling my story in one coherent text (Denzin, 2012).

### **3.2.2.2 Risks of crystallisation**

Manipulating several research genres requires research skill. Crystallisation can involve abundant data which can create additional complexity for the qualitative researcher already immersed in a complex research arena (Neves et al., 2021). Analysis can be superficial as researchers juggle narrative writing, philosophical criticism and qualitative analyses. (Ellingson, 2009).

This presented challenges for me not envisaged at the outset of my inquiry. I needed to consider carefully how my autobiographical narrative writing might contribute to synthesis of findings from my analyses of all the forms of data I collected. Crystallisation can involve a conflict between depth and breadth - I needed to maintain a tight focus on my topic to retain textual coherence. Finally, crystallisation may lack universal recognition as a viable methodological framework. It would be essential to be well-prepared to address questions of legitimacy of research practices and analytical rigour (Ellingson, 2009).

### **3.2.2.3 Research validation in crystallisation**

Concepts such as credibility or authenticity may be more appropriate and meaningful than validity for demonstrating the plausibility of the interpretations and inferences associated with qualitative research (Coe, 2021). Tracy (2010; 2020, p.268) asserts '*the key is to be truthful with ourselves and our readers*' and suggests '*eight big tents of qualitative quality*', which I revisit in detail specifically in connection with this study in 3.6. Unlike conventional methods of demonstrating research validity such as triangulation, crystallisation offers a broader conceptualisation of research validation, drawing on multiple, rather than just three, perspectives. It recognises that there are only multiple and partial truths, co-constructed by researchers, offering them a methodology through which to celebrate multiple perspectives on a phenomenon across a methodological continuum (Denzin, 2012; Ellingson, 2014; Richardson, 2000; Tracy, 2010; 2020). In my varied and shifting research context, using crystallisation as a methodological frame allowed me to combine ethnographic participant observation, phenomenological, narrative Pictor interviews (charts and transcripts), documents and artefacts and my own leadership story to illuminate understandings and make plausible interpretations about the phenomenon of leadership practice as it pertains to LS in my research context (Coe, 2021). This synthesis is discussed in Chapter 5. Crystallisation resonated with the complexity of my research arena and enabled me to synthesise findings from a varied data bricolage (Kincheloe, 2001; 2005; Yardley, 2008). This included phenomenological semi-structured interviews as well as ethnographic participant observation and

autobiographical narrative writing based on a reflexive account of my own experiences as a research participant.

Next, I outline the three main qualitative methodologies I have combined within an overarching framework of crystallisation. First, I discuss the ethnographic and auto-ethnographic aspects of my research design, both of which were emphasised in the early phase of my inquiry.

### **3.2.3 Ethnographic participant observation**

The epistemological and theoretical foundations of my inquiry in its initial stages suggested that a naturalistic research methodology such as ethnography (Guba and Lincoln, 1982), would allow me to observe, describe and interpret the practices of leaders, including myself, in specific LS contexts intricately associated with the core purpose of my professional work. I could combine direct empirical inquiry with theoretical analysis of the socio-cultural organisation of my school and its professional network (Hammersley and Atkinson, 2007). As an ethnographer, I could immerse myself in my research as a participant and observe leadership while positioned professionally in the field of my inquiry. I could gather data from a range of sources, using participant observation and semi-structured interviews and informal conversations. The categories for interpreting what people say and do would be generated inductively through data analysis. However, as my research study developed, I had to acknowledge and account in my research design for a series of changes in my relationship to my research field and the impact this had on my data collection.

During Phase One of this study, from a practical standpoint, I was involved in:

- observing teachers' engagement in LS in response to my own leadership practices during the course of my day to day LS leadership work;
- reflecting on, evaluating developmentally (Patton, 2011) and recording my reflections on my own leadership practices and their influence on LS in my own school and in partner schools in the network;

- observing, examining and writing about the actions and interactions of other school leaders in response to my leadership practices in relation to LS in their schools;
- acknowledging and accounting for the influence of my professional position of power in relation to my research participants in my own school. I also needed to pay attention to this in relation to my interactions with teachers and leaders in the other school involved in Phase One, but to a more limited extent, since my relationship with them was not one of formal leadership or authority;
- investigating other school leaders' practices relating to LS in their own schools;
- evaluating my and other system leaders' practices as they promoted LS across our network of schools;
- hearing teachers, school and system leaders discuss their experiences of participation in and leadership of LS.

### ***3.2.3.1 Affordances and risks of ethnographic participant observation***

Participant observation from an ethnographic stance supports:

- an iterative and reflexive process of data collection, reflection, evaluation, inquiry and analysis as the observational narrative progresses;
- ethnographic strangeness – taking time to stand aside from the field to reflect on my notes and to consider my observations of both my setting and myself supports useful and detached analysis of my own and others' leadership practices and their effects;
- the generation of thick description as a result of involvement in the field of my inquiry over an extended period of time; this could reveal patterns of practice and effect (Dey, 1993; Geertz, 1973; Rubin and Rubin, 2005)
- an intensive focus on a particular strand of leadership from an insider's perspective;
- opportunities to be explicit about my researcher reflections in the data;
- engagement in dialogue with other informants.

Because of my intense involvement in the research arena and its unequivocal connection with my professional role and priorities, I needed to acknowledge the risks of:

- creeping researcher bias. I wanted, and still want LS to succeed – it would be important to remain receptive and responsive to negative feedback and critical research literature;
- researcher influence, particularly with regard to an imbalance of power, because of my position of authority in relation to all participants in Phase Two, following the change in my professional role at the end of Phase One;
- self-indulgence and self-absorption;
- the effects of such an intense research focus on leadership practice – the act of researching increases the intensity of the reflection on those practices which is likely to affect the practices themselves (Anderson, 2006).

Continuous vigilant acknowledgement of these risks, entailed in conscientious transparency about my role in my field notes and narrative, coupled with attention to the need to bring an ethnographic strangeness to my reflexive account would help to mitigate the risks of an ethnographic methodology. However, to ensure that I formalised my engagement with other informants (Anderson, 2006), I needed a coherent interviewing strategy which would be consistent with this approach and would enable me, genuinely and with integrity, to record, understand and present the authentic perspectives and interpretations of my research participants, minimising as far as possible the potential for me, in my position of power and authority with a well-known position on LS, to influence their responses. I sought an approach to interviewing consistent with maintaining ethnographic strangeness, to balance the intensity of my own perspectives in the research field and to reflect the complexity of LS leadership and participation. This would also provide another data source consistent with a crystallisation methodology. I explain my rationale for this interviewing strategy in the next section.

### 3.2.4 Phenomenological interviewing strategy

My crystallised research design hinged on four main sources of data:

- ethnographic field notes generated from observations and reflections as a participant observer;
- interviews to access the perspectives of research participants;
- documents and artefacts relevant to my inquiry;
- my own iterative and reflexive narrative writing conducted throughout the inquiry.

I wanted to find an interview method which would allow informants independently to reconstruct, recall and reflect on interactions they had had with leaders and other LS participants and on practices that they either experienced or enacted, consciously or otherwise during LS engagement. Interviews should generate accounts of LS leadership which I could synthesise with records of observable facets of LS leadership from my own observations. These stories would contribute to a crystallised account and provide access to perspectives on leadership practices broader than and different to my own. Well-designed interviews could support the development of useful data to address my research questions and, through crystallisation, contribute to the study's validity. Before deciding on a specific approach I explored a range of interview options.

The structure of the interviews would be dictated by the nature of the data I needed to collect to address my research questions, my professional and researcher role and my relationship to my research participants, the theoretical framework of my study and the epistemological and ethical basis of my research design (Biesta, 2020; Bryman, 2012; Denscombe, 2010; King and Horrocks, 2010, Powney and Watts, 1987; Thomas, 2017).

At one end of the spectrum, a structured interview appeared to offer a neat method of data collection (Thomas, 2017). However, it might be too easy to pre-empt responses and the data produced may not be credible. My choice of interview technique should be dictated by issues of fitness for purpose (Gibson, 2010; Hobson and Townend, 2010). My research purpose required

me to explore the perceptions and beliefs of research participants, acknowledging the risks and affordances of my position. For most of my research participants, I was in a position of direct authority, a senior figure with power and influence in this network of schools. Among colleague head teachers, my commitment to LS was well known. In order to protect the integrity of my data, I tried to ensure as far as possible that I was supporting informants to develop authentic accounts of their personal, professional and leadership perspectives as opposed to a set of plausible or espoused theories of practice they might think I wanted to hear. I needed an interview strategy which would allow my informants' complex perspectives to emerge, for them to *inform* me of their perspectives and interpretations of leadership practice in LS contexts rather than respond to questions that I had framed (King and Horrocks, 2010; Powney and Watts, 1987; Tracy, 2020).

Having considered the benefits and drawbacks of respondent and informant interviews, the latter seemed to offer my colleagues the scope to reveal their perspectives unhindered by the pre-determined, potentially restrictive questions of a respondent-style interview approach (Powney and Watts, 1987; Tracy, 2020). However, some structure was needed to generate information relevant to my area of study, and to prevent informants' responses from meandering too far off course. I wanted to create a dynamic within the interview situation which was open to an informant's frame of reference, would allow them to tell their stories unfettered, yet provided clarity about the focus of the interview (Tomlinson, 1989).

I dismissed the possibility of tightly structured, respondent interviews and weighed up the pros and cons of any structure at all. I thought that fully unstructured interviews may simply be unfeasible and of little use to my study given my specific focus of investigation on LS leadership. My dilemma lay in finding an optimal balance between sufficient structure to allow participants to understand what I wanted them to think and talk about, and not constraining scope within the interview for colleagues to tell their full stories on their own terms, in their own words and from their own perspectives. This was important to safeguard the integrity of informants'

accounts. The strategy of hierarchical focussing seemed to offer a way of enjoying the best of both worlds (Tomlinson, 1989; Hobson and Townend, 2010). Hierarchical focussing provides a systematic framework within which to think through the design of a semi-structured interview schedule. The principle underpinning the approach hinges on the interviewer's support for colleagues to articulate their construals with a minimum of framing. However, I was aware that over-preparation of such an agenda in advance of the interviews risked inhibiting researcher reflexivity during the interview itself and may exert too much control over interview direction. Starting with a single question also seemed unlikely to capture data about leadership practice occurring within the interactions between several participants working in a complex, collaborative context. To create a forum for my informant to consider the complex web of interactions between leaders and followers in LS contexts, I needed a technique that would enable me to be very clear about the focus of my interest in the interviews, yet still allow my colleagues freedom to talk about their own experiences, construals and perspectives.

The aim of my research was to illuminate and understand leadership practices enacted in LS contexts. I was keen to understand these practices from my participants' perspectives. Phenomenology pursues an understanding of the research arena from a participant perspective and asks the researcher to suspend or bracket her own interpretations and understandings (Bryman, 2012; Butt, 2008; Crotty, 1998; King and Horrocks, 2010). A flexible, informant-style and phenomenological interview format, to which I may also be able to bring my insight as a participant researcher, seemed to offer scope for me to probe for more detail and further relevant information from my informants and to be consistent with a crystallised, qualitative research design.

I turned my attention to phenomenology to integrate with ethnography and narrative within a crystallised study. Phenomenology pursues an understanding of the research focus from a participant perspective and requires the suspension of the researcher's interpretations and



understandings (Bryman, 2012; Crotty, 1998; Tracy, 2020). It requires close scrutiny of specific phenomena and human perception and experience of it before theorisation (Tracy, 2020). Tracy (2020) emphasises the importance of critical self-reflexivity for researchers using phenomenology. A phenomenological interviewing technique would therefore be compatible with a reflexive, iterative, narrative inquiry.

A phenomenological approach to interviewing could illuminate my research participants' perspectives and, within a crystallised study, help to validate interpretations by revealing hidden dissonance and facilitating authentic dialogue with participants (Maggs-Rapport, 2000). It could provide access to the understandings of the leaders and followers involved in a complex matrix of interactions relating to LS leadership practices. After exploring the strengths and limitations of structured, semi-structured and unstructured interviews, I selected semi-structured Pictor interviews (King et al., 2013; King and Horrocks, 2010). Pictor offered a technique to elicit my participants' perspectives about their own and others' leadership practices in my complex research field. A flexible, phenomenological, informant-style and semi-structured interview format, to which I could contribute my insight as a participant observer, the Pictor technique offered scope for my research participants to narrate their experiences, reflect on complex, collaborative contexts and interactions, and present their perceptions and interpretations. Such an interviewing strategy, generating narrative accounts of LS participation and leadership practices combined with my own narrative, ethnographic observations of LS leadership, helped me to juxtapose and synthesise different ways of knowing through the use of crystallisation (Ellingson, 2009).

Although I was aware that I should try to bracket my own interpretations and prejudices during the interview process, transparency about my perspectives allowed me to probe for additional insights and to prompt my interviewees to communicate further relevant and useful data. My insider knowledge of situations would prove invaluable to analysis of data produced in this way.

However, it was important to guard against any tendency to look only for evidence to support my own subjective assumptions (Tracy, 2020).

Pictor was also compatible with a complexity research lens and a narrative and ethnographic research design. I explain the technique in detail in the next section.

### **3.2.5 Pictor interviews**

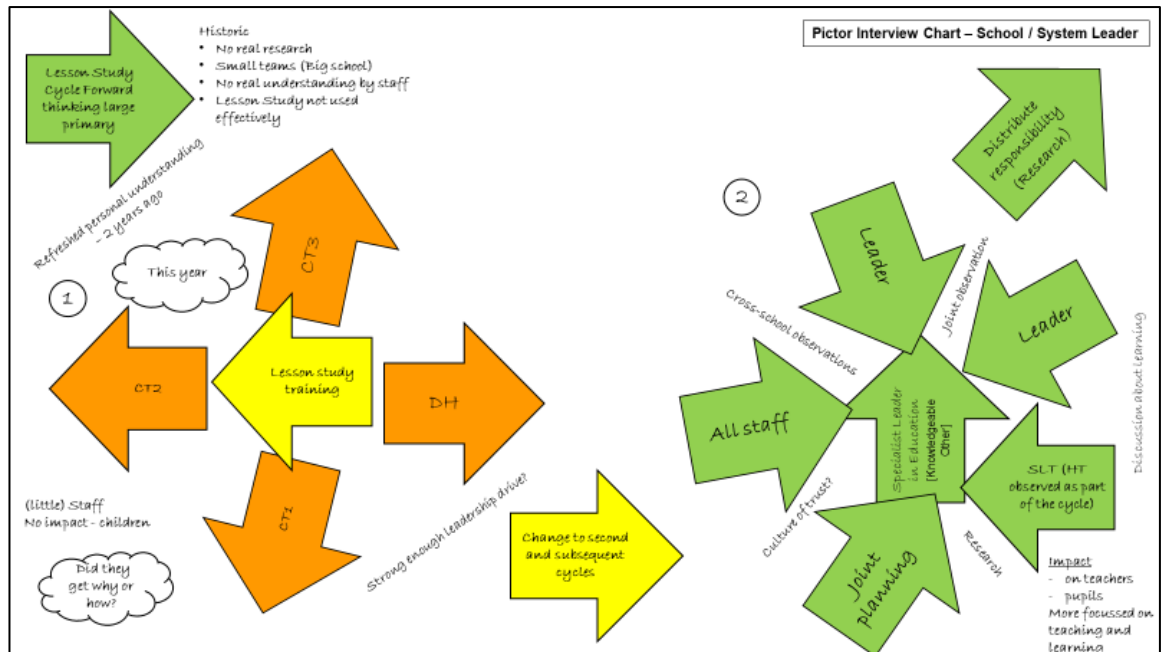
Since much of the research on school leadership may have been dominated by a small number of research instruments, such as questionnaires and interviews, a more descriptive account of leadership practice may emerge from a technique borrowed from another field (Spillane and Healey, 2010). The Pictor technique is one of a range of methods which may facilitate a phenomenological interview approach (Hargreaves, 1979; King and Horrocks, 2010; King et al., 2013; Ross, 2005; Ross et al., 2005).

Pictor has been used in health and social research as a method for exploring informants' experiences of professional collaborative working (King and Horrocks, 2010; King et al., 2013; Ross, 2005; Ross et al., 2005). Originating in Kelly's (1955) Personal Construct Theory, its use was pioneered by Hargreaves (1979) in psychological research investigating inter-personal constructs in social networks (Butt, 2001; 2008; Butt and Parton, 2005; Hargreaves, 1979). Derived from a constructivist viewpoint, Personal Construct Theory suggests that individual human beings make meaning and formulate hypotheses or constructs to explain their world. Construing happens through the person's actions and interactions in and with the world (Butt, 2001; 2008; Butt and Parton, 2005; King and Horrocks, 2010). Compatible with an interpretivist paradigm (Biesta and Burbules, 2003; Bryman, 2012), this visual method is used to create representations of the complex relationships and interactions that take place in a specific and collaborative situation, providing a visual scaffold for the informant to talk about them. This is particularly relevant to LS contexts. Pictor helps the informant reflect on how these relationships and interactions relate to his/her experience (King and Horrocks, 2010; King et al., 2013).

Three key elements of the Pictor technique facilitate a full discussion of a collaborative situation such as a LS cycle or event which may involve the enactment of practices perceived by participants to be oriented towards leadership:

- Pictor is case-specific – the researcher asks informants to think about a specific case, context or situation, maintaining a tight focus to the interview;
- Pictor is inter-relational – the informant is asked to reflect on the relationships involved in the specific context of collaborative working;
- Pictor is complex – the technique facilitates an accessible, visual representation of complex interactions and relationships (King et al., 2013).

Pictor requires the informant to choose a context of collaborative working in which he or she is, or has been involved, for example a LS cycle. The informant is provided with a set of arrow-shaped cards or adhesive notes and asked to arrange them on a large (A3) sheet of paper in a manner that helps them tell the story of their case, with the arrows representing people, organisations or situations involved. The arrows can be positioned in any way that is meaningful to the informant; an arrow pointing away from the situation might infer a negative influence, towards might infer the opposite, for example. The informant then uses the completed chart to narrate their experience, and the interviewer uses it to probe the informant on his or her experiences during the ensuing in-depth discussion (King et al., 2013; King and Horrocks, 2010). Figure 7 shows an example of a Pictor chart, transcribed to protect participant confidentiality. Examples of Pictor charts completed by a system leader, a school leader, a teacher leader and a teacher participant are shown in Appendices 1 - 4. An example of a Pictor interview transcript is included in Appendix 5.



**Figure 7: An example of a Pictor interview chart**

*(Original in colour; size A3; identifiers removed)*

My pilot study in 2015 provided me with an opportunity to trial the integration of this phenomenological approach to interviewing within an ethnographic methodology. It allowed participants to narrate their experiences and generated useful data to synthesise with my field notes, researcher narrative, documents and artefacts. This synthesis facilitated engagement with crystallisation as a method of analysis and presentation and to evidence the trustworthiness and validity of my inquiry that avoided the formality of triangulation (Ellingson, 2009; Tracy, 2010; 2020).

I move on now to outline my rationale for including narrative inquiry in my crystallised research design.

### 3.2.6 Narrative Inquiry

One of the advantages of employing crystallisation was its potential for achieving a holistic and complex account of the central phenomenon under investigation. In the case of my inquiry, the phenomenon was leadership practice as it pertains to LS implementation in individual primary schools and across a network of schools. To contribute to a crystallised picture emerging from the perspectives of my participants via observational field notes and Pictor interviews, I could add my own perspectives from the autobiographical

narrative derived from my reflective journal, my field notes, and my continuous and iterative writing and re-drafting throughout an extended period of data collection, analysis and thesis development.

Cresswell (2009) suggests that narrative inquiry is one of the five main qualitative research methods, alongside ethnography, phenomenology, grounded theory and case study. It involves developing a cohesive story from a range of qualitative data such as interview transcripts, documents and field notes. In narrative research the researcher studies the lives of individuals and invites participants to tell their stories to determine how they have experienced the phenomenon at the centre of the inquiry. The researcher then re-stories the information into a narrative chronology. This was reflected in aspects of my research design as my participants told their stories and experiences of leadership in LS contexts through the Pictor interviewing technique and I reflected on those stories in my own narrative reflections; examples of both are shared throughout Chapter 4.

Clandinin (2013) distinguishes narrative inquiry from narrative research and narrative analysis. Narrative inquiry is defined as deriving from a Dewey-inspired, pragmatic epistemology and representing collaboration over time between the researcher and participants with the aim of understanding experience. The researcher enters the research field to explore the stories participants live and tell, to live and tell research stories with the participants, going on to re-live and re-tell those stories in the research text. The resulting collaborative narrative text combines the views of the participants with those of the researcher (Clandinin and Connelly, 2000). Narrative analysis, as distinct from narrative research and inquiry, uses a narrative genre of writing both to develop analyses and to develop a research text which weaves together the analysis of a range of qualitative data (Clandinin, 2013).

As part of a crystallised research methodology, I utilised all three facets of narrative research as defined here. To present my research findings in Chapter Five, I used my own autobiographical narrative to weave together analyses of interview charts and transcripts, field notes, documents and

artefacts to synthesise a woven, integrated and crystallised story of LS leadership experienced and enacted by teachers, school and system leaders over the course of my inquiry (Denzin, 2012; Ellingson, 2009; 2014; Tracy, 2010; 2020).

I move on now to explain how I have secured the ethical foundations of my study.

### **3.3 Ethics**

In this section I begin by explaining how I have taken serious account of the ethical issues relating to my study. Linked to that, I discuss the significance of my professional role in the collection of my data and how I address issues of imbalance in power and authority between my research participants and me. I detail the phases of data collection during participant observation and recount how my field notes developed during this phase. I explain how I incorporated ethical considerations into my interviewing strategy and in the presentation of my research text.

While there is no risk of physical harm to any of the participants through participation in my study, I considered seriously the risks to teacher participants and to myself as a result of my research.

#### **3.3.1 Foreseeable risks**

- Honest observations made from the standpoint of someone committed to the development of LS could infer criticism of participants' actions and/or interactions.
- Identification of participants perceived to be the subject of inferred criticism could potentially harm their standing in the professional community.
- By drawing attention to differences of approach in schools in my network there is a risk of potential harm to relationships within the network community.
- My stance as a keen advocate for LS was understood by research participants. Observing as a participant, conducting interviews and recording informal conversations in a research journal could pose a

risk that my presence in a LS team might cause anxiety, that interviewees might not feel they could be completely honest, and that participants who hold different views to my own might feel uncomfortable about being included in my research.

- I hold a position of the most senior leadership in the network of schools in this study. This reflects a position of professional power and authority over all employees – all research participants. There was therefore a risk that my research may induce psychological stress, anxiety or embarrassment. It might also exert pressure on participants, consciously or unconsciously to tell me what they thought I might want to hear and represent a risk to the validity of my research.

### **3.3.2 Mitigation of foreseeable risks**

- I made sure that my observations avoided value judgements and remained observational, detached and objective in tone.
- I have protected the identities of all participants by ensuring that no real names or gendered pronouns, either of people or of the schools involved are used in my narrative.
- I have confined my observations explicitly to the focus of my inquiry and research questions in order to avoid identifying participants through descriptions of character or other personal information.
- I have selected an approach to interviewing (Pictor) which is designed to support interviewees to consider independently and dispassionately their recollections and understandings of LS experiences.
- I have been transparent about my dual researcher/professional roles and emphasised to participants that a key aspect of my research is to be receptive and open to all views and perspectives on LS, both positive and negative.
- I have been rigorous about ensuring the security of my research data through encryption and computer security protocols.
- I have followed both the University of Leicester (in Phase One) and the University of Brighton (in Phase Two) ethics codes of practice,

policies and guidance regarding issues in research ethics throughout the study.

### **3.3.3 Securing informed consent**

- Prior to Phase One, I presented my research proposal to teachers in my own school at a staff meeting and outlined the risks and my plans for mitigating those risks.
- Prior to Phase Two, I presented my research proposal to the head teachers of the schools in my network in order to seek their permission to approach teachers in their schools to participate in my research.
- All participants were provided with a written research study information sheet and consent forms for participants and/or gatekeepers (see appendices 7, 8 and 9).

For all Pictor interviewees:

- I provided explicit written information (Appendix 7) about the research study and about the principles of research ethics, via links to the University of Leicester Research Ethics Code of Practice or University of Brighton Research Ethics Policy and British Educational Research Association (BERA 2018) Ethical Guidelines for Educational Research
- I made it clear that participation was completely voluntary, with the freedom to withdraw at any point. (Appendix 8)

The tensions of an ethnographic orientation necessitate a particular analytic mentality, a mode of looking, listening and thinking about social phenomena. Qualitative research utilising ethnography involves a commitment not to jump to hasty conclusions; to pay attention to appearances but not to take them at face value; to seek understanding of other perspectives without judgment of their truth or falsehood; to examine peoples' actions including both what they are, and are not, aware of (Hammersley and Atkinson, 2007; Wolcott 2010). I have followed this ethnographer's code in my consideration of the ethical aspects of my study, with explicit acknowledgement that this is especially important in an ethnographic study.



### **3.3.4 Ethical Approval**

This study has been undertaken in two phases. The first phase – up to the point of thesis proposal, was undertaken at University of Leicester. After a break from studies of one year in 2016-17, to allow for a significant change in my professional role, I transferred to University of Brighton to complete the study.

- I gained approval from the Research Ethics Committee in the School of Education at the University of Leicester during the Summer Term 2015.
- The process of seeking permission from potential participants began once I had received ethical clearance from the University of Leicester Research Ethics Committee.
- The University of Brighton's Ethics Committee provided consent for the study as part of acceptance of my application to transfer my doctoral study to Brighton in October 2017.

### **3.3.5 Ethical significance of my researcher role in data collection**

In my professional role, I have a responsibility to promote and participate in teacher learning and development, linked to whole school improvement priorities emerging from self-evaluation activities. In my professional context this emphasises participation in LS. In the first phase of my study, the challenges of small school leadership added to the complexity of my researcher role. I was simultaneously headteacher, English Subject Leader, Research and CPDL Lead and Assessment Co-ordinator. Later, as leader of the school network, I was responsible for policies and systems relating to the whole gamut of school and network development. This implies considerable complexity in my contribution as a participant and in the ethics of my research situation. Not only was I leading the development of LS for the purposes of facilitating teacher professional learning which might embody many of the features of effective CPDL, I was a knowledgeable other (Koshi) in relation to subject knowledge, teacher engagement, access to research literature, information about research methods and potentially fruitful ways of participating in LS. In my school, and subsequently as an organisational and

system leader, I was acknowledged as a source of professional expertise across a wide spectrum.

I needed to be unambiguous about my role within the study (Lincoln and Guba, 1985) and to acknowledge the power inherent in my professional role and the influence my position of authority might have on participant responses (Biesta, 2020). This inquiry emerged from a genuine professional problem related to my responsibility for school improvement and my commitment to achieving whole school improvement through enhancement of the quality of teaching and learning. It evolved to encompass similar objectives for a much larger group of schools. My inquiry is value bound - by my values as researcher, in my choice of problem and in the way I have framed it. The investigation is influenced by the interpretivist paradigm framing it, and by my conceptualisations of learning and leadership. It was influenced by the values inherent in the culture of my school, which, after eleven years of headship, must have been influenced in part by my leadership. It is also likely to have been influenced by the developing culture and values of the school network which I now lead. My study is likely to be resonant with the phenomenon I chose to explore because of my immersion in it and the intensity of my focus on it, both from a research and professional practice standpoint. Acknowledging this openly, I endeavoured to design a credible and authentic investigation which allowed me to pursue my research questions in contexts of LS at school and system level, while:

- acknowledging transparently my standpoint in the study and utilising a data collection method, such as Pictor interviewing, designed to mitigate the associated risks of this as far as possible;
- reflecting on my interpretations of the effects of my own and others' leadership practices and perspectives;
- revealing the interpretations and construals of my research participants;
- generating a descriptive and critical account which might provide some dependable and confirmable information which may be useful to others interested in this field (Lincoln and Guba, 1985).

- illustrating the ways in which my role, as it is affected by local and national policy and practice contexts, influences my professional policy and practice, my research participants, and my inquiry. An example of this is an acknowledgement that urgency and a sense of crisis relating to school improvement is likely to stem from the adverse outcome of an external school inspection. This is an event prompted by a national policy stance which nonetheless influences decision-making and the selection of school improvement priorities at school level. I recognise this in 4.4.2.

Having addressed the ethical underpinning of my inquiry, I move next to outline my approach to data collection.

### **3.4 Data collection**

The first and early phase of my study comprised four periods of ethnographic, participant observation, summarised in Table 2. The first two involved my direct participation in two LS cycles with the KS1 and KS2 teachers in my own school. Most Monday afternoons throughout the Autumn Term in 2015 we gathered together, first as a KS1 and then as a KS2 LS team, to work on LS.

The third period was linked to my facilitation of a joint LS cycle that took place as part of a collaborative project across two schools – my own and one other local partner school. This project had received grant funding to support a joint LS project focusing on the development of communication, language and vocabulary in the Early Years. It involved the direct participation of the Early Years Foundation Stage \* and KS1\*\* teachers from my school and two participants from the partner school.

The fourth period of observation involved my role as system leader in a local teaching school alliance – a large group of schools working together to provide CPDL for their teachers. I had been asked to work with an alliance member's leadership team to support improvement in the teaching of English, specifically reading.

**Table 2: Data Collection Phase One**

Phase 1								
Episode	Location	Date	Duration	Data Sources	Participants	Researcher Role		
1	KS1** LS Cycle	Own School	Autumn Term 2015	23 hours	Teachers' LS planning & evaluation meetings	KS1 teachers at my school (4)	Facilitator / Participant in the LS cycle	
					Research lessons (3)			Visiting participants (24) for Open House lessons
					Open House Research lessons (3)			
2	KS2*** LS Cycle	Own school	Autumn Term 2015 and Spring 2016	23 hours	Teachers' LS planning & evaluation meetings	KS2 teachers at my school (4)	Facilitator / Participant in the LS cycle	
					Research lessons (3)			Visiting participants for Open House Lesson (13)
					Open House Research lessons (2)			
3	Inter-school EYFS* LS Cycle	Own and partner school	Spring Term 2016	9 hours	Teachers' LS planning meetings	EYFS/KS1 teachers at my own and one other school (6)	Facilitator in LS cycle	
4	KS1** and KS2*** LS Cycles	Partner school	Spring Term 2016	16 hours	Teachers' LS planning meetings	KS1 and KS2 teachers at an alliance partner school	Facilitator/ Subject Specialist in KS1 and KS2 LS cycles	
<p>*<b>Early Years Foundation Stage</b> (Reception Class): pupils aged 4-5 years  **<b>Key Stage 1</b>: first phase of statutory, primary schooling in England; Year 1: pupils aged 5-6 years; Year 2 – pupils aged 6-7 years.  ***<b>Key Stage Two</b>: final four years of primary schooling in England; Years 3-6: pupils aged 7-11.</p>								

The headteacher agreed to trial a LS approach to this school improvement priority, so I worked with them, and a senior and middle leader to facilitate two cycles of LS with each of two LS teams over a series of weekly meetings. These involved sessions introducing the concept and process of LS to each team and support with a period of Kyouzai Kenkyuu, involving engagement with relevant research about the teaching of reading and

authoritative and research-informed guidance on pedagogies related to reading. I also facilitated collaborative research lesson planning and the attendance of both teams at Open House research lessons on reading in both key stages in my own school. I was not directly involved in any research lessons.

### **3.4.1 Field notes**

In line with ethical procedures outlined in 3.3 and with consent gained from all participants, (appendices 7, 8 and 9), through every stage of my inquiry I recorded field notes on a digital recorder and uploaded the audio files to my computer for transcription. These notes include records of participation in and observation of LS and narrative, reflexive accounts of events and activities relating to the leadership of LS both within my own school and across the network of schools. The professional context required me to adopt an open-ended and exploratory research design. At the beginning of my study, participant observation allowed me to understand the leadership of LS from the various standpoints. I could work responsively so the story of the leadership of LS in my research context could unfold in an unpredictable educational landscape.

Both my professional and my research roles involved direct participation within the research field, either as a participant in LS with my colleagues in my own school, or as a facilitator of the process in my own and other schools as I supported network colleagues in their attempts to implement LS in their schools. This made writing up my observations and research notes in the field unfeasible – attempting to do this would have interfered with my work and work distractions would have interfered with the quality of my notes. Instead, I developed the habit of recording my field notes using a digital recorder compatible with modern dictation software immediately after each LS session. I would also do this when I had been involved in a research episode, either in my own school or elsewhere. Each following weekend, I would use a dictation software package to synchronise my recording. This provided me with an opportunity not only to hear my data (Rubin and Rubin, 2005), but also with an imperfect but very readable and easily editable draft

of my notes, which I would review and re-draft, then transfer into Nvivo (a secure, online qualitative data analysis software package) for filing and storage, ready for analysis. This routine meant that I could record my reflections on field activities soon after each episode of interaction, make any additional notes or observations and add reflexive memos to create a running record of my thinking. In this way I began an informal and rolling analysis and evaluation which informed and influenced the progress of my inquiry, ensuring that my inferences were well-grounded in my data which could then grow into a narrative, descriptive and analytical ethnographic account (Dey 1993), and eventually become Chapters 4 and 5 of this thesis. The routine of reflexive reading of my data also began to influence my professional practice week by week. For example, after reflecting on my field notes about a LS planning afternoon with our school's KS2 team, I wondered if the opportunity to share their lesson more widely would augment the professional learning of the KS2 teachers in my school, providing a model which would support the growing confidence of the teachers I was supporting in our partner school. I decided to ask teachers in my school if they would mind if I invited the KS2 teachers from the other school to the Open House research lesson we were planning for our own KS1 teachers. They agreed. This Open House research lesson took place early in the summer term 2016.

My field notes developed into a combination of:

- descriptive observations of human social interaction and dialogue in LS contexts;
- a record of my reflections on and analysis of those interactions;
- a record of my reflections and analysis of the contexts, the nature, rationale, effects and consequences of the practices enacted. Extracts from my researcher reflections are included in Chapter 4, and an example of a field notes transcript is provided in Appendix 6.

### **3.4.2 Pictor interview collection and research participants**

I gained consent from gatekeepers (school leaders) and participants and made arrangements to conduct Pictor interviews. Examples of consent forms are provided in appendices 7,8 and 9, and the guide for interviewees in

Appendix 10. Interviewees included seventeen teachers (five of whom were teacher leaders – middle-tier leaders responsible for leading specific subject development in schools), eleven senior school leaders (headteachers and deputy headteachers) and three system leaders from eight of the eleven schools in the network. (System leaders were either executive headteachers responsible for leadership across more than one school, or other senior leaders who undertook strategic leadership of an aspect of school improvement beyond their own school.) Interviewees and their roles are shown in Table 3.

### **3.4.3 Documents and artefacts**

Throughout my study I collected documents and artefacts which related to the leadership of LS, at school and system level. These include notes from professional development meetings; conference papers and presentations; teacher participants' and leaders' LS plans, reports and posters; published articles, policy and guidance documents, minutes of governor and trustee meetings, emails and memos. When considered alongside the field notes that go with them, these documents provide a perspective detached from my own. Two examples of LS artefacts are provided in Appendices 11 and 12.

**Table 3: Research Participants**

<b>Data Collection Phase 1 2014 - 2016</b>			
<b>Code</b>	<b>Pictor Respondent</b>	<b>Research Role</b>	<b>Research location</b>
A-T1	Teacher	LS Participant	School A
A-T2	Teacher	LS Participant	
A-TL3	Teacher Leader	LS Participant	
A-T4	Teacher	LS Participant	
A-T5	Teacher	LS Participant	
A-T6	Teacher	LS Participant KS2 Team Leader	
A-TL7	Teacher Leader	LS Participant/Facilitator/Koshi	
B-SL8	School and System Leader	LS Participant/Facilitator	School B
B-L9	School Leader	LS Participant/Facilitator	
B-L10	School Leader	LS Participant	
B-TL11	Teacher Leader	LS Participant/Facilitator/Koshi	
B-T12	Teacher	LS Participant	
B-T13	Teacher	LS Participant	
B-T14	Teacher	LS Participant	
<b>Data Collection Phase 2 2017- 2019</b>			
<b>Code</b>	<b>Pictor Respondent</b>	<b>Research Role</b>	<b>Research location</b>
C-SL15	School and System Leader	LS Participant/Facilitator	School C
C-L16	School Leader	LS Participant	
C-T17	Teacher	LS Participant	
D-L18	School Leader	LS Participant	School D
D-L19	School Leader	LS Participant	
D-T20	Teacher	LS Participant	
D-T21	Teacher	LS Participant	
E-L22	School Leader	LS Participant	School E
E-TL23	Teacher Leader	LS Participant/Facilitator	
F-SL24	System Leader	LS Participant/Facilitator	Schools F
F-L25	School Leader	LS Participant	
F-T26	Teacher	LS Facilitator	
F-T27	Teacher	LS Participant/Facilitator	
G-L28	School Leader	LS Participant	School G
G-TL29	Teacher Leader	LS Participant	
H-SL30	School Leader	LS Participant/Facilitator	School H
H-SL31	System Leader	LS Facilitator/Koshi	

Thirty-one Pictor interviews took place once my participant observation data collection phase was concluded. Fourteen were undertaken by the end of the academic year 2015/16. A further seventeen were undertaken 2017-19,



during which several school leaders in the network had begun to establish LS in their own schools.

I summarise my approach to data analysis in the next section.

### **3.5 Approach to data analysis**

In the next chapter, I outline my approach to data analysis in detail and discuss the impact an iterative, inductive, and reflexive analysis of my data bricolage had on the progress of my research and on my own leadership practice.

#### **3.5.1 Reflexivity and professional practice**

There is a symbiotic and developmentally evaluative aspect both to the process of data collection as a participant observer and to the reflexive analysis of those data (Godfrey et al., 2018; Patton, 2011). This aspect links to my research questions and feeds directly into my professional practice. Promoting and participating in LS was an intrinsic element of my professional practice and I was simultaneously collecting research data for a professional doctoral study. My continuous analysis informed both of these purposes. I found myself making changes to my professional leadership practice in response to my iterative analysis of the data. This in turn affected the ongoing research and subsequent data. An example of this was related to early findings about the role of facilitation, acknowledged in 4.3.2. LS facilitation was provided in an ad hoc, informal way in School A in the early stages of this project. The extent to which it was valued by LS participants was clear in Pictor interviewees' responses. My subsequent reflections on this emergent finding led to a more strategic and considered approach to the provision of facilitation in School A and eventually at network level. This was complex in research terms and reflected a developmentally evaluative approach to change management and LS development (Godfrey et al., 2018; Patton, 2011) discussed in 2.2. This aspect of my study reinforced the importance of conducting interviews with research participants in order to crystallise a range of perspectives contributing to my inquiry.

### **3.5.2 Analysis of interviews, ethnographic field notes and research journal entries**

I recorded the discussions which followed participants' creation of their Pictor charts and created transcripts from the recordings, which were stored securely and digitally alongside scans of the charts. All data were backed up securely to the Cloud.

Between 2016 and 2019, I used Nvivo to develop an inductive, thematic analysis of my ethnographic field notes and interview transcripts. I received training on the use of Nvivo from the University of Leicester and found it a useful and convenient vehicle for storing and organising my data, and subsequently to facilitate detailed thematic analysis, allowing themes gradually to crystallise with each analytical iteration. I structured my analytical approach to reflect my research questions and the theoretical framework developed from my literature review, hoping to reveal patterns and themes in leadership practices enacted in LS contexts and their orientations (Saldana, 2015; Spradley, 1980). With this in mind I was alert to references in the data to domains of leadership practice. Domains emerging in the initial stages of analysis included: coaching, facilitating, organising, scheduling, resourcing, listening, promoting, participating, challenging, advocating, insisting, questioning and enabling. These practices were oriented towards and enacted in contexts of conditions, cultures, processes and structures supportive of LS. Iterative analysis of each of these domains suggested further themes and categories, for example, under 'facilitating' – *mediating access to research engagement, key texts/authoritative guidance, expert pedagogic content knowledge, subject expertise*; under 'participating' – *discussion, teaching, research engagement, planning, evaluating* and so on. With each analytical and reflexive iteration, more and different themes, contexts and patterns of practice emerged. These are presented in more detail in Chapter 4.

### **3.5.3 Development of a research text**

Throughout the period during which I was undertaking my thematic analysis using Nvivo, I was also writing about the themes and patterns emerging from

my analysis and building my own autobiographical analysis. This process contributed to the development of a crystallised research text synthesizing report and narrative genres of writing (Clandinin, 2013; Ellingson, 2009). This narrative writing provided both a method of analysis with which to interrogate my data and a context in which to tell my own story of LS leadership and of my research study. It provided me with a tool with which to weave together - as Ellingson (2009) suggests - an integrated, crystallised account of my research and my perspectives, and those of my research participants – seen in Chapters 4 and 5.

Next, I outline my study's validity framework.

### **3.6 Validity framework**

As previously discussed, my position as a participant researcher contained inherent risks which could have made maintaining a stance of ethnographic 'strangeness' or phenomenological bracketing problematic (Hammersley and Atkinson, 2007; Schuetz, 1944; Thomas, 2017). I was aware that I may not have been as a-tuned to noticing elements of my own tacit knowledge as I would have been if I were simply observing a research arena detached from my own professional milieu. For this reason I tried to secure the quality, trustworthiness and authenticity of my research in a number of ways (Bryman, 2012; Tracy, 2010; 2020). Tracy (2020, p.269) suggests eight '*Big Tent*' criteria for quality in qualitative research. These include a **worthy topic** for the inquiry – there is little empirical research into the practices, or '*situated doings*' of LS leaders (Jarzabkowski et al., 2007, p.7). A study focusing on what leaders actually do in their efforts to establish effective and sustainable LS is therefore worthy.

Another criterion is methodological **rigor** - conducting all the elements of the inquiry cycle conscientiously and thoroughly, which I have done and outlined in this thesis. Another is **sincerity** – when researchers are prepared to be open about their aspirations and their miscalculations. I have acknowledged openly and transparently the risks and affordances of my researcher role. I have also made explicit my self-reflexive research, alongside the possible tensions connected with my professional role and practice.

**Credibility** is another of the big tent validity criteria, encompassing trustworthiness, honesty and plausibility. A crystallisation methodology supports this by facilitating continuous revisiting, revision and review through different lenses and from differing perspectives.

Next, **resonance** relates to research that is meaningful to its audience. I hope my findings will find an audience of aspirant and experienced educational and LS leaders and participants who will find meaning in it and be interested to apply those meanings flexibly in their own professional contexts, accepting that those contexts are unlikely to replicate those in which my research was conducted.

Research should make a **significant contribution**, and extend the body of knowledge in its field, even to a limited or small extent. I contend that my findings do make a significant contribution to knowledge about the scarcely-studied phenomenon of LS leadership practice.

**Ethical research practice** is possibly the most important, overarching quality criterion. My approach to securing ethical foundations and validity for my research project are explicated in 3.3.

The last of Tracy's (2010; 2020) qualitative research validity criteria, **methodological coherence**, indicates research that achieves its purpose and aims, demonstrates coherent connections between literature, theoretical frameworks and methodology. Throughout the development of my thesis, I have endeavoured to establish coherent connections between the aims and purposes of my inquiry, my study of pertinent literature and the development of a conceptual framework with which to ground my study. I dedicated time and thought to developing an informed research design, methodologically suited to addressing my research questions and which fulfilled recognised criteria of high quality research.

Another feature of this study which secures validity has been its duration. Continual change and disruption to my role and to the national educational climate affected its duration, the research design and the researcher's position in the inquiry. Not only did a significant change to the researcher's professional role impact the research design, but the growth of the school

network during the inquiry meant that leaders faced the continual challenge of implementing LS with novices, from scratch. Changes in my leadership and therefore researcher role necessitated a change in research design which, although stressful and difficult while it was happening, was methodologically beneficial. The use of crystallisation aligned well to the spirit and nature of my inquiry, resonating with and allowing coherent organisation without over-simplification. Two periods of significant disruption - organisational and leadership change and a global pandemic - brought opportunities, even though they were not always obvious at the time. On a simple level, they extended the study. This felt onerous and frustrating, but allowed a long-term perspective which saw maturing models of LS leadership; by the end of the study two schools had been using LS for almost 10 years. As new schools joined the network during the course of the study, experience of and iterative research into LS contributed to changes in LS leaders' practices and provided further data for analysis. This longitudinal aspect of my inquiry contributes to its validity and responds to one of the recommendations for further research made by van den Bloom-Muilenberg et al (2022).

Finally, and possibly most challenging, I have drafted, re-drafted and re-written my thesis seemingly countless times in my attempts to achieve textual coherence, so that my readers might understand my research aims, purposes and questions and connect them to my findings.

### **3.7 Summary**

My review of research literature related to my professional problem led me to conceptualise LS as a collaborative, inquiry-oriented process which supports teacher learning founded on the interpretations and construals taking place within the social interactions of participants, combined with opportunities to put such learning into practice within a supportive environment. Similarly my theorisation of LS leadership acknowledges the socio-cultural learning aspects of distributed leadership practices which are oriented towards support for teachers' professional learning. I configured my research questions in the context of these conceptualisations. I developed a research design derived from an interpretivist paradigm, underpinned by a

constructivist world view and an epistemology grounded in social constructionism. Informed by a pragmatic theoretical perspective combining phenomenology and complexity thinking, ethnographic, phenomenological and narrative data sources contributing to my data bricolage are consistent with a crystallisation methodology. In the next chapter, I present my data analysis and a summary of my findings.

## 4 Data analysis and findings

In this chapter I present my data analysis as a crystallisation of evidence drawn from a range of data sources and summarise my findings to address my research questions, restated here:

*In a network of eleven UK primary schools:*

- *how do leaders influence the implementation of effective and sustainable Lesson Study?*
- *what kinds of leadership practices do teachers (including teacher leaders) school and system leaders perceive to promote organisational conditions, cultures, processes and structures which establish and sustain effective LS within and across schools?*

I begin by summarising the connections between my theoretical framework and a crystallised approach to analysis.

### 4.1 A theoretical framework to inform crystallised analysis

I used my research questions and the theoretical framework explained in Chapter 2, to inform my analytical approach. I examined and categorised my data thematically, against my questions and against strands from my theoretical framework including learning, professional learning, organisational learning cultures, improvement science and educational leadership, and I developed crystallised understandings viewed through the metaphorical lens of complexity theory.

I made a deliberate choice to include the word 'effective' relating to LS in the title of my thesis and through my main research question, I have used it to anchor my analysis. Biesta (2020) defines effectiveness as a process value, only meaningful when the aims and purposes of the activity are specified and clear. In the context of my study, I posit that LS is a form of teachers' professional learning and development which uses teachers' action research (TAR) and inquiry to fulfil the primary aims of improving teaching and pupil learning.

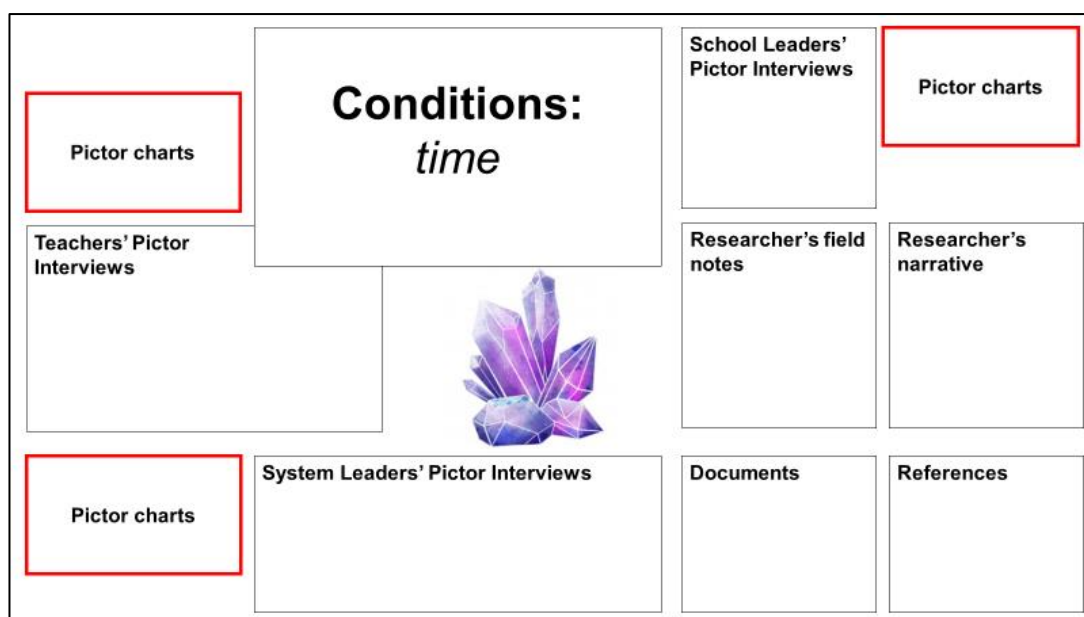
If the question of effectiveness depends on what is intended as the primary purpose of the activity, and that purpose is teachers' continuing professional development and learning, then the effectiveness of the activity might usefully be evaluated against what is known about effective CPDL, taking account of a range of effective CPDL characteristics.

In the context of my data analysis, my interpretation of effective LS as effective CPDL was informed by Guskey's (2002) five critical levels of CPDL evaluation (2.2), and those characteristics of effective professional learning and teachers' action research and inquiry outlined in Section 2.3.5.

#### **4.2 Analysis of data by LS support and leadership level**

Collecting an eclectic range of data over such a long period of time and from a large group of research participants generated a large data bricolage (Kincheloe, 2001; 2005), requiring multiple, iterative readings and analyses. Each of the data sources in the bricolage was considered side by side, as illustrated in Figure 8 below, to weave together a range of perspectives on key themes emerging from my crystallised, inductive analysis. I used the categories of LS support itemised in my research questions, i.e. conditions, cultures, processes and structures, combined with three levels of leadership i.e. system, school and teacher leadership, as analytical tools and initial nodes to which to code data in Nvivo during successive iterations of inductive, thematic analysis. This process facilitated the crystallised emergence of evidence from across the data bricolage, allowing me to construe connections between leaders' practices and the conditions, cultures, processes and structures supportive of LS.





**Figure 8: Crystallisation of perspectives on leaders' practices**

*(Original in colour)*

There is not space here to address all emerging themes relating to leaders' practice orientation in detail, so I have selected a smaller number of the most prominent ones for more detailed exposition. I made the selection on the basis of how often participants referenced leaders' practices connected to a specific area of LS support, the significance informants and/or I attributed to those practices, and the extent to which they resonated with my theoretical framework. Throughout the analytical process and in making decisions about prioritising the use of space in this chapter, I attended to data I perceived to address my research questions. Here I take each of the categories of LS support from my research question in turn. I include extracts from my data and provide a summary of the outcome of my analysis with an illustration of my analytical process relating to prominent aspects of each category of LS support.

### **4.3 Conditions**

Key functions of school leadership include the development of the school as a learning organisation and to promote teachers' professional learning (Louis, 2017; Robinson et al., 2009; Senge et al., 2012). It follows that school leaders implementing LS with these goals in mind need to create the conditions for LS to thrive. Several overarching conditions which appear to

support successful LS emerged from my data analysis. For the purposes of my analysis, I define *condition* as a feature of LS provision without which all others would be impossible. Conditions for LS need to exist first, before LS can begin. They constitute the soil in which processes, structures and cultures can grow. The conditions I identified were:

- Time
- Facilitation
- Leadership commitment
- Trust

As my analysis progressed, two levels of condition emerged which I have distinguished as primary and secondary. I consider primary conditions as those without which LS appears to struggle to gain traction in a school. Time, trust, the commitment of leaders and the presence of facilitation appeared to fall into the primary category. Participant commitment may be essential to sustain LS over time, but does not appear to flourish unless the other four are already in place; for my purposes I considered it a secondary condition. For reasons of space, I return to participant commitment in connection with teacher agency in section 4.4.3. Of the four, time stood out above all the others as a practical, logistic and symbolic tool essential to quality LS work. Time was practical and logistic in its necessity for the work to happen, and symbolic in that teachers appeared to interpret its provision as evidence of leaders prioritising their professional learning, valuing their development, their personal time and wellbeing, and their contribution to organisational learning. My data analysis indicated that teachers and leaders considered the provision of adequate time to be fundamentally important to effective and sustainable LS.

### **4.3.1 Time**

#### **Teachers' Perspectives**

A-T1 politely pointed out that teachers' time is precious. They felt personally accountable for their own and other people's time and were anxious not to waste it. Having regular dedicated time to engage with colleagues in *Kyouzai Kenkyuu* - the study phase of a LS cycle undertaken before planning the

research lesson) promoted unfettered professional dialogue, and when a commitment had been made to include colleagues from another school, the feeling of accountability for using the time productively was heightened.

<b>A-T1</b>	<p><i>We were actually having time to [discuss] what did everybody think? We could go through it more slowly and how can we work on that, what didn't we see, what did we see, and then again picking the research back up, what did it say about that and going back to it to refine the next lesson.</i></p> <p><i>And it's more protected time...when you've made that formal arrangement with other colleagues in another school, you protect that time.</i></p>
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Cynicism and resentment may develop when insufficient time is provided for teachers' CPDL – in this context where a Kyouzai Kenkyuu session is cut short, or leaders cancel or postpone the session without adequate explanation.

Teachers in **School F** were new to LS at the beginning of this study. F-T25 was incredulous that time was provided for LS engagement and held up six fingers in astonishment:

<b>F-T26</b>	<p><i>Six weeks. We had six weeks, including the lesson and the lesson plan and everything. Because there's so much quality time spent. It's six weeks of quality teacher time and there's four teachers who are involved in this and that was over six weeks...a lot of time.</i></p>
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B-TL11 connected safeguarding LS time and the commitment of leaders to the LS team's professional learning and development. They particularly valued leaders recognising that they should do this work in school time, not in their own time:

<b>B-TL11</b>	<p><i>I think that was clearly understood that the issue wasn't that people wouldn't want to do some extra but on top of everything else and as stretched as we can be sometimes, we will never affect it, we never had anyone come in and say, you have to miss lesson study this afternoon because we're short. It didn't happen.</i></p>
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<b>C-T20</b>	<i>Over a course of weeks having got a time that we knew was ring-fenced for us to be going and doing that...I know we tried to still go through towards the end of the process but I remember it feeling more challenging to actually keep that time sacred, that we were going to be going out.</i>
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Teachers did not begrudge giving their time to participation in LS per se. Resentment was reserved for leaders' *expectation* that they would engage outside working hours. Conversely, when the time was provided and protected, teachers genuinely valued it; they perceived this as leaders investing in their development both in effort and resource and appeared then to be more willing to continue their engagement beyond the time allocated during the working day.

### **School Leaders' Perspectives**

School leaders acknowledged the importance of providing protected time for LS. B-TL11 (who moved into a teacher-leader role during this study) reflected that the school's first attempt to introduce LS had failed largely because leaders had not allocated adequate time. Their view was that teachers perceived the lack of provision for adequate time to participate in LS as a sign that leaders were not committed to their CPDL and did not value their personal time. They felt that this had caused cultural damage which had derailed the introduction of LS, and inhibited attempts to re-introduce it two years later. At that point, some teachers told their less experienced colleagues not to engage as they would be expected to participate in their own time. B-TL11 notes the single word '*time*' on one sticky note in their Pictor chart – but they talked at length in their interview about the lasting damage insufficient dedicated time had inflicted on teachers' attitudes to LS in the school.

<b>B-TL11</b>	<p><i>The feeling was overwhelmingly negative because – well only about one aspect and that was that time wasn't devoted during the school day. People were expected to do it during lunch times and after school. Both the research, the planning, and then time was given to teach the lesson.</i></p> <p><i>People liked the process but because there wasn't time set aside it became a very, very unpopular element of CPD.</i></p>
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During the second iteration of LS implementation, leaders prioritised the protection of adequate time for LS during the working day. To re-establish LS and repair its reputation among teachers, B-L10 felt it was important to be single-minded about time for LS. Leaders were explicit with participants – confirming that there would be no expectation that they should extend their LS work beyond the working day, and that the expectation that LS was a school priority would be understood by all school staff.

<b>B-L10</b>	<p><i>So I think one of the key reasons that lesson study previously, in our school, hadn't been entirely successful was around the time given to it. So we made the decision that we would have planned time, on the timetable, that was properly covered and protected and unlimited, was going to be an important thing.</i></p>
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In 2021, B-L10 spoke in one of the network's regular school leaders' meetings about the impact they perceived LS to have had on culture and pupil outcomes in their school. They stressed again the role of protected time in teacher engagement.

<b>B-L10</b>	<p><i>Our journey at [School B] has been over several years. It's been difficult at times but has definitely been worth it. Lesson study has become embedded and everyone understands its importance. It's been really helpful that B-TL11 and I have taken part as teachers. All the time needed to take part is provided by the school .</i></p>
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### **System Leaders' Perspectives**

System Leaders D-SL24 and H-SL31 also felt that the provision of scheduled, dedicated time in the working day, secured over several weeks,

contributed to the success of LS. H-SL31 includes time on two Pictor chart sticky notes. The first related to time for the whole LS cycle, the importance of time being made available to the LS group to meet together regularly to undertake all the elements of the LS cycle. The second related to the inclusion of time within the LS cycle for Kyouzai Kenkyuu.

<b>H-SL31</b>	<i>So they were creating timetable space, and resources to make it happen, which was a very important thing I think.</i>
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Time for Kyouzai Kenkyuu was also perceived as essential. Where time wasn't provided, leaders were seen to be taking teachers' time for granted – expecting them to read research articles or curriculum guidance in their own time, or not including any pre-planning study or Kyouzai Kenkyuu period.

### **Researcher's Reflections**

As a school leader, system leader and participant researcher immersed in my own field of inquiry, my practices as a LS leader were influenced by my research participants' responses and by my observations and experiences. Time crops up repeatedly in my field notes and reflexive writing as a key condition for LS, alongside my reflections on my own and other leaders' strategies and actions oriented towards solving the problem of dedicated LS time.

<b>R</b>	<i>Some teachers' responses about time for LS are veiled with cynicism, others make clear their understanding of the difficulties, but infer in their self-effacing and polite apologies for pointing out the bleeding obvious to the dim-witted, that uninterrupted quality time to engage in authentic work during their working hours is essential to the worth – in their eyes – of the work. When LS time is scheduled, protected, uninterrupted, sustained, not cancelled, re-scheduled or re-arranged, no-one co-opted to do something else instead, there's a sense of astonishment and disbelief. (December 2017)</i>
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Where time had been allocated, leaders had made adjustments to timetables, staffing structures and curriculum provision to release class teachers from their usual class teaching responsibilities. They re-allocated routine staff meeting time to LS for members of LS teams for a period of

several weeks. They left clear instructions with school administrators that LS was not to be interrupted or cancelled; teachers engaged in LS were not to be called away to provide cover for absent colleagues. Where sustainable solutions were found for the provision of LS engagement time, the process itself was sustained as an embedded feature of CPDL.

As time maintained its steady beat throughout my data as a primary condition for LS, so too did facilitation. In the next section, I continue my crystallisation of perspectives related to leaders' practices suggested in my data and coded to the theme of facilitation in my analysis.

### **4.3.2 Facilitation**

While facilitation could be perceived to be a form of leadership, for my analysis I have focused on explicit facilitation with the purpose of implementing and sustaining effective LS.

Teachers and leaders at all levels discussed the role of facilitation and the facilitator in successful LS repeatedly and intentionally. By the end of Phase 1 of my study, I had begun to understand that skilled facilitation may be important in securing the other primary conditions for LS, for example, dedicated time in the working day during which it could take place, trustful relationships and explicit leadership commitment to successful LS. Initial findings from my early data analysis led to a programme of facilitator training in my network and the establishment of the LS facilitator role in schools implementing LS. Further data were collected during this period.

#### **Teachers' perspectives**

Teachers suggested that facilitation kept LS on track, keeping participants on task, mediating access to relevant research and supporting the professional collaboration essential to any group endeavour. In the absence of facilitation, D-T20 felt isolated and unsupported, having wasted time trying to find relevant research, not knowing where to look or what to look for.

B-TL11 and B-T12 both acknowledged the role of a facilitator, or a Koshi whose expertise is in LS rather than or as well as curriculum or pedagogy. A-T2 talked about the facilitator being the person who was responsible for

establishing and maintaining the conditions for LS to take place. A-TL7 was ‘very clear’ that the role of the facilitator was essential to successful LS, to mitigate against the risk of one experienced or powerful person dominating the group, to mediate access to research literature and curriculum guidance, to establish the ground rules for collaboration, to prompt and coach the group and to encourage resilience and persistence to ensure the cycle was completed.

<b>A-T2</b>	<i>Lesson study is facilitated well. That means a quiet space with no interruptions, and the class is covered well, and the teachers don't have to worry about the planning or be asked about their planning during their lesson study time, because your head should be and hopefully is somewhere else at that time.</i>
<b>A-TL7</b>	<i>The difference in my mind was very clear that it was the facilitator, having the facilitator in the lesson study made a massive amount of difference as to the outcome of the process.</i>

### **Leaders' Perspectives**

B-L10 felt that proactive facilitation of the LS process had contributed to establishing and sustaining LS in the school following its re-introduction after an initial, unsuccessful attempt to introduce it two years earlier. B-L10 had been a reluctant participant in LS in the early stages of this second attempt. They had experienced LS during its first iteration and shared some of the negative views of LS expressed by several members of staff. As a new headteacher, they had been encouraged to try again, this time with more purposeful facilitation, combined with their direct participation.

<b>B-L10</b>	<i>I've then put the team that was involved closely around that because when B-TL11, who was the driver. [They were] the person that led us to learning about the lesson study cycle and the elements of it and who should do what and how the team was made up and how it should work....</i>
<b>E-L23</b>	<i>So I started here with the person that leads it. That's the research lead and really driving force, making sure everyone sticks to the plan of action, that we're meeting and it doesn't slide because of this mainly.</i>



E-L23 believed the structure and discipline the facilitator brought to the process supported participants by providing clarity about the process, so that teachers could focus on the LS inquiry during the time they had available for engagement and '*stick to the plan*'.

### **System Leaders' Perspectives**

B-L9 talked about their role as a senior school leader and LS facilitator. They believed they acted as a coach, guiding participants through the LS process, sustaining and completing the cycle. Later, in 2017, they had moved schools and become a headteacher (C-SL15). Their combined role as LS leader and facilitator had continued to develop, including leadership of a network group of school research leads, providing LS facilitation training and CPDL sessions for school leaders interested in implementing LS in their schools. They describe guiding participants through the LS process, asserting their belief that this guidance helped to ensure that LS was sustained.

<b>C-SL15</b>	<i>I think my role in our school is guiding people (the green arrows) through that process of doing their lesson cycle; so using the things from here, like the ethics policy, the proformas, the ethos and the why're we doing this and those sorts of things and then taking that to the teachers... enabling them to do those things.  I guess to sort of coach them through the process...</i>
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In 2017, as part of this study, I recorded a discussion about LS that took place on a train journey to a LS event between myself and two network system leaders and research informants. We reflected on the nature of LS facilitation, debating whether a LS facilitator inhibits teacher agency, or is essential to promote collaboration and prevent individual members of the LS team from dominating the process.

<b>R</b>	<i>So the knowledgeable other really needs to be quite a skilled facilitator at the same time because you don't want them to tell the answers, you want them to provide the rationale and the research behind the pedagogy.</i>
<b>C-SL15</b>	<p><i>It seems to me the whole success of the whole process relies on that, the expert, and like you said it's not just a question of being an expert in the subject knowledge, it's about knowing the lesson study process, isn't it?</i></p> <p><i>But it's almost <b>someone</b> that just keeps it, keeps everybody on track...pulls it back together and goes right, we can't do that, we need to do this...</i></p>

C-SL15 described the first two LS cycles implemented in their new school. None of the staff had engaged in LS before, so C-SL15 facilitated the first cycle pro-actively, modelling the process and expectations about professional collaboration. They had been aware that teachers were anxious, having never experienced LS and being unused to having observers in their classrooms. C-SL15 was unable to be present for the lesson planning session of the second cycle and was dismayed to learn that one teacher had decided to save everyone's time by planning the lesson on the group's behalf, thereby undermining the collaborative nature of the lesson planning process in LS. This experience reinforced C-SL15's conviction that facilitation is an essential condition for successful LS.

### **Researcher reflections**

I experienced an epiphany when the significance of facilitation to sustain successful and productive LS dawned on me. It came as a direct result of this study following comments from two teachers in my school (A-TL7 and A-T2 below) which I recorded in my field notes at the time.

<b>R</b>	<i>[A-TL7] said that they were delighted that I was going to be taking part because they felt that that would ensure that it happened properly.</i>
	<i>...I know [A-T2] for example has said 'oh we'll have to do it properly now because you're here. We were going to have a nice chat, you're here now so we'll have to get on with it.' (October 2015)</i>

In the early phase of the study my role as LS facilitator evolved unintentionally. Initially I kept LS at arm's length, worried my involvement would inhibit teacher engagement, cause suspicion about performative lesson observation by the back door and constrain my attempts to provide a safe and trusted space for teacher learning. LS faltered, failing to inspire participant commitment. Later, I reflected that my absence had removed leadership from the process and left teachers floundering, with limited time to access the resources they needed and without the leadership required to keep the process on track.

In small schools, the facilitator was the headteacher, for lack of anyone else with the time or the inclination, unless the network could develop this role at system level to promote LS. So we began training LS facilitators, to work in their own schools and/or others. We developed guidance about the process and how school leaders might resource and facilitate it in their schools. We trialled the deployment of an LS facilitator to introduce LS in two small schools new to LS. Later, schools' experiences developing the role were shared with colleagues in leadership meetings as we began to establish LS facilitation more widely across the network. I reflected on the impact of this work on LS in my research journal.

<b>R</b>	<p><i>The teachers are really positive and [SL24] has noticed a change in the morale at School H. They're all really enjoying working with [A-TL7] and talking about the experience over coffee and in staff meetings. That's really positive.</i></p> <p><i>She talked about how significant A-TL7's support had been in keeping the group of teachers on track, and also in supporting their teachers' subject knowledge. (August 2018)</i></p>
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Leadership commitment has been mentioned by informants in relation to the two conditions already described here – the provision of time for LS, and facilitation. All four are inter-connected. I turn now to participant perspectives and other evidence relating to leadership commitment to LS as a vehicle for CPDL and/or Teachers' Action Research (TAR).

### 4.3.3 Leadership commitment to professional learning

#### Teachers' Perceptions

Teachers discussed the importance of evident commitment on the part of leaders to professional learning, their sense of their work in LS being valued, and leaders' concern about their professional development and its relationship to the quality of education for children. A-T2 felt strongly that leaders should be involved in LS from the outset, and that teachers and leaders should discuss and agree together the rationale for the LS inquiry focus, to generate a shared commitment to action and a commonly understood theory of change.

<b>A-T2</b>	<i>In deciding what you're going to focus on I think it's good for the teachers to think about what they feel, but also the leadership might put in this is what some of the data's showing, what do you think? How can we carry on with that? So it isn't just a random thing that a teacher chooses or one particular teacher chooses, it's more of a shared decision.</i>
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#### Leaders' Perspectives

F-L25 compared two cycles they had participated in and expressed a clear preference for the second one in which the Executive Headteacher (EHT - the overall leader of more than one school) played an active part. They felt the teachers were more committed to the process because the EHT's support and expectations were more explicit.

<b>F-L25</b>	<i>All staff felt much happier when the head teacher was leading it, I think, in the original format that we'd used. They felt more confident and they felt that all staff benefitted from the discussions that we had because we were all together.</i>
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Leaders in schools succeeding in establishing LS felt that leaders' commitment was key to this success. E-L22 valued pro-active facilitation and leader's support for the facilitator and by association the implementation of LS.

## System Leaders' Perspectives

<b>F-SL24</b>	<i>I think my mistakes were: there wasn't strong enough leadership to drive it I don't think. And I had deliberately kept my hands off because I wanted it to be something that other leaders were able to push through and I think that's a mistake. So it wasn't successful. So that's why the arrows are all pointing outwards with no real impact. It wasn't joined together.</i>
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F-SL24 discussed two cycles, one which they felt failed to thrive because of a lack of leadership commitment from the senior leader to whom LS leadership had been delegated. F-SL24 felt this ambivalence may have stemmed from a lack of experience as a LS participant and a lack of understanding of the purpose and potential impact of LS when well-led and facilitated. As a result F-SL24 stepped in for the second cycle. Both they and F-L25 believed F-SL24's involvement had 'sharpened things up'. In doing so they stepped out of arms-length, strategic leadership of LS, into more operational facilitation of the process.

## Researcher's Reflections

F-SL24's experience of explicit leadership commitment manifested in active participation and engagement in LS echoes my own observations recorded in my research journal. My initial anxiety that teachers might perceive my involvement as performative and judgemental, gave way to a realisation that my absence was understood as a lack of commitment. If I wanted teachers to commit as participants to this new way of engaging in professional learning, I had to lead by example, teach and coach by modelling and take an active part in the process.

<b>R</b>	<i>I have reflected quite a bit just in free moments here and there over the last two weeks or so about how much more effective it seems to be, I don't know whether it's because I'm involved or whether people are more experienced and more confident in their participation in lesson study than they were before. Part of it will be my participation in it. (October 2015)</i>
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In the second phase of the study, system leadership commitment was demonstrated in the development of policy and explicit guidance to promote the adoption of LS as a form of CPDL across the network as a strategic priority. Training materials were produced for seminars to support school leaders in their efforts to implement LS in their schools. LS implementation was included in school leaders' annual performance management objectives. Energy and effort were expended organising events where LS participants could share the outcomes of their work, such as Open House lessons, conference workshops and opportunities to present to colleagues in school staff meetings.

I conclude this part of my analysis with a section on *trust* as a bridge between conditions and cultures supportive of LS.

#### **4.3.4 Trust**

Trust crystallised as an emerging analytical theme from across my data bricolage. Participants stated its importance explicitly and implied the same less directly, whether they were talking about time, facilitation or leadership commitment. I found it difficult to decide whether to code *trust* to Conditions or Cultures. I began by coding references from teachers and leaders to both, then merged them, separated them again and dithered about whether it mattered. All participants referred to trust in some way, whether to the lack of it being a barrier or to its presence being a support. It was present throughout my field notes and research narrative. Finally I decided to code all references to trust to *conditions*, because my perception grew that successful LS does not appear to be possible without trust, making it, by my definition, a primary condition. Teachers needed to trust in the credibility of leaders' intentions and commitment and in facilitators' expertise, that the guidance and information they are given is grounded in evidence, that there will be no performative agenda related to observations of learning in LS, that their teaching will not be judged, and that they are free to be vulnerable in trustful LS contexts. Trust was so fundamental that it must be a primary condition. Trust was also palpable in functioning LS contexts, and leaders especially felt that teachers' and leaders' engagement in LS promoted

trustful relationships and cultures where previously they may have been lacking. On this basis, trust may be a cultural feature promoted *by* LS and a cultural condition *for* LS, spanning the boundary between the two categories of LS support of interest to my inquiry (Williams 2002). A key challenge for me as a researcher was to understand what it was leaders might be doing in their leadership practices to build trust in ways that might contribute to the successful implementation of LS.

### Teachers' Perceptions

F-T27 commented on the role F-SL24 played in establishing trust through active participation in and facilitation and leadership of LS.

<b>F-T27</b>	<i>There are times when [F-SL24] said, right, well I'll teach the lesson this time and you can all watch. That's really nice to get to see someone else teaching who's been teaching for so many years and who will come in and do it. So, I think that really has been a good leveller put there. It makes us all feel like there's no one who's above anyone else. Everyone's ideas are valued.</i>
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A-TL7 compared two LS cycles they had experienced, one with and one without facilitation. They remarked on the difference they perceived in levels of trust between the two. The facilitator had credibility in their eyes because of the emphasis on the use of authoritative research literature to inform the cycle. This lent credibility to the new learning taking place during Kyouzai Kenkyuu. The facilitator's insistence on collaborative planning based on the group's new learning led to a sense of collective ownership of the lesson. This, and an explicit focus on pupils during the observation also removed the 'threat' of performative observation from the teacher leading the research lesson. A-TL7 connected the presence of a skilled facilitator to the trust necessary to support a successful LS cycle.

<b>A-TL7</b>	<p><i>It doesn't matter if you're the head teacher, a subject leader or a newly qualified teacher. You're all in the same boat and you're starting in the same place. There's no threat.</i></p> <p><i>I don't feel that my teaching is being judged because I'm teaching something that has been approved collectively.</i></p> <p><i>I think it's trust, isn't it, and that's what the facilitator does.</i></p> <p><i>Going through the process you begin to trust in each other, that no-one is out to get criticised.</i></p> <p><i>I think also you trust in your facilitator because they, in this instance, produced a selection of abstracts or summaries of good research.</i></p>
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### **Leaders' Perceptions**

C-L16 connected '*non-threatening*' with the focus of observations in the research lesson being on the children's responses. They reflected that teachers in their school had not been accustomed to discussing children's learning in a '*safe environment*'. They expressed joy in the progress the relatively recently appointed headteacher had made in building a more trustful school culture.

F-L25 felt the LS facilitator should have the full support of the school's senior leadership – especially where some teachers may have negative attitudes to CPDL and/or LS. The headteacher was trying to effect cultural and organisational change, using LS as a vehicle for professional collaboration and pedagogical improvement. The LS leader in this school discussed the difficulty of introducing it in a school where teachers had long been accustomed to performative, graded lesson observations. They described the challenges they had encountered and attributed the growth of trust to engagement in LS. They expressed satisfaction in experiencing a shift towards more a trustful culture and positive engagement in LS over time.

### **System Leaders' Perceptions**

F-SL24 also suggested that LS contributed to a growing culture of trust in the cluster of small schools under their leadership. They had used LS deliberately to provide a context in which teachers and leaders could work



together to develop teaching and learning. They felt that this close professional collaboration had nurtured the growth of relational trust from a cynical starting point.

<b>F-SL24</b>	<i>There wasn't that culture of trust but it was built through this process because everybody did it, everybody had a go and then over time the culture of trust has become really strong and I think partly because we did this. I can see why you might think you need the culture first because you do need to be able to trust the process and trust that you're not going to be judged somewhere along the line and that actually we're doing this for the children. We know that but it can be used as a tool to build culture where there isn't any. I think to show them that what we are doing is important and it's not ... it isn't a judgement about the teaching, it's not a judgement about who is delivering. We're not judging you, this is a learning experience for all of us.</i>
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F-SL24 echoed A-TL7's comments about the role of the LS facilitator in building participants' trust in the LS process. They compared two cycles, with and without their facilitation. They suggested the absence of leadership from the first cycle had contributed to its ineffectiveness. This perception had prompted F-SL24 to be more actively engaged in the second. Their sense that this had made a positive difference to participant trust, motivation and engagement was echoed in the Pictor responses of teacher and leader participants.

### **Researcher's Reflections**

In my field notes I refer to the importance of building trust in order to sustain LS, that participants needed to trust me as their LS facilitator, to trust in my expertise as a Koshi (with specialist expertise in primary English), as school and system leader, and as LS participant.

R	<p><i>I can see how that would work because my participation in lesson study this half term I think has had quite a few effects, positive effects, that outweigh any negative worries that I've had about inhibiting people and making them feel that they're being monitored.</i></p> <p><i>I need to build trust and inspire confidence that I know about what I'm doing and what I'm talking about.</i></p> <p><i>Encourage a spirit of inquiry and anticipation – a safe context in which to take some risks with no threat.</i></p> <p><i>Hopefully this is an indicator of emerging trust and the beginning of positive relationships...</i></p> <p><i>Building trust is key. (October 2015)</i></p>
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I observed that interrogating evidence-informed sources of guidance and engaging in guided discussions about research evidence relating to pedagogy and curriculum in LS, during Kyouzai Kenkyuu, appeared to help teachers to understand and trust leaders' rationale for change and to develop their own theories of change.

I commented on my own and other leaders' practices which aimed to alleviate teachers' anxiety and build trust, for example:

- arranging for the leader or the LS facilitator to teach the first research lesson;
- putting strict protocols in place to ensure that observers' attention was directed towards children and away from the teacher teaching the research lesson;
- team teaching the first research lesson to share the burden of scrutiny.

All of these strategies appear to have helped to cement trust in the process.

This section presents a woven, integrated crystallisation of perspectives and evidence from my research data bricolage on aspects of leaders' practices oriented towards establishing four primary conditions which I suggest may promote and nurture effective and sustainable LS in my network of 11 English primary schools. I concluded that practices aiming to establish trust

may promote a cultural condition both necessary to and a potential outcome of LS and placed it here to provide a bridge to the next section on other aspects of school culture which may allow LS to flourish.

#### **4.4 Cultures**

I approached this strand of analysis using the anthropological definition of organisational culture outlined in 2.3.7. Participants' responses and my observations suggest that collaboration in LS situations provides rich opportunities for productive, professional dialogue, characterised in literature as exploratory talk (Dudley, 2010; Mercer and Dawes, 2008). In addition, further themes relating to organisational cultures emerging from my data analysis at each or either level of leadership, included the manner in which leaders' LS-oriented practices varied in response to school crisis and the extent to which they promoted teacher agency. What follows here is a woven crystallisation of evidence from my data bricolage relating to the practices enacted by leaders to promote and change school learning cultures in contexts of LS in this study, focussing on:

- Collaboration
- Crisis management and school improvement urgency
- Teacher agency

I begin with a summary of analysis relating to collaboration.

##### **4.4.1 Collaboration**

Evidence from my analysis suggests that collaboration takes place in successful LS contexts, but also that LS may provide a context which promotes authentic collaborative cultures in which participants engage in fruitful co-labouring that has the potential to promote practice change, either through planned and intentional CPDL and/or Teachers' Action Research. I reflected in 2.3.8 that school leaders might wonder whether a collaborative, learning and inquiry culture might be required before introducing LS, or whether LS could contribute to the development of such a culture. The answer may be both. As in the case of trust, my challenge as a researcher

was to understand what leaders do in their LS-oriented practices to promote fruitful professional collaboration in LS contexts.

### Teachers' Perspectives

B-TL11's responses suggest that while a culture of professional dialogue and collaboration existed in their school, engagement in LS lent focus and rigour to the discussions that they had not experienced in other contexts. On their Pictor Chart, they use the word '*meaningful*' to describe the professional discussions they had enjoyed in LS and position this sticky note next to '*working collaboratively*' - two features, they explained in their interview, characterising successful LS.

<b>B-T12</b>	<p><i>It sounds a bit general and obviously, but working collaboratively, I love the group who I work with...</i></p> <p><i>And being a new member of staff at the school as well, it was a completely sort of equal playing field from the first conversation we had...</i></p>
<b>F-T26</b>	<p><i>But actually, we're all in this together. And then because it's our little team, it felt like, do you know what? We're going to drive this forward for the school. And it felt about just getting that sort of culture. So that collaborative colleague sharing, peer assessment, peer observation and everything was really useful.</i></p>

Teachers referred to the extent to which they had valued and enjoyed the opportunity to collaborate with colleagues in LS contexts. B-TL12 commented that they had not had a similar opportunity to engage in dialogue about educational research in a collaborative context since they were a student at university.

### Leaders' Perspectives

<b>A-TL3</b>	<p><i>And everybody has to know what their role is. The importance of their part is like - it has to be a collaboration.</i></p> <p><i>...because lots of people just like to have the power – you're doing that, you're doing that. But it's not like that at all and that's the whole thing of Lesson Study. It's all about working together.</i></p>
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Leaders discussed the benefits of collaboration to promote collective thinking, problem solving relating to lesson design and pedagogy, and collective responsibility for lesson outcomes.

### **System Leaders' Perspectives**

<b>F-SL24</b>	<p><i>And we hadn't that many staff meetings together but it did set up the pattern for me really so every staff meeting is together now.</i></p> <p><i>...genuine dialogue that happens between teachers and you actually see them getting really passionate about it.</i></p>
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The quality of collaboration was enhanced in the second of the two cycles compared by F-SL24 through more proactive leadership and facilitation. Participants had recognised the improvement and begun to understand the potential benefits of LS. C-SL15 also acknowledged the impact facilitation had on the quality of collaboration in his inexperienced LS team.

<b>C-SL15</b>	<p><i>Four teachers had met to discuss what they were going to plan and one of the things that seems to be a problem I suppose, is the sense of people not understanding necessarily the process of collaborative work.</i></p> <p><i>And there was at one point one of the more dominant teachers in the group came to me after they'd met and said I've gone away and I've planned the lesson.</i></p> <p><i>Forget about the collaborative nature and understanding really what the planning of the lesson was about, it's not just go back and plan the lesson. It's thinking about how to plan the lesson collaboratively and not just get it done,</i></p>
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### **Researcher's reflections**

The extent to which informants valued the high-quality professional dialogue taking place in collaborative LS contexts was evident in Pictor responses and in my own observations and reflections. Dialogue as purposeful, exploratory talk seem to be intrinsically linked with effective collaboration. It was also apparent that both collaboration and dialogue seemed to be more productive when well-structured and facilitated. The network's school improvement framework, based on Fullan and Quinn's (2016) coherence model and

illustrated in Figures 9 and 10, emphasises LS implementation as a central strategy to promote professional collaboration, learning and collaborative school and organisational cultures.



Figure 9: Framework for coherence

(Fullan and Quinn, 2016, p.12; original in colour)

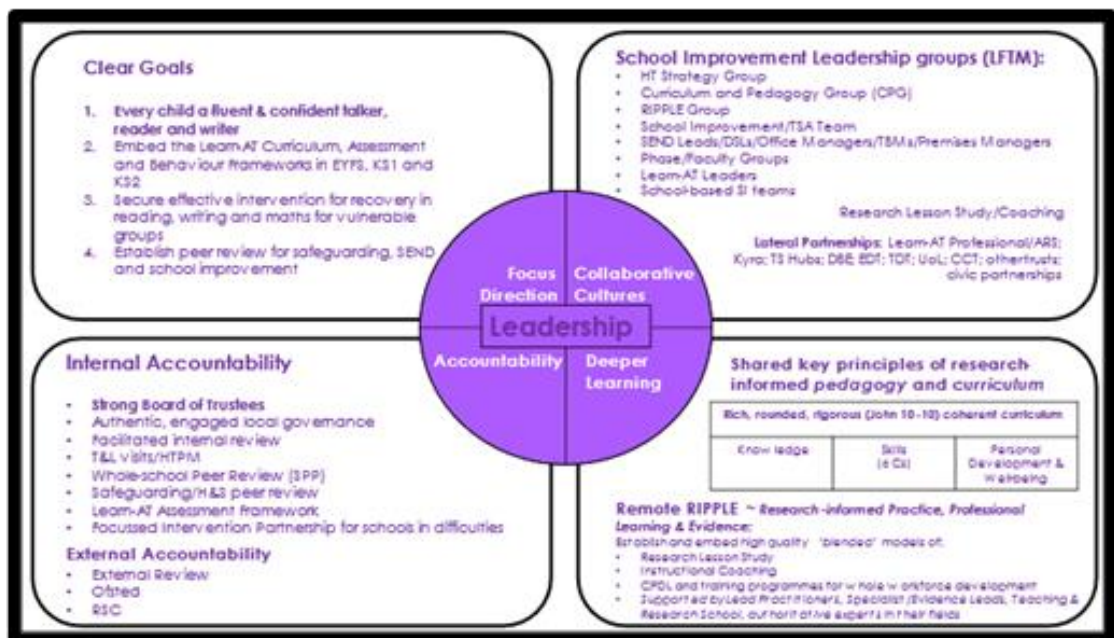


Figure 10: This study network's school improvement framework diagram

(original in colour)

Iterative data analysis throughout this study has suggested that teachers value dialogue with leaders and subsequent co-construction of actions and strategies to address school improvement priorities identified through school evaluation processes. In the next section, I crystallise evidence from across my dataset relating to participants' perspectives about LS leadership practices during periods of school improvement urgency or in response to school crisis.

#### 4.4.2 School Improvement Urgency

In this study, informed by my review of relevant literature, I conceptualise school improvement as the achievement of successful and sustainable change in the complex work of schools. Urgency can turn into crisis following events such as negative school inspection judgements. I found evidence in my data that a sense of school improvement urgency and, in two case schools, crisis, can be framed as a catalyst for positive school change in contexts of LS.

#### Teachers' Perspectives

Following two contrasting cycles of LS, F-T26 reflected that LS leaders and participants should be braver in their willingness to confront school improvement challenges in LS contexts. In one LS cycle they felt that the group had opted for the easy, rather than the worthwhile.

<b>G-TL29</b>	<p><i>And then thinking about how it really needs to be integrated into the school development plan.</i></p> <p><i>I think we just need to step up and say, change can sometimes be difficult but we're going to have to do it. Maybe everyone just be a bit stronger about saying, no actually, we need to do this, or try this, rather than just go with something that seems doable.</i></p>
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A-T2 urged leaders to trust teachers with school improvement and evaluation information, to invite and engage in dialogue and to value the contribution teachers could make to the debate about how to tackle school improvement priorities in the classroom.

## Leaders' Perspectives

Leaders also valued explicit links between school improvement priorities and LS. They suggested that LS might support the development of teachers' and leaders' collective efficacy in tackling these priorities together. F-SL24 and F-L25 both felt that school improvement urgency gave a purpose and rationale for action that supported teachers' understanding of the theory of change informing their LS work and the contribution it might make to whole school improvement.

<b>F-L25</b>	<p><i>I think for us, it's made us much more focussed on the school development plan.</i></p> <p><i>It's very easy to think, this is it. This is an issue. This is something we need to look at. We've decided, we know we're going to look at this.</i></p> <p><i>So this is about making it happen when you want it to happen for your school development plan.</i></p>
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## System Leaders' Perspectives

C-SL15 asserted that leaders should be focused and single-minded in their planning for LS in order to prioritise resources with which to implement it effectively, the better to tackle coherently the challenges facing the school. Leaders should communicate clearly to LS participants the rationale for the choice of LS inquiry focus and work with participants so that participants' attention and energy are oriented in one direction. I construed this to be an example of a learning-focussed leader developing strategy to promote and participate in teachers' professional learning, directed clearly towards the improvement of pupil learning outcomes (Robinson et al., 2009; MacBeath and Dempster, 2008). F-SL24 suggested that the urgency created by a negative external (inspection) judgement of the school's effectiveness had motivated teachers and leaders to engage productively in LS with a clearer understanding of the rationale for change.



<b>C-SL15</b>	<p><i>And that comes back to that focus on school development plan, because if you're going to do that you want the lesson study to be focused on the school development and priority areas.</i></p> <p><i>But you can't have lessons where you go off on a complete tangent on some whimsical kind of side-track, just not necessarily relevant to the agreed focus of the LS - but people do as an aside if they really want to.</i></p>
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## Researcher's Reflections

The network's School Improvement Framework document, first published in 2017, exhorts school leaders to utilise 'a rigorous and supported form' of LS as part of a strategy for school improvement which emphasises teachers' professional learning and development. The policy acknowledges that LS requires leaders to commit adequate resource to LS.

<p><b>Key Strategies</b></p> <p><b>Collaborative Lesson Research or Lesson Study</b></p> <p>Research Lesson Study (RLS) forms the beating heart of school improvement through provision of collaborative, research-informed professional learning. RLS is implemented in a rigorous and supported form, in response to the improvement needs of the school identified through evaluation and review. A subject specialist, such as an Specialist Leader in Education, and Evidence Lead in Education or a Trust Leading Practitioner, trained and experienced in the facilitation of lesson study, supports the LS team with:</p> <ul style="list-style-type: none"> <li>• Identification of the LS inquiry focus/research question (informed by school improvement priorities)</li> <li>• Kyouzai Kenkyuu - a period of facilitated CPDL/study/engagement with pertinent literature and research-informed guidance</li> <li>• Collaborative lesson planning informed by Kyouzai Kenkyuu</li> <li>• Conduct of the research lesson(s) with joint observation of pupil learning</li> <li>• Post research lesson evaluation, review and re-planning if appropriate</li> </ul> <p>In addition, the facilitator supports the collection of baseline assessment data and further assessments undertaken at the end of the intervention to support the evaluation of impact and the publication of a Lesson Study report/poster, for submission to the RIPPLE Group. Where possible, the LS Team invites colleagues in their own school, and/or from other schools in the Trust, to an Open House lesson with a presentation about the lesson study.</p> <p>The T will make systematic use of secure video via MS Teams to record research lessons, staff meetings and other forms of professional learning to create a trust professional learning archive. This will further support the development of a collaborative culture, supporting remote collaboration, observation and discussion of learning.</p>
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**Figure 11: Network's School Improvement Framework document extract**

I recorded in my field notes my reflections about a presentation at a university by a LS researcher about their work in China (Xu and Pedder, 2015). I realised that in other countries more experienced with LS than the UK, there seemed to be much less anxiety about providing explicit central direction about topics for LS inquiries. I reflected that I may have been over-cautious about providing such overt direction. This led me to reflect again that my honourable intentions in the early days of implementation about wanting teachers to feel unconstrained by performative interpretations of my involvement, might in practice have been too laissez-faire and could have been construed instead as a lack of leadership and/or commitment.

<b>R</b>	<p><i>It made me reflect that we do seem to go through a lot of agonising about whether we should be telling teachers what to focus on in their lesson study or whether we should be leaving it entirely to them, but this doesn't appear to be an issue in the Chinese system.</i></p> <p><i>So teachers, for example, in the lesson study that [the researcher] had been recording, were looking at review lessons. The issue of the quality of review lessons had been highlighted at district level, and so this was what the focus of the lesson study for that particular year was orientated towards.</i></p> <p><i>We shouldn't be afraid of identifying an area for development that would benefit from that kind of forensic analysis, research and study.</i></p> <p style="text-align: right;"><i>(October 2015)</i></p>
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Managing the tension between direction and teacher agency is a leadership challenge relevant to the development of school learning cultures. Next, I summarise my analysis of data relating to teacher agency.

#### **4.4.3 Teacher Agency**

I did not mention teacher agency explicitly in my field notes. When I started the process of data analysis and thinking reflexively about aspects of my literature review, I began to connect teacher agency and participant commitment to LS to references in my literature review relating to trust, facilitation, collaboration and dialogue, school improvement, the role of Koshi and the place of processes, structures and systematic organisational routines in successful LS. These reflections alerted me to participant

responses which may relate to teacher agency and participant commitment during data analysis, outlined below.

### Teachers' Perceptions

I found little reference in the literature of teacher agency and/or leadership in LS contexts. Teacher participants did not use the term *agency* in their responses. I did not code many explicit references to teacher agency from leaders' responses. However, in my field notes I recorded observations relating to teacher agency in LS. Implicit in teachers' Pictor responses was the importance they attributed to a sense of ownership, of collective responsibility for the improvement work promoted in LS, and an appreciation of genuine collaboration with leaders and senior leaders in LS cycles which they felt had been successful.

Teachers valued being involved in decisions relating to focuses for LS inquiry, based on discussion and consensus about school improvement priorities with leaders. This was connected to the value they placed on effective facilitation, structure and systematic organisational routines informed by clear protocols. Teacher agency and commitment to LS appeared to be enhanced rather than inhibited by facilitation.

<b>A-T2</b>	<p><i>Firstly, the study needs to be meaningful and useful to all teachers involved.</i></p> <p><i>...In deciding what you're going to focus on I think it's good for the teachers to think about what they feel, but also the leadership might put in, 'this is what some of the data's showing, what do you think? How can we carry on with that?'</i></p> <p><i>Yes, I agree. I've put it works better when teachers enjoy and share their experience and feel valued in the group.</i></p>
<b>A-TL7</b>	<p><i>We want to be treated as equals and to have shared ownership of the task. Actually we taught the lessons and completely came to expect that we're going to reflect on that and make improvements.</i></p> <p><i>I felt more pride in the lesson, in all of the lessons this year. I think that's probably the shared ownership of them, definitely.</i></p> <p><i>...asking the questions which help other people come to the answers that make decisions. And there's links to coaching and mentoring, getting people to realise things for themselves...</i></p>

Teachers wanted their views, opinions and contributions to be valued by leaders. This was associated with their desire for LS to be linked to school improvement priorities, for leaders to share information with them so that they could contribute, through LS, to the improvement endeavour. B-T13 felt strongly that their experience of LS had a significant impact on their sense of professional growth and worth.

<b>B-T13</b>	<i>This was the impact on myself. I think it was so important for me actually as an NQT and actually not being very confident in my opinions of things, I went into it feeling like, oh, no one's going to listen to me, I don't know much. Actually, it was completely almost fresh walking in there and everyone I found... You'd say something and they're like, oh, yes, that's right. I felt like I was really valued in the process rather than being sort of the add-on person, oh, we need someone younger in. It felt really nice. I felt like that built my confidence.</i>
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For these teachers, well-led and facilitated LS appears to have provided a context in which teacher agency and leadership could flourish together.

### **System Leader's Perceptions**

H-SL31 recounts their experience of introducing LS to a group of teachers in a school in challenging circumstances, new to the network and to LS, cynical about the support being provided to them by the network and suspicious of H-SL31's role, motives and intentions. H-SL31 described how patient persistence, insistence on structure and engagement with evidence, in a relatively short time (less than a term) brought about a change in teachers' perceptions of the process and attitudes to engagement. By establishing trust and credibility, and developing a context which promoted accountability and engagement, the green shoots of teacher agency began to emerge.

<b>H-SL31</b>	<i>I think that was, there was a demonstrable difference from the beginning and the end, to the end of the lesson study cycle that I did. Where people came in thinking; I'm not really sure what I'm doing, I don't really know why we're doing this. To more of them being able to stand up in front of the other staff in a staff meeting and do a little thing saying; this is what we did, come and see it if you want to. And other staff who'd popped in to watch the last lesson saying; oh yes, it sounds really simple, but you'd be amazed at what they really did. And so it was part of their learning that I was involved in, they learnt something that is starting to have a bit of a ripple [effect] on other people, and it changed their perceptions of themselves as teacher learners I would like to say. That sounds quite strong.</i>
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In the next section, I move onto to discuss evidence from my data analysis relating to leaders' practices oriented towards organisational processes which may support LS implementation.

#### **4.5 Processes**

In this section I present a crystallisation of evidence from my data analysis pertaining to the practices enacted by leaders which aim to put in place processes which promote and sustain effective LS.

These processes contribute to the implementation of LS by leaders, whether they aim to introduce LS for the first time in a school or sustain and embed its practice over the longer term. From across my data bricolage, evidence emerged pertaining to leaders' practices which were oriented towards implementing the following processes in pursuit of these aims:

- clear LS protocols
- systematic organisational routines
- Kyouzai Kenkyuu
- knowledge mobilisation

I consider these four main processes, starting by defining each of them in the context of my study, then moving on to crystallise evidence from my data related to each one, making connections to theorisations of learning, LS and educational leadership outlined in my literature review.

### 4.5.1 Protocols

In this section, I summarise my crystallised analysis of data from across my bricolage, focusing on the documents and artefacts which codify guidance for LS participants in my study. In the context of my study, LS protocols are defined as rules or guidelines which scaffold and direct the implementation of LS. Such guidance has been informed by LS research literature and developed as a result of iterative and reflexive data analysis and practical experience accrued over more than eleven years of enacting LS in schools in our network. It is codified in the network's LS and CPDL policies, used by school, CPDL (or RIPPLE – Research-Informed Professional Learning and the use of Evidence) leaders and LS facilitators in training and in their work to implement and sustain LS in the schools included in this study.

Leaders at all levels suggested that clear protocols contributed to the success of LS. Until 2018, LS participants had been using Dudley's (2014) LS handbook as a guide to the LS process (<https://lessonstudy.co.uk/lesson-study-a-handbook/>). After 2018, a bespoke set of procedures was developed, informed by Takahashi and McDougal's (2016) and Seleznyov's (2018) work, which suggested characteristics of Japanese LS which may have been missing from LS practised in the UK. These included increased emphasis on Kyouzai Kenkyuu or the study phase of a LS cycle. Research informants' comments about the utility of clear and detailed guidance about LS cycle chronology and procedures also informed the document. It is kept under review and amended annually to reflect changes recommended by LS participants and leaders, and new research findings.

Protocols valued by LS participants and perceived by them to promote successful LS cycles included:

- written guidance in policy documents about aspects of LS and how to conduct a LS cycle;
- joint authorship and publication of LS cycle report and/or poster;
- research lesson observation proforma.

## Teachers' Perceptions

B-TL11 was determined to achieve a version of LS that reflected an authentic Japanese model and wanted this codified in guidance. Later in the study they became a school and system leader and LS facilitator (H-SL30) and contributed to the development of the network LS Policy. They advocated clear and unambiguous guidance, to promote consistency across the network in the implementation of a model of LS which reflects the core components suggested by Takahashi and McDougal (2016) and Seleznyov (2018).

<b>B-TL11</b>	<p><i>That is my own lack of confidence in my understanding of how lesson study works or how it should work. I know we can't replicate how it works in Japan, but I want to. I want to sit in a room with 25 other people, because that's how they do it. And I know that we... in time, we'll end up with an anglicised version, which will be cheaper and more efficient. And I worry that it won't work as well. And I think we should aim to do it how it's done in Japan, or at least aim to do it how someone who knows about how it's done in Japan thinks it could be done in Britain.</i></p> <p><i>And everyone... The leadership team, the senior leadership team has agreed that it will be very much a focus next term. To be doing it authentically and having a knowledgeable other about lesson study, and a knowledgeable other subject knowledge expert, and making sure that those two people sit outside of the process and are only there in an advisory [capacity].</i></p>
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## Leaders' Perceptions

<b>A-TL3</b>	<p><i>And, I think we definitely need those guidelines A-I was thinking some kind of toolkit, like with our Readers' and Writers' Workshop. Literally, like a set of expectations as well. Like your role within here is: you need to do this.</i></p>
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A-TL3 had experienced LS as a participant and later as a facilitator. They contributed to the adaptation of existing LS guidance (Dudley, 2014) used in the earlier stages of LS implementation to reflect better the Collaborative Lesson Research (CLR) model of LS emerging later across our network

(Seleznyov, 2018; Takahashi and McDougal, 2016). They found the provision of explicit procedural guidance to be useful, both in supporting them to fulfil their role as facilitator and in supporting LS participants to understand the process and expectations of them.

### **System Leaders' Perceptions**

F-SL24 felt that until the publication of the network's LS Policy neither she nor LS participants in their school had had a clear understanding of exactly how LS was intended to proceed. They suggested that time had been usefully spent training participants in the process of LS before embarking on implementing it, and that once that had been done, using the LS Policy as an artefact to support training, subsequent LS cycles had followed the inquiry cycle more faithfully and had been perceived by participants to be more successful.

### **Researcher's Reflections**

<b>R</b>	<i>...insisting that teachers observe learning and focus on their target pupils takes the attention away from the teacher who's teaching them as they may feel quite anxious about that. It's a very important leadership action to emphasise that.</i>  (October 2015)
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Informants' responses suggested that there was insufficient understanding among participants and LS leaders of the process and the rationale for the various components of a LS cycle. They asked for clearer written protocols and training to support the process. The lack of codified guidance may have hampered effective implementation and provided a barrier to LS being sustained in some schools. This led directly to the development of the network's LS Policy and contributed to the design and content of LS facilitation training sessions.

The network LS Policy contains explicit step-by-step guidance about the management and chronology of a LS cycle with appendices which include proforma for ethical consent to participate, research lesson observation, LS reports and posters, a list of LS *Dos and Don'ts* and pro-forma to support



close observation of pupils. This close observation is a systematic organisational routine (see 4.5.2) which serves two main purposes. The first is to focus the observers' attention on specific pupils about whose learning the LS participants have agreed beforehand that they have a particular interest. The second is to divert observers' attention away from the teacher who is teaching the research lesson and place attention very deliberately on pupils. Participants suggested this helps to reduce teacher anxiety, build professional relational trust and to emphasise to participants that LS is interested in pupil learning, not performative observation of teachers which may be construed to stem from an accountability agenda.

Templates such as this form part of the LS protocols codified in policy and communicated to school leaders and LS facilitators in training sessions and network meetings. The policy continues to support the ongoing implementation and development of LS in network schools. It makes explicit the place of systematic organisational routines, components of successful LS cycles which informants and LS literature indicate may be essential (Schipper et al., 2021; Stigler and Hiebert, 2016). In the next section, I crystallise evidence relating to the routines which may promote and sustain LS which reflects the characteristics of effective CPDL and teachers' action research.

#### **4.5.2 Systematic organisational routines**

A systematic organisational routine in the context of this study implies a standardised, codified procedure that is embedded in LS practice, to the extent that it is taken for granted in the approach to LS implementation in schools involved in this study. Several systematic organisational routines related to LS emerged as valuable to participants. They included:

- initial training and information (CPDL) about LS for participants and school leaders before embarking on a LS cycle;
- co-construction of the pedagogical problem and consensus about a specific LS inquiry question pertinent to the LS team, set in the

context of wider school priorities identified through school self-evaluation;

- development at the beginning of the cycle of a written research proposal which includes an evaluation method;
- Kyouzai Kenkyuu. This is Japanese term which refers to a period at the beginning of a LS cycle during which teachers undertake thorough study of material relevant to the LS inquiry focus (Fuji, 2014; Seleznyov, 2016; Takahashi and McDougal, 2016). Findings related to Kyouzai Kenkyuu are considered separately as a discrete process in 4.5.4.
- collaborative research lesson planning;
- disciplined time-keeping/scheduling of meetings and research lessons;
- close observation of case pupils using an observation proforma;
- a structured/facilitated post-research-lesson discussion which may involve a Koshi (someone external to the LS team who acts as a consultant to the group because of their specialist knowledge of the LS process and/or curriculum or pedagogical content knowledge);
- knowledge mobilisation procedures such as:
  - LS research reports
  - a research lesson to which colleagues are invited (Open House)
  - sustained follow up after the LS cycle.

Here I focus on a sample of systematic organisational routines which my analysis suggests may contribute to successful LS and are not mentioned extensively elsewhere in the literature. The sample includes:

- disciplined time keeping;
- meeting schedules and routines which contribute to knowledge mobilisation such as Open House research lessons;
- sustained follow-up after a LS cycle is complete.

#### 4.5.2.1 Disciplined time-keeping

Both teacher and leader participants expressed the view that it was helpful to establish expectations within the routine of a LS cycle that participants' and leaders will honour commitments to undertaking research lessons.

#### Teachers' Perceptions

<b>A-TL7</b>	<p><i>Also there's the timekeeping element. It's very easy without someone facilitating to justify within the group, oh I think we need another session on research or another session on planning when actually you don't.</i></p> <p><b>R:</b> <i>Do you think there's a tendency for a group of teachers to put off the evil moment of teaching a [research] lesson?</i></p> <p><i>[A-TL7] Yes, definitely, and very easy if something comes up in the school day like it does every day, something unexpected, to be ah, we can't do it. It's prioritising the lesson early on, saying it will be taught here at this point, no matter what, so we will make sure we're ready for that rather than we'll book it in when we're ready. I think that's quite important.</i></p>
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#### Leaders' Perceptions

<b>A-L3</b>	<p><i>They gave us a clear idea of when.. What we'll need to do; when we were going to do it – like a timeline. Deadlines, put dates in the diary...and with the deadlines, I think it was much more efficient because we weren't becoming scared about things or going off on a tangent because they had it all there, the structure, that's what I'm saying, the structure.</i></p>
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#### Researcher's reflections

<b>R</b>	<p><i>A-TL7 went across to School F today, to drop in on the lesson study that was meant to be happening. In fact it had been rearranged for another day. This is becoming a bit of a pattern and one of the challenges of managing lesson study in a starter school.</i></p> <p><i>Teachers appear to get quite anxious about it and they put it off and it's quite a challenge for the facilitator to hold everybody to account really, for carrying out and doing what they said they were going to do, and to get them over that initial hump*.</i></p> <p style="text-align: right;"><i>(March 2018)</i></p>
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I comment in my field notes on the frustration felt when participants new to LS appear to avoid committing to the first research lesson. Barriers appeared - staff absence, calendared school events clashing with the research lesson, dentist appointments...all manner of reasons to postpone, shelve or cancel plans for research lessons. Such was the strength of anxiety among teachers who have experienced lesson observation for performative or accountability purposes. Study participants suggested a robust approach to gaining commitment from teachers, school leaders and administrators that the time would be protected and commitments kept. I observed that once participants had experienced their first research lesson, (*'the hump'*\* -R, p.178) almost without exception they enjoyed and valued it so much the problem largely disappeared thereafter. These feelings were reflected in responses to participation in Open House research lessons – to which colleagues are invited to learn about the LS cycle and observe the research lesson. Participants were initially daunted by anticipation of an unfamiliar experience involving the scrutiny of their peers, but found that they enjoyed it, and were exhilarated by the event.

### **4.5.3 Knowledge mobilisation**

Here, I attend to participants' perceptions of the knowledge mobilisation opportunities presented by Open House lessons, written LS reports or posters and staff meetings.

#### **4.5.3.1 Open House Lessons**

An Open House (OH) lesson is a research lesson to which colleagues, either from within and/or beyond the host school are invited. The context of the LS cycle to which the research lesson pertains is explained to guest participants before the lesson begins, including the pedagogical challenge explored during the course of the cycle's inquiry focus, research literature reviewed during Kyouzai Kenkyuu, the rationale for change and evaluation, key strategies included in the research lesson design and where the research lesson sits within a sequence of lessons. OH guests may be provided with copies of the research lesson plan, the LS report or poster for information and a lesson observation pro-forma to direct their observational focus

towards pupils during the research lesson. After the lesson, guests are invited to participate in a structured post-lesson discussion, facilitated by an invited Koshi (subject specialist) where possible. Takahashi and McDougal (2016) warn against misconstruing an OH lesson as an opportunity to showcase pedagogical expertise; they are not demonstration lessons.

<b>B-T13</b>	<i>Because of that lesson, where there were so many people came to see B-L10 teach, it felt so high profile. It just felt really important and I think that's something that if you feel like you're involved in something that's really high profile and important.</i>
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B-T13 suggests the OH lesson gave purpose to the LS cycle. They felt their work was being acknowledged and valued by their colleagues and they felt proud to have participated and contributed. This sense of pride and purpose was echoed in leaders' responses.

### **Leaders' Perspectives**

<b>B-L10</b>	<i>It was good having a range of observers coming, a real range of people who know a lot about lessons, to knowing nothing about it. And hearing, not only their observations of the children during the lesson and how they'd responded to it, but also what they thought about how we'd done the cycle and what it was telling them for their own practice. I thought that was really useful during that post lesson discussion, that was a good element of it.</i>
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Leaders and System Leaders suggested that opening lessons up to colleagues enhanced the significance of the LS work in the eyes of the participants. They took LS more seriously, with a heightened sense of accountability for conducting it to a high standard. They were concerned about the quality of their teaching, the pupils' learning and the lesson design, and the way in which they practised LS. They wanted to represent their LS team, their colleagues and their school well.

### **Researcher's reflections**

Three network schools ventured into OH territory during the study. LS participants invited people external to the school, while one school invited

colleagues from other classes within the school to attend an internal OH lesson. I expected informants to express negative feelings about these lessons, because I was aware that participants found them daunting. However, while acknowledging the stress they induced, they all enjoyed them and felt a sense of achievement and pride in having participated in them. They were proud that other teachers wanted to come and take part. They valued the opportunity to share their experiences of the cycle, their learning and their findings with colleagues. I reflect in my journal that the anticipation of the OH lesson, the issuing of invitations - setting the date - might act as an internal accountability mechanism. It brought a sense of purpose and an expectation of peer scrutiny which may have enhanced leaders' and participants' motivation and engagement throughout the cycle. The OH lesson provided an opportunity for public acknowledgement of teachers' work in LS. Participants appreciated the opportunity to share their new knowledge beyond the group and felt valued.

The importance of a platform for effective knowledge mobilisation was also reflected in responses about written LS reports and comments about further follow up after a LS cycle has finished, in the form of staff meetings. I address this next.

#### ***4.5.3.2 LS posters and follow-up meetings***

##### **Teachers' perspectives**

The network's LS protocol required the publication of a written report in the form of a poster (Fig.12) at the end of a cycle. These posters were collected and stored in an online shared space. They were displayed at the network's annual conference, with contributors on hand to explain the LS cycle to interested conference delegates. Informants' responses suggested resignation and exasperation at all levels of leadership around these posters. The resignation came from a tacit acceptance that some form of write-up of a LS cycle was needed. There was a consensus that the poster format provided a manageable template on which to record the core elements of a LS inquiry cycle. The exasperation came from a sense that not enough use is made of the poster once published. To teachers this seemed a waste of their effort and a missed opportunity to mobilise new knowledge generated

through LS. They felt deflated after a LS cycle had concluded, as if the intensity of engagement was followed by a vacuum in which their work and the potential to contribute to pedagogical improvement more widely faded away with the posters' curling corners.

<b>A-T2</b>	<i>Discussed, I suppose. Not just the poster. Oh yes, so when you've completed it, sometimes it feels like, we're just asked, where's your poster? And if you value what you've done, the poster isn't quite enough. You just feel, okay, have the poster then. And actually the poster does not really reflect all your feelings and what you've got from it. It's.. Because you're doing the poster for somebody else, but you might feel that with your leadership you might rather discuss what you did. You know, something more deeply than the poster demonstrates.</i>
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**Area for Development: The teaching and learning of problem solving in Maths.**

**Research References:**

**Summary of findings/commonalities:**

EEF *Improving Mathematics in Education in Key Stage 2 and 3*

Children need to draw on problem-solving strategies to make sense of the unfamiliar situation.

Children need to be shown how to use existing knowledge – fluency and prior knowledge and vocabulary (also Hattie 2017 pp 49)

Children will need to distinguish between superficial similarities and deeper similarities - Use different representations to help with this.

Encourage pupils to ask metacognitive questions of themselves – What am I trying to work out? How am I going about it? Is the approach I'm taking working? – Resilience and confidence to question what they are doing or other are doing.

Need to help children understand that there can be different ways to solve a problem from early on – using open ended problems with no none outcome to illustrate this.

**The Teaching Gap – Sligler and Hiebert (1999) reviewed by Professor Takahashi** -

Teachers spend time considering in the planning phase the possible outcomes to problems and how to model this to the children and how to guide children towards these possible ways.

Problems are planned for so that children can access and begin to solve independently without input.

**School 3**

Report Written by:

L14, L15, L16 et al (2017)

**Hypothesis:**

Children can follow processes relatively well but struggle to really contextualise these skills.

Children, and often children who are progressing well in maths, struggle with different variations of problems or problems with no set answer. Focus can be on the right answer and not the process.

**Your Question: Does the use of a problem without ready-made answers aid the children to develop their overall resilience and ability to apply the mathematical thinking and vocabulary.**

**Lesson Plan/s Summary and Adaptations:**

Lesson 1 (Whole class Year 1 and 2 mixed) – Using the 'Maths no problem' example of 22 children in 3 lines initially 6, 7 and 9. How many children are there in total? How could they be lined up? Ask the first question and allow time for the children to ascertain there are 22 and for the next [part there will still be 22. How did you did you found out how many children there were? Review and model to the class how children did it? How could they be lined up on the playground?

Lesson 2 (whole class Year 3 and 4 mixed) - As above but we made a point of all children recording individually due to some being passive in the last lesson. There would still be the opportunity to use talk partners. Also if children struggled to start the problem we agreed that the teacher would bring them together and provide a further example.

Lesson 3 – (Whole class Year 5 and 6 mixed) – As above and see how children record their ideas – do they use brackets, are they systematic in their approach?

**Observations:**

Session 1 – We used Iris Connect to see the moment when a child, who we would not have come up with such an idea, started solving the problem in a systematic way independently. This was shared with the class by the teacher and other children began to use this method. We noted that although working in pairs aided discussion some children relied on their partner to record the information and they became more passive. A lot of rich vocabulary and discussion between pairs of children. Children demonstrating prior learning – 'part, part, whole'. Some children demonstrated other mathematical knowledge such as multiplication and 'near doubles'. Next time we want to take children who appear not to be accessing and provide a further example rather than them becoming passive and leaving a partner to complete any recording or thinking.

Session 2 – More able children initially reverted to drawing pictures of the lines of children rather than number sentences. This occurred after the teacher had modelled number calculation recording. All children were engaged and were able to show their ideas – they also were all keen to get going even before the teacher had finished explaining. One child noted that he didn't need to draw pictures of the people all of the time. Nobody appeared to be using a logical route (20+2, 19+3 etc) and were randomly selecting numbers. Some did with just two numbers and some did have more than two lines of children.

Session 3 – The children's response the initial 'how many children are there altogether?' was met with all the children initially counting singularly – some children after prompting did suggest other ways. The children found 'getting into' the problem tricky and suggested groupings such as hair colour. Quite a few children drew detailed pictures of the children or lines to record before realising they could record as a number sentence – this reduced the number of solutions tried. The children needed quite a bit of additional input possibly because they thought the problem was too easy?

**Conclusion – Data (qualitative and quantitative)- acknowledgment of the limitations of the study:**

Children as they got older appeared to find the open ended nature of the problem harder to suggest possible solutions. This problem, although it seemed not 'all sing all dancing', was met with complete engagement by all children.

The older children struggled more than the younger children to identify patterns, solutions, logical processes and efficient written responses to the problem. Discussions around the maths was high in all sessions.

The children across the sessions appeared to be drawing and juggling a lot in order to interpret their ideas for solutions. More direct teaching of open ended problems was needed by all – but that we must look into how this is done to help children to become independent and not rely just on a given structure (meta-cognitive approaches).

NB – this is based on the observations of three sessions, all on one problem, with 68 children present overall. This is a small sample and our findings are limited by this.

**Practice Change/Advice:**

- A need to support and provide chances for children to tackle 'open ended questions' and real problems to solve.
- Pictorial and concrete variations and manipulations are still needed throughout the school and not just for younger children.
- Modelling and exploring with children drawing/journaling styles to support learning (not always perfect pictures of children in the problem).
- Anticipate that the older and 'higher attainers' will become frustrated more quickly with open ended problems.

**Figure 12: Lesson Study Research Poster, School C**

*(Original in colour; original size A3; identifiers removed)*

Teachers questioned leaders' motives for the poster. There was an implicit suggestion that it might be used as an instrument of accountability, more to evidence the completion of a cycle rather than a genuine knowledge mobilisation tool. Teachers wanted their LS work followed up, through opportunities to share their work in staff meetings, to revisit it later to sustain the implementation of practice change brought about by LS. Where posters were shared, say at an Open House lesson, or in a staff meeting with colleagues, teachers expressed satisfaction. Enthusiasm for follow-up



seemed to express a need for leaders' recognition of teachers' work and for that work to have a genuine purpose and audience.

### **Leaders' and System Leaders' Perspectives**

Leaders talked less about the poster. They shared reflections about how they had tried to embed changes in classroom practice arising from LS more widely in their schools – using a range of strategies to mobilise new knowledge, such as staff meetings, internal open house research lessons for teachers in their schools beyond the LS group. D-L19 acknowledged the LS poster, but compared the way the network was (or wasn't) using them with their experience in a separate Teacher Research Group focussed on mathematics, which to them seemed more effective and gave the posters a purpose and a role to play in LS knowledge mobilisation.

<b>D-L19</b>	<i>It's hard, it's what you do, spend all this time finding and seeing what do we do with it, the poster or whatever's helpful in a sense that it reflects what's been done. But it's quite hard to then say now everybody needs to, you know, we've found this out, it can get lost by the time people, people run out of steam by the time – sometimes they get to the end and it's a bit kind of like thank goodness that's done. And then it's gone forever.</i>
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In the next section, I move on to crystallise participant perspectives about the processes involved in Kyouzai Kenkyuu, to illuminate the characteristics participants perceived to contribute to its value as a LS process and organisational routine.

#### **4.5.4 Kyouzai Kenkyuu**

In this section, I crystallize a range of perspectives from my data about the role of Kyouzai Kenkyuu in a LS cycle and leaders' practices aimed at securing its place in LS cycles.

#### **Teachers' perspectives**

Teachers' responses reflected the value they attributed to a structured and facilitated period of study in advance of planning their research lesson. F-T27 shared their reflections about using the knowledge gained during Kyouzai

Kenkyuu to refine and narrow the LS inquiry focus. They felt this had been too broad in past cycles and that iterative cycles and improved access to relevant research literature would support this development.

<b>F-T27</b>	<p><i>I like that we have meaningful discussions all the time but I think it was that having the time to sit down, actually look at research papers that sometimes you would never have the time to do and actually picking apart and being really reflective and talking with each other. And how I might have interpreted something that was said in a general article might be different to what [others] would think so it was that sort of bouncing ideas off of each other as well which, again, I thought was really good.</i></p> <p><i>Yes, I felt a bit like I was back at university almost and that I was learning more because day by day, you're so busy in the classroom you don't always have time... Yes, I don't feel like I have a lot of time to sit down and do that. So having that time of your own to really get stuck into something. I felt I was learning a lot in that.</i></p>
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Teachers valued both having the time to explore research literature before embarking on lesson planning, and having a trusted facilitator mediating access to relevant articles and authoritative guidance. This saved them valuable time and provided assurance that the material provided was credible and from reliable sources. There was an implicit recognition, too, that a sharply-focused period of Kyouzai Kenkyuu supported the process of refining the LS inquiry question and helped the LS team more clearly articulate a theory of practice change to inform their research lesson planning. There was a clear sense of the process enhancing teachers' sense of professionalism and academic gravitas, reminding them of their time at university and their enjoyment of professional, academic and critical dialogue.

### **Leaders' perspectives**

B-L10 recognised the significance of the learning which took place during Kyouzai Kenkyuu. They discuss their realisation that the LS research lesson played a relatively small, though important part in the extended learning and inquiry process of an entire LS cycle. They described how the team's new learning about a small and tightly focussed aspect of pedagogical content

knowledge in maths took place during strongly-facilitated Kyouzai Kenkyuu. This informed the changes participants made to their research lesson planning, which provided a context for teachers to try out their new understandings in a safe practice space.

<b>B-L10</b>	<p><i>And then we started looking at the research surrounding our focus.</i></p> <p><i>And some research was found for us by the maths lead and by the [facilitator] of the cycle. And then the rest of us went and found bits and pieces as well, and we spent two or three weeks reading that and synthesising it and talking to each other about what that was telling us.</i></p> <p><i>Yes, because actually the research lesson was a tiny part of it. I know that all of this was leading up to that, but that bit seems like a really small part. All of the reading and the discussing and the practicing and the refining and the thinking about the planning and the talking, that we did as a team, was so valuable.</i></p>
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### **System Leaders' perspectives**

F-SL24 described the significance they attributed to Kyouzai Kenkyuu as a structured, and explicitly-led opportunity for LS participants to learn something new about a specific aspect of pedagogy, supported by a subject specialist (the Koshi). They saw Kyouzai Kenkyuu as providing space and time for facilitated professional dialogue to strengthen subject and pedagogical content knowledge and the research lesson as a supported context in which new understandings can be applied in practice. H-SL31 discussed their approach to facilitating LS for novice participants, while simultaneously fulfilling the role of Koshi, as a Primary English specialist. They described how the process of iterative reading and subsequent dialogue about the participants' interpretation and synthesis of research findings had helped them to distil their LS inquiry focus from a broad whole school topic to a much narrower one which they felt was relevant to pedagogical problems in their classrooms.

<b>F-SL24</b>	<p><i>...understanding that research, isn't it? You can't just launch straight into your lesson planning. You have to have two or three CPD sessions, don't you? To unpick what you have found out.</i></p>
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## Researcher's reflections

R	<p><i>The role of research leader has been important – spending time on the research...before planning the lesson has been transformational.</i></p> <p>(September 2016)</p>
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Extracts from my research journal indicate that a combination of participant feedback and my own continuing engagement with LS research influenced the approach taken in this network of schools to structuring a LS cycle around organisational routines and processes which included a structured Kyouzai Kenkyuu or study phase at the beginning of a LS cycle. The process of planning the research lesson would not take place until participants had reviewed a range of literature pertinent to the inquiry focus and/or engaged with authoritative guidance with the support of a Koshi. Only then would they refine their LS inquiry question and use their new understanding to frame an approach to evaluating the effectiveness of a new aspect of PCK trialled in the research lesson.

In the next and final section, I consider evidence in my data pertinent to school structures which may contribute to the successful implementation of effective and sustainable LS.

### 4.6 Structures

The structures which my data analysis suggested might contribute to successful LS relate specifically to the staffing structures that informants and other data sources suggest may promote effective facilitation of the LS process. Structures include those relating to staffing, for example to provide access to a Koshi to support an LS cycle and/or provision of Kyouzai Kenkyuu in the early stages of a cycle.

I divide this short section into two strands, reflecting evidence emerging from my crystallised analysis. The first addresses structures designed by leaders to promote distributed instructional leadership, and the second the wider school staffing structures established by leaders which facilitate teacher

participants' release from their class teaching responsibilities to participate in LS during working hours.

#### 4.6.1 Staffing structures for distributed LS leadership

In section 4.3.2, I discuss the value attributed by participants to skilled facilitation to support effective collaboration between LS participants and to sustain the LS process. Participants also valued the involvement of a Koshi or knowledgeable other to support Kyouzai Kenkyuu.

#### Teachers' Perceptions

<b>A-TL7</b>	<i>Also perhaps without the facilitator initially there is a lack of understanding across the group as to what research actually was. We didn't look at many academic articles for example. It was more, this is a nice activity from this book, which wasn't looking back now with hindsight, having done it so well this year, isn't really, we didn't get a lot from that.</i>
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Both A-T1 and A-T7 were convinced that a combination of facilitation and strong leadership was a key factor in achieving successful LS.

#### Leaders' Perspectives

<b>E-L22</b>	<i>[They've] got support and then what we're doing is we've targeted [unclear] staff who I thought would be willing and, you know, the team that I originally wanted sort of fizzled it was E-TL23 who sort of came through as the driver. But it's just about building those other teams, so, you know, the fact that R did the lesson study and then R is now going to look at the monitoring. It just builds that support and, you know, because they're both invested in it.</i>
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E-L22, re-introducing LS to a school where the first attempt had been unsuccessful, decided to be pro-active and assertive in their LS leadership for the fresh start. They and the middle leader they had appointed to facilitate LS worked closely together and E-L22 made their support for the LS facilitator explicit.

## System Leaders' Perspectives

<b>F-SL24</b>	<i>And I think my mistakes were: There wasn't strong enough leadership to drive it I don't think. And I had deliberately kept my hands off because I wanted it to be something that other leaders were able to push through and I think that's a mistake. So it wasn't successful. So that's why the arrows are all pointing outwards with no real impact. It wasn't joined together.</i>
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F-SL24 felt their active involvement and participation increased the effectiveness of LS in their two schools. They reflected on whether the leader to whom they had originally delegated LS leadership had had enough experience and understanding of LS to lead it successfully, and made the decision after the first, unsuccessful cycle to play a more active part.

I started this chapter with a discussion of evidence in my data suggesting that the provision of adequate time is an essential primary condition for effective and sustainable LS. I move on now to crystallise evidence about the value participants attribute to staffing structures which aim to release teachers (and leaders) from their classroom (or other) responsibilities and commitments to participate in LS.

### 4.6.2 Releasing teachers to participate in LS

The emergence during this study of dedicated time for LS engagement during working hours as an essential condition for successful LS, creates a practical, logistical and financial challenge for school leaders. Iterative evaluation, informed by data from this study and regular discussions among leaders since LS was first attempted several years ago has informed the network's LS policy, making explicit the expectation that leaders will facilitate successful LS implementation. The policy describes the role of a school's RIPPLE\* Lead to ensure teachers' release time is protected, and school leaders are urged give the RIPPLE\* Lead their 'full and unequivocal support' (see Figure 13).

### **The RIPPLE\* Lead as Lesson Study Facilitator**

Skilled and determined facilitation by a senior leader is a key characteristic of successful, sustainable lesson study. The school should nominate a senior leader with sufficient authority and the full and unequivocal support of the headteacher to implement, facilitate and sustain lesson study as a key element of the school's CPD provision. This is the leader of research-informed professional learning – RIPPLE Lead. Learn-AT RIPPLE Leaders' Network Group provides training and support for school RIPPLE Leads to:

- understand Lesson Study and the Trust's approach to it;
- how to access and evaluate high-quality and pertinent research literature;
- how to use the Education Endowment Foundation's Toolkit to support engagement with well-founded research-evidence.

The Trust's RIPPLE Leads are members of the Chartered College of Teaching. Membership is paid for by the school and ensures access to a high-quality educational research database and quarterly editions of the College journal, Impact.

The RIPPLE Lead:

- Keeps the lesson study process on track: makes sure the session times are protected, cover is organised, teachers remember, the research lesson is taught, outcomes recorded and shared effectively.
- Facilitates professional collaboration: coaches the team members in lesson study participation, makes sure they understand the process and how a cycle works; supports collaborative discussion – ensures team members engage in professional dialogue and manage the tensions inherent in productive professional dissonance.
- Signposts the team to relevant and accessible research material, research reviews and other key texts to support the study period, facilitates their engagement with literature.
- Liaises with the Learn-AT RIPPLE Group for advice and guidance about the process, relevant, high quality literature. Attends RIPPLE meetings and engages in appropriate facilitation training.
- Facilitates direct engagement with a Knowledgeable Other (subject specialist) where appropriate and possible.

*\*Research-Informed Practice. Professional Learning and the use of Evidence*

**Figure 13: Extract from network's Lesson Study Policy 2019**

### **Teachers' Perceptions**

Teachers needed to feel confident that their pupils were in competent hands in their absence, not only to release them from their classroom duties to engage in LS per se, but also so that they could concentrate fully on LS participation, without worrying about what was happening to their pupils in their absence, or feeling guilty about abandoning them to potentially poor quality provision. When leaders had put in place reliable and established structures to secure regular, high quality cover for classes to release LS participants, teachers recognised and valued their effort, commitment and investment in teachers' CPDL.

<b>A-T2</b>	<p><i>Lesson study is facilitated well. That means a quiet space with no interruptions, and the class is covered well, and the teachers don't have to worry about the planning or be asked about their planning during their lesson study time, because your head should be and hopefully is somewhere else at that time.</i></p> <p><i>Because it's very difficult to focus on or worry about your class when you're doing it.</i></p>
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### **Leaders' and System Leaders' Perspectives**

Leaders described ways they had found to release teachers effectively and economically. D-L19 refers to the deployment of two HLTAs (Higher Level Teaching Assistants) to provide cover. HLTAs are a permanent feature of many primary schools' staffing structures in England, and often provide cover for short term teacher absence and teachers' Planning, Preparation and Assessment (PPA) time. However, finding capacity for them to cover LS as well is not easy and neither is it cost neutral. H-SL-30 explained that where the principles applied to providing PPA time are applied to LS release time, the process can be straightforward, but still challenging to achieve. Other strategies included using specialist instructors (often less expensive than fully qualified teachers) to deliver specialist teaching in areas of curriculum such as music, art, cooking, computing, sport and other 'enriching' outdoor activities such as Forest School and orienteering. Leaders and teacher LS participants suggested this type of activity reassured them that pupils were experiencing an enhanced curriculum rather than a holding activity, or a demanding lesson delivered by someone who might not have an adequate grasp of the content and might disrupt a carefully planned sequence of lessons. Other solutions included dedicating weekly staff meeting time for up to one school term to LS for one LS team at a time.

<b>F-L25</b>	<p><i>The biggest barrier is the releasing of staff, really. That is the hardest bit, to manage that and feel happy that you're leaving the children, that they're still doing what they should be doing and that we're not just all floating about. That's the biggest barrier for me.</i></p>
<b>D-L19</b>	<p><i>Well an HLTA and two TAs who are released on a Thursday afternoon to provide that release for the three teachers in the phase. And it seems to be working at the moment.</i></p>



<b>C-SL15</b>	<i>Cover is arranged just like PPA – same principles – so we can release four teachers at a time. And everybody knows it can't be disrupted – just like PPA time – it's untouchable. Office staff have been briefed – everyone understands.</i>
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### Researcher's reflections

<b>R</b>	<p><i>We talked about the various ways of facilitating that. I described what happened at School A before I left, and D-L18 corroborated that and said that it was still happening. That on a Monday afternoon three teachers are released to take part in lesson study, through a combination of one class having Forest School, one class having an HLTA teach computing and another class having an art lesson from a specialist practitioner.</i></p> <p style="text-align: right;">(January 2018)</p>
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Staffing structures designed to provide the class release time that data indicate is so important to successful LS emerged over time as leaders shared experiences and strategies. Approaches were influenced by school funding and budgets, but network policy acknowledged concerns that the quality of curriculum provision for pupils while their teachers were engaging in any form of CPDL including LS should be high. In practice, school leaders in this study deployed a combination of HLTAs and specialist instructors, most often for PE, Sport and Forest School, but also Art, Computing and Music to cover teachers' LS release time. Developments in digital technology during the COVID-19 pandemic presented opportunities for remote delivery of specialist teaching, supported and facilitated by teaching assistants physically present in classroom; these were being trialled at the time of writing, in LS and other contexts. Releasing teachers to participate in LS is a significant logistical and financial challenge for schools, but practices established over time in schools in this study demonstrated that the challenges are not insurmountable when factored into schools' strategic financial planning. As part of this study, in a recorded discussion with C-SL15, B-TL11 said, 'It feels to me like [LS] can't be treated as an add-on to CPD, it's got to be at the centre of it, hasn't it? It's almost got to be the centre

of the ethos of the school and the culture of the school in terms of how teachers make decisions about lessons.'

Embedding LS in the centre of schools' CPDL programmes also means embedding LS provision in CPDL budgets. The challenges of CPDL budgets are well understood and I do not under-estimate them here – but my observations and the responses of my research participants indicate that innovative solutions are available; staffing systems and structures can be implemented which facilitate the engagement of at least one LS team in one cycle at a time. In small schools – that team might represent all teachers; in larger schools, teacher engagement in LS was planned as part of a two-year programme.

This concludes my crystallised analysis of evidence contained within my data bricolage. I have woven together construals which are based on my understandings and interpretations of participants' perceptions, my own reflections contained within my field notes and narrative writing, and inferences drawn from LS documents and artefacts generated during the course of this long study. I move on now to present a summary of findings emerging from my crystallised analysis.

#### **4.7 Findings relating to categories of LS leadership practice emerging from crystallised data analysis.**

I developed the mental model presented in Figure 6 (2.6, p.97) to illustrate my conceptualisation of my field of inquiry. This model was further developed through synthesis (or crystallisation) of my literature review and my data analysis. It illustrates complex, multi-directional interconnections between leaders' practices and LS supports including cultures, conditions, processes and structures required to implement and sustain effective LS within and across the network of schools in my study. The emergence of LS in the centre is explained by theories contributing to the theoretical framework for my inquiry. I explained in my literature review ways in which complexity theory may help to explain how successful LS might emerge from within a complex system as a result of leadership activity which deliberately approaches its implementation from several different angles (see 2.5). Following analysis, a revised version of this inquiry conceptualisation model,

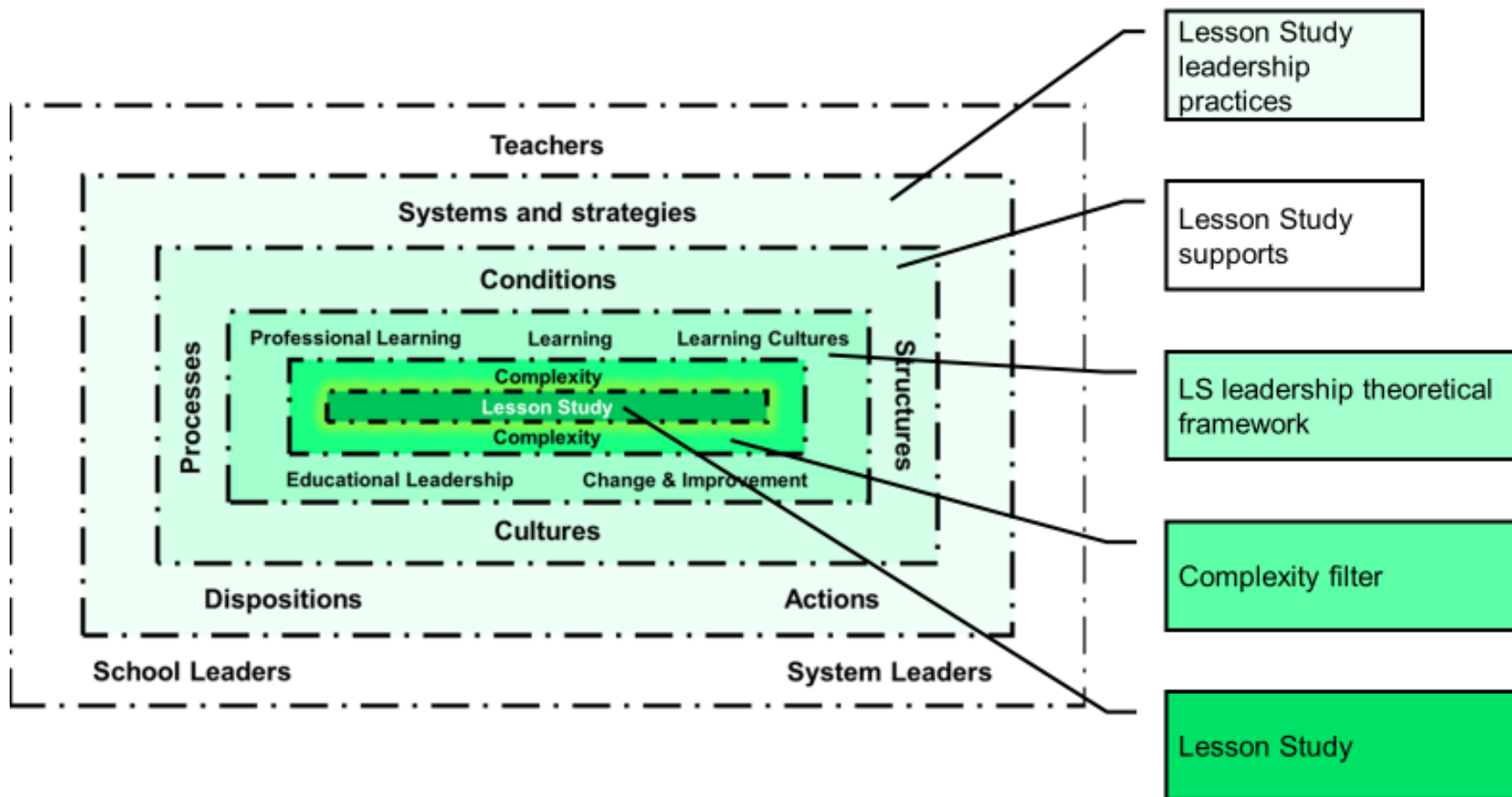
illustrated in Figure 14, positions the now illuminated categories of LS leadership practices of system leaders, school leaders and teachers which I hoped my inquiry would reveal in the outer layer of the diagram. With perforations, I indicate porous boundaries between the practices, LS supports and fields of leadership activity, to indicate their inter-connectivity and boundary-spanning characteristics (Williams, 2002).

My iterative, thematic and crystallised analysis suggests three broad categories of leadership practice enacted by leaders and oriented towards establishing supports promoting successful LS:

- **Strategies and systems:** Leaders made strategic decisions, devised strategic plans and put systems in place which prioritised LS implementation.
- **Actions:** leaders undertook actions intentionally oriented towards LS implementation.
- **Dispositions:** leaders demonstrated their commitment to LS explicitly and implicitly in their dispositions, including through their language, behaviours, attitudes and practices.

Table 4 summarises the main practices emerging from my crystallised analysis, organised according to these three categories.

Figure 14: Inquiry conceptualisation, post-analysis



Leaders' practices are now defined as systems and strategies, actions and dispositions.

*(Original in colour)*

**Table 4: LS leaders' practices**

LS Leadership Practice Category	LS Leadership Practice
<p><b>Systems and strategies</b> <i>Leaders made strategic decisions, devised strategic plans and put systems in place which prioritised LS implementation.</i></p>	School leaders made adjustments to school timetables and staffing structures to create time for teachers to participate in LS during the working day.
	School leaders made adjustments to teachers' contracted time commitments, to school timetables, curriculum and staffing structures to release teachers from their usual teaching responsibilities and to create time for them to participate in LS during the school day.
	School leaders established enabling systems and structures to secure sustainable staffing to release teachers from their usual teaching commitments to participate in LS during the school day, including scheduling LS cycles and LS teams across one or two school years.
	System and School Leaders planned and made provision for LS facilitation.
	System and school leaders provided specialist support relevant to the LS inquiry focus as part of the LS cycle's study phase (Kyouzai Kenkyuu).
	System and school leaders organised provision for teachers' continuing professional development (CPD) around LS and they integrated LS into CPD provision. They ensured the characteristics and mechanisms of effective CPD were incorporated in LS processes and procedures.
	System and School Leaders established knowledge mobilisation systems for reporting and/or sharing LS outcomes.
	System Leaders brought teachers from the same year group or age-range phase together from across a cluster of small schools to make a LS team. System leaders developed and disseminated LS policies and protocols using written artefacts, developing training programmes and materials, establishing network groups to support LS facilitators and leaders wanting to start LS in their schools.
<p><b>Actions</b> <i>Leaders undertook actions intentionally directed towards LS implementation.</i></p>	School leaders appointed and developed LS facilitators in schools.
	School leaders set clear goals for LS linked to school improvement priorities while promoting teacher agency in setting and refining LS inquiry questions related to these goals.
	School leaders built knowledge-sharing organisational routines into LS procedures, e.g. staff meetings, Open House research lessons, online briefings, training sessions and conference workshops to provide opportunities to follow up after LS cycles have concluded.
	School leaders arranged enabling structures for teacher learning in LS e.g. remote collaboration across schools, staff meetings to share LS outcomes.
	School leaders delivered presentations and training sessions for LS facilitators and LS participants.
	System leaders deployed subject specialists or Knowledgeable Others (Koshi) to support LS cycles in network schools
	System leaders made provision for remote or virtual forms of LS, using digital technologies and a virtual communication platform (MS Teams).
<p><b>Dispositions</b> <i>Leaders' demonstrated their commitment to LS explicitly and implicitly in their dispositions, including through their language, behaviours and attitudes.</i></p>	Leaders' commitment to LS influenced their willingness to commit human and financial resources to implementing and sustaining LS.
	Leaders communicated their expectations that LS processes and protocols be followed with fidelity.
	Leaders' prioritisation/protection of time for LS provided a clear message to administrative staff that teachers' CPDL in the form of LS was important.
	School leaders engaged in LS as full participants.
	Leaders were motivated to pursue, encourage, and find creative structural solutions to enable LS to take place.
	Leaders communicated clearly to all staff their expectations that time during the school day for LS should be protected.
	System and school leaders understood the rationale for LS and were committed to establishing and maintaining the processes involved in implementing it.
	System and school leaders viewed LS as integral to their school improvement plans.

In the next section, I present my findings as they relate to each of these categories of practice undertaken by teacher, school senior and system leaders.

#### **4.8 Leaders' LS practices**

The aim of my inquiry was to understand what kinds of practices were enacted by leaders in their efforts to establish a supportive environment in which LS might thrive. Thirty-one Pictor interviews, ethnographic field notes, narrative writing and LS documents and artefacts collected over nine years produced an extensive and varied data bricolage. It is not possible to include here every nuanced micro-practice enacted by leaders of LS or noticed by me in the course of my inquiry. For practical purposes I have highlighted those I construed to be emphasised through my analysis, to be significant and noteworthy in the context of my inquiry and my research aims and that speak most directly to my research questions.

I begin by explaining those practices linked to the strategies and systems designed by leaders in their efforts to establish a supportive environment for LS.

#### **4.8.1 Strategies and systems: leaders make strategic decisions and devise strategic plans which prioritise LS.**

##### **System leaders developed and disseminated LS policies and protocols.**

Network policy documents provided written guidance for school leaders wishing to implement LS in their schools, for LS facilitators keen to develop authentic LS procedures and to help LS participants understand the LS processes in which they were engaged. Leaders and teachers felt that written guidance helped LS to be implemented with as much fidelity to a Japanese model as was possible in an English educational context. System Leaders and LS facilitators reviewed the policies and protocols regularly in response to their continuing learning and research about LS and their experience of implementing it in their schools.

##### **School leaders made adjustments to school timetables and staffing to provide curriculum enrichment opportunities such as Forest School and/or specialist subject teaching such as computing, art or music in order to release teachers from their usual teaching commitments to provide time for them to participate in LS.**

This contributed to fulfilling two of the primary conditions my analysis suggested to be essential to sustaining successful and effective LS – *time* and *trust*. Teachers were resentful when leaders took their free time for granted and expected them to participate in LS at the end of the school day. However, when leaders provided adequate time, teachers willingly gave more of their own time. Making strategic provision for that time to be reliably available throughout a LS cycle may help to build trust and trustful learning cultures in which LS can thrive (Louis, 2017).

##### **System Leaders brought teachers from the same year group or age-range phase together from across a cluster of small schools to make a LS team.**

Teachers met in groups either face-to-face or online in Microsoft Teams. This practice provided teachers in small schools with opportunities for professional dialogue in LS contexts with colleagues who were teaching the

same year group. This relates to the contribution collaboration may make to organisational cultures which promote effective LS (Hargreaves and O'Connor, 2016; Fullan, 2015). It may also help to build networked, professional learning communities beyond the capacity of small schools with limited numbers of teachers and provide social support for participants, identified as a mechanism of effective CPDL (Sims et al., 2021).

### **System and School Leaders made provision for LS facilitation.**

My analysis suggested that facilitation may be a primary condition for successful implementation of effective LS. System leaders made strategic decisions setting organisational expectations for LS facilitation which influenced the decisions and actions of school leaders in their individual schools. System Leaders set expectations in policy that school leaders in the network should appoint a LS facilitator. Provision was made for network training and ongoing support for schools' LS facilitators. School leaders made provision for facilitation by undertaking the role themselves, or by appointing a middle or senior leader to undertake this responsibility. They made scheduling and staffing decisions which provided time for LS facilitators to be released from other duties to attend training and fulfil the role. They arranged for facilitators to have membership of professional bodies such as the Chartered College of Teaching to provide facilitators with access to online databases of research literature so that they could mediate access to research evidence on behalf of LS groups.

### **System and school leaders made provision for specialist support relevant to the LS inquiry focus as part of the LS cycle's study phase (Kyouzai Kenkyuu)**

In addition to and separate from LS facilitation, system and school leaders ensured LS teams were supported during a period of study before the research lesson was planned (Kyouzai Kenkyuu) by a Koshi with specialist subject knowledge pertinent to the LS inquiry. This was arranged both by System Leaders at network level and at school level by school leaders. System leaders deployed specialist subject leaders such as leading Maths or English teachers to support LS across a number of schools where LS teams



were working on similar inquiry topics. School leaders commissioned subject specialists to support individual LS cycles in their own schools. Sometimes this took the form of direct support from a specialist colleague. Sometimes, because of resource constraints, this support would be mediated by the LS facilitator through the use of a core text or texts written by recognised and authoritative experts in the focus of inquiry. This provision related to knowledge mobilisation (i.e. providing access to new knowledge pertinent to the LS team's inquiry question) through Kyouzai Kenkyuu (Selezniov, 2018; Takahashi and McDougal, 2016).

**System and School Leaders established knowledge mobilisation systems for reporting and/or sharing LS outcomes.**

Processes for mobilising the new knowledge generated through LS engagement may also be significant in LS implementation (Cheng, 2019; Qi and Levin, 2012). School Leaders developed systems and strategies to facilitate LS teams presenting their findings to their school colleagues; they put systems in place for organising 'Open House' research lessons. These were either internal, where school colleagues were invited to participate in a research lesson, or external, where colleagues from other schools were invited. System Leaders put policies, systems and supports in place for these activities to happen in multiple schools in the network. They made arrangements for the publication of LS research posters and the preparation of LS resource packs to support colleagues in other LS teams interested in exploring similar themes. A digital platform (MS Teams) was used to provide an online knowledge-sharing space in which to keep and disseminate LS artefacts and resources. These included LS research packs to support cycles in common inquiry areas such as problem-solving in maths, or early reading; LS research posters, reports, research proposals and plans; policy documents, LS guidance and written protocols.

**School leaders established systems and structures to secure sustainable staffing to release teachers from their usual teaching commitments to participate in LS during the school day, including scheduling LS cycles and LS teams across one or two school years.**

To provide dedicated time for teachers to participate in LS, which I suggest has been a primary condition for its success in this network, some school leaders deployed competent members of support staff to lead and supervise curriculum enrichment activities such as Forest School, cooking and craft activities like knitting and sewing. Specialist teachers and/or instructors were employed to teach subjects such as music, computing and art. These activities were sometimes provided in rotation half a term at a time. These measures allowed teachers to be released from their usual teaching responsibilities to participate in LS, confident that their pupils were having a worthwhile educational experience in their absence. Because the cost of this provision was significant, System Leaders agreed with school leaders to set an expectation at network level that teachers could expect to participate in a cycle of LS at least once every two years and that there should be one LS group working in a school at any one time. System leaders incorporated opportunities for school leaders to share knowledge of these practices and policies with colleagues in meetings and codified them in policy and procedural documents.

**System and school leaders organised provision for teachers' continuing professional development and learning (CPDL) about LS and they integrated LS into CPDL provision. They ensured the characteristics and mechanisms of effective CPDL were incorporated in LS processes and procedures.**

In school cultures where LS was established and effective, leaders saw it as an essential component of their school's CPDL offer to teachers, rather than something additional or extra. They recognised LS as a collaborative form of CPDL and as such they planned strategically and budgeted for it to take place alongside and integrated with other forms of CPDL such as coaching and CPDL programmes relevant to their school improvement priorities and teachers' professional learning needs (Sims et al., 2021). Prompted by the senior System Leader, one School Leader shared his systematic approach to CPDL implementation with others in a strategy development meeting and as a result other school leaders adopted a similar strategy. This involved identifying one school improvement priority which would be addressed

through LS, another through weekly instructional coaching and a third through regular weekly or fortnightly professional development meetings. This structure for CPDL helped to embed LS into schools' professional learning provision; it promoted clear goal setting and helped leaders at both levels to reflect on what form of CPDL was most appropriate to teachers' professional learning needs in the context of current school priorities.

The next section addresses leaders' practices demonstrated in the actions they took which were directed towards establishing LS supports.

#### **4.8.2 Actions: leaders undertook actions intentionally oriented towards LS implementation.**

##### **School Leaders set clear goals for LS linked to school improvement priorities while promoting teacher agency in setting and refining LS inquiry questions related to these goals.**

Having committed significant financial investment in facilitating LS, such as making arrangements to release teachers from their classroom responsibilities to participate, school leaders sought to influence LS activity through goal setting and evaluation of its impact on pupil and teacher learning. Leaders were keen to see a return on their investment but were willing to consider wider impact on areas such as school's professional learning culture, teacher motivation for professional learning and qualitative measures of teacher competence and confidence which did not correlate directly to specific LS inquiry foci. Teachers welcomed clear goals related to school priorities but valued freedom and agency to agree and refine LS inquiry questions pertinent both to school priorities and the needs of their pupils with colleagues in the LS group.

##### **School leaders appointed and developed LS facilitators in schools.**

School leaders designated a middle or senior leader as a school LS facilitator and tasked them with coordinating the school's LS teams, scheduling LS cycles, mediating access to educational research literature, as well as subject specific and pedagogical guidance pertinent to LS inquiries. In small schools with limited capacity for middle and senior leadership, the

Headteacher undertook the role of LS Facilitator. At network level, System Leaders appointed and trained LS facilitators who supported the introduction of LS in schools embarking on it for the first time. They provided regular LS facilitation training and support for schools' facilitators, by establishing a LS facilitators' (RIPPLE Leads') network group led by a lead facilitator, also a system leader.

### **System Leaders deployed subject specialists (Koshi) to support LS cycles in network schools**

System Leaders deployed primary English and Maths specialist teachers to work with LS teams in schools. These were teachers who had been designated as Specialist Leaders in Education (SLE) as part of the English Teaching Schools initiative (Gu et al., 2015), having undergone a quality assurance process to achieve their designation. Both Maths and English SLEs supported LS groups during the Kyouzai Kenkyuu phase of LS cycles and during post research lesson discussions. They mediated access to research literature and curriculum and pedagogical guidance, promoting the development of teachers' PCK prior to research lesson planning. One Maths SLE was employed on a permanent, part-time basis by the network as a Maths Lead practitioner. Part of their role was to support LS cycles in network schools as a Koshi. Teachers valued the contribution these Koshi made to their PCK and felt that their involvement lent credibility to the LS process and the changes they were making to their practice.

### **School leaders built knowledge-sharing organisational routines into LS procedures, such as staff meetings, Open House research lessons, online briefings, training sessions and conference workshops specifically scheduled to provide opportunities to follow up after LS cycles have concluded.**

Teachers valued school leaders' acknowledgement of their LS work, which they had become invested in and committed to. They wanted to share the outcomes of their LS inquiries and felt disgruntled and ignored when cycles were not followed up in some way. When leaders made systematic arrangements for LS participants to share their research and experiences

with colleagues in staff meetings after their LS cycles were completed, they felt that their contribution, through LS, to the work of school improvement was being valued. This was echoed and amplified in those schools where leaders organised Open House research lessons. System leaders made arrangements for LS teams from across the network to share their LS work in workshops and in a LS poster exhibition at the annual conference. It was not clear from my research whether these routines were effective in mobilising the new knowledge generated through LS to effect change beyond the boundaries of the LS team. Further research would be needed to explore that. That the events happened appeared to have a positive impact on the dispositions and culture of the LS team and the schools. Teachers and leaders felt that they raised awareness and understanding of LS among other teachers not so far involved, and seemed to contribute to the LS participants' sense of collective efficacy, pride in their involvement in LS and motivation to continue to participate.

### **System leaders made provision for remote or virtual forms of LS, using digital and video technologies and an online communication platform (MS Teams)**

During the worst period of the pandemic (March 2020 – July 2021), system leaders developed the use of a digital learning platform (MS Teams) and associated technologies such as class/conference microphones to trial LS remotely with teachers in small rural primary schools. Conducting Kyouzai Kenkyuu with a Koshi on Teams prior to the research lesson allowed teachers from the same year group to collaborate without the inconvenience and time constraints of travelling to each other's schools. Use of the technology provided opportunities for professional dialogue within an adapted form of LS which helped to mitigate some of the isolation of Covid restrictions and lockdown. One System Leader conducted a Masters' study about virtual LS and found benefits in the use of video for LS participants to record and review research lessons that may have potential to be useful in post research lesson discussions after the pandemic is over. This is proving an interesting area for further research in the UK and elsewhere (Holden 2021).

I move on now to describe the practices of leaders exemplified in their everyday dispositions – their behaviours, their language and their attitudes to establishing the supports necessary for successful LS.

#### **4.8.3 Dispositions: leaders demonstrated their commitment to LS explicitly and implicitly in their dispositions, including through their language, attitudes and behaviours**

##### **System and school leaders understood the rationale for LS and the process**

System and school leaders who were succeeding in implementing and sustaining effective LS in and across network schools articulated a clear rationale for LS as a form of inquiry-based teachers' professional learning. They understood the critical features of the LS process as outlined in the network's LS policy and were committed to incorporating them in their LS implementation plans.

##### **School leaders engaged in LS as full participants**

Leaders in schools where LS was well-established engaged in LS as full participants. Once school leaders had experienced well-facilitated LS, their appreciation of its potential to support and promote teachers' professional learning appeared to grow, along with their commitment to sustaining it in their schools. They enjoyed it.

##### **Leaders' were willing to commit human and financial resources to facilitate and sustain LS**

Leaders communicated clearly to all staff expectations that time during the school day for LS was protected.

Leaders in small schools (less than 100 pupils) undertook the role of LS facilitator themselves.

School and system leaders explicitly demonstrated through their attitudes and actions that they valued the impact of LS on teaching and learning and on school culture. They made it clear to teachers that they valued their LS work. They paid attention to LS participants and their findings. They allocated

staff meeting time and attended the meetings to listen to LS participants' presentations and engage in discussion about them. They committed to and attended Open House lessons. They made resources available to support the publication of LS findings in the form of posters and reports. They contributed to the credibility of LS and the development of trustful cultures by resourcing its implementation and by encouraging and facilitating the use of authoritative research literature and guidance to create new knowledge during Kyouzai Kenkyuu.

### **System and school leaders viewed LS as integral to their school improvement plans**

Because system and some school leaders saw LS as part of their school improvement toolkit alongside other forms of teachers' professional learning, they were prepared to invest in its success. They were also aware of the accountability implications related to this significant investment and were therefore keen to set clear goals for LS teams which were explicitly associated with school improvement priorities.

School leaders recognised difficulties in demonstrating any unequivocal and short-term correlation between individual cycles and specific aspects of pupil achievement. They evaluated the impact of LS on teacher motivation to engage in professional learning, the quality of teachers' professional dialogue, positive changes to organisational culture and more general changes to classroom practice. This was in addition to more specific evaluations and assessment of improvements to areas of learning which were the focus of specific LS inquiries.

One senior school leader recognised in themselves a tendency to covet tight control over the focus of LS inquiries. System leaders revisited LS policy rationale and intent regularly in LS planning meetings to sustain and refresh dialogue about the importance of teacher agency in refining and setting LS cycle inquiry questions under the umbrella of a clear school improvement goal.

I conclude my data analysis chapter here with a visual summary of the final iteration of my crystallised analysis. To try to understand the intentions and

orientations of leaders' practices and curious to see if there might be any interesting patterns, I used a simple grid to map each of my main findings to the LS supports suggested in my data that leaders and participants identified as pertinent to successful LS. This matrix illustrates a multi-faceted relationship between three categories of leadership practice, four categories of LS support and a further four dominant patterns in LS-oriented practices. The first two patterns show practices directed towards LS implementation – the provision of time and facilitation. The second two are directed towards broader school improvement leadership themes of teacher learning and school and pedagogical change:

1. Leadership practices related to the provision of dedicated time for LS
2. Leadership practices related to LS facilitation
3. Leadership practices related to effective CPDL and teacher inquiry
4. Leadership practices related to educational leadership of change and improvement

Table 5 illustrates this mapping exercise, using colours to indicate the connections between leaders' practices and LS supports. Like Figures 6 and 14, the dividing lines between columns and rows in Table 5 are perforated to indicate porous, permeable boundaries between categories of practice and their aims and to illustrate the scope for an infinite number of complex interactions between actors, leaders' practices and participant perceptions of them.

The next and final chapter of my thesis presents a discussion of my findings and conclusions, my reflections on my inquiry and its implications, and my thoughts on areas for further study.



**Table 5: Mapping LS leaders' practices to LS supports**

Overarching priorities		Priorities related to LS implementation						Priorities related to pedagogical change and school improvement						
		LS leadership practices related to the provision of dedicated time for LS			LS leadership practices related to LS facilitation			LS leadership practices related to securing the characteristics and mechanisms of effective CPDL and teacher inquiry			LS leadership practices related to educational leadership of change and improvement			
Categories of Practice		Conditions			Cultures			Processes			Structures			
LS Supports		Time	Trust	Leadership Commitment	Facilitation	Collaboration	School Improvement	Teacher Agency	Clear LS Protocols	Kyouzai Kenkyuu	Systematic organisational routines	Knowledge mobilisation	Distributed leadership	Staffing structures
Leadership Practices	Systems and strategies Leaders made strategic decisions, devised strategic plans and put systems in place which prioritised LS implementation.	School leaders made adjustments to school timetables and staffing structures to create time for teachers to participate in LS during the working day.			System Leaders brought teachers from the same year group or age-range phase together from across a cluster of small schools to make a LS team.			System leaders developed and disseminated LS policies and protocols using written artefacts, developing training programmes and materials, establishing network groups to support LS facilitators and leaders wanting to start LS in their schools.			School leaders made adjustments to teachers' contracted time commitments, to school timetables, curriculum and staffing structures to release teachers from their usual teaching responsibilities and to create time for them to participate in LS during the school day.			
		System and School Leaders planned and made provision for LS facilitation.			System and school leaders organised provision for teachers' CPDL around LS and they integrated LS into CPDL provision. They ensured the characteristics and mechanisms of effective CPDL were incorporated in LS processes and procedures.			System and School Leaders established knowledge mobilisation systems for reporting and/or sharing LS outcomes.			School leaders established enabling systems and structures to secure sustainable staffing to release teachers from their usual teaching commitments to participate in LS during the school day, including scheduling LS cycles and LS teams across one or two school years.			
	Actions Leaders undertook actions intentionally directed towards LS implementation.	School leaders appointed and developed LS facilitators in schools.			School Leaders set clear goals for LS linked to school improvement priorities while promoting teacher agency in setting and refining LS inquiry questions related to these goals.			School leaders built knowledge-sharing organisational routines into LS procedures, e.g. staff meetings, Open House research lessons, online briefings, training sessions and conference workshops to provide opportunities to follow up after LS cycles have concluded.			Leaders arranged enabling structures for teacher learning in LS e.g. remote collaboration across schools, staff meetings to share LS outcomes.			
		System Leaders deployed subject specialists or knowledgeable others (Koshi) to support LS cycles in network schools.			System leaders made provision for remote or virtual forms of LS, using digital and video technologies and an online communication platform (MS Teams).			Leaders delivered presentations and training sessions for LS facilitators and LS participants.						
	Dispositions Leaders' demonstrated their commitment to LS explicitly and implicitly in their dispositions, including through their language, behaviours and attitudes	Leaders' commitment to LS influenced their willingness to commit human and financial resources to implementing and sustaining LS.			School leaders engaged in LS as full participants.			System and school leaders understood the rationale for LS and were committed to establishing and maintaining the processes involved in implementing it.			Leaders were motivated to pursue, encourage, and find creative structural solutions to enable LS to take place.			
		Leaders communicated clearly to all staff their expectations that time during the school day for LS should be protected.			System and school leaders viewed LS as integral to their school improvement plans.			Leaders communicated their expectations that LS processes and protocols be followed with fidelity.			Leaders' prioritisation/protection of time for LS provided a clear message to administrative staff that teachers' CPDL in the form of LS was important.			

(original in colour)

## **5 Summary and Concluding Discussion**

In this chapter I briefly revisit the background to this study, connecting my professional problem to the purpose and aims of my inquiry. I reflect on my rationale for my review of research literature in Chapter Two and the extent to which the theoretical framework generated from that review was successful in informing my research design and data analysis. I consider the methodological choices I made throughout the study and reflect on the implications of those choices. I discuss my findings and the extent to which they answer my research questions. I discuss the contribution this inquiry makes to knowledge in the field of LS research and practice. Finally, I suggest avenues for further research.

### **5.1 Study background and aims**

This study was prompted by a genuine professional problem of leadership practice, explained in the introduction to this thesis. Despite my belief in the potential for LS to nurture teachers' professional learning, and a commitment in the early phase of the inquiry to establishing it in my own school and in other local schools with which I worked, I encountered challenges in implementing and sustaining forms of LS that were effective in promoting teacher learning in ways that improved pupil learning. I did not understand clearly enough how to lead and implement successful and sustainable LS. The study's findings illuminate the centrality of intentional, informed and goal-oriented leadership practice in relation to successful implementation of effective LS and the importance of reciprocity between LS leaders and participants to securing participant commitment and agency.

Although there was and still is a growing body of research clarifying LS procedural requirements (see 2.2), there was a dearth of research suggesting what actions teacher, school and system leaders might take, what decisions they might make in their day-to-day operational practice, how they might work with LS participants, what they might do to establish conditions, cultures, processes and structures supportive of successful LS implementation. Interest in this aspect of leadership is beginning to grow; Van den Bloom-Muilenberg et al's (2022) investigation of leadership practice

for sustaining LS in Dutch secondary schools where LS was already well-established, resonates with aspects of this study.

My professional problem informed my review of research literature, as I sought to understand what those conditions, cultures, processes and structures might be, why they might be important and what leaders might need to understand, achieve and do in order to establish them. My review of literature relating to LS itself, its translation beyond its country of origin (Japan), theories of learning and professional learning, learning cultures, educational leadership of pedagogical and school change and improvement and complexity thinking informed a theoretical framework for my study (illustrated in Figure 6, 2.6), and my conceptualisation of LS leadership as a phenomenon. This enabled me to clarify my research purposes and aims (1.6), to refine my research questions (1.9) and formulate my approach to data analysis (Chapter 3).

Empirical research suggests characteristics essential to models of LS that reflect principles and characteristics of an authentic Japanese approach, and are helpful to school leaders keen to capitalise on the opportunities for teacher learning this presents (Goei et al., 2021; Seleznyov, 2018; Takahashi and McDougal, 2016). Conversely, leaders in my study are attempting to implement LS in very different professional contexts, with different traditions and cultural expectations of teachers' professional learning; different organisational structures, and different contractual arrangements affecting the number of non-teaching working hours available to engage in professional learning opportunities such as LS. My study illuminates the practices enacted by leaders as they try to implement LS with fidelity to processes and principles that they associate with an authentic Japanese approach to LS, but in a context that is very different from the one from which LS emerged. It is also not possible for me to generalise about what might be typical of an English primary education context for LS, as opposed to any other western context. LS appears to be interpreted and practised in a range of ways even within England, between regions, districts and individual schools. Neighbouring schools in the same town can have very different cultures, leadership approaches and understandings of what

LS is. While this study's findings are drawn from a specific context – a specific group of schools, their circumstances, their individual leaders and LS participants - it offers valuable knowledge which is of use to others. I observed and interpreted LS leadership practices in eleven schools in this study and these leadership practices may resonate with or differ from practices elsewhere in England and in other countries.

## **5.2 Methodological findings**

This study was undertaken over a period of nine years during which significant changes in my professional role, influencing my professional relationships, professional practice and leadership circle, necessitated methodological adjustment. My research design needed to be flexible, to accommodate a complex research arena, and to be sympathetic to complexity (3.2.1), multiple datasets and data collection methods. Changes in my leadership role and significant disruption caused to schools nationally during the Covid-19 pandemic 2020-2022, simultaneously changed my researcher role, diminished my capacity for full participant observation and required a shift in research stance, and an expansion of data sources, with a greater emphasis on documentary analysis, narrative inquiry and semi-structured, Pictor interviews. All of this was frustrating at the time, but eventually presented methodological opportunities not envisaged at the beginning of the study. A crystallisation methodology (3.2.2) facilitated a comprehensive and gradual evaluation, influenced by nuanced and subtle variation in circumstance and culture and accommodated my shifting professional and researcher roles. Pictor (3.2.5) contributed to a coherent, crystallised research design, framed by complexity thinking (3.2.1) because it allowed research participants to reflect on the complexity of their own experience of LS leadership practice in the context of collaborative, interconnected professional aims, practices, relationships and responsibilities.

Crystallisation allowed me to weave together evidence from several sources of data and genres of analysis to build a picture of practice from a complex research arena and from multiple perspectives. It combined data from both

phases of my study. This approach resonated with the concept of complex emergence in complexity theory (2.4 and 3.2.1) and enabled me to weave together evidence from across my data and across time. Moreover, it supported research validation by drawing on a broad range of research perspectives and allowing findings to emerge gradually following iterative, inductive, thematic and narrative analyses. Ellingson (2009) used the metaphor of a growing, emerging crystal of research clarity. After several years of combing through layers of evidence, as facets of my findings gradually emerged, this seemed a fitting metaphor for my study.

Table 5 (p.208) connects theoretical to practical findings and illustrates the multiple, complex connections between LS leaders' strategic and operational practices, enacted through the systems and strategies they devised, their actions and their dispositions (language, behaviours and attitudes), the LS supports towards which their practices were directed and their over-arching leadership priorities regarding LS implementation (the provision of time and facilitation) and their goals for teacher learning, school improvement and change.

To continue the crystallisation metaphor, for this study, Table 5 is the crystal; it illustrates the complex emergence of clarity and coherence from a crystallised analysis of an extensive data bricolage.

### **5.3 Key findings arising from data analysis**

Crystallisation facilitated construction of a picture of practice through layers of iterative analysis undertaken from different standpoints. This extended process revealed first leaders' intentions and aims, later their associated practices, and finally broad categories of macro-practice to which leaders' nuanced micro-practices could be associated. Three phases of data analysis were undertaken altogether, summarised and discussed below

#### **5.3.1 Data Analysis Phases 1 and 2: LS supports**

The process of data analysis began before data collection was completed and proceeded iteratively over a period of about three years. In this first, extended phase of analysis, data were coded inductively to multiple themes

using Nvivo coding, gradually crystallising after four iterations around four core themes related to LS supports – conditions, cultures, processes and structures - towards which school leaders, system leaders and teacher participants perceived leaders’ LS practices to be directed. Further sub-themes emerged from each of those four LS support themes (Table 6).

**Table 6: LS supports to which LS leadership practices were directed**

<b>LS support themes</b>	<b>LS support sub-themes</b>
<b>Conditions</b>	Time
	Trust
	Leadership commitment
	Facilitation
<b>Cultures</b>	Collaboration
	School improvement
	Teacher agency
<b>Processes</b>	Clear LS protocols
	Kyouzai Kenkyuu
	Systematic organisational routines
	Knowledge mobilisation
<b>Structures</b>	Distributed LS leadership
	Staffing structures

These themes and sub-themes related to leaders’ aims – including the LS supports leaders were trying to establish and that LS participants valued. They spanned four broad categories, including organisational conditions essential for LS to succeed, school cultures supportive of LS, and the processes and school structures necessary to sustain LS. This analysis is presented in Chapter 3, sections 3.2 – 3.6, and in Table 5, p.208. Chapter 4 presents evidence of research participants’ clear indications in their responses that they thought dedicated time during the working day (4.3.1), trustful relationships (4.3.4), the commitment of leaders (4.3.3) and forms of facilitation of the LS process (4.3.2) were essential conditions for successful LS. Cultures of professional collaboration and reciprocity between LS participants, and between leaders and participants (4.4.1), clear

communication and transparency about school improvement priorities and theories of change between leaders and LS participants (4.4.2) nurtured teacher agency (4.4.3) and engagement and contributed to successful and sustained implementation of effective LS. Regarding LS processes, LS leaders and teacher participants valued clear protocols (4.5.1), and well-planned and delivered Kyouzai Kenkyuu (the period of study prior to research lesson planning), mediated and supported by someone with specialist knowledge of the LS inquiry topic - a Koshi (4.3.2). Research participants and my own writing emphasise the importance of systematic organisational routines (4.5.2), including Kyouzai Kenkyuu, the selection of target pupils (4.5.1) and facilitated post-lesson discussion. They also include reflections on how new knowledge generated during LS is mobilised, for example by sharing new learning from Kyouzai Kenkyuu and outcomes from subsequent LS research lessons with colleagues in staff meetings, in Open House lessons (4.5.3.1) and through the publication and dissemination of reports, research lesson plans and posters (4.5.2.4 and Figure 12, p.183). Data also suggested several manifestations of LS leadership distribution and associated staffing structures (4.6.1). These structures supported both the direct facilitation of individual LS cycles, with facilitators from senior and middle leadership roles, and more strategic leadership of LS implementation at whole school and network level.

I realised during the initial phase of analysis that although the process was revealing useful information about the LS supports school and system leaders were intent on establishing and those valued by LS teacher participants, I still did not have a clear understanding of what leaders were actually doing, the specific practices they were enacting in their efforts to achieve these objectives. For this reason, I embarked on a second phase of analysis, beginning with iterative narrative inquiry and re-coding data to themes in Nvivo (3.4.1; 3.5.2) related specifically to leadership practices. Phase 1 analysis felt like a mistake at the time. I was dismayed that I had spent so long looking for evidence of the LS supports leaders were trying to establish, when I thought I should have been looking for evidence of their practices – a more direct route to addressing my research questions.

Through the lens of hindsight, and after revisiting Pring (2015) and Spillane (2007) (1.8), I realised that to understand practice, research *does* need to attend to both the intentions and practices of leaders as well as their interpretation by those who are led. It may also be true that although leaders may have a particular rationale for a specific practice, multiple other unintended positive (and negative) outcomes may result. Phase 1 therefore provided an important and necessary foundation for Phase 2, by illuminating leaders' rationale for their practices.

The second phase of analysis considered the nature of the practices enacted by leaders and perceived to be directed towards LS supports. Iterative, thematic coding of these data and continuous analytical, narrative writing suggested practices falling into three broad categories of systems and strategies, actions and dispositions. These practices are outlined in Table 4 (4.7) and explicated in detail in 4.8.

### **5.3.2 Data Analysis Phase 3: Mapping practices to LS supports**

The final phase of analysis revealed patterns of practice spanning the boundaries and connections between the categories of LS support and leaders' practices. I used a matrix (table) and colour-coding to cross-reference leaders' practices to the LS supports identified in the first phase of analysis (illustrated in Table 5, Section 4.8.3). This matrix illustrated multi-faceted inter-relationships between leadership practices, specific categories of LS support and four dominant patterns in LS-oriented practices. Two of these patterns were related to the provision of time and LS facilitation, both of which align to an overarching priority directly related to LS implementation. The other two were related to securing effective professional learning and the leadership of school change and improvement in contexts of LS. These four patterns and two overarching priorities are shown in the top rows of Table 5 (4.8.3, p.208).



## 5.4 Summary of key findings

Teacher, school and system leaders enact practices related to implementing and sustaining LS through the school strategies and organisational systems they design, their day-to-day actions and their dispositions. LS leaders' overt, explicit *and* tacit, implicit, micro- and macro-practices are many, nuanced and varied. They are specific to individual leaders and their professional orientations, and influenced by their understandings, values and beliefs about educational leadership and about effective LS, its purposes and characteristics and the supports it requires to thrive. Leaders' practices are also influenced by context, circumstance, external and internal factors and human interaction as well as their aspirations for their organisations. Leaders' teleological practices are directed towards overarching purposes and goals, associated both with the practical implementation of LS, particularly the provision of time and facilitation, and with wider objectives related to teachers' CPDL and pupil learning, school improvement and change.

The creation of Table 5 (4.8.3, p.208) exemplifies the crystallisation metaphor for this inquiry. It weaves together three phases of data analysis and the multiple perspectives offered by the data and makes explicit connections between often tacit, implicit and invisible practices enacted by leaders and influenced by their leadership goals. It allows an imperfect version of clarity, crystallised through analysis, to emerge visually from a complex, multi-faceted data bricolage. It supports this discussion, because it simultaneously encapsulates, integrates and illustrates, in one place, the 'what' and the 'why' of LS leaders' practices illuminated through this study. It reveals the reciprocal, integrated nature of effective LS leadership.

Successful LS leaders demonstrate clear, evidence-informed thinking, professional credibility, vulnerability and openness to new learning - in trustful collaboration with teachers - about leadership, curriculum and pedagogy (4.3.3). They communicate clear, well-founded goals (4.4.2; 4.8.2) and establish relational trust (4.3.4), and teachers respond with agency (4.4.3), commitment and investment in shared objectives for their professional learning, their teaching and their pupils' learning.

However, it is convenient and satisfying as a researcher to organise ideas in neat boxes, but complexity thinking is a reminder that the connections between them are porous and untidy. The perforated borders in Table 5 are included for this reason. There are no neat, straight boundaries between the columns and rows. The influence of leadership practice may span any or all boundaries, intentionally or unintentionally. For reasons of organisation and discursive coherence, I take leaders' practice rationale as a starting point here, and set my discussion in the context of the LS supports to which they were directed. I begin with conditions, but weave references to culture through the discussion, as well as addressing it discretely at the end. This is because, of the four categories of LS support, culture seems most to influence and be influenced by LS leadership practices.

#### **5.4.1 Leaders' practices directed towards LS conditions**

Key aspects of conditions essential for LS valued by leaders and LS participants included time, trust, leadership commitment to LS and facilitation. There were complex connections between all four. On a practical level, teachers needed time during the working day to engage in LS (4.3.1) – but its provision was also connected to trust. When teachers were expected to engage in LS in their own time, trust was eroded and resentment festered (4.3.4). Teachers also needed to trust that LS would be a safe space to make pedagogical mistakes, take risks with practice, to learn without the threat of a performative, accountability agenda – and leaders also recognised this (4.3.4). LS participants emphasised the importance of leaders' commitment to implementing, valuing and sustaining LS; where that commitment was less evident, LS faltered (4.3.3). The provision of LS facilitation was the oil that kept the wheels of LS moving (4.3.2). The role of the facilitator was varied and wide in scope. From practical aspects such as ensuring that participants adhered to agreed procedures (4.5), to mediating access to research literature and guidance, or as a Koshi or subject specialist to support effective Kyouzai Kenkyuu (4.5.4), the facilitator was the LS linchpin acknowledged by both LS leaders and participants. At network level, system leaders coordinated facilitator training on behalf of all schools,

set common expectations for the role, established network groups allowing LS facilitators to meet regularly, engage in training, share experience and practice. School leaders appointed RIPPLE Leads (Research-Informed Practice, Professional Learning and Evidence, 4.6.2), and organised release from their teaching responsibilities to allow them to undertake responsibilities related to LS. The term RIPPLE indicated that LS was central to this important school improvement activity and lent kudos and status to the role.

The three categories of practice that emerged from this study exemplify an iterative and continuous plan-do-review leadership process (Table 4, p.196). Leaders combine their understanding of the current state of LS in their schools with their understanding of the conditions it requires. They set goals – not always explicitly (4.4.2). They draw on both implicit and explicit leadership knowledge that teachers need time, trust and confidence in leaders and a facilitator to inform their strategic planning and system design. Actions follow (4.8.2) – LS facilitators are appointed; subject leaders found and released to support Kyouzai Kenkyuu; office managers asked or instructed not to deploy LS participants to cover staff absence (4.6.2).

Leaders' practices related to their dispositions are central to the success of their strategies, systems and actions (4.8.3). LS participants and other actors in schools, such as administrators, judge leaders' commitment to LS against their leadership behaviours – the extent to which they demonstrate their commitment to LS and motivation for it to take place. Leaders' dispositions are also inextricably linked to trust building (4.3.4) – when leaders do what they say they will do, when they willingly expose their professional vulnerabilities by participating on an equitable basis in LS with teachers, when promised plans and actions materialise, time is allocated, Kyouzai Kenkyuu is well organised and supported by a trusted, credible specialist (4.5.3) – practices such as these contribute to predictability, reliability and trust in leadership. When leaders lead and work with teachers in cultures of openness, reciprocity and professional collegiality, LS seems more likely to become an embedded part of a school's professional learning culture.

#### **5.4.2 Leaders' practices directed towards LS processes**

Core LS processes included clear LS protocols, procedural guidance, clarity around how Kyouzai Kenkyuu would take place and systematic organisational routines (4.5). Leaders and LS participants valued the certainty and clarity provided by codification of protocols and routines in policy. System leaders with responsibility at network level were able to secure procedural coherence and consistency across the group of schools by setting policy and providing guidance on behalf of all schools. This clarity may have contributed to embedding common procedures in LS practice, its long-term sustainability and its integration into the professional learning culture of the wider school network. Requiring disciplined time-keeping (4.5.2.1), understanding and knowing that there must be a research lesson, followed closely by a post-lesson discussion, means that LS leaders in schools can plan ahead to make provision for these things to happen. Understanding the rationale for Kyouzai Kenkyuu and its importance to successful LS, requires leaders to understand the research focus for LS, the school's long term improvement goals (4.4.2) and to be able to plan strategically to resource LS with relevant and valid research and appropriate specialist input. Similar strategic and logistical capacity is required to make provision for systematic organisational routines related to knowledge mobilisation, such as Open House lessons, staff meetings and the publication and dissemination of LS documents and artefacts (4.5.2).

#### **5.4.3 Leaders' practices directed towards LS structures**

Leaders needed to establish staffing and organisational structures to sustain LS. If facilitation is an essential condition for successful LS, then someone has to be available to do it. Resources need to be allocated, such as time, personnel and budget. Timetable and curriculum structures were adapted and changed to release members of staff to fulfil these roles (4.6.2). The implementation of LS within schools and across schools is a significant undertaking and too large a task for one person to undertake; LS leadership is necessarily distributed across all levels (4.6.1), from system leaders operating across the school network, through headteacher leadership,

across senior school leaders, middle leader LS facilitators / RIPPLE Leads and teacher leaders within LS groups. To achieve this, a RIPPLE Leaders' Network Group was established to provide support and ongoing CPDL for LS facilitators. LS-specific CPDL was integrated into regular school leaders' meetings and development sessions and LS provision was built into leaders' performance review (4.5.3.2).

#### **5.4.4 Leaders' practices directed towards LS cultures**

Culture has implications for each of the other supports, and aspects of each of them impact on cultures supportive of LS. Collaborative cultures of school improvement incorporating teacher learning, pedagogical change and teacher agency were perceived by teachers and leaders as essential LS supports, but also recognised as outcomes of LS participation (4.4.1). Responses from leaders and LS participants indicated clearly that successful LS implementation contributed to a positive professional learning culture (4.4.1). It was also clear that ineffective implementation had a negative influence, on the implementation of LS and on school culture (4.3.1). Based on my analysis, I suggest that LS requires a positive school learning culture, but can also contribute to the development of such cultures where it is well-led (4.3.4). There was a reciprocal relationship between credible, unambiguous and well-informed LS leadership, professional dialogue, transparency about school improvement priorities and theories of action and teacher agency and engagement and successful LS. This finding resonates with Schipper et al's (2020) research which also found evidence that LS may contribute to the development of positive professional learning cultures and recommended more research in this area. A central example from my study is the all-pervasive nature of trust (4.3.4). I categorised trust as an essential condition for LS. Teacher participants suggested clearly that relational trust was key to a successful LS group; they needed to trust that leader participants were not judging them performatively during research lesson observations, and to trust that leaders were prepared also to do what they were asking of teachers in LS contexts (4.3.4 and 4.4.1). However, interview responses and researcher observations in several schools indicated that

positive experiences of LS participation helped to build relational trust where it had been weak (4.3.4). Established systems and clearly communicated strategies for LS provided predictability and reliability for LS participants – they knew how and when LS would take place, and that having planned to participate, and undertaken their responsibilities to ensure its success, (reading, planning, resource preparation etc) the research lesson would actually happen and not be cancelled or postponed (4.3.1; 4.3.2). The actions leaders promised would take place, happened. Leaders' dispositions reflected their actions and their commitment to LS and teacher learning. Where this did not happen, trust in LS, and in leaders' credibility was eroded (4.3.1).

## **5.5 Final reflections on findings**

Questions have been raised about the efficacy of LS as a mode of teachers' professional learning beyond Japan (Murphy et al., 2017). This study has revealed the complexity inherent in its leadership, variation in leaders' understandings of LS, the supports it requires to function effectively, the features (such as skilful facilitation and Kyouzai Kenkyuu) that enhance its effectiveness. Given such variable and inconsistent interpretations of LS, even between neighbouring schools in the same locality, it is unsurprising that the purposes of LS may not always be clear and it may not always achieve its potential for improving teaching and pupil learning outcomes, especially in the short term. I set out to try to identify what types of practices teacher, school and system leaders enacted in their endeavours to implement and sustain effective LS. I wanted to know what leaders were *doing*, as opposed to what they were achieving or trying to achieve. It turned out that it was difficult to understand leaders' practices without understanding their aims and objectives. Teleological practices, deliberate and intentional, helped leaders to achieve pre-determined goals; some were tacit and unintentional and contributed to outcomes that no-one either intended or imagined; some were both. Of the three categories of practice illuminated in this study, leaders' strategic and systematic practices appeared the most explicit and intentional. Whether at system (network) or school level, leaders expended extensive effort and complex thought on their development, which

was largely imperceptible to LS participants and other colleagues beyond their immediate leadership circle. Actions were either directly related to strategic plans, or were responsive to events and circumstance; tactical and situated; in the moment; as required. Leaders' dispositions, represented in their attitudes, behaviours and language, were sometimes explicit, intentional and deliberate, but also often implicit and related to their motivations, their commitment to and aspirations for LS, teachers' learning and their schools.

This research has highlighted practices that have been largely invisible in LS leadership research literature. Practices involve complex problem-solving and endeavour that remains hidden from view. They take place in offices, in planning meetings, in the minds of leaders during their strategic and reflexive planning. When not undermined by staff absence, or other disruptions typical of the primary school calendar, the outcomes of leaders' practices are often manifested as *faits accomplis* to the school or network's LS community, who proceed to judge efficacy during their LS engagement on the basis of those outcomes, not on the practices and the effort that brought them about.

My ongoing longitudinal research has inevitably influenced my reflexive understanding of the types of school contexts, routines and structures which support LS and has provided an opportunity to reveal the day-to-day leadership practices enacted by school, system and teacher leaders as they work to establish them. This has enabled me to highlight to leaders and LS participants in our network the practices which appear to be effective in helping to establish LS, and to revise LS policy and procedure in response to research findings. The impact of this has been an increase in LS participation and development in LS practices in schools across the network during the course of this study (discussed in 3.5.1).

## **5.6 Limitations**

Specific examples of leadership practices surfaced by this research (and outlined in Table 4, p.196 and 4.8) are situational and context-specific and therefore unlikely to be replicable in different school and organisational contexts, situations and cultures. The LS supports they aimed to establish, though, may be much more common across contexts, as may the four

broader leadership priorities outlined above. Understanding what needs to be achieved to implement and sustain effective LS, and the contribution LS might make to overarching priorities of improving teacher learning and school change, set alongside examples of the practices enacted by leaders with similar professional goals, may influence the practice choices of other leaders and policy-makers with similar aspirations. Moreover, while the specific, multiple and context-bound practices illuminated by this study may be impossible to predict or precisely replicate in others, the overarching categories of practice in Table 5 (p.208) may provide a useful guide to LS leaders when they are making decisions about the types of practice which may help them establish effective LS in their own professional contexts. An identical study would be impossible to repeat, but other LS leaders working in their own contexts may recognise common situations and dilemmas and the potential for adapting some of the practices illuminated here to their circumstances. Hence, as crystallisation is grounded in complexity and the positionality of the researcher, findings emerge that are specific to the study, not directly replicable, but which may resonate with other studies. This reflects again the crystallisation metaphor - no two crystals are ever the same, but they are both crystals.

A significant limitation of this research relates to my role as researcher and the potential impact of the power and authority I hold, potentially over all other LS leaders and participants in this network of schools. I have maintained transparency about this aspect of my study and discuss the deliberate risk mitigation measures I incorporated into my research design, in detail, in sections 1.4, 3.2. and 3.3. Crystallisation offered a methodology with which I could present, analyse, evaluate and respond to my data with open acknowledgement of my role as a network insider and authority figure in my inquiry. The choice of the Pictor interview technique was also key in helping me to address issues of power and authority by affording agency to research participants and minimising my influence on their LS reflections. However, notwithstanding all my efforts to mitigate the impact of my researcher stance, it is important to acknowledge that it was impossible to neutralise it completely. As an insider, it may be impossible for me to have a



full awareness of all the issues of power that may pertain to my role, or the extent to which I mitigated them, or to which they influenced my data.

Insider-ness, however, also lends authenticity to my research story. I have been transparent throughout that these findings have emerged from the partial and imperfect perspectives of my research participants and have been synthesised through the filter of my own partial and imperfect inferences as an insider in my research arena. However, despite a false start to a long period of data analysis, an iterative, complex and extended crystallisation process has proved to be an initially unanticipated but innovative research design which has surfaced a valid and authentic story of leadership practice which other LS researchers, leaders and participants might find much to reflect on and adapt to their own unique LS situations.

In this following, final section, I discuss the contribution this study makes to knowledge in the field of LS leadership research and make some suggestions for further research.

## **5.7 Contribution to knowledge**

My research aim was to understand how leaders influence the implementation of effective and sustainable LS by investigating what they actually do, day to day, to establish suitable LS supports. This meant interrogating their practices or 'situated doings' (Jarzabkowski et al., 2007, p.7) rather than (or as well as) what they were trying to achieve or their capacity to achieve it. It also meant understanding practice from a range of standpoints – including those of teacher, school and system leaders and the LS participants they lead. Van den Bloom-Muilenberg's (2022) study is one of few interrogating LS leadership practice, and an encouraging indication that practice aspects of LS leadership may be starting to attract more research attention. However, investigating LS leadership from a practice rather than a competency perspective in a primary school network context in England has addressed a gap in current research. Here I consider the contribution to knowledge made by this study from theoretical and practical perspectives.

### **5.7.1 New theoretical knowledge**

An understanding of complexity theory in educational contexts was helpful in framing my research design in a complex research arena. Complexity thinking as a methodological lens and a subject for study supported an understanding of the multiplicity of nested, overlapping and inter-connecting spatial and temporal conditions and social interactions which influence LS leadership. Human actions, practices and behaviours are often tacit, nuanced, unconscious and habitual, however implicitly and intrinsically connected to intentions, aims and purposes and influenced and changed by context, time, location, mood, and infinite scope for interaction. This study illuminated the teleological nature of LS leadership practice – whether metacognitively intentional and explicit or not, leaders at all levels enacted practices which were inextricably tied to their ultimate goals and objectives, associated with their purposes for LS in their schools. These purposes were linked to teachers' professional learning requirements and priorities for curriculum, pedagogical and whole school improvement and change. They were also associated with the logistics of introducing, implementing and sustaining LS in ways that allowed teacher learning and inquiry to flourish.

System and school leaders' practices related strongly to strategy development and system design and reflected leaders' theories of action, incorporating their understanding and awareness of the supports effective LS requires, and of theories of change, organisational and cultural leadership, learning, and LS itself.

Teacher leaders' practices related more closely to the operational practicalities of implementation. However, practices reflected teachers' understanding of and connection to school and system leaders' overarching vision, aspirations and goals for their individual schools and the network, their priorities for teacher learning and the contribution they envisaged LS might make to the quality of teaching and school change.

### **Main theoretical findings:**

1. An understanding of theories relating to characteristics of effective LS, teachers' professional learning and the leadership of educational improvement and change contributed to the success of LS leaders' practices in establishing school conditions, cultures, processes and structures supportive of LS.
2. Understanding the types of organisational supports required by effective LS and *why* LS was being implemented, supported leaders' practice decisions relating to the logistical, practical aspects of *how* this might happen.
3. LS leaders' practices are influenced by the purposes they ascribe to LS and to the extent to which they connect to overarching goals for pedagogical, curriculum and whole school improvement and change.

These findings reflect Lewin's maxim 'There is nothing so practical as a good theory' (1943, p.118). Secure understanding of theories of LS and of LS purposes and goals, helped leaders achieve clarity, coherence and efficacy in practice.

#### **5.7.2 New practice knowledge**

Despite its complexity, there is a coherence to leadership practice which can successfully promote effective LS which stems from clarity of purpose at all levels of leadership. As well as a clear understanding of the types of supports required to implement and sustain LS, clarity also about the purposes they ascribed to LS helped leaders to connect LS, through their practices, to its potential as a vehicle for teacher learning and inquiry and effectively to wider school improvement goals and objectives. The same clarity of and about purpose also helped LS participants understand leaders' rationales for deploying LS as a model of CPDL and teacher inquiry. Where leaders had a secure theoretical understanding of LS, its purposes and the supports it requires to be effective, they were able to enact both explicit, intentional and implicit, unintentional practices directed towards those

objectives. and to communicate with LS participants in reciprocal and collaborative dialogue in ways that promoted agency and engagement.

**Main practice findings:**

My iterative, thematic and crystallised analysis suggests three broad categories of leadership practice enacted by leaders and oriented towards establishing the conditions, cultures, processes and structures which support successful implementation of effective LS:

1. **Strategies and systems:** leaders made strategic decisions, devised strategic plans and put systems in place which prioritised LS implementation (4.8.1).
2. **Actions:** leaders undertook actions intentionally oriented towards LS implementation (4.8.3).
3. **Dispositions:** leaders demonstrated their commitment to LS explicitly and implicitly in their dispositions, including through their language, behaviours, attitudes and practices (4.8.4).

Table 5 (p.208) connects theoretical to practical findings and illustrates the multiple, complex connections between LS leaders' strategic and operational practices, enacted through the systems and strategies they devised, their actions and their dispositions. It illuminates the importance of reciprocity in the way leaders work with LS participants, valuing their endeavours, with openness about theories of action and practice rationales, LS aims and purposes and authentic recognition of the contribution teachers can offer to school improvement and change goals through their LS work.

This research is significant from both the theoretical and practical perspectives of its research focus and its research design. It makes visible the day-to-day doings of LS leaders which are often opaque both in school life and in LS research and it does so, using crystallisation, over an extended period of time. This enhances the validity of the findings and is new in the field of LS research.

## **5.8 Recommendations for further research**

My study has provided answers to my research questions and inevitably raised more questions. I offer the following suggestions for further inquiry.

Although there will always be potential participants new to LS arriving in schools, and requiring initiation and support, the challenges of introducing LS in conventional, face-to-face contexts are likely to differ from those linked to sustaining successful, established LS over time. Moreover, there are likely to be marked differences in the leadership practices required to implement the models emerging post-pandemic, which may blend face-to-face practice with the use of technology in digital/remote situations. Exploring LS leadership from a practice perspective in these blended contexts would provide a fruitful avenue for future research.

As I suggest in 4.8.1, it fell beyond the scope of my inquiry to evaluate how effective systems for mobilising and sustaining in classroom practice any new knowledge generated from LS cycles might be. More research to investigate and compare the impact of strategies such as poster publication, LS report sharing, LS team presentations to colleagues in staff meetings and online briefings, and Open House research lessons would represent a useful area for additional study.

Finally, it seems to be a common-sense assumption that certain cultures may need to be in place in a school to contribute to successful LS – cultures of professional collaboration, community, learning, generosity, reciprocity and trust. Schipper et al (2020) also found a connection between LS and the development of professional learning cultures. My research findings suggest LS leaders' practices may have a pervading impact on organisational learning culture, intentionally or unintentionally, explicitly or implicitly, positively or negatively. Further study on the influence of LS leadership practice, and/or LS itself on organisational learning cultures could provide multiple routes to further inquiry.

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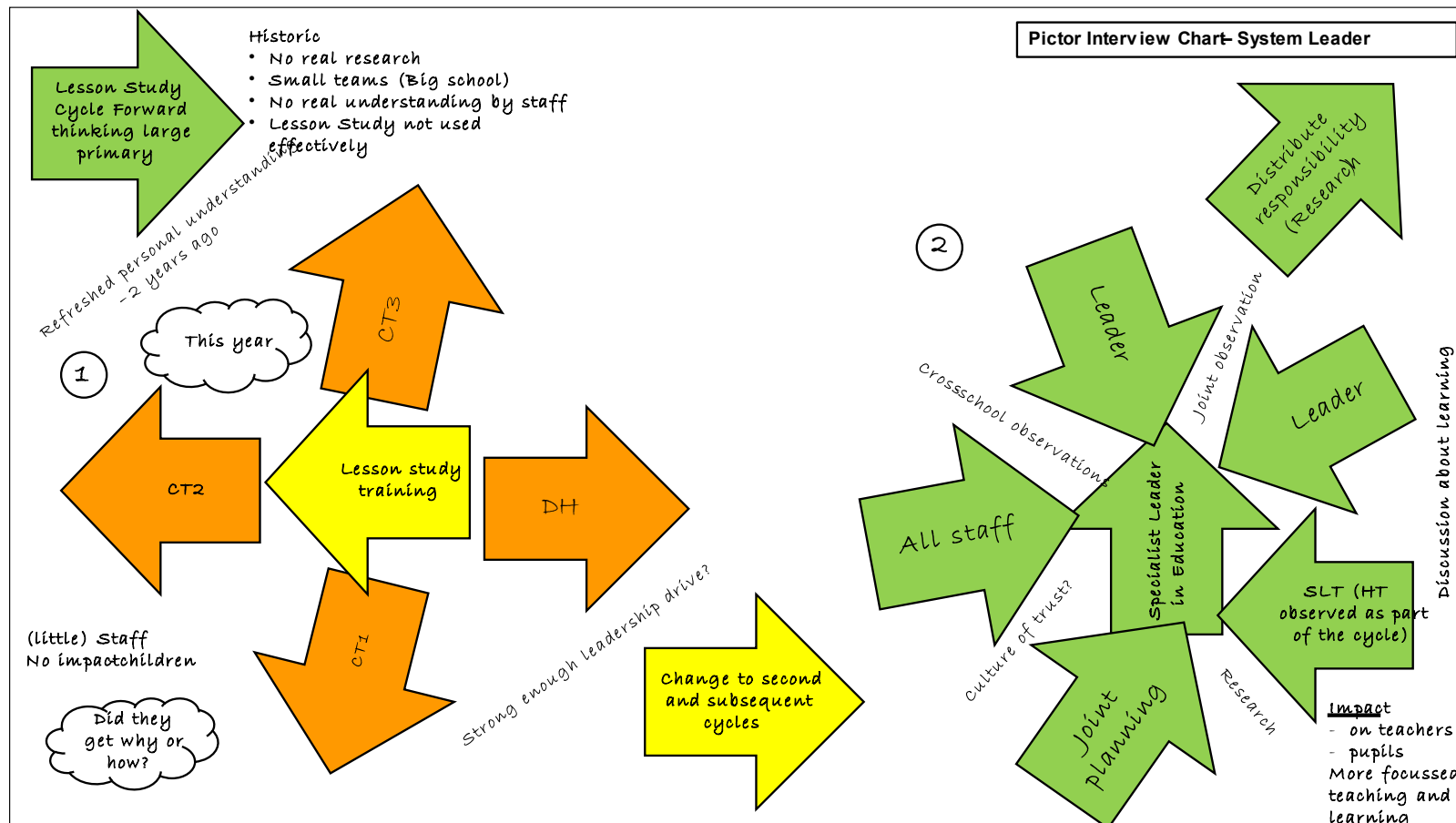


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# Appendices

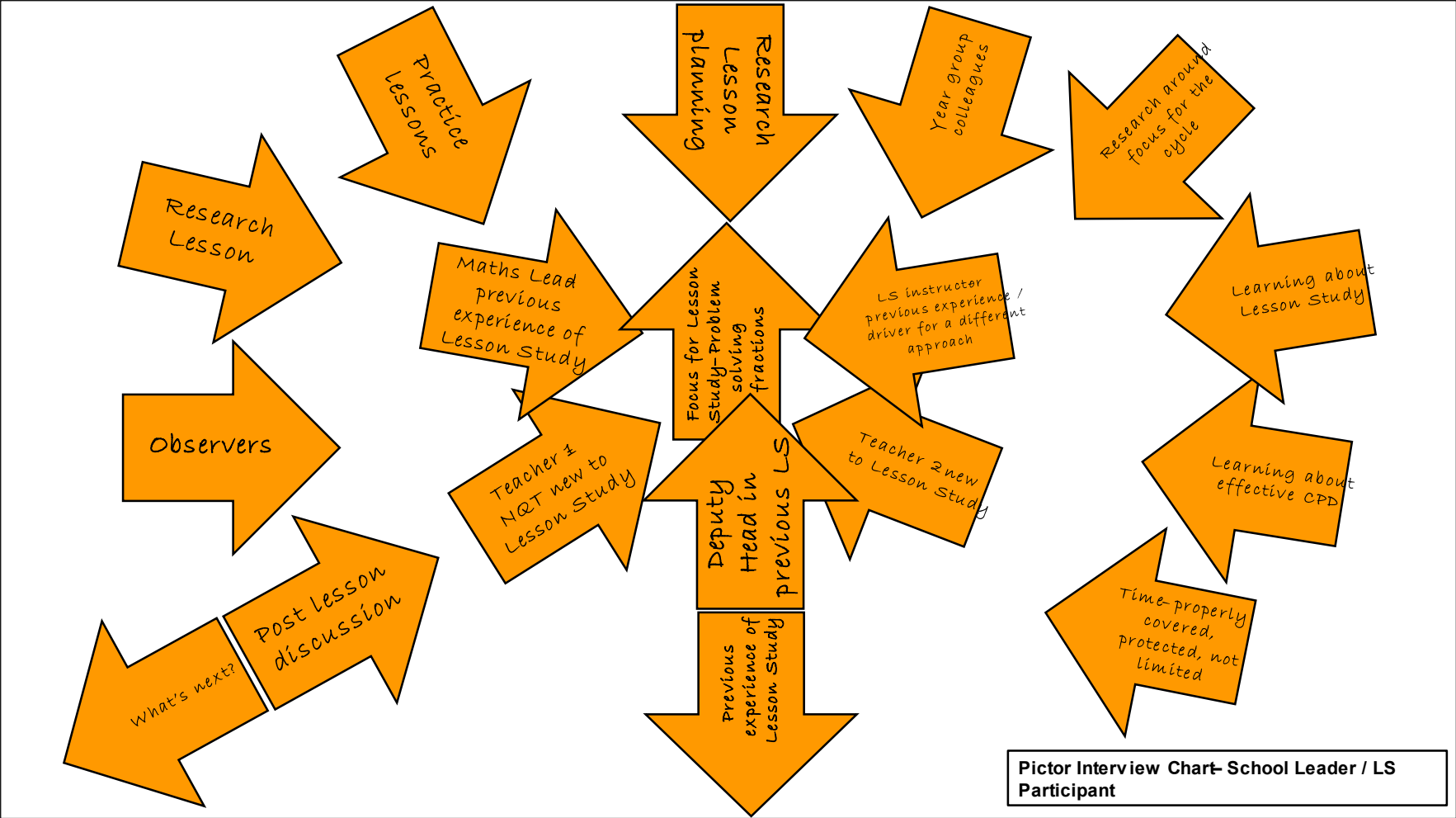
## Appendix 1: Pictor Chart: System Leader

(original in colour – identifiers removed)



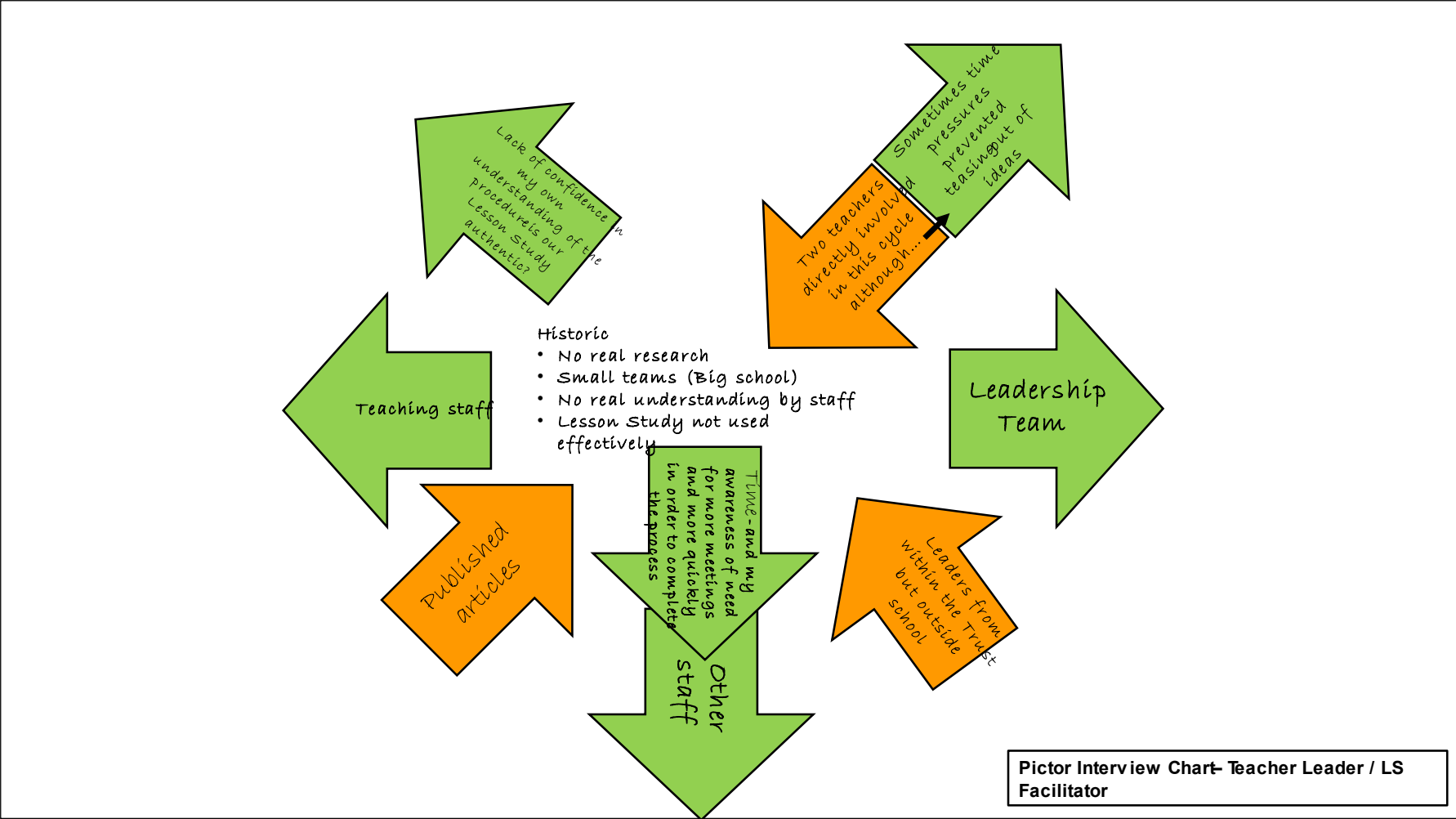
**Appendix 2: Pictor Chart: School Leader**

*(original in colour- identifiers removed)*



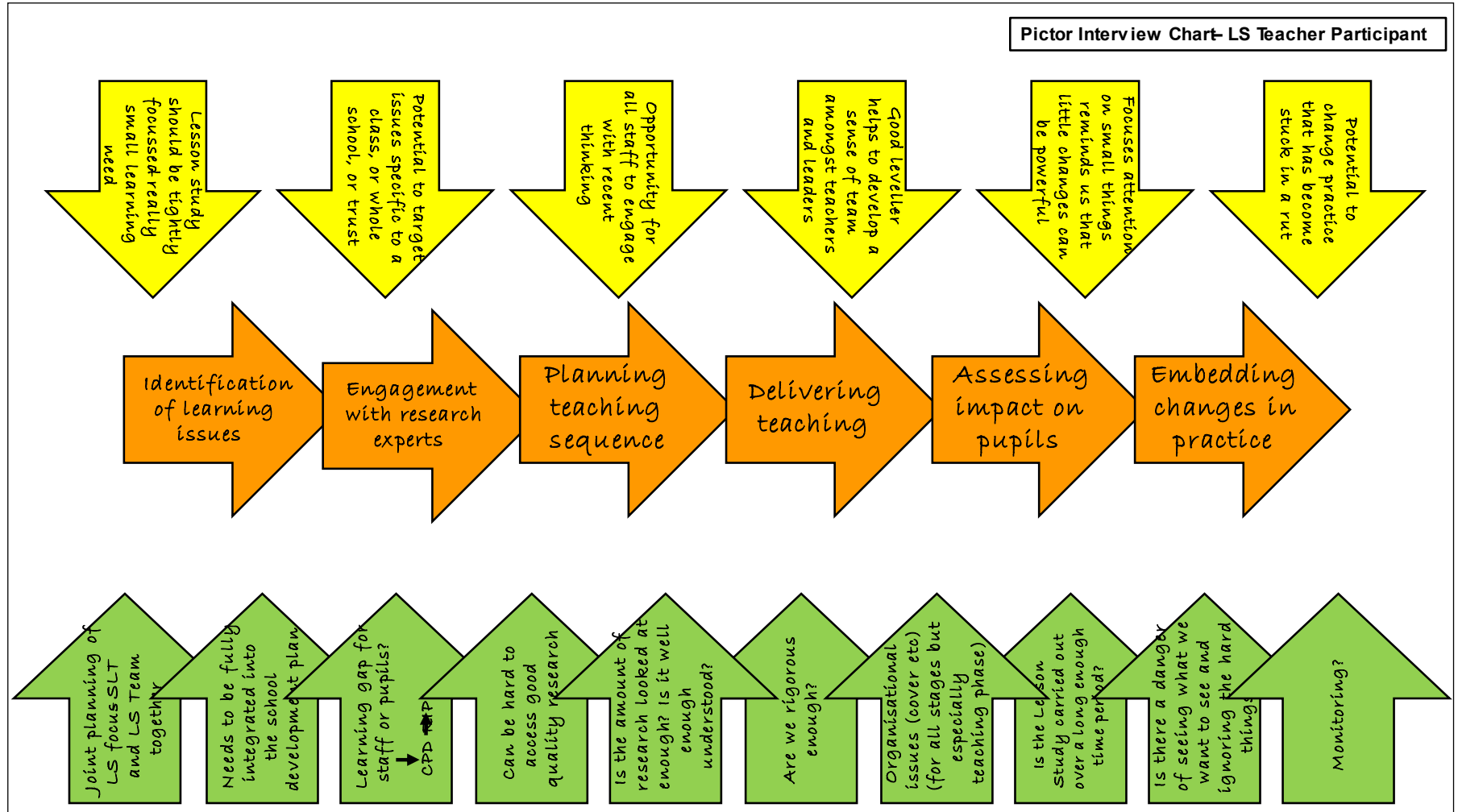
**Appendix 3: Pictor Chart: Teacher Leader**

(original in colour- identifiers removed)



# Appendix 4: Pictor Chart: Teacher LS Participant

(original in colour- identifiers removed)



## Appendix 5: Pictor Interview Transcript Extract: System Leader

### Speaker Key:

IV Interviewer (Researcher: Stefanie Edwards)

IE Interviewee

00:00:00

IE My first experience of Lesson Study was in a previous school, a large primary school, forward-thinking primary school but was up to date in all of the sort of, the initiatives that were of the time. So this is quite a few years ago, I guess when Lesson Study first became a thing. Interestingly, it had very little impact and over time it just filtered out. And I think ... when I think about why I think it was really that there was no research behind it. It was done in sort of pairs. Almost like a buddy system. And I don't think there was a clear understanding by staff of the whole thinking behind it. It had very ... it wasn't really very effective.

IV How was it introduced?

00:01:09

IE In a staff meeting and I think [the headteacher] had gone away and learned about Lesson Study [themselves] and came back and cascaded it. I mean, people were positive because they were quite positive then, so one or two people were more positive than others and took it onboard. We paired up and we planned and sort of talked about lessons together. But there was no real time made for looking at the lessons, joint observations, that kind of thing. So they did happen but they were squashed in. [They] gave us, sort of in this three-week window, go and observe each other kind of thing. And so, when the feedback came from the people who had observed, it wasn't very effective, there was no real understanding of how this was going to improve practice.

IV When you look back on it now with what you know about Lesson Study now, do you think what was happening then was Lesson Study?

IE No. I don't. I think it was more ... a bit more like peer buddy observation kind of thing. It wasn't really Lesson Study as we understand it now. And that's why I don't think there was a clear understanding of what Lesson Study was and how it's supposed to work. Certainly, by staff whether the senior ... whether [the headteacher] knew but it hadn't filtered through to staff ... I don't ... I'm not sure. But there was some kind of disconnection between the idea of what Lesson Study can do and should do and what actually happened. It was different.

00:02:44

IV Okay. It's interesting, isn't it?

IE Yes. It is interesting because nobody else in the staff had gone out on training. It was something ... [they] had gone away and come back and said that this is

lovely, let's have a go at this kind of thing. As you do. I mean, we are talking we must be talking eight, ten years ago now.

IV Gosh. So that must have been when ... that must have been when the Primary Strategies were still around because that was the first kind of encounter most of us had with Lesson Study when it was still Primary Strategies.

IE Yes.

IV It was just at the end of the Primary Strategies.

IE Yes. It was a long time ago because I've been at [School I] for five years so it must ... yes, it must be. So I have always had this in the back of my head about Lesson Study. I then did ... refreshed my understanding of Lesson Study and how it would work and how it would improve practice. And so, I think that must be two or three years ago. This year ...no, last year. I have said this year but I meant last year before I was here ... before I was at [School F], I very much wanted to get the {School I} staff involved in Lesson Study and so I sent ... and it was quite difficult almost ... I sent all of them ... I sent ... [the Deputy Head] sent three or four other teachers together to do the training with [B-SL9] with the view that they would take a project and lead it and drive it and we could drive it through.

00:04:18

The arrow is pointing outwards because it was quite ... it didn't work. They did the training and they did ... I gave them time to talk about what they wanted to focus on and they did. So they had some dedicated time, it just ... it didn't ... nobody was driving it and I think when I reflect on why it didn't work, I think I'd ask questions: Did they get why? Did they understand completely what the process was and how it could drive improvement or was it a bit like this where people had got little bits of information and not completely joined it together to understand? Or did they not understand the process and how it could do it?

So I am not sure I could answer. I think it's probably a bit of both but it really had little impact on staff. They had got some understanding of this thing called Lesson Study ... no impact at all on the children. They got to the stage where they had planned something: They wanted to work on handwriting. They got to the stage of looking at research and then it just ... that's it ...

IV It just fizzled out.

00:05:31

IE Yes. And I think my mistakes were: There wasn't strong enough leadership to drive it I don't think. And I had deliberately kept my hands off because I wanted it to be something that other leaders were able to push through and I think that's a mistake. So it wasn't successful. So that's why the arrows are all pointing outwards with no real impact. It wasn't joined together.

## Appendix 6: Researcher's Field Notes - Extract

### Speaker Key:

SE Stef Edwards

00:00:00

SE Wednesday 24th January 2018. Heads meeting, whole day. It was going to be at [School J], but this week we heard that {School F} was going to have a two-day section five Ofsted inspection. So we moved the venue back to {School F} in order to be on hand; particularly for me to be on hand if I was needed for the inspection and also to provide a support group for {F-SL24} upstairs, should [they] need any help or support with the inspection at all.

As I have already outlined in the description plan for this meeting, on January 16th the day was divided into two. It was a whole day, so very much a CPD focus with minimal housekeeping. We had a few updates. I'd done an information paper for the beginning but by half past ten we were down to business onto the first section of the presentation, which was about collaborative lesson research.

We had a really good discussion about the Takahashi paper. I think the disciplined approach to the description of the key features of effective lesson study, and the conditions that are required in school to make it work, appealed to heads. The message about, if what you're doing isn't having a clear impact on the quality of teaching and pupil outcomes, then what you're doing isn't lesson study was also... Well, it prompted quite a lot of discussion.

00:01:59

The various experiences of lesson study around the table haven't always been very successful, and [B-SL8] particularly was quite open in explaining what had happened at [School B]; that it hadn't been given enough time by the school, that teachers had been expected to work together after school and in their lunchtimes, and that it had caused resentment and fizzled out for that reason. [D-L18] shared some of [their] experiences in [their] previous school of lesson study; that results had been mixed, that there had been some success and some fizzling out.

{Headteacher – School J}... That was interesting, [they] said that [they] had taken on board the trust's approach to lesson study and had already spoken to [their] staff about setting up, from September, three lesson study teams. This was before we got to the section in the presentation about the importance of making sure that teachers have time in school time and the minimum expectation.

But when we got to that part, about the minimum expectation and linking it to the discussion around what Takahashi says in his paper about the conditions required in school; how important it is to provide proper funded release time for a team of teachers to work together.

00:03:52

I addressed that and explained that I felt that [headteacher] might find it difficult to do it in that way; that they might struggle to release three teams of teachers and that perhaps it would be wiser to limit it to one team, especially in quite a



small school. And that to start with this minimum expectation, to have one team engaged in lesson study at any one time in school, to try and get that sorted properly first before moving on.

We talked about the various ways of facilitating LS. I described what happened at School A before I left, and D-L18 corroborated that and said that it was still happening. That on a Monday afternoon three teachers are released to take part in lesson study, through a combination of one class having Forest School, one class having an HLTA teach computing and another class having an art lesson from a specialist.

So we had a discussion about kinds of ways in which schools might be able to facilitate LS to happen. We also made reference to the work that we would be doing later on coaching by saying that you know, perhaps if a teacher was taking part in a lesson study at any time, then they wouldn't be taking part in coaching as well. And that would support the capacity for the senior leadership team to be instructing leaders.

We had a really good discussion around the Viviane Robinson video and the leverage leadership message; that the core purpose of the school senior leaders is to focus on instruction and improvement, and improving the quality of teaching. And that all of our teachers have an entitlement to that continuing CPD, and that sometimes you know, that is a challenge.

00:06:07

{E-L22}, for example, said that [they have] teachers who have said to [them] you know, I don't like this LS. I don't like this focus on people in my classroom, I'd really rather go back to three formal observations a year and you leave me alone to get on with my job. So [headteacher in London]'s point about culture is a very valid one and this hump, that we have to get over to establish a lesson study and embed it in the school's approach to CPD, is a tricky one.

Some people are more determined than others to resist. But I described the experience at [School F] where there had been some resistance, but that resistance had been overcome very quickly. Because very quickly, within the first cycle of lesson study, the teachers had realised how much they enjoyed it; it had been sustained and it was continuing to this day. [F-SL24] wasn't available to talk about it because [they were] involved in the inspection.

We went on in the afternoon to talk about the coaching strand, but we finished the afternoon with a half-hour session on bringing those two strands together and agreeing that they would form the basis of the research and CPDL strategy for the trust. We agreed that we would set up a research and CPDL steering group. And that the role and remit of that steering group would be to link to the self-evaluation of the trust, to identify what the key priorities for CPDL were annually, and to plan a program of support for CLR and coaching.

00:08:06

To provide research resources, organised so that research and culture leads in schools would have access through the shared drive, to the relevant and

appropriate authoritative guidance and research, relating to the issues that they were exploring and improving.

That each school would go away... Each head would go away and think about who the persistent lesson study advocate in their school would be. We talked about the example of E-TL23] at School E who I described as a lesson study Rottweiler. [They are] the person who really drives lesson study at [School E] who makes sure it happens, who holds everyone to account and how important it is to find a person like that in school.

Somebody who will take it on and make sure that people go to the meetings, have access and facilitate it happening. It was agreed that everyone would go away and give that some thought, and come to a meeting in early March to establish the inaugural Learn-AT research and CPD steering group.

We discussed the possibilities that that group might take on, and planning the subject leader meetings and supporting those, the phase group meetings, and really the CPD program for the trust would sit with that group. That that group might morph, for example, into a management board for the teaching school, if we get the teaching school designation.

[C-SL15] and I agreed that we would meet together, in advance of that first meeting with B-TL11, to plan the agenda and [they] emailed me later tonight to... I've just had an email from [them] telling me that [B-TL11] was delighted that we were going to get this off the ground, and was available for the meeting on March 2nd.

00:10:28

## Appendix 7: Research Information and Ethical Consent Forms

*This is an example of the document including research information and consent forms provided to research participants and gatekeepers. It shows amendments made for Phase Two of the study following my transfer from University of Leicester to University of Brighton (2017) in italics in square brackets [].*

### Stef Edwards EdD Research Information

I am a primary school head teacher [*the leader of a charitable schools trust*] and part-time post-graduate student at the University of Leicester [*University of Brighton*], studying for a professional Doctorate in Education. My research project originates from my role as a system leader in a network of primary schools. The role involves me in a trust-wide push to embed Lesson Study as a vehicle which may facilitate teachers' professional learning and engagement with and in educational research (Dudley 2011).

A system of collaborative teacher learning which forms an integral part of system-wide, strategic approaches to improving teaching in Japanese schools (Fernandez, Yoshida 2004), Lesson Study is becoming increasingly prevalent in the UK. It appears to provide contexts in which teachers are able to focus on pupil learning, approach lessons in a spirit of enquiry and develop an enhanced sense of agency (Dudley 2011, Lewis 2009, Stigler and Hiebert 1999).

A Lesson Study cycle begins with a group of teachers identifying a learning issue requiring improvement. They collaborate in an investigation of this aspect of learning, through engagement with relevant academic research and/or authoritative subject or pedagogical guidance. Informed by their new learning, they plan a research lesson together. One of the team teaches the lesson, while remaining members observe pupils' learning. Afterwards, team members meet to evaluate the lesson and pupils' responses to it, before deciding on next steps, planning and refining the next research lesson and repeating the cycle (Dudley 2011; Dudley 2014; *Takahashi and McDougal 2016*).

In my work to support the network-wide introduction of Lesson Study, I want to understand the leadership practices and organisational conditions which best support effective implementation of Lesson Study. In this context, I use the word *effective* to mean that, by facilitating the professional learning of teachers, *effective* Lesson study impacts positively on the learning of pupils.

My research involves investigating the leadership practices that happen in relation to the implementation of Lesson Study at three levels:

1. **Teacher**
2. **Headteacher and senior school leader**
3. **System leader**

### **My main research questions are:**

- What school/network conditions, processes, routines, structures and contexts support the development of effective and sustainable Lesson Study?
- What leadership practices do teachers consider influential in enhancing the effectiveness of their learning and practice change in contexts of Lesson Study?
- How is leadership practised and distributed in ways that support successful promotion and embedding of Lesson Study in schools and across networks of schools?
- How are leadership practices and perspectives reflected and combined in teachers' participation in Lesson Study?
- 

There are two main strands to my project:

#### **1. Participant Observation**

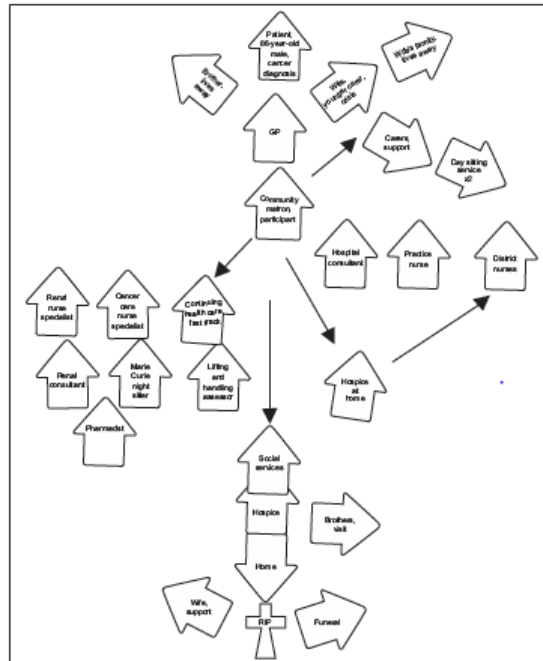
I would like to observe the practices and interactions involved as people engage in the process of Lesson Study and in events and activities related to it.

As someone who is professionally involved in working on Lesson Study in my own school and in a wider network of schools, I want to capitalise on my position as a participant to observe the leadership practices enacted as Lesson Study is implemented. I hope to observe people working at each of the three levels identified above. From notes taken during my observations, I will record my observations in a research journal. I hope that the resulting journal narrative will provide a rich seam of qualitative data for analysis. I intend to analyse these data according to the themes suggested by my research questions.

#### **2. Semi-structured 'Pictor' Interviews**

I want to find out more about what the people involved in Lesson Study think about the ways in which it is implemented. I would like to interview people involved in Lesson Study and related activities and events at teacher, head/senior school leader and system leader. I intend to use an interview strategy borrowed from health research called the *Pictor* technique. This technique requires the informant to choose a case of collaborative working in which he or she is, or has been, involved. They are provided with a set of arrow-shaped cards or adhesive notes and asked to lay them out on a large sheet of paper in a manner that helps them tell the story of their case, with the arrows representing people or organisations involved. The interviewer then uses the chart produced in this way to discuss the interviewee's experiences during an in-depth, audio-recorded interview which takes place once the chart is complete (King and Horrocks 2010, King et al. 2013).

**An example of a Pictor chart from health research (King et al. 2013, p.1143)**



I intend to record the interviews using a digital audio-recorder. The resulting recordings will be transcribed. The qualitative data contained within the transcripts will be analysed according to the themes identified in my research questions. Any evidence I find which pertains to my research study will be used to inform my EdD thesis.

**Declaration**

- This research will be carried out strictly in accordance with the [University of Leicester Research Ethics Code of Practice](#) [ [University of Brighton Research Ethics Policy](#)]. More information about ethics in educational research can be found here: <https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2018>
- All data collected in connection with this research will be held securely according to the Data Protection Act.
- Neither research participants nor the schools involved will be named in any publication related to this research project. Confidentiality of participants will be protected and steps will be taken to ensure that their schools cannot be identified.
- Participants have the right to withdraw from the research at any time without providing a reason. Any data collected before withdrawal will be destroyed.

Signed:

Stefanie G Edwards - Student Number: \_\_\_\_\_

**Appendix 8: Request for consent to participate in research – Interviewee**

Researcher's home address  
Researcher's university email address

Dear Colleague

I would like to invite you to take part in my research as outlined in the attached information sheet.

I request your consent to take part in a recorded interview about an activity related to Lesson Study in your school or in our network of schools.

Please read the following statements and tick the relevant boxes:

	Yes	No
I have read the Information Sheet about Stef Edwards' EdD research project. I understand the aims of the research and what my participation in the research will involve.		
I understand that any data collected for this project as a result of my participation will be held securely in accordance with the Data Protection Act 1998.		
I understand that this research will be conducted according to the University of Leicester's Research Ethics Code of Practice [ <i>University of Brighton's Research Ethics Policy</i> ]		
I understand that neither I nor my school will be named in any publication related to this research project. My confidentiality will be protected.		
I understand that, having given consent to participate in this research, I can change my mind and withdraw my consent at any time. In this case any data already collected will be destroyed.		
I consent to taking part in a recorded research interview, undertaken by Stef Edwards as part of her EdD research study.		
<b>Name:</b>		
<b>Signed:</b>		
<b>Date:</b>		

I would like to take this opportunity to thank you sincerely for your contribution,



Stef Edwards

**Appendix 9: Request for consent to participate in research – Gatekeeper**

Researcher's home address  
Researcher's university email address

Dear Colleague

I am writing to request your consent to invite colleagues in your school to participate in my EdD research project. Information about the project is provided in the attached information sheet. Participation may involve being observed while at work and/or participation in a recorded, semi-structured interview about their experiences of collaborative working in Lesson Study related activities or events.

	Yes	No
I have read the information sheet about Stef Edwards' EdD research project. I understand what participation in the research involves		
I understand that any data collected for this project as a result of my participation will be held securely in accordance with the Data Protection Act 1998.		
I understand that this research will be conducted according to the University of Leicester's Research Ethics Code of Practice [ <i>University of Brighton's Research Ethics Policy</i> ]		
I understand that neither participants nor my school will be named in any publication related to this research project. Participants' confidentiality will be protected.		
I understand that, having given consent to participate in this research, I can change my mind and withdraw my consent at any time. In this case any data already collected will be destroyed.		
I consent to the involvement of colleagues from my school in this research.		
<b>Name:</b>		
<b>Signed:</b>		
<b>Date:</b>		

I would like to take this opportunity to thank you sincerely for your contribution,



Stef Edwards

## Appendix 10: Pictor Interview Guide

### Interview Guide

#### **Explain the focus of the research study** (*record this introductory section*)

This research study is designed to investigate the kinds of leadership practices involved in the implementation of lesson study. This means I am interested in finding out about the kinds of actions taken by leaders at all levels in schools, from teachers, through senior leaders and head teachers to system leaders at network level (for example, at the level of the teaching school alliance [*or Trust*]). I want to find out about anything that anyone has done or said that you think might be at all relevant to the Lesson Study you choose to think about: processes, contexts, routines, events, meetings, time, relationships, actions and interactions, attitudes, comments, and helpful, unhelpful or indifferent.

#### **Teachers, Senior Leaders/Headteachers, System Leaders**

Think about a specific cycle of Lesson Study in which you have been involved most recently. Think about all the people who were involved in any way at all, anyone who had a bearing on how it happened. Think as widely as possible. If in doubt, err on the side of inclusivity.

#### **Pictor Interview Procedure**

Provide a stack of arrow-shaped sticky notes in three different colours and a large A3 sheet of paper for the informant.

Ask the informant to write a pseudonym and/or role title on separate notes to represent the people involved in the chosen situation.

Once the arrows are generated, ask the informant to place them on the paper in a manner that helps them to tell the story of the situation they have selected. They can use the colours to make distinctions if they wish.

The informant is left alone to complete their chart for 15-20 minutes. (*The recorder is switched off during this process.*)

Once the chart is complete, the recording resumes. The informant is asked to talk through the story of his/her chosen event, using the chart to help to verbalise reflections.

**Prompts** may be used based on the layout of the arrows:

- Why are some arrows closer than others?
- What is signified by the direction of the arrows?
- What is signified by the colours of the arrows?

**Probes**, designed to minimise leading the informant and avoid the expression of researcher opinion or value judgements, will be used for:

- **Elaboration:** Could you say more about that? Can you talk more about your thinking there?



- **Clarification:** Can you explain what you mean by...? Can you explain what that meant to you?
- **Completion:** And what happened...?

Interviews should last about one hour. After each interview, the arrows are drawn around to record their positions on the paper and each arrow tracing is marked with its pseudonym (and colour) as written on the post-it by the informant. Finally a digital scan of the chart is taken and stored securely, electronically.

The data consist of both the chart and the subsequent transcribed discussion/interview.

## Appendix 11: Example LS Artefact – Open House Research Lesson

School B (June 2018)

### Finding Equivalent Fractions through Problem Solving - Report

Lesson planning team: B-T14, B-L10, B-T12, B-T13

Instructor: B-TL11

**Focus Question:** Can the Japanese problem-solving approach be used to move from pictorial representations of fractions to abstract representations of fractions within equivalence?

#### Goals:

<b>Level 1: Goals specific to the lesson</b>
Using the multiplying factor technique to find equivalent fractions of a given fraction.
<b>Level 2: Goals specific to the unit</b>
Recognise and show equivalent fractions. Move from pictorial representations of fractions to abstract representations within equivalence.
<b>Level 3: Broad subject-matter goals</b>
Develop problem-solving skills. Apply prior knowledge.
<b>Level 4: Long-term goals for student development</b>
Develop perseverance and resilience when tackling difficult situations (Margaret Taplin Institute of Sathya Sai Education, 2017)

#### Relationship to the Curriculum

- Recognise and show, using diagrams, equivalent fractions with small denominators
- Solve problems (Department for Education, 2013)

Most teachers would agree that fractions are difficult to teach and seemingly difficult to learn. Fractions are well known for being a stumbling block for primary school children and yet they are commonly used in our everyday life. When presented with a mathematical symbol such as  $\frac{3}{4}$ , there needs to be an understanding of how this is related to different kinds of situations in the real world. It can be used in these ways:

- To represent a proportion of a whole or of a unit
- To represent a point on a line
- To represent a proportion of a set
- To model a division problem
- As a ratio

(Haylock and Manning 2014)

Many models have been proposed to link the different categories of fractions and the multiple meanings of fractions in order to study the different obstacles in learning fractions (Gabriel et al 2013). The understanding of fractions also relies upon a balance of conceptual and procedural knowledge. Theories argue that children have difficulty learning fractions when they have not used their conceptual understanding but only the procedure (Gabriel et al 2013).

In the lesson study school, we follow the Inspire Mathematics scheme based on the Singapore Mastery approach. The textbooks we follow have been written by Dr Fong Ho Kheong. His work is based on well-established constructivist ideas that teach mathematical concepts and skills from assimilation and accommodation. They also use Bruner's three models of representation; concrete, pictorial and abstract learning. Our textbooks dictate that the sequence of teaching that should be followed when teaching fractions is:

- Use the terms numerator and denominator
- Write a fraction given the numerator and the denominator
- Solve word problems relating to numerators and denominators
- Divide a fraction strip into equal parts to show a fraction
- Divide the divided fraction parts into further equal parts to show the equivalent fraction
- Write the equivalent fraction of a give fraction with the help of model drawing
- Write the equivalent fractions using the multiplying factor technique
- Write the equivalent fractions using the dividing factor technique
- Expression a fraction in its simplest form using the dividing factor technique  
(Ho Kheong, 2015)

Research indicated that exposing children to multiple representations of fractions and conceptual variance allowed them to become more fluent in fractions. Due to this, we decided that we would plan a combination of lesson using Inspire Maths textbooks and *The Teaching of Fractions* book. After assessing the children's prior knowledge of fractions it was decided that some of the Year 2 Inspire Maths textbook would also need to be covered to enable children to access the work fully.

At School B, problem solving and reasoning in maths has been a focus. Research has found that underpinning Japanese research lessons is the problem solving lesson structure that has evolved over four decades (Groves 2013). Features of these problem solving lessons include: the hatsumon which is the problem that students are to engage with, kikan-shido which is when the teacher monitors the progress and takes note of various approaches to the problem that could be used in the next stage, Neriage. During this stage of the lesson, the teacher facilitates mathematical discussion and draws out the mathematical concept that was intended to be learned. By identifying different approaches used by the students, the teacher can facilitate the discussion to compare and contrast methods to lead the discussion towards finding an efficient method and making connections between different parts of the lesson. Finally, Matome is the teacher's summary and review of the lesson . (Isoda 2010; Takahashi 2006; Groves 2013)

## Unit Plan

Date	Area of fractions
w/b 30.4.18	Using shapes to show whole and different fractions Language of fractions: numerator and denominator Recognising equal fractional parts of a shape Representing fractions using bar model and area models
w/b 7.5.18	Using bar models to identify size of fractions Using bar models to compare fractions
w/b 14.5.18	Putting fractions on a number line Ordering fractions by size
w/b 21.5.18	Activity ideas in teaching of fractions book
w/b 4.6.18	Problem solving pages 68-71
w/b 11.6.18	Mixed number fractions and adding & subtracting like fractions, including where the fraction is a mixed number
w/b 18.6.18	Teaching what equivalent fractions are Lesson study

### Considerations for planning the unit and research lesson

Prior to teaching the research lesson, trial sessions were carried out with groups of year 5 and year 3 pupils. The session with year 5 pupils was very insightful and informed us about the prior knowledge that was essential in order for them to access the task. We found that the children spent too much of the time focusing on finding  $\frac{1}{3}$ . Other issues are listed below.

- Children write as a number sequence
- Children add all the fractions together
- Children to try and find how many children have equally, e.g. you add all the bits up and divide by the number of children
- Children need prompted to draw  $\frac{1}{3}$
- Children try to divide incorrectly
- Children have poor understanding of fractions
- Children don't spot patterns
- Children have correct method but miscalculate
- Children calculate the equivalent fraction of the chocolate remaining
- Children write numerators as 1 every time
- Child forgets they are finding  $\frac{1}{3}$  and split into 4
- Child divides by 6 not 3
- Child splits cubes into groups of 3s rather than thirds

The session with the year 3 children informed us that the children would be able to discover the new learning if the problem was adapted to  $\frac{1}{2}$  instead of  $\frac{1}{3}$  due to some barriers with the three times table.

### Teaching the vocabulary

Equivalent, equal, parts, pieces, whole, numerator, denominator, patterns, relationship

**Research Lesson plan**

Steps, learning activities, teacher's questions and expected student responses	Teachers / support role	Evaluation
<p><b><u>Phase 1: Present problem (5 minutes)</u></b>            "Yesterday we learnt what the word equivalent means. RP – what does equivalent mean?            We found out that two fractions can be equivalent even if the denominators &amp; numerators are different" Draw children's attention to flipchart from previous lesson. Sheet 1            "Today we have a problem with children sharing biscuits. They have broken their cookies into different numbers of equal pieces and have to give a 1/2 away to a friend."            Sheet 2 (see appendix 2)            "Can you help them decide how many pieces they will need to give away? You will need to show it in a fraction."</p>	<p>Check they understand/have read problem properly.</p>	<p>Do they understand the problem?</p>
<p><b><u>Phase 2: Students problem solve (20-25 minutes)</u></b>            "There are some resources available for you to use on your tables if you need them." Gesture towards resources (plain and squared paper, circles, rectangles, scissors, glue).            "You can decide whether or not you work with your maths partners or by yourself."</p>	<p>Teacher circulates the room, facilitating student discussion            Anticipated student responses...            Students do not present their calculations as fractions            Gesture towards the fractions box underneath the problem.            Students use division to calculate the number of pieces rather than the fraction.            Can the answer to your division be shown as a fraction?            Automatically assume the answer is <math>\frac{1}{2}</math>            Can you show me how many pieces they will give away?            Struggle to represent the problem            Why don't you try using the paper to represent the cookie?            Attempts to fold/draw 14<sup>th</sup>            Can you think of a quicker way?            Use a grouping strategy to calculate the answer            Can you think of an easier or quicker way?            They will calculate answers but show no relationship between parts of the problem</p>	<p>Have children selected appropriate equipment to facilitate them in answering the problem?             Are children able to choose another strategy when they come to difficulties?</p>

	<p>Are you beginning to spot any patterns? How would we do this for even bigger numbers? Can you see a relationship between <math>\frac{1}{2}</math> &amp; <math>\frac{5}{10}</math>?</p> <p>Pupils know equivalent fraction e.g memorised equivalent fractions</p> <p>Can you prove this? Is there a pattern?</p> <p>Student is completely unsure how to approach a problem</p> <p>Why don't you discuss with another group to see their approach? Can you remember what we did yesterday to find <math>\frac{1}{2}</math>?</p> <p>How do I fold my circle into 5 equal parts?</p> <p>If you can't could you use something else e.g. squared paper.</p> <p>Identify children who have used particular strategies – to use in phase 3.</p>	
<p><b><u>Phase 3: Comparison and discussion 'Neriage' (20-25 minutes)</u></b></p> <p>We're going to stop now and share our strategies. Don't worry if you haven't solved the problem, we will solve it together."</p> <p>"Did anybody use folding to work this out?"</p> <p>Could folding help you solve the whole problem?</p> <p>How much of the problem can we solve using each method?</p> <p>What other way could we solve it?</p> <p>Can you see a relationship between the numerator and denominator?</p> <p>Can you now see a relationship between the numerator in <math>\frac{1}{2}</math> and the numerator and denominator in <math>\frac{5}{10}</math>?</p> <p>What mathematical calculation can I do to get from 2 to 10?</p> <p>Can we apply this to our problem?</p> <p>Can we apply this to another problem on sheet 2?</p> <p>Write a rule for this sheet 5.</p>	<p>Show an example of each strategy folding, drawing, cutting. Sheet 3</p> <p>Show examples of mathematical strategies used by children and record on Sheet 4</p> <p>Child: Numerator is half the denominator</p> <p>Show a fraction e.g <math>\frac{1}{3}</math> and <math>\frac{2}{6}</math> – does this rule apply here? (move on quickly from this)</p>	<p>Can the children identify the weaknesses of each strategy?</p> <p>Can children see that in a fraction that is equivalent to <math>\frac{1}{2}</math> the numerator is half the denominator?</p> <p>Can children identify the rule of multiplying to</p>

	Misconception + 8 Does that work for our other equivalent fractions?	find equivalent fractions?
<b>Phase 4: Teacher summary 'Matome' (5 minutes)</b> Reiterate the rule (children to read rule) Use the rule to find out which of these is not an equivalent fraction? $1/3 = 3/9$ $1/2 = 8/16$ $1/5 = 3/18$	Teacher to summarise what we have found and show exit ticket question.	

Anticipated Pupil Responses	Suggested Teacher Responses
Students do not present their calculations as fractions	Gesture towards the fractions box underneath the problem.
Students use division to calculate the number of pieces rather than the fraction of chocolate	Can the answer to your division be shown as a fraction?
Students automatically assume the answer is $1/3$	Can you show me how many pieces they will give away?
Students struggle to represent the problem	Why don't you try using the paper to represent the chocolate bar?
Students assume the fraction with the largest numerator or denominator is biggest	Can you prove this?
Student attempts to fold/draw 48ths	Can you think of a quicker way to do this? When Willow did this question they didn't have any paper to use.
Students assume the pattern and do not recognise change in denominator	Draw attention to the change in the problem.
Students assume the pattern is doubling	Draw attention to the fact that some denominators do not fit this pattern.
Students have a poor understanding of the relation between numerator and denominator e.g. represent each fraction as $1/3$ , $1/12$ , $1/48$ etc.	Can you show each of these fractions using the paper? Are they all $1/3$ ? Establish what the numerator and denominator show us and use apparatus to demonstrate the fraction as parts of a whole.
Students use a grouping strategy to calculate the answer	That will be a difficult strategy to use for bigger numbers like 48, can you think of an easier and quicker way to do this?
Students calculate answers but do not show any relationships between parts of the problem	Can you see a relationship between $1/3$ and $2/6$ ? Are you beginning to spot any patterns? How would we do this for even bigger numbers?

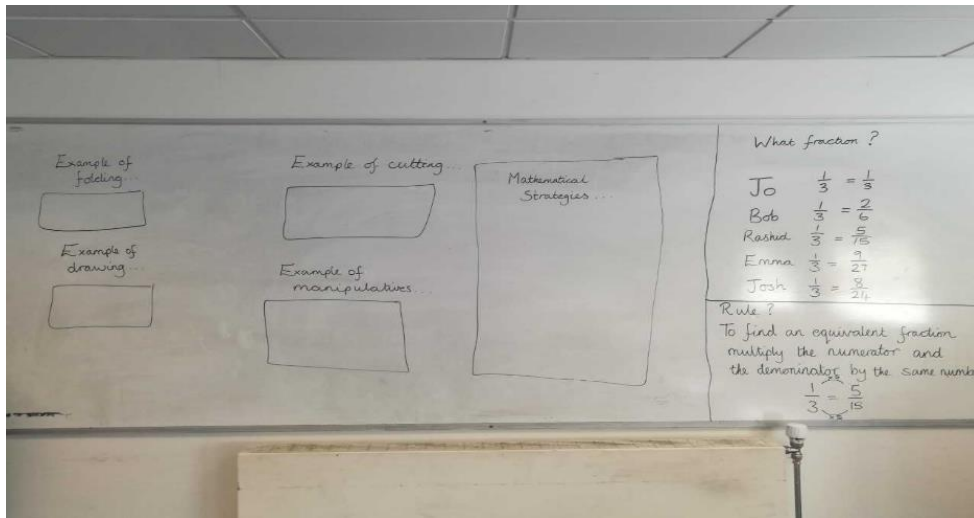
Students only see the relationship between the numerators/denominators but not both	Can you see a relationship between the numerators/denominators? How is it changing?
Students assume the relationship is through adding/subtracting	Would this be correct for the next part of the problem? Does it apply?
Students know the equivalent fractions without calculating e.g. Children have looked at equivalent fractions at home and have memorised that the equivalent fractions for $\frac{1}{3}$ are $\frac{2}{6}$ , $\frac{4}{12}$ and so on.	Can you prove it? Is there a pattern/rule?
Student is completely unsure of how to approach the problem.	Why don't you discuss with another group how they have approached it?
Students guess answers	Can you prove how you know?
Questions to be used if children need support.	Question to be used during discussion
Can you explain to me what you have to do?	What do you notice about?
Can you think of another way/quicker way?	Can you see a relationship between $\frac{1}{3}$ and $\frac{2}{6}$ ?
Can you show me (draw/use manipulatives) how many pieces will you get?	Does this apply to the next step as well?
Would drawing a picture help?	Can you show me how you know this?
Is there something you already know that might help you?	Can you show me another way of doing this?
	What is the relationship between the numerators?
	If a child has 30 pieces, how many pieces would they give away?
	Can you show me another fraction that is equivalent to $\frac{1}{3}$ ?
	Does this apply to finding equivalent fractions for any fraction? Can you show me?



## Whiteboard plan: 'Bansho'

Possible adaptation to include:

- Reminder of previous day's work on working wall. No manipulative example required. Main problem to be displayed on working wall, to be filled in during lesson.
- Sheet 1 – previous lesson
- Sheet 2 – problem outline
- Sheet 3 – examples of strategies
- Sheet 4 – mathematical strategies
- Sheet 5 – Rule
- Sheet 6 – Exit ticket



## Timing for the research lesson event

- B-TL11 – explain why lesson study is good CPD
- B-T14 – talk through the plan and the data collection sheet and allocate a child to each observer (children will have a number on their back).
- Lesson – 1.45 – 2.45 p.m.
- Break – 2.45 – 3.00 p.m.
- Post lesson discussion – 3.00 – 5.00 p.m.

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## **Appendix 12: Example LS Artefact: LS Inquiry Report**

### **Research Informed Professional Learning at School G (Autumn Term 2021)**

Since joining {the Trust}, we have tried several times to create the capacity for our staff to take part in Lesson Study. For a variety of reasons – staff absence, releasing teachers and financial capacity to name but a few – we have been unable to deliver this programme as we would want to.

We have recently engaged with the Teacher Development Trust programme which focuses on CPD Leadership and recognise that the best professional learning is:

- Collaborative
- Sustained over time
- Situated in practice
- Research-informed
- Inquiry-orientated
- Focused on pupil learning

With this in mind, we began to think about how we could change our approach to professional learning for our staff. It remained an issue that being able to consistently release staff – particularly in the current climate – was not going to be an option for us; we needed to devise a programme that would meet these objectives outside of people's teaching commitments. The best option available to us was to use our weekly staff meeting time.

We devised a Research Informed Professional Learning programme based on the principles of Lesson Study and the Teacher Development Trust and shared it with the staff at the beginning of the academic year. We asked the teachers to work in the following groups:

- EYFS/1
- Years 2 and 3
- Years 4, 5 and 6

Each group was asked to identify an area of their practice that they would like to work on and with the support of senior leaders, the following inquiries were launched:

- EYFS/1 – To what extent does the teaching of subject specific vocabulary impact children's story telling
- Year 2/3 – To what extent does a phonics-based approach to spelling impact on children's ability to spell words correctly
- Year 4/5/6 – Does the specific teaching of complex sentence structure have an impact on the composition of writing

Throughout the Autumn term, 10 hours of directed (staff meeting) time was allocated to collaborative research, planning, delivery, reflection and presentation of these research topics.

This delivery method is unique and is, we think, the revolutionary aspect to making this work effectively. In a busy school facing the challenge of a shrinking budget and responding to the global pandemic, these arrangements have allowed us to prioritise and protect this important professional learning and make it an integral part of teachers' contracted hours. The arrangements required for releasing teachers to

take part in the research lesson are far less onerous and have been managed effectively within the research groups.

An initial research base was provided for each group by senior leaders and each group added to this as their inquiry progressed and their focus became more specific. Resources were stored and shared in a dedicated channel on Microsoft Teams.

Each group followed an approach based on Lesson Study. They worked collaboratively to research the topic, form a research proposal, plan the lesson, teach the lesson, discuss the findings and present these findings and future actions to the wider staff body.

### **EYFS/1**

The following results were shared by this group:

#### **Findings - EYFS:**

- Children all started with a clear opening ("One sunny day") but did not deviate from the modelled opening.
  - Used taught ocean vocab: Octopus, seal, humpback whale, mermaid
- Stories were articulate and in well-formed sentences:
  - "They tried to help the fish, but he swam away"
  - "Why did you pull the ship down?"
  - "This ice-cream will drip"

#### **FINDINGS - YEAR 1**

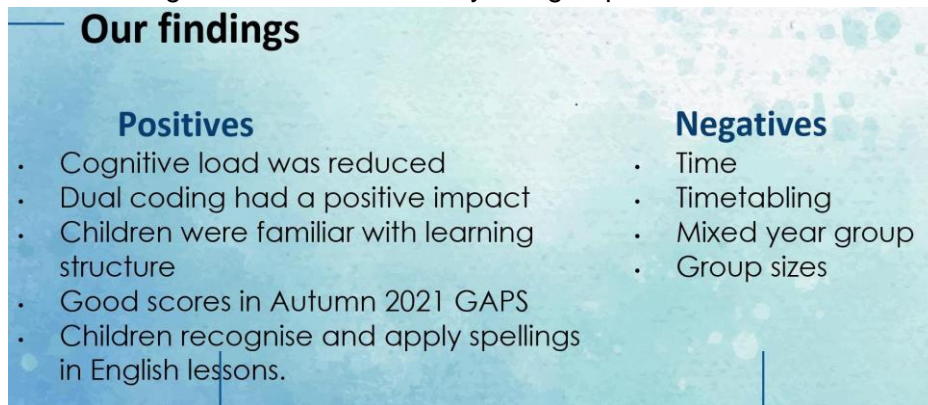
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- The taught vocabulary stimulated children to reflect on their own life experiences and incorporate them into their stories (jellyfish)
- Children gave good eye contact to the speaker and stayed on task by showing active listening
- Taught vocabulary was extensively used: deep blue water, spotted a mermaid with a long swishy tail, pink scaly fish, shoal of fish
- The story map annotated with adjectives, accompanied by pictures and new vocabulary gave children a clear structure and support for their writing

Other staff reflected how oracy might be overlooked and should be explicitly planned for. This prompted discussion amongst leaders about further developing the 'talk for writing' approach in a deliberate way across the school.

### Year 2/3

The following results were shared by this group:



This promoted a lot of discussion between departments around approaches to spelling and we are using these findings to ensure a more structured and coherent whole school approach.

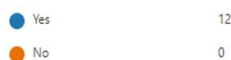
### Years 4/5/6

The following results were shared by this group:

Teachers in this group showed the greatest progress in their understanding of the specific skill that they researched. The deliberate practice required to effectively teach 'complex sentences' became clearer as they researched, planned and taught the sequence of lessons. They also reflected on the need to clearly model this aspect of writing across the curriculum to ensure children use it naturally. The Lesson Study approach has led to a greater level of understanding and impact. After the showcase, we asked teachers to complete a questionnaire. The results were overwhelmingly positive. Every teacher had valued the opportunity to have some autonomy over their professional learning and to work collaboratively with others. There was a great appetite to engage in this style of professional development moving forward and people were also very keen to work across phases in future inquiries.

2. Do you feel that participating in lesson study has had a positive impact on your practice?

[More Details](#)



Whilst we recognise that our learning from this process is not ground-breaking, we feel that the model of using directed time will make the process more accessible and sustainable. We hope that it may allow more schools to engage to an even greater extent as it reduces the impact of the need to release teaching staff during lesson time but still retains the core features of effective research informed professional development.