"Are we there yet?": A study of the Oxford University Press Pathways to school improvement



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Abstract

This study explores the workings of, and practitioner engagement with, a selection of online resources provided by the Oxford University Press (OUP) intended to support primary schools' engagement in improvement tasks. On 5 November 2013, the OUP launched 'Pathways', an online 'four-step system' to school improvement comprising the following phases: 'audit', 'strategic planning', 'take action' and 'evaluate impact'. The resources, consisting of 23 different Pathways divided by 'issue', aim to support primary schools through a range of whole school improvement and curriculum-focused topics, for example increasing parental engagement and promoting outstanding reading. This research investigated primary school practitioner perceptions and attitudes towards OUP Pathways and both collective and individual improvement practice via an embedded multi-method case study comprising a purposive sample of five primary schools that signed up to use Pathways. It also followed the evolution of Pathways itself using a "design-based research" (DBR) framework. DBR focuses on bridging the realms of academia and external, more practical contexts, the documentation and monitoring of how designs function in authentic settings (The Design-Based Research Collective, 2003) and promoting research impact through user engagement in the development of theoretically-linked real-world learning environments. The growth and use of Pathways by schools was investigated through the theoretical lenses of the Dynamic Approach to School Improvement, DASI (Creemers and Kyriakides, 2012) and Guskey's five-level model of Continuing Professional Development, CPD evaluation (2002a). During the project, teachers and school leaders engaged with a variety of resources to inform their practice and support collaborative working with colleagues, including Pathways. This research focuses uniquely on how *teaching practitioners* engage with and perceive technology in their school improvement practice and professional development experiences. Pathways, rather than being regarded as a digital platform on its own, appeared to function as part of a bigger 'professional learning environment' and 'school improvement space' for practitioners that enabled more structured offline and wider interactions and discussions to take place around school improvement issues. Pathways tools seemed to offer opportunities for teachers and middle leaders to work both collaboratively, individually and autonomously – with their work being partially 'mediated' by Pathways itself as a resource, and specific 'hospitable conditions' cultivated by senior leadership such as professional guidance, support and trust. The nexus of two fields that are usually studied separately is explored here: school improvement and its links with how knowledge is developed, managed and mediated; and practitioners' use of digital technologies for their own learning and development. This study's unique contribution to the fields of educational effectiveness and improvement and educational digital technologies lies in its innovative application of a DBR framework to study primary school improvement processes and journeys, and how these might be influenced by the development of an online technology platform for teachers that aims to extend knowledge and develop their capacities to engage in improvement practice.

Structure of the thesis: Parts I, II and III

Part I introduces the thesis with the following three chapters:
Chapter 1 sets out the **introduction** and background to the study, its overall argument and progress to be made towards completion of the final thesis. This first chapter describes the **study's origins**, aims, objectives, research questions, line of reasoning and contribution to the fields.
Chapter 2 provides **a review of the literature** in the three overarching fields of school improvement, school effectiveness and educational digital technologies.
Chapter 3 presents the **methodology and research design** – in principle and practice - informed by the research aims and questions stated in **Chapter 1**. It also discusses the processes used to analyse and integrate the various sources of data collected during the research and how these will be used to address the research objectives and research questions. This chapter concludes with a discussion of the research challenges and ethical conduct during the study.

Part II presents the case studies of schools and Woodland Press:
Chapters 4 to 6 detail the first set of **Findings** from five case study schools – three larger, more comprehensive school case studies (Magpie, Raven and Sparrow – Chapters 4, 5 and 6 respectively). Two abridged pen portraits of schools that engaged less with Pathways (Jay and Jackdaw Schools) are presented in Appendices 20 and 21.
Chapter 7 reports the second set of **Findings** – focussing on the OUP (referred to later as Woodland Press) case study and DBR aspects of the overall research design.

Part III brings together the findings in the cross-case analysis, along with links to the literature in the Discussion and Conclusions:
Chapter 8 draws the case studies together and presents a **Cross-Case Analysis and Synthesis**.
Chapter 9 presents the study's **Discussion and Conclusions**. This chapter links the study's main findings with substantive literature in Educational Effectiveness and Improvement Research (EEIR) and digital technologies. It also summarises the thesis and explores future directions for school improvement and educational digital technologies research**.**
References and **Appendices** close the thesis.

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List of abbreviations

Abbreviation	Description
AP	Action Plan
A&R Team	Advisory and Research Team (part of the configuration of the DASI)
CPD	Continuing Professional Development
CPDL	Continuing Professional Development and Learning
CUREE	Centre for the Use of Research Evidence in Education
CUREC	Central University Research Ethics Committee (University of Oxford)
DASI	Dynamic Approach to School Improvement
DBR	Design-Based Research
DfE	Department for Education (in England)
EER	Educational Effectiveness Research
EEIR	Educational Effectiveness and Improvement Research
GEL	Global Experience Language
KM	Knowledge Management (systems)
LLE	Local Leaders of Education
NAHT	National Union of Headteachers
NC	National Curriculum
NLS	National Literacy Strategies
NNS	National Numeracy Strategies
NS	National Strategies
NUT	National Union of Teachers
Ofsted	The Office for Standards in Education, Children's Services and Skills
OL	Organisational Learning
OUP	Oxford University Press / Also referred to as Woodland Press
PP	Pupil Premium
PPA	Planning, Preparation and Assessment
PPG	Pupil Premium Grant
RO	Research Objective
RQ	Research Question
RWI	Read Write Inc
SAT	National Curriculum assessment, colloquially known as SATs which historically stood for 'standardised assessment tasks'
SDP	School Development Plan
SE	School Effectiveness
SEN	Special Educational Needs
SEND	Special Educational Needs and Disability
SER	School Effectiveness Research
SI	School Improvement
SIP	School Improvement Plan
SLE	School Learning Environment
SLT	Senior Leadership Team
SSE	School Self-Evaluation
SSIR	School/System Improvement Research
TER	Teacher Effectiveness Research
WAGOLL	What a Good One Looks Like
YGL	Year Group Leader

Glossary of terms

Term	Description
Mixed methods	The use of *more than one paradigm* (usually qualitative and quantitative) in a study (Teddlie and Tashakkori, 2009: 145)
Multi-methods	Usually denotes the use of multiple methods *within one paradigm* (either qualitative or quantitative)
Numicon	Primary level mathematics resource offered by the OUP (https://global.oup.com/education/content/primary/series/numicon)
Oxford Owl	Website of the OUP (http://www.oxfordowl.co.uk/) that offers resources (sometimes free) to schools and parents (hence it sits on a separate web location to its more generic commercial operations (http://global.oup.com/?cc=gb).
Pathways	Online platform (http://www.oxfordowl.co.uk/welcome/for-school/pathways-page/home--4#latest) that sits on Oxford Owl. Part of the offering of resources to schools along with publications, CPD materials for practitioners, training videos amongst others. Accessible via online registration. One free Pathway is offered per year. Other Pathways and additional resources are 'unlocked' after the payment of subscription fee (£499 per annum [last accessed June 2018]).
Pathways study	The study being discussed in this report
Project X	Whole-school reading and writing intervention programme, one of the many resources offered by the OUP (https://global.oup.com/education/content/primary/series/projectx/)
Read Write Inc	Programme of resources and professional development to developed by Ruth Miskin and offered by the OUP to develop children's reading, writing and speaking (https://www.oxfordowl.co.uk/for-home/find-a-book/read-write-inc-phonics--1/)
Teaching Schools	Schools graded as Outstanding by Ofsted that apply to work with other schools to provide training and support to staff. Part of a government initiative to develop a "self-improving and sustainable school-led system" (DfE and NCTL, 2014: [online])

Case names	Description
Jackdaw School	Case study school (Pen Portrait: Appendix 20)
Jay School	Case study school (Pen Portrait: Appendix 21)
Magpie School	Case study school (Extensive case study: Chapter 4)
Raven School	Case study school (Extensive case study: Chapter 5)
Sparrow School	Case study school (Extensive case study: Chapter 6)
Woodland Press	Pathways division of Oxford University Press (given a pseudonym to align with case study schools – Extensive case study: Chapter 7)

Part I: Introduction, Review of the Literature & Research Design and Methodology

Chapter 1: Introduction

1.1 Study overview

This study explored the workings of, and practitioner engagement with, Oxford University Press (OUP) Pathways in primary school improvement. In addition to publishing curriculum resources for schools, the OUP has been actively involved in developing materials for teaching practitioners in the areas of school improvement and professional development. In 2013, the OUP launched a "four-step system" to school improvement in the form of Pathways. Each Pathway contains web-based resources such as audit tools, questionnaires and guidance documentation that attempt to support schools through specific activities (or 'issues' as they are termed in Pathways). Examples of such issues include the implementation of the new primary National Curriculum (NC) in England – the majority of which was introduced in September 2014 (DfE, 2014), putting measures in place to build an 'outstanding reading school', narrowing the gap, raising boys' achievement and increasing parental engagement.

One core purpose of this research was to study and understand school practitioners' perceptions and attitudes towards school improvement and their use of Pathways and other resources to support their practice and professional development. In particular, this qualitative, multi-method exploratory case study investigated and describes the perspectives of headteachers, other members of school leadership and teachers towards the OUP approach to school improvement and Pathways. The research also studied the evolution of the Pathways themselves, the nature of school improvement practice and links with Pathways resources within a purposive sample of five primary schools. There was a particular focus on areas such as diagnosis, capacity-building and leadership with an aim of studying and illuminating the variety of school improvement 'journeys' within individual schools (Hopkins, 1998; Day et. al., 2011; Hallinger and Heck, 2011; Chapman and Sammons, 2013). The study also applied Guskey's Five Level Model of CPD Evaluation (2002a) to investigate how teachers, particularly school leaders, compiled and used different forms of evidence to inform their practice and support collaborative working with their colleagues, using a mixture of resources that may have included Pathways.

1.2 Study origins

The main stated aim of the OUP, as a department of the University of Oxford, is to support and widen the university's objective of "excellence in research, scholarship, and education" through the means of publishing (OUP, 2016). Historically, the OUP has produced (amongst other resources – academic and dictionaries for example) materials aimed at parents and schools in supporting children's learning. It has also developed resources for teachers and their professional development. The Pathways web-based platform for schools was developed over a period of between 18 to 24 months (from the initial idea or concept of building such a platform up to its official launch) using expert advice and input from an advisory group made up of a variety of consultants, including former headteachers and school senior leaders, two former Ofsted inspectors, subject specialists, teachers and university academics. On 5 November 2013, Pathways was launched with the first in the series focusing on "managing and implementing the new National Curriculum" (NC) in primary schools. The launch of this first Pathway (which was and continues to be offered to schools free of charge) followed the publication in September 2013 of a new NC framework in England by the Department for Education (DfE). This first Pathway is a resource aimed at supporting schools through the implementation of the programmes of teaching, learning and assessment associated with the new NC. In November 2014, nine other Pathways were launched, access to which is offered to schools via an annual paid subscription of £499. The 23 (in total) Pathways comprise, as of February 2018:

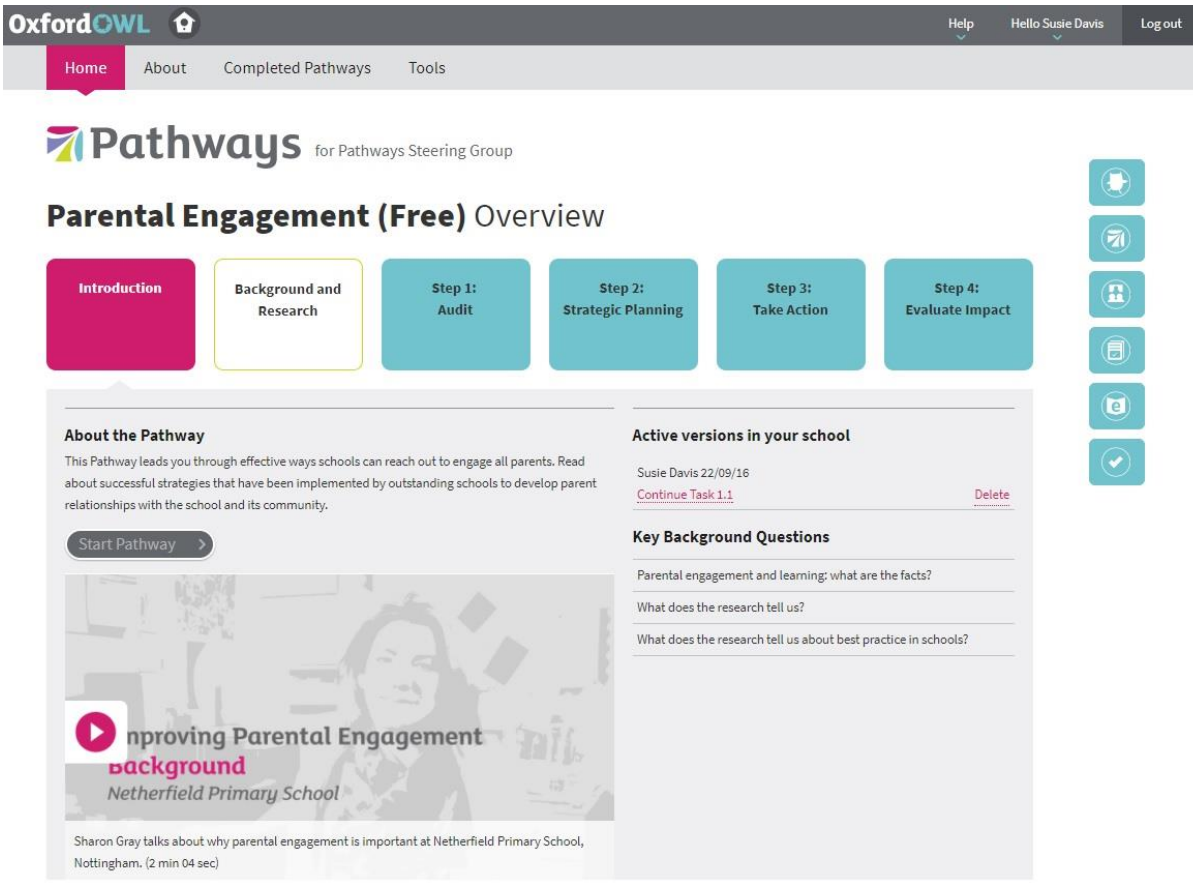
- ten focusing on "whole school improvement" ("Assessment for Learning" [provided for free until 2017], "Managing and Implementing the National Curriculum" [currently still free], "Assessment without Levels", "Closing the Gap", "Developing Best Practice in the Early Years", "Effective Governance", "Effective Self-Evaluation", "Outstanding SEND and Inclusion Practice", "Parental Engagement" [very recently provided for free[1]] and "Raising Boys" Achievement") and;
- 13 focusing on "teaching and learning" (nine English Pathways: "Building an Outstanding Reading School", "Developing Early Writing", "Guided Reading", "Improving Big Writing Practice", "Improving Grammar", "Improving Phonics", "Improving Spelling", "Improving Writing" and "Teaching Comprehension" & four dedicated to mathematics: "Mastering Mathematics", "Mathematical Reasoning", "Number and Calculation" and "Problem Solving in Mathematics").

All Pathways sit on a wider platform called 'Oxford Owl' which holds a wide range of resources for schools and parents, many of which are free (e.g. e-books and guidance for parents and teachers). Pathways is located in the 'schools' division of Oxford Owl.

[1] Parental Engagement was not one of the free Pathways offered during the research project period (2013-2016). During that time the free Pathways were Managing and Implementing the new National Curriculum and at a later point, Assessment for Learning.

A screenshot of the Pathways web platform is shown below in Figure 1 including the phases that make up the "four-step system".

Figure 1: Front screen of an example Pathway: Parental Engagement (Oxford Owl, 2018) Available from: https://www.oxfordowl.co.uk



The self-evaluative approach represented in the 'Overview' and four-step system in Figure 1 aims to provide opportunities for practitioners to assess schools' functioning and pupil outcomes while examining the processes and interactions that played a role in reaching those outcomes.

My research investigated, analysed and describes how the OUP Pathways approaches to school improvement were perceived, interpreted and used in five different case study schools across England. In line with how Pathways is structured around the four core steps highlighted above, starting with an initial audit of current practices and finishing with a self-evaluation of new practices, one key learning point that has emerged from previous school improvement research is that "a clear and practical focus for development is linked to simultaneous work on the internal conditions within the school" (Reynolds, Hopkins and Stoll, 1993: 46). The final evaluative phase would ideally involve a collective search for meanings and clarity, a period of system refinement and activities that allow practitioners to monitor progress and enhance their professional judgement (Ainscow and Hopkins, 1992).

Each of the five case study schools were given pseudonyms to keep schools' and practitioners' identities anonymous. As the wider platform being studied is called Oxford Owl, every school was given an appropriate name of a bird. To reflect that any references to OUP up to this point in the document and beyond signify a particular segment of the organisation responsible for Pathways and not the whole organisation, it was decided that 'OUP' should also be given a pen name, 'Woodland Press'. From this point on, in order to maintain consistency across the thesis, all participant organisations will be referred to by their pseudonyms, (OUP as) Woodland Press, and the five schools: Magpie, Raven, Sparrow, Jackdaw and Jay. Names of research participants will usually follow the convention of 'Title' 'Bird name' (e.g. the headteacher of Magpie School is Mrs Magpie). Where there is more than one main actor per organisation, initials based on their job role or other defining characteristic will be used to identify participants.

This doctoral research project was collaborative, where a partnership was formed between the 'research team' (me and Professor Pam Sammons, both members of the Woodland Press Pathways Steering Group), Woodland Press and each of the five case study schools who expressed interest in participating in the research. My role has traversed that of a doctoral researcher/student as well as 'partner' in the collaborative efforts to study, and support the ongoing development of Pathways over time. This has made for a rich but also complex experience in reconciling the different responsibilities of the role. I should declare here that as well as studying Pathways and schools' engagement, I also co-authored several publications that were uploaded onto Pathways as 'research and background' pieces for schools – e.g. a series discussing from the academic literature: the principles of school improvement, school effectiveness, school self-evaluation, capacity building and leadership. Sections of this were translated from my literature searches for my doctoral research, and forms one of the key portions of collaboration in this project. A need was identified by senior publishers at Woodland Press when Pathways was first being designed to create a kind of 'evidence base', an introduction to school improvement for practitioners that was informative, but also practically accessible. A tentative link was then made between the literature being compiled and studied for my own research and what school leaders and teachers also seemed to regularly grapple with, and with considerably more obstacles to accessing and engaging with academic research. The link considered: could some of what I was reading and digesting be condensed and connected more explicitly to inform Pathways users' practice? The answer was yes, but also acutely uncovered the difficulties experienced by countless others in the 'translation' of 'research-academic-abstract-speak' to 'on-the-ground-concrete-speak'. One of my first tasks was to make for example, 'general principles for effective leadership' relevant to practising school leaders. Outside of professional development and leadership concerns, practitioners are likely to negotiate a range of challenges in their professional lives and day-to-day – adaptations to their teaching practice and others', pupils' behaviour, staff relationships, staff-pupil dynamics and a host of administrative duties. My being involved in the partnership highlighted some of the challenges faced by Pathways schools and practitioners, designers and authors, and provided a space in which to try to understand the problems first hand and explore possible ways to

address these gaps with practitioners, in addition to asking how the gaps and challenges were perceived or constructed by different stakeholder groups of the study. I saw an additional responsibility from the research to document these challenges and engage with practitioners in their discussions with me about the opportunities and drawbacks of participating in the research project, and research evidence more widely in their practice.

To give another example, this time from a more 'functional' perspective, I wrote a guide to analysing data from questionnaires – to support Pathways users after they had distributed surveys to collect audit information or views about current practices in their schools and were looking to make sense of the data that was collected, and present it back to others for further discussion to aid decision-making. Again, a link had been made between my experience with educational research design methodologies and types of data collection taking place in schools – and Woodland Press and I explored whether one could support the other. These collective links and explorations formed the basis of the DBR approach to the study. As a 'design researcher', I was endeavouring to, in a sense, immerse myself in the already complicated and messy research setting, maximise the opportunities for social interaction (over isolated learning) with the other partners in the project, and assume the role of participant in studying different participants' inputs into researcher judgements (Collins, 1999; Brown, 1992). Examples of the publications are shown in Appendices 13A and 13B (pages 407 and 413 respectively).

Ultimately, the most important segment of my role was, and is, that of researcher – the one in the room (certainly when with Woodland) to question and understand sometimes long-held assumptions about teachers' practice and how they might participate in professional development and school improvement tasks. When with schools, I would initially suspend my judgement about 'what' they were doing while learning more about the 'how', 'how come' and the trail of events that had possibly led them to that point in their school improvement trajectory and potential use of Pathways. These, and other investigations into Woodland's construction of its work and challenges across different parts of the organisation, helped to formulate the study's research aims, objectives and questions.

1.3 Research aims, objectives and questions

This research had the following overarching **aims** to:

1. explore the workings of, and practitioner engagement with, OUP ('Woodland Press') Pathways and other resources for school improvement;
2. study individual school improvement practice via an embedded multi-method case study and;
3. investigate the evolution of the Pathways themselves as a school improvement resource base (using a DBR framework).

The specific **objectives** of the research were as follows:

RO1. Gathering views and perceptions from staff and other stakeholders in schools and OUP (Woodland Press) on Pathways development and use in schools;

RO2. Mapping schools' improvement journeys, how they might (or might not) link with Pathways approaches and resources and the interactions among teachers and senior management using as lenses two frameworks: Dynamic Approach to School Improvement or DASI (Creemers and Kyriakides, 2012) and Guskey's alternative model of teacher change (2002a), specifically exploring the extent to which Pathways is perceived to support the development of collaborative inquiry, professional practice and improved pupil outcomes in schools;

RO3. Mapping the evolution of Pathways as a platform and its constituent resources, taking into account the different inputs that are linked with its development including schools, its designers and advisory group and this researcher, again using the DASI and Guskey frameworks as theoretical lenses.

The three **research questions** addressed by the study are:

RQ1. What are the views and perceptions of practitioners in their use of Pathways around the functionality of the platform and its tools?

RQ2. What role does practitioners' use of Pathways (and other related resources) play in supporting individual schools' improvement journeys and approaches and practitioners' professional development experiences?

RQ3. How were Pathways and its constituent components designed, against a background of school improvement and school effectiveness literature and how is it evolving in the light of experiences of schools and practitioners' use of Pathways?

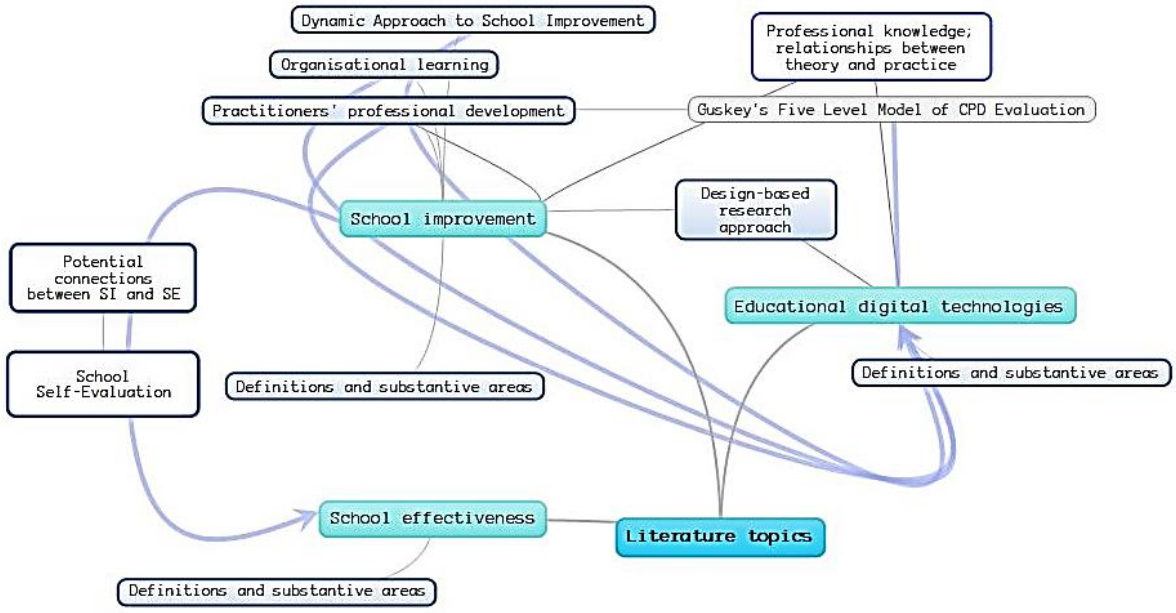
Summary

This first chapter has highlighted the study's origins, the collaborative, design-based nature of the doctoral research project, including an appraisal of my role in the study, and its wider research aims and objectives, and more specific research questions. The literature that guided some of the planning and thinking around this project is provided next.

Chapter 2: Review of the literature

The three main fields of research that inform this study are that of school improvement, school effectiveness and educational digital technologies. The concomitant subtopics that will be discussed include school self-evaluation (SSE), knowledge management systems (KMS), organisational learning (OL), practitioners' (online) professional development, Guskey's Five Level Model of CPD evaluation, and the Dynamic Approach to School Improvement (DASI)[2]. Figure 2 illustrates how the various components of this chapter are linked to address the key foci of the study. Appendix 11 (page 388) provides a more detailed account of how the different components of this literature review link with its research questions. An overview of how the literature review was conducted is provided in section 3.3.1a.

Figure 2: Chapter 2 Conceptual map of the literature relevant to the Pathways research



2.1 School improvement (SI)

2.1.1 Definitions

School improvement has been recognised as:

- A series of overlapping processes that take place within a collective endeavour that can "significantly enhance the quality of teaching and learning" (Harris, 2002: 5);
- Strategies that encompass valuable lessons and signposts that schools can access in order to construct their own facilities and capacities for improvement; and

[2] Literature on design-based research is covered in detail in Chapter 3

- (Running parallel with classroom practice) a means of developing a professional learning community in which teachers and pupils learn and progress together.

Combining these characteristics, school improvement has also been framed as:

> [A] distinct approach to educational change that enhances student outcomes as well as strengthening the school's capacity for managing change. (Hopkins, Ainscow and West, 1994: 3)

Chapman (2012: 32) links school self-evaluation efforts with the three key levels of improvement, i.e. "within schools", "between schools" and "beyond schools" – focusing on the structures and processes available to support "teaching, learning and capacity for change" across practitioner, organisational and systemic boundaries. In practical terms, improvement-type processes have often been observed to propagate or 'fire-up' following a 'spark' such as an evaluation or observation of a school's particular functions or ways of working including a response to inspection judgments in England (Harris, Jamieson and Russ, 1996; Matthews and Sammons, 2004; 2005). On the whole, school improvement can be seen as a path of growth or maturation over time that is dynamic in nature and responsive to internal and external stimuli (Mortimore and MacBeath, 2003); it has been described in 'horticultural' terms, involving periods of:

- the "sowing" or generation of ideas in a school culture that enables such endeavours;
- the "germinating" or careful cultivation of these ideas;
- the selection or "thinning" of the most promising projects;
- the "pruning" process where knowledge is shaped and validated; and
- the disseminating and exchange of knowledge or what we would term, 'propagation', after which the growth process may continue into a different series of processes and initiatives. (Hargreaves, 1998: 29-32)

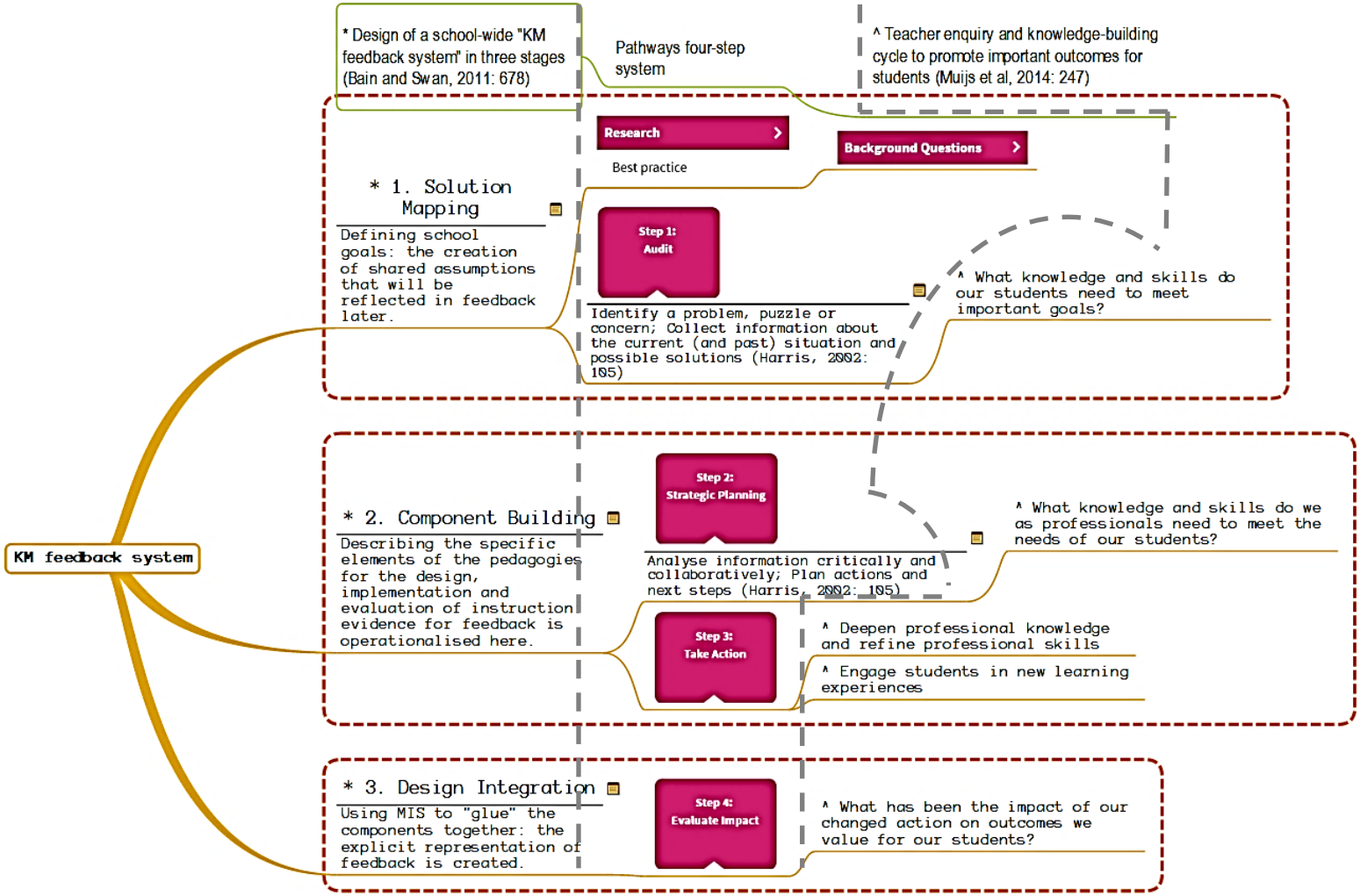
This framework, although apt, misses one crucial element which is that of self-evaluation; which when carried out effectively (i.e. evaluatively as opposed to descriptively), could aid the propagation phase to work more efficiently (Bubb et al, 2007; Reed and Street, 2002). The original notion of schools and ideas as 'living organisms', however, is an attractive metaphor. It serves its purpose in encouraging researchers and practitioners to consider educational institutions as evolving structures and settings where strategies are being tested and applied *in vivo*, and hence require due care and attention in the event that they 'fall ill' and become weak. Theoretical models of school improvement such as the "dynamic model of educational effectiveness" (Creemers and Kyriakides, 2008) seek to forge stronger ties between Educational Effectiveness Research (EER) and improvement practices (Creemers and Kyriakides, 2015). The metaphor of the 'living' or developing organisation is extended in a more material sense with the Dynamic Approach to School Improvement or DASI (Creemers and Kyriakides, 2012), which by the authors' account, provides schools and practitioners with more than just a model of the different factors that are associated with learning outcomes (Creemers and Kyriakides, 2010a). The DASI, supported by a

series of empirical evidence testing the validity of the dynamic model (e.g. Creemers and Kyriakides, 2009; 2010b):

> stresses the importance of collecting data about the functioning of factors at the classroom and school level to identify teacher and school improvement needs, respectively. In this way, an evidence-based and theory-driven approach to improvement can be gradually developed. (Creemers and Kyriakides, 2015: 105)

Each factor in the DASI is defined along five dimensions, where *frequency* measures quantitatively the "functioning" of that factor, and *focus*, *stage*, *quality* and *differentiation* qualitatively measure functioning of effectiveness at a classroom / school / system level (Creemers and Kyriakides, 2015). This links closely with the "reframing" - Silins and Mulford (2002a) remark – of schools as learning organisations; or indeed where Louis, Toole and Hargreaves (1999) refer to organisations' examinations of and learning from past practices that could be categorised as less supported and even uncertain. The many facets of this chapter permit only a brief tour through the topic of organisational learning (OL), or the "detection and correction of error" as set forth by Argyris and Schön (1978). One component that has been linked with OL is that of Knowledge Management (KM) systems which, often associated with information technology but not always, can be seen as a means of supporting continuous OL (Spector and Edmonds, 2002) and providing the 'feedback loop' necessary for schools to build and sustain their capacity for change (Bain and Swan, 2011). KM systems can take the form of mechanisms to for example, formulate strategic plans and curriculum goals or store and analyse student attainment data. In the context of Pathways, the potential for such a platform to support the collection of audit, feedback and evaluation data at different points and from different sources presents the opportunity for this study to ask: what is it that Pathways is designed to achieve and why and how is the application of the design used in schools, each in their unique but shared contexts as primary level educational institutions and seeking to 'improve' in some way? Certainly, as Bain and Swan (2011: 676) are not alone in pointing out, "moving from intention to application is always a difficult transition". They go on to discuss ideas around the design of feedback tools to enable school improvement; the three stages of which they categorise as "Solution Mapping, Component Building, and Design Integration" (Bain and Swan, 2011: 677). Each stage is represented on the left of Figure 3 (page 27) below, along with a brief description of each stage on the right, along with how this framework links with this study.

Figure 3: Potential combined knowledge management feedback system supported by three columns
(Left-most column *) Design of a school-wide "KM feedback system" in three stages (Bain and Swan, 2011: 678); (middle column) Pathways four-step system; (right-most column ^) Teacher enquiry and knowledge-building cycle to promote important outcomes for pupils (Muijs et al, 2014: 247)



2.1.2 Organisational learning (OL): Contingency theory

Effective schooling is recognised as a dynamic, enduring process (Creemers and Kyriakides, 2015). The notion that to be considered 'effective', schools are expected to (successfully) adapt to changing contexts is consistent with contingency theory (Donaldson, 2001; Mintzberg, 1979), which in turn acts as one of the main assumptions underpinning the dynamic model (Creemers and Kyriakides, 2015; Scheerens, 2013). Scheerens (2013) discusses the 'contingency framework' – the idea of organisations as systems where certain strategies, for example, formalising procedures that were previously more implicitly understood, are more effective and advisable under a set of conditions than others – during a "period of stability and internal tranquillity" (Scheerens, 2013: 11). Closely linked with the components associated with OL is the need to develop successful leadership practices. Research conducted in international contexts has highlighted the "potential positive and negative impacts of leadership, particularly principal leadership, on school organisation, culture and conditions" (Day, Gu and Sammons, 2016: 222-223), through which there might be influences on pupil achievement and quality of teaching and learning (Bruggencate et al, 2012; Leithwood et al, 2008; Marks and Printy, 2003; Silins and Mulford, 2002b; Leithwood and Jantzi, 1999). It is important to stress here that in discussing contingency theory as part of dynamic organisational adaptations, I am not referring to 'contingency leadership theory' (Fiedler, 1964) but more of a 'layered' approach to leadership in school-specific contexts, i.e. recognising:

> [T]he complex range and combinations of strategies, actions, and behaviours that successful principals employ over time in striving to improve their schools. . . [and] the active role played by values—moral and ethical purposes—in decisions about which strategies to apply, how they should be combined, applied, and changed over time and how, cumulatively, these might best lead to the building of organizational cultures and actions by all stakeholders through which improvements may be more likely to occur. (Day, Gu and Sammons, 2016: 226)

This research recognises that 'standardisation' of leadership practices across the board – for example, viewing people and their knowledge purely as 'resources' (Freidson, 2001) – does not recognise the unique contexts of individual schools' organisational challenges either. Darling-Hammond's (1997) argument about the importance of evidence-informed judgement makes the case for contextualised responses (Ashwin, 2015; Webster-Wright, 2009) even stronger:

> Bureaucratic solutions to problems of practice will always fail because effective teaching is not routine, students are not passive, and questions of practice are not simple, predictable, or standardised. Consequently, instructional decisions cannot be formulated on high then packaged and handed down to teachers. (Darling-Hammond, 1997: 67)

So here, contingencies may include the environment, the size of the organisation and organisational strategies being deployed (Donaldson, 2001). The main tenet of contingency theory states that the corresponding 'fit' between organisational characteristics and contingencies leads to high performance – as such, organisations are constantly seeking ways to attain the 'best fit' in changing circumstances.

> For this reason, organisations are motivated to avoid the misfit that results after contingencies change, and do so by adopting new organisational characteristics that fit the new levels of contingencies. Therefore the organisation becomes shaped by the contingencies, because it needs to fit them to avoid loss of performance. Organisations are seen as adapting over time to fit their changing contingencies so that effectiveness is maintained. Thus contingency theory contains the concept of a fit that affect performance, which in turn, impels adaptive organisational change. (Donaldson, 2001: 2)

The idea of adaptation corresponds to organisations such as schools attempting to reach a *temporary* 'equilibrium' or "fit"; for example, when a school is in Special Measures, operations may become more hierarchical and mechanistic in order to adapt to and seek to stabilise a probably unstable and uncertain state after the judgment is given. This pattern is also consistent with the "lines of success" identified by Day et al (2009: 185) to illustrate leadership strategies applied at different points in schools' improvement journeys, where successful leaders are seen to "enact leadership practices in contextually appropriate forms" – for instance, "setting directions, redesigning the organisation, developing people and use of data" (Sammons et al, 2014: 578). When a school has come out of the 'cloud' of Special Measures, or a school is in the midst of aiming for an 'Outstanding' Ofsted grade, the school may be experiencing more in the way of stability, and so can afford to potentially 'destablise' by experimentation and a more participatory approach in order to innovate. The timing of when to switch between mechanistic and organic may vary. Also, contingency theory links with how a school builds and stores capacity for change and enhances student outcomes (in line with its improvement goals), particularly as the school's intake changes, and educational policy is reformed.

Contingency theory is different to 'structural contingency theory' in that contingency theory provokes disequilibrium and continual 'misfit' – for example when an organisation achieves higher performance which then leads to expansion (Donaldson, 2006: 21). A more recent variation of contingency theory is 'configuration theory', which states that the adaptations required between contingency and structural variables is constrained to just a few configurations or 'gestalts' (Miller, 1986). In contrast, Cartesianism (Donaldson, 2001) holds that there are many fits and possible adaptations, situated in a kind of spectrum. Each change in a contingency variable is adaptable by fitting a specific level of structural variable (Donaldson, 2006: 22). The dynamic model (or DASI as detailed in section 2.4.1) represents the process of schools, regardless of how effective they are, trying to attain 'fit' within changing sets of contingencies (Creemers and Kyriakides, 2015: 106):

> DASI assumes that even schools which are among the most effective should take actions to improve further their policy for teaching and their school learning environment in order to remain effective (Creemers and Kyriakides, 2010a). This characteristic of the dynamic model is taken into account in establishing DASI. Specifically, at the beginning of the school year, all schools (including those which were among the most effective in the previous year) are expected to generate data to find out how to improve the functioning of the school factors and through that to promote student learning.

Critics of structural contingency theory argue that it does not make sense for organisations to be constantly attempting to achieve fit with their contingencies because while structural adaptations are taking place, the contingencies may themselves be altered – so in the end, the organisation's new structure only fits an older shape of contingencies. This is a common problem faced by schools at the mercy of changing policy both nationally and locally. However, changes in school characteristics also influence educational policy, and so, the strategies required to adapt to new contingencies is also constantly changing. As Donaldson (2006: 23) suggests:

> [B]y moving towards the fit, the organization is decreasing misfit, and thereby increasing its performance relative to what it would be if it were to make no structural change. The organisation may attain not full fit, but quasi-fit, that is, a structure that only partially fits the contingencies . . . (Donaldson, 2001). Yet this may increase performance sufficient to produce some expansion in the contingencies.

This is another important point to note found also by Spillane, Shirrell and Hopkins (2016) in the US where bureaucratic and collegial arrangements in their study of 14 elementary schools seemed to work in tandem, rather than in opposition. Donaldson (2001: 2) suggests that a more "mechanistic" structure fits a stable environment because the "hierarchical approach" suits routine operations, while an "organic" structure fits a more unstable environment because a "participatory approach" facilitates innovation and change. This initially seems to contrast with schools placed in an Ofsted category like Special Measures or Notice to Improve in England where staff are more likely to face increased hierarchical and mechanistic structures to decrease perceived 'organisational misfit'. However, some level of reform and transformation may be put in place to move the school forward, which might offer opportunities for staff at all levels to introduce new approaches to change.

This research sought to study a combination of the three different stages highlighted in Figure 3, particularly during stages 2 and 3 where the DBR methodology was used to observe, participate in and understand how Pathways was designed and redesigned, and continued to 'develop' or evolve in the context of Woodland itself, and against the backdrop of schools' own development or change journeys. Research literature on practitioners' use of digital technologies for the purposes of school improvement is scant. Blau and Presser (2013) detail the different e-communication flows of secondary school principals in the Israeli context using "school management systems" and tools for "data-based decision making" while Leask and Younie's (2013) observation about the dearth of research into teachers' CPD in the context of digital technologies remains current in 2018. In an era of growing interest in the use of online technology to aid various aspects of education including e-resources for pupils and parents, it seems fitting to also explore how teachers go about using technology in their school improvement practice. My study aims to develop some understanding in this area linked to the notion of component building:

> The component building process can result in dozens of forms, screens and tools that reflect both content areas of interest (pedagogy, collaboration and adaptation of content) and the

> feedback requirements (multiple sources and methods). This detail is then employed in the design integration stage to build a technological solution that involves using the software interface to provide the "glue" for connecting the components. This is especially important in addressing the timing of feedback and form in which it is reported. (Bain and Swan, 2011: 679)

However, the stages in reality are unlikely to progress in a linear or even circular fashion. Commenting on the revelations from research by Argyris and Schön (1978: 39-40) which uncovered the limits to OL, such as letting "buried failures lie" and avoiding the 'surfacing' or testing of opposing views in organisational conflict, Scheerens (2015: 19) warns of what may lie beneath the "less contested" areas of school self-evaluation: "resistance, immunization against potential criticism, and barriers to organizational learning". Creemers and Kyriakides (2012: 165-166) meanwhile stress the importance of school stakeholder buy-in to any school improvement project:

> It is important to acknowledge that each member of the school may have his/her own views on what the priorities for improvement are. However, after the results of the [School Self Evaluation] have identified a priority area for improvement all stakeholders are expected to show a willingness to work on this area.

Luyten, Visscher and Witziers (2005: 271) recommend that SER should focus less on the "well-known key variables" and instead try to draw more on theory to help "explain specific phenomena" that can also adapt to individual school settings and contexts. They give an example around "organisational functioning" and how the development of theories in this area might be useful:

> [T]he concept of "the learning organisation" implies a causal chain; the sustainability of an organisation relies on innovation and improvement that, in turn, can be attained only by unlocking individual potential and enhancing commitment by creating favourable organisational conditions. (Luyten, Visscher and Witziers, 2005: 271-272)

The current study aims to examine organisational functions and processes of working that:

- translate from primary school leadership, senior management roles, middle management and other teaching practitioners and move into the classroom
    - via the channels of digital technology (Pathways) and its resources
        - against the backdrop of schools' improvement plans, strategies, practice and evaluation.

No publicly available research was found related to the particular combination of factors and contexts highlighted above. Indeed, the study also aims to develop tentative theoretical formulations that may aid, for example, with questions such as:

> . . . why and how the school context interacts with school performance and with processes at both the classroom and the school level. For example, the conditions under which contextual characteristics match with features of classroom and school processes and why represent an important area for further investigation. (Luytens, Visscher and Witziers, 2005: 259)

So, to what ends are Pathways being designed and for what purpose? Here it is important to consider the area of school effectiveness and how effectiveness and improvement processes can be linked, particularly in the context of the DASI.

> The very concept of educational effectiveness[3] is based on the rational idea of optimal goal attainment. The factors "that work" can be seen as effective means to reach educational goals. (Scheerens, 2015: 17)

2.1.3 Building collective capacity for improvement

School-wide capacity for improvement can be defined as:

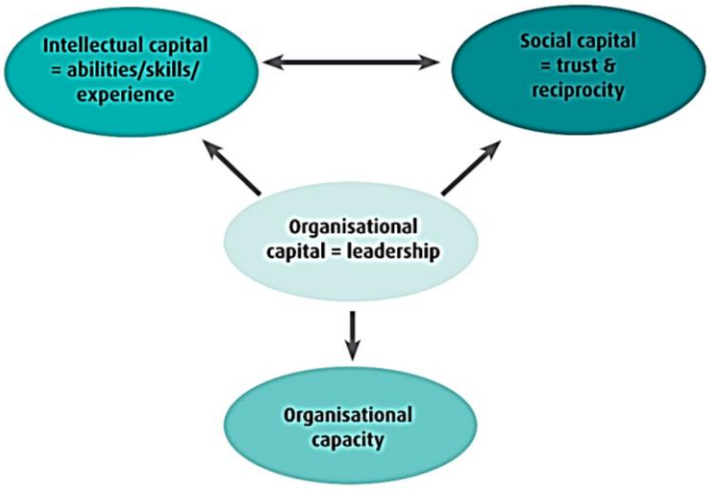
> [S]chool conditions that support teaching and learning, enable the professional learning of the staff, and provide a means for implementing strategic actions aimed at continuous school improvement. (Hallinger and Heck, 2010: 97)

Hargreaves (2012: 22) puts forward a model for organisational capacity shown in Figure 4 that takes into account individual level intellectual and social capital and organisational leadership. This framework lends support towards notions of how collective capacity might be built in schools – essentially harnessing the combined efforts, skills and expertise of individuals and teams to develop the whole organisation. However, there is less mention in this framework of intra-organisation conflict and differences in individuals' understandings, and differences for instance between "teachers' belief systems" and "knowledge systems" (Pajares, 1992: 311; Nespor, 1987). In some instances however, tension and conflict may also act as catalysts for organisational change (Donaldson, 2001). Matthews and Sammons (2004: 18), point out how post-inspection questionnaires indicated the recognition by headteachers of the value of Ofsted's "external assessment of the quality, strengths and weaknesses" of schools – and how "improvement *through* inspection" should not be misinterpreted as the more causal-driven idea of "improvement *by* inspection". What seems crucial here is the opportunities for 'gestalt' type combinations of capital that may potentially contribute to whole-school 'thinking' and improvement. This fits with the idea of school principals as "professional leaders" rather than "head educators" (Botha, 2004: 241). Sammons et al (2003: 4) found in their evaluation of New Community Schools in Scotland that while overly bureaucratic and overlapping management layers hindered progress, effective staff development "supported the development of collaborative cultures and practice by removing barriers to multi-agency working". Caldwell (2001) lists characteristics commonly

[3] The term educational effectiveness or more specifically *Educational Effectiveness Research* (EER) is increasingly being used more widely than school effectiveness or *School Effectiveness Research* (SER) (Sammons, 2012; Creemers et al, 2010; Muijs, 2006). EER recognises the broader scope of more recent research into effectiveness of educational institutions, including the role of local authorities, school districts and pre-schools (Sammons, 2012) plus *Teacher Effectiveness Research* (TER) and *School/System Improvement Research* (SSIR) (Harris et al, 2013). However, as this study focuses on primary schools as 'units of analysis', the usage of 'school effectiveness' still applies and is relevant to the overall aims of the research and its sample, hence will be sustained for the remainder of this thesis.

associated with the "gestalt" approach to "innovation in professionalism" – networking and teamworking within and beyond school settings and professional knowledge based on existing educational research and other evidence, and not just reliant on individuals' conceptions of knowledge. This approach is also consistent with Vangrieken et al's (2015) "teacher collaboration continuum" which moves from completely individualised to collaborative working in its fullest form; and Brouwer et al's (2011) conception of teacher teams evolving into work communities.

Figure 4: Developing capital within a school (Hargreaves, 2012: 22)



Sleegers and Leithwood (2010) identify two perspectives commonly used in the theoretical and empirical literature on school improvement and educational change: the "inside" view which focuses on the internal capacity of schools to create supportive contexts for teacher learning and educational change; and the "outside" view which focuses on the implementation efforts that take place externally to reform schools and systems. Thoonen et al (2012) highlight the distinction between these two perspectives using two approaches, first identified by Chin and Benne (1969):

(1) the normative-reductive approach which focuses on the larger process of understanding how teachers "work and live through individual and collective reflection on beliefs and practices";
(2) the empirical-rational approach which assumes that teachers, as rational actors, will "implement changes in their classrooms which are demonstrated to improve student learning" (Thoonen et al, 2012: 443).

Guskey's (2002b) alternative model of teacher change discussed later in section 2.6.2 seems to take into account both perspectives as change in practice is predicated on teachers being able to recognise and reflect on how a particular intervention may have brought about change *before* deciding to implement that new intervention in their own setting. The DASI (Creemers and Kyriakides, 2012) discussed in section 2.4.1 however appears from the outset to originate more from the empirical-rational approach where different aspects of school operations including teaching and learning,

behaviour, parental engagement, and leadership are assessed to see how change in pupil outcomes can be implemented successfully. Change is seen to be co-constructed by practitioners, leaders and other school stakeholders in order to meet the goals and demands of an external model – which includes a process of mutual adaptation (Thoonen et al, 2012: 444). However, when taking into account the self-evaluative function of the DASI, the approach, like the Guskey model, seems to take on the normative-reductive perspective as well, as change is influenced by internal transformations and capacity for change, and not just mutual adaptations. These two strands appear to combine as in Figure 4 (page 33) proposed by Hargreaves (2012), in forming a kind of organisational leadership 'collective'. One of the main challenges of my study has been to recognise these different perspectives and formulate the approach that I am using. My study takes more of a normative-reductive focus as it studies change more from practitioners' perspectives but uses theoretical lenses that consider both the normative-reductive and empirical-rational approach, and in addition, studies Pathways as a kind of 'external' programme. This has presented challenges in finding the best ways to analyse my data and write my findings that offer the reader opportunities to make sense of my study both from the 'inside' and 'outside'. In studying both schools' and Woodland Press' perspectives, my research aims to bridge not only the fields of school improvement and educational digital technologies, but also (to a smaller extent perhaps), these 'inside' and 'outside' perspectives that have emerged in my own perspective and DBR approach.

In the building of these different bridges, one aspect that was explored was how individual and collective understandings might develop over time. Linked to this notion of practitioners building understandings about change is *collaborative leadership* which "focuses on strategic school-wide actions that are directed towards school improvement and shared among the principal, teachers, administrators and others" (Hallinger and Heck, 2010: 97). Is it possible for a school to form a type of "collaborative consciousness" – not necessarily where everyone inside and outside of the school 'agrees' on every action and outcome, but a space or configuration made up of decision points, individual, team and OL journeys and "collective autonomy" (Little, 1990), which includes the "conflicts of human interaction that come with them" (Gehrke, 1991: 46). Different approaches have been applied in the literature:

- Fink and Stoll (1997: 195) suggest that schools and systems need to "weave their various activities" into a "gestalt" which attempts to provide the best outcomes for all pupils.
- Darling-Hammond (2006: 146) focus on the notion of "reciprocal accountability" – where leaders contribute towards individual and collective learning experiences for which teachers and leaders are all then held accountable.
- Earl, Torrance and Sutherland (2006: 110) start from the assumption that sustained change is a collective endeavour.

- Spicer (1998: 129) suggests that "the effective organisation acts as a Gestalt entity, ensuring that an individual's actions and learning are both supported by, and providing support to, the organisation as a whole".
- Robinson, Hohepa and Lloyd (2009: 120) suggest that successful collaborative opportunities for professional learning tend to focus on the relationship between teaching and learning, and notions of "collective responsibility and accountability" for pupil achievement and well-being.

Cordingley (2015: 248-249) asks if educational researchers might be able to support teachers in using enquiry-oriented, research-based tools and "protocols" to harness evidence already available in their schools to inform schools' improvement efforts and sustain and embed continuing professional development and learning (CPDL) in daily practice. Borko (2004: 7) meanwhile notes that "[n]orms that promote supportive yet challenging conversations about teaching" are difficult and time-consuming to achieve but are some of the most important features of building successful learning communities. All of these perspectives seem to point to the opportunities and challenges afforded by schools being able to assemble 'collective school improvement' communities or spaces which may act as a kind of 'collaborative consciousness" made up of individual and group perceptions, learning experiences and tensions.

2.1.3a The influence of leadership on improvement

School improvement must assess change in pupil outcomes and school improvement leadership is focused on growth in pupil learning (Hallinger and Heck, 2010). In my attempt to bridge the 'inside' and 'outside' perspectives of Pathways design and use in schools discussed earlier, a technique called 'journey mapping' was employed. Journey mapping (Marquez and Downey, 2015; Stickdorn and Schneider, 2011), explained more in section 8.3.3 and Appendix 24 (page 472), is a visual representation of a user journey experience in a programme or space, and highlights the stages, steps and 'touchpoints' that users (in this instance, practitioners) encounter in completing a specific task (here, progressing through one or more Pathways). In addition, charting practitioners' professional development experiences by way of journey maps, and interactions with different resources and the conditions that may support or deter their engagement can be used as an indicator of organisational support and change in Level 3 of the Guskey five-level evaluation model (2002a) – detailed later in section 2.5.1a. The 'stages' that frame each journey map are derived from the four broad phases of improvement identified by Day, Gu and Sammons (2016: 240) that chart leadership capacity as schools (and practitioners, more collectively) might move from more "foundational" to "renewal" phases as school principals progress through a task. The use of journey mapping, while raised in this literature review, is also discussed briefly in section 3.3.1. A summary of the four phases is provided below in Table 1 (page 36).

Table 1: Phases of leadership during school improvement

Phase	Description (Day, Gu and Sammons, 2016)
Foundational	In this phase of principals' leadership, the following key strategies were applied: "[T]ransformational leadership (e.g., developing vision, setting directions, building a "core" senior leadership group with common purpose) were used, together with instructional leadership strategies (e.g., raising teacher performance expectations of self and pupils; improving pupil behaviour; improving the physical, social, psychological, and emotional conditions for teaching and learning; and using data and research)." (ibid. 240)
Developmental	"In the developmental phase of principals' leadership, two key transformational and instructional strategies were prioritized. First, there was wider distribution of leadership with the focus being placed on redesigning organizational roles and responsibilities to extend leadership across the school, build leadership capacity, and, through this, deepen the scope and depth of change." (ibid. 243)
Enrichment & Renewal	"[F]ocused on the further personalization of learning and enriching of the curriculum. Throughout these phases, the emphasis on quality (of learning as well as teaching), classroom observations, target setting, and pupil participation in learning was increased. Personalization (in Phase 4) was reflected in an increasing emphasis on teaching that promoted more participative, interdependent, independent, and flexible learning and that supported a range of approaches to pupil learning." (ibid. 243-244)

Making tentative links between internal and external sources of support and challenge is arguably a crucial enterprise in the progression of the fields of school improvement and effectiveness. Harris et al (2015: 1) suggest that the challenge is two-fold:

> [T]o ensure the theoretical and empirical work is not side-lined and is part of the contemporary discourse about school and system improvement; second, to underline that context is an explanatory factor of effectiveness and improvement, at both the school and system level.

This does not mean that outcomes are pre-determined by contextual influences, but that "by removing all contextual and cultural influences any neat, causal attributions are questionable and any sweeping explanations for system or school improvement are dubious" (Harris et al, 2015: 1).

2.2 School effectiveness (SE)

2.2.1 Definitions

Here, I explore the area of school effectiveness and the different ways it has been defined. School effectiveness is understood to be primarily based around investigating and measuring the schools' contribution to promoting student outcomes of various kinds (academic, affective, social and behavioural) and quantifying differences between schools (Harris, 2001). It is a relative, retrospective concept that is both outcome and time dependent and results depend on the adequacy of the statistical models used, e.g. the ability to control for differences in student intake (Sammons, 1996; 2007). In addition, it seeks to identify and study school and classroom processes that predict better outcomes

for pupils while taking into account differences in student intakes (Mortimore et al, 1988; Scheerens and Bosker, 1997; Sammons 2007; Teddlie and Reynolds, 2000). In the 1960s and 1970s, researchers in the US indicated that pupils' attainment could be predicted based on family background and socioeconomic status and suggested that school effects accounted for very little in facilitating pupils' educational outcomes (e.g. Coleman et al, 1966). While later research challenges this view now, and points to limitations in the research designs employed within such early studies, their publication started a conversation about schools and how much they 'matter' to pupils' outcomes and life chances. Other US and UK-based research that followed sought to tease out the school effects from those related to student background by developing methodologies that provide greater control for differences in student intake. A range of research in various international contexts has shown that schools vary in their effectiveness and that even in challenging circumstances and disadvantaged areas, schools could make a difference - early studies include the Plowden Report (1967); Rutter et al (1979); Edmonds et al (1979); Reynolds (1976) and Mortimore et al (1986). These studies do also however, acknowledge the powerful influence of background. Since then, studies employing more sophisticated statistical techniques - such as multilevel modelling - e.g. early research by Goldstein (1987) - have continued to indicate that there is significant variation between schools in pupils' academic outcomes even when prior attainment, other student characteristics and school composition is controlled. However, as noted previously with school improvement, these measurements are rarely static. In many contexts there is strong pressure to show improvement outcomes, particularly so in England during the last 20 years or more. There is an interest in studying schools' results across several years (three being the minimum to identify trends) in a range of outcomes. Taking these factors into account, an 'effective school' has been defined as:

> [O]ne in which students progress further than might be expected from consideration of its intake. An effective school thus adds extra value to its students' outcomes, in comparison with other schools serving similar intakes. (Sammons, Hillman and Mortimore, 1995: 7)

In a similar sequence, the school improvement 'movement' grew out of a recognition that schools have the capacity to "*make a difference*" to pupil performance and achievement (Harris, 2002: 6 [original author's italics]), particularly if the conditions and culture of a school enable educational practitioners and young people to support and sustain the learning required in order to make such differences (Barth, 1990). The latter part of the last century saw the beginning of a shift - certainly in educational research literature and policy (Sammons, 2008) - from more 'prescription-driven' programmes of reform to a focus on devising strategies for improvement that match the specific contexts and development needs of pupils, practitioners and schools (Harris, 2002). The key focal points during the various phases of school improvement are generally understood to cover a combination of the aspects shown in Table 2 (page 38), at different levels.

Table 2: Different strategies and phases of school and system level improvement

At the school level Five strategies (Hopkins, Ainscow and West, 1994: 43) representing a more "holistic approach" (Ainscow and Hopkins, 1992) towards school improvement:	Towards the 'system' level Five phases of school (and system) improvement (Hopkins et al, 2011: 2)
• Planning • Inquiry, reflection and involvement • Leadership • Staff development • Coordination	• Understanding the organisational culture of the school • Research and individual initiatives • Managing change and emphasis on leadership • Building capacity for learning • Towards systemic improvement

Returning now to the potential role of resources offered via Pathways in terms of school improvement, the prospective contributions of internal and external influences during the various phases of school improvement (Harris, 2002) are explored. In the instance of this study, Pathways and the resources provided by Woodland Press could potentially play a part in the manifestations of the 'external' roles suggested below in Table 3.

Table 3: Types of support provided by internal and external stakeholders during the school improvement cycle (after Harris, 2002: 57-65)

Internal		External
Research supports the idea that school improvement should be 'owned' by the individual school, its teachers and students. The school 'climate' and 'culture' are vital to the successful transformation of attitudes, beliefs and values during the school improvement cycle.	⇨⇦	The "external change agent" could be well placed to assist schools in diagnosing strengths and weaknesses. External support may include other schools, school improvement partners (informal and formal), educational organisations or a local authority for example.
Teacher professional development is a crucial contributor to the concept of a 'learning organisation'	⇨⇦	Can provide expertise related to data analysis and interpretation.
Teachers should feel able to experiment and conduct joint enquiry	⇨⇦	'Critical friendship" including reflection, reformulating concepts and challenging accepted norms

Emphasis on 'professionalism', knowledge and making connections	⇨⇦	Training and continuous professional development
Potential for substantial gains when students become active participants in improvement cycle, and are able to contribute to the change process.	⇨⇦	Evaluative feedback: providing the means and tools to support the school improvement cycle
Students are a source of 'data' and intelligence; "school improvement groups" made up of teachers and students may act as a 'catalyst for change' and develop alternative communities of practice.	⇨⇦	Opportunities for networking, sharing knowledge and forming alternative learning communities.

Next, considering other key elements that may influence educational change, Hopkins (1998) for example lists the following: "curriculum and instruction, organisational development and the decentralisation of decision making". Hopkins (1998) goes on to argue that the synergy and integration of these elements form a vital component of the improvement process. Certainly, in the case of the 2013 publication of the new NC, change was (and is) still making its way through primary schools across England where subject content has been altered, along with a reduction in the provision of materials, training and guidance to support teaching the revised curriculum. Documentation outlining the new NC highlights claims of increased teachers' freedoms and opportunities to build their school curriculum with less 'prescription' from central government (DfE, 2013a). Such claims may well be open to challenge. So, change here may manifest in a combination of curriculum and instruction and a degree of decentralisation. In addition, schools would be looking to evaluate the outcomes of those changes in the form of student outcomes at a later date. This phenomenon points to how schools might go about evaluating the effectiveness of their own school improvement processes.

SER (and EER) and their outputs are not without their critics of course. As well as more intrinsic motivations within the field, early criticisms and debates may have extrinsically contributed towards the impetus in the field of Educational Effectiveness and Improvement Research (EEIR) to develop better, more wide-ranging theoretical frameworks such as the Dynamic Model of educational effectiveness (Creemers and Kyriakides, 2015). In the past, school effectiveness researchers have, at one time or another, been accused of (amongst others):

- remarkably, being both overly 'liberal' and 'conservative', depending on the perceived political-ideological nature of the research (see Luytens, Visscher and Witziers, 2005);

- focusing too much attention on schools in disadvantaged contexts and their "reform" (Thrupp, 1999) and yet, also focusing mainly only on "successful schools" (see Reynolds and Teddlie, 2001); and

- failing to use 'proper' scientific methods (see Teddlie and Reynolds, 2001) but also over-complicating matters by using more sophisticated statistical techniques - see Gorard's (2010) problematic analysis of CVA and measurement error, a defence by Muijs et al (2011) and Gorard's counter response (2011).

A few critiques, from almost two decades ago it has to be noted, even come with a taxonomy of how SER does not respond well to criticism, for example displaying signs of unresponsiveness, being inconsistent towards and even ignoring criticisms (see Thrupp, 2001; Townsend, 2001). However, it is important to be aware that while researchers within the SER field call for more understanding of how theoretical models might be used to formulate improvement strategies (Antoniou and Griaznova, 2018; Scheerens, 2013), there are a number of multi-level theoretical models that attempt to combine school and classroom-level factors and their potential impact on pupil attainment and progress (Scheerens, 2013) – e.g. the dynamic model by Creemers and Kyriakides (2006) which is built on the "comprehensive model of educational effectiveness" (Creemers, 1994), and earlier 'input-output' studies (Kyriakides, 2005) with multi-level structures (Scheerens, 1992; Slater and Teddlie, 1992; Stringfield and Slavin, 1992). Chapman and Sammons (2013: 4) argue that school improvement research has evolved with, until recently, "little communication between proponents of different educational theories", however, they list other key developments:

- current school improvement research studies focusing on the principles of improving pupil outcomes using knowledge of how to develop organisational cultures and capacity (Harris, 2002);
- the study of 'from within' and 'bottom up' approaches to improvement, where schools are encouraged to understand that: "every school can improve; improvement must ultimately be assessed in terms of improved pupil achievement outcomes; every individual in the school has a contribution to make to the improvement; there need to be the highest possible goals, but an acceptance that schools' start points are different; schools should help themselves and guard against creating dependency; [and] everyone in the school should be learning from others" (Potter, Reynolds and Chapman, 2002: 251).

A question I would pose at this point is might there also be a place for online resources like Pathways to potentially support a "cultural assets" model (Rooney, 2017) – for example in the MAID analysis tool (an example of which is included in Appendix 14 on page 416) where strategies and operations that schools might want to 'Maintain' are analysed along with what they might look to 'Amend, Improve and Discard'. This aligns with Rooney's (2017) comments on contemporary cultural assets which he argues are:

> [T]he result of blurred boundaries forming during cultural change. Consequently, reconceptualising cultural assets responds to two distinct needs. First, the need to develop a cultural theory involving an assets-based approach within SESI research (Hargreaves, 2001). . . It requires schools to act as cultural hubs, or gathering places, for cultural assets, regardless of

> cultural dominance (Rooney, 2013). Second, the need to reconceptualise cultural assets as an overarching concept responds to change, and reinforces school effectiveness. (Rooney, 2017: 2)

As also highlighted by Harris (2002) in Table 3 (page 38), part of the body of measures that schools may look towards in their individual improvement programmes might be to carry out joint enquiry, perhaps as part of structured school-wide self-evaluation with practical tools to move from 'plans' to enacting improvement practice. School Self-Evaluation (SSE) is discussed next.

2.3 School self-evaluation (SSE)

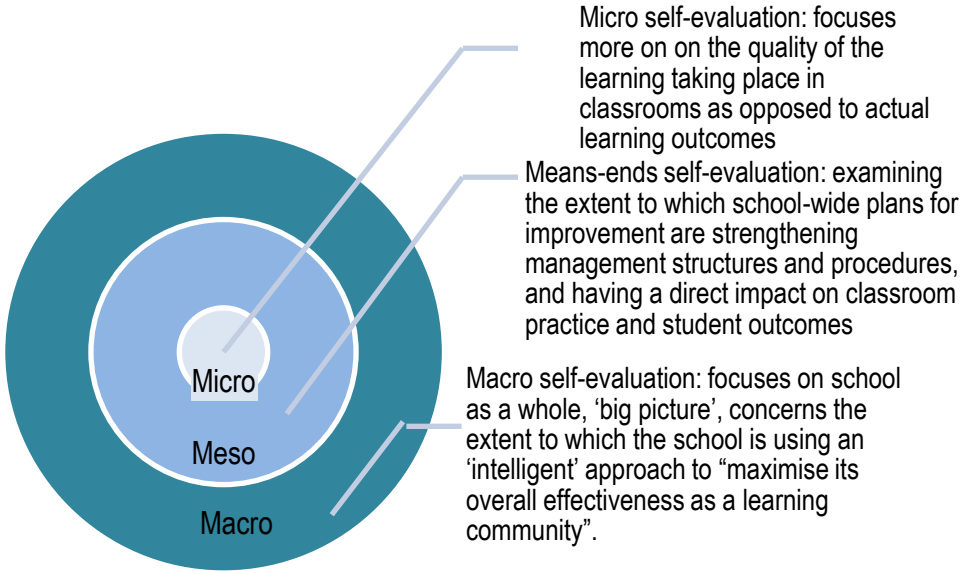
2.3.1 Definitions

One of the most popularly quoted definitions of school self-evaluation (SSE) is given as a process that is:

> [O]ngoing, embedded in the day-to-day work of classroom and school, formative in character, honest in its assessment of strengths and weakness, rigorous in its concern for evidence. (MacBeath, 2006: 2)

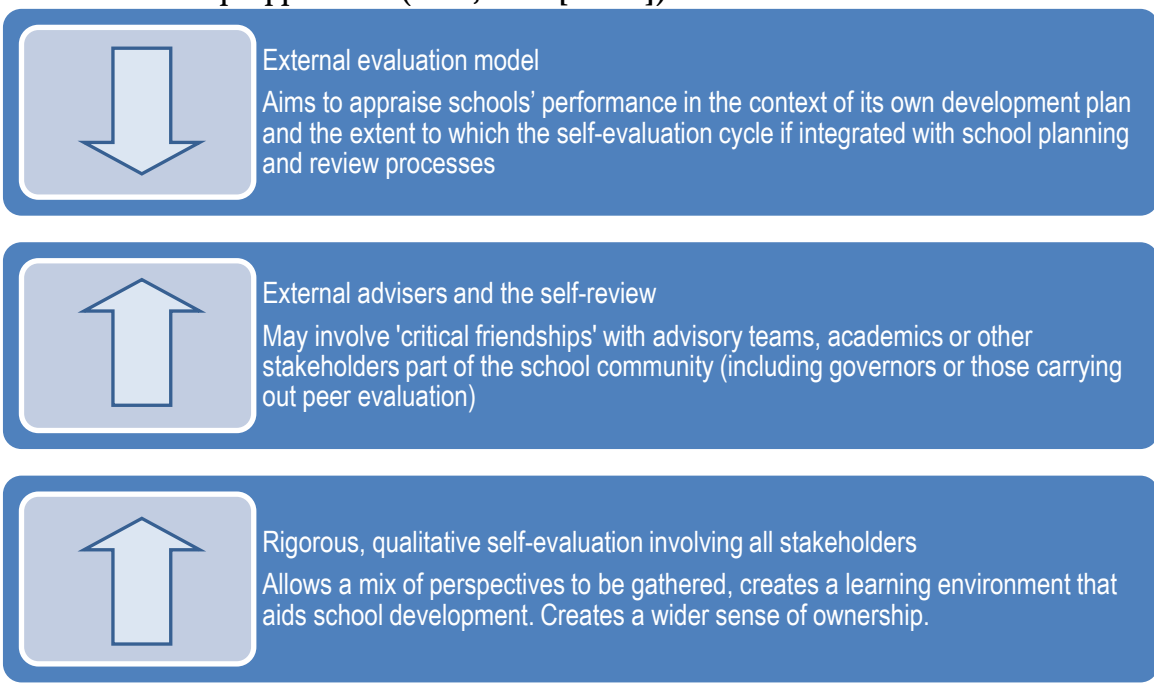
SSE is often used interchangeably with terms such as 'self-review' and 'collective review' (MacBeath, 2006). However, Chapman and Sammons (2013: 9) note that self-review is distinct from self-evaluation because self-review is a process where a school gains a more summative "overview of school quality and effectiveness", while a school's self-evaluation (which may influence their self-review) is more selective, formative and in-depth. MacGilchrist (2000) meanwhile identifies three dimensions of self-evaluation serving dual purposes; accountability and development shown in Figure 5.

Figure 5: A proposed 'illustrative' model of self-improvement encompassing its multi-dimensional and multi-purpose nature (after MacGilchrist, 2000: 330)



According to MacGilchrist, Myers and Reed (2004) school self-evaluation can also contribute towards developing the "intelligent school" whereby knowledge and experience of various stakeholders become 'owned' by the school as a learning institution and does not get lost when staff move on. This has parallels with conceptualisations of school improvement as more collective and based around a kind of 'consciousness' or 'navigation centre' and the ideas of OL noted earlier.

Figure 6: An alternative model of evaluation: the 'top down' exercise is counter-balanced by the two 'bottom up' approaches (GTC, 2004: [online])



With the tensions inherent in the multi-dimensional, multi-tiered approaches to evaluation outlined here, how are decisions to be made in order to balance the top-down with the bottom-up; the external with the internal? Key questions for stakeholders to ask, for example those shown in Figure 6 may include (Chapman and Sammons, 2013: 16):

1. Where should an organisation place itself on each dimension to optimise the impact of school self-evaluation on professional and student learning?
2. What sort of relationship should there be between school self-evaluation and external review/inspection?
3. To what extent do the following roles, structures and processes within the system, school and classroom promote internally driven, bottom up approach to self-evaluation to promote student and professional learning?
    i) Leadership at different levels
    ii) Tools for monitoring progress, planning and standard operating procedures
    iii) Relationships and politics

iv) Capacity for change and improvement: can development be ignited and sustained at an appropriate level?
v) Time and resources

Previous empirical research has indicated that schools developing an awareness of self-evaluation processes may exhibit the following characteristics (Reed and Street, 2002: 5):

- Clarity of purpose regarding the principles driving the school's approach to self-evaluation;
- Clear understanding of the purposes of self-evaluation and its relationship with school improvement;
- Skills to collect and analyse data;
- Data is used proactively, with knowledge of which data is confidential or shared;
- Range of evidence-gathering strategies;
- Criteria by which to analyse evidence made explicit and shared with stakeholders;
- Able to lead and manage evaluation cycle and involve all stakeholders;
- Understanding and management of tensions inherent in self-evaluation (e.g. between development and accountability; internal and external) – which also links with the internal-external division of strategies identified by Harris (2002) in Table 3 (pages 38-39);
- Clear links between self-evaluation and other school processes (e.g. CPD, responses to external initiatives);
- "The school has a secure, trusting and open climate".

Diagnosis remains an important first step to identify the school's current state and position (Vanhoof et al, 2011; Verhaeghe et al, 2010; Reynolds, Hopkins and Stoll, 1993) since schools are at various stages in terms of the improvement journey. The role of leadership and its relationship with pupil outcomes was also discussed earlier:

> Strategies for school development need to fit with the "growth state", or culture of the particular school. It is also clear that strategies that are effective for improving performance at one "growth state" are not necessarily effective at another. (Hopkins et al, 2011: 15)

In addition, a positive self-evaluative culture is one where teachers can (Reed and Street, 2002: 7):

- generate questions amongst their peers and pupils about learning;
- engage in regular dialogue to explore pupils' experiences in and orientation towards learning;
- develop a critical interest in current research about learning and use the knowledge to reflect on their own practice; and
- be willing to take a step back from their own position and apply a more systematic use of research evidence on which to explore individual classroom practice and learning context (rather than the use of unexamined assumptions).

SSE, and indeed the concepts of school improvement and effectiveness are all multidimensional and can serve a variety of purposes at any one time. SSE should allow schools to function as more autonomous and active participants and leaders during school improvement processes. "Self-evaluation, school improvement planning, professional development and performance management need to be integrated so that they are manageable, evidence-based and systematic without being over-bureaucratic" (Bubb et al, 2007: 36). Thus, the leadership of self-evaluation is seen as vital if it is to provide a useful 'guide' or 'roadmap' in a school's journey towards improvement, but should not be viewed as prescriptive.

> How the process of school self-evaluation is led and managed is vital to its success. Leadership and management actions are likely to determine how staff perceive the process, how they engage with the process and also to influence the action and outcomes of the process. (Chapman and Sammons, 2013: 30)

2.4 Connections between school improvement and school effectiveness: potential and realised

The forging of closer ties between the traditions of school improvement and school effectiveness is and has been a contentious issue, primarily as the two enterprises are in some ways philosophically premised on diverse aims and knowledge bases. School effectiveness is seen to travel from top to bottom or outside in, favouring researcher knowledge over practitioner experience while school improvement appears to constantly look for ways to change the system, working from inside out (Reynolds, Hopkins and Stoll, 1993), attempting to examine the events and relationships that represent a school's inner 'engineering'. However, there is increasing recognition that practitioners are more likely to understand the 'effectiveness' of a school if there is more knowledge surrounding the 'path' or sequence of events and their interplay that may have led to a change in student outcomes (Creemers, Stoll and Reezigt, 2007). This would include the voices of the practitioners and pupils treading that path so to speak; a charting of the school's educational practices and processes combined with the complex consequences of human interaction and networks that may have evolved and facilitated the outcomes over time. The 1990s saw a new paradigm emerge called "Effective School Improvement" which was defined as:

> [P]lanned educational change that enhances student learning outcomes as well as the school's capacity for managing change. (Creemers, Stoll and Reezigt, 2007: 2)

In this combined sphere, there are two primary criteria: one based on effectiveness and the other improvement. The effectiveness criterion asks: "Does the school achieve better student outcomes?" (Creemers, Stoll and Reezigt, 2007: 2). The improvement criterion poses: "Does the school manage change successfully?" (Hoeben, 1998) and build internal capacity for change. MacGilchrist, Myers and Reed's (2004) criterion meanwhile is how far the school is becoming an "intelligent school". They cite

nine intelligences (ethical and spiritual which combine to form a *vision*, plus contextual, operational, emotional, collegial, reflective, pedagogical and systemic which together forms *action*) that guide schools towards addressing simultaneously and successfully their two main "core business" areas of learning and teaching while considering relevant applications of effectiveness and improvement research (MacGilchrist, Myers and Reed, 2004: xvi). The authors stress that each intelligence has a discrete function, however, overall success depends on all intelligences working together and forming a gestalt (organisational 'consciousness' in section 9.1.1.) or *systemic* intelligence – that is, the vision combined with action. Connections can be made between the idea of combined intelligences, the building of collective capacity for improvement (discussed earlier in section 2.1.3) and how knowledge might be mobilised between cycles of school improvement and objectives of school effectiveness. Related to this idea of knowledge mobilisation, and later (in Chapter 9) to how the notion of schools as improvement 'spaces' might be linked to schools as organisations that embody different types of learning, the DASI was chosen as a framework for this study as it focuses on influences on pupil attainment at different levels and also explicitly discusses the use of research evidence in schools for improvement purposes via the "Advisory and Research (A&R) Team" (Creemers and Kyriakides, 2012: 64). The A&R Team in this case matches well with the tentative roles played by this researcher, other academic support from the university and Woodland Press (via Pathways resources and its presentation of research evidence and guidance) in the DBR framework adopted in this research.

2.4.1 The dynamic model and DASI

Below are the essential characteristics of the dynamic model (Creemers and Kyriakides, 2012: 22-24)

1. Pupil attainment is influenced at four different levels: teacher, student, school and system. The multilevel nature of influences on pupil attainment has been emerging in effectiveness studies carried out in a range of national contexts (Teddlie and Reynolds, 2000).

2. School and system level factors have both direct and indirect effects on student achievement as they also play a role in teaching and learning contexts, and factors between levels may interact with each other.

3. How school and system level factors affect student achievement has to be structured and defined differently compared to the impact of classroom level factors.

   "Policy on teaching and actions taken to improve teaching practice must be measured over time and in relation to the weaknesses that occur in a school. The assumption is that schools and educational systems which are able to identify their weaknesses and develop a policy on aspects associated with teaching their School Learning Environment (SLE) are also able to improve the functioning of classroom level factors and their effectiveness status. Only

changes in those factors for which schools face significant problems are expected to be associated with the improvement of school effectiveness." (Creemers and Kyriakides, 2012: 22)

Here it becomes clearer how the DASI model differs to other EER models; the impact of school and system level factors only takes into account very specific conditions and points of interest for improvement purposes in a particular context. This feature of associating improvement with a specific set of circumstances or chain of events links closely with the notion of Ofsted inspections serving as a "catalyst for change", particularly with regard to weaker or less effective schools (Matthews and Sammons, 2004: 12). Or indeed the use of school self-evaluation for developmental and formative purposes (Hopkins, 1989) in addition to accountability, external or otherwise, in order to guide decision-making and to achieve specific goals that make direct impact in the classroom (MacGilchrist, 2000).

4. The association of some effectiveness factors and achievement may not be linear; for example, the curvilinear relationship between teachers' subject knowledge and student achievement reported by Monk (1994) where knowledge beyond a certain point may hinder or have no effect on achievement in certain cases.

5. There is a need to carefully investigate the relationships between effectiveness factors, even within the same level, including the possibility of identifying particular groups of factors that yield better outcomes or those that impact more indirectly on attainment and possible interactions.

6. Another important difference of the dynamic model from previous models is crucial to the way this current study is designed; the DASI attempts to examine the qualitative characteristics of factors in order to identify more finely-tuned feedback on how each factor or combination of factors work and how they can be further improved. "[D]ifferent dimensions for measuring the functioning effectiveness factors should be used to collect data and provide constructive feedback to teachers and schools" (Creemers and Kyriakides, 2012: 25).

7. This study uses as its methodology DBR, where essentially, "unravelling the multi-faceted interaction" between a particular intervention or activity and the context in which it is taking place is considered and even becomes the "explicit focus" of the research (McKenney and Reeves, 2012: 23). The activities in my study include:
   a. schools' use of Pathways;
   b. the design and redesign of the Pathways platform over time as the Woodland Press receive formative feedback from its advisory group, school practitioners, this researcher and other

relevant stakeholders and;

c. schools' individual improvement practice and journeys.

As for the empirical literature and making connections between evidence from SER and SI, Hopkins et al (2014: 273) summarise from earlier studies (e.g. Hopkins, Harris and Jackson, 1997) that schools at the lower-end of the performance continuum often require more in the way of "top-down intervention" compared to schools at the higher or middle range. One of the key findings identified by Sammons et al (2014: 580) in a study about the role of leadership in school improvement indicated that schools that began their improvement trajectory from a lower starting point:

> made greater improvements in changing school culture, climate and addressing teaching and learning and use of performance data during the last three years.

Meanwhile, Harris et al (2013) draw attention to the "historic divide" between SER and school and system improvement research (SSIR) where practitioners might be aware of the factors associated with effective education but are still in the dark about the "processes necessary to put the effectiveness correlates in place" (Harris et al, 2013: 6-7). Hopkins et al (2014) reiterate the implications of research such as that of Day et al (2011) where 20 schools were found to have made sustained improvement and were able to increase autonomy (after establishing the "basic regularities" of schooling) that "there is a developmental sequence in school improvement narratives that requires certain building blocks be in place before further progress can be made" (Hopkins et al, 2014: 273). My study of five primary schools making efforts to improve is one such attempt at understanding those "building blocks". For example, how these blocks are defined and perceived by different stakeholders and the sequence of how each block is arranged and in what types of configuration in each school's different context.

The decision to use the DASI as a framework on which to build an evidence base in the study of school improvement processes in this study is also strengthened by the array of empirical research conducted over the last three decades and summarised by Creemers and Kyriakides (2015). For example, studies in the Cypriot context (Kyriakides and Creemers, 2009; Creemers and Kyriakides, 2010a), the European context (Panayiotou et al, 2013) and in Canada (Kyriakides, Archambault and Janosz, 2013). My study of Pathways adds to this array as it explores five English state primary schools' journeys and their contexts, documenting, analysing and illuminating the various elements and processes associated with school improvement, specifically in relation to the use of digital technologies by practitioners.

2.5 Educational digital technologies: extending the connections?

While there has been an exponential increase in schools' use of IT and technology during the last 20 years, the possibilities and challenges of the intersection between digital technology platforms and

approaches to school improvement remains relatively under researched. Indeed, a recently published OECD study suggested that countries where schools made more use of computers tended to have poorer achievement by pupils, although such an association cannot be treated as causal and may reflect a wide range of influences (OECD, 2015). Chapman et al (2016: 19) raise a potential reason for this apparent lack of impact of technology on pupil outcomes, certainly in the field of Educational Effectiveness and Improvement (EEI) – as an "inherent conservatism" among researchers "who have tended to focus on what is rather than what might be". Is the education community asking the right questions and looking at the most relevant outcomes for both practitioners and pupils' use of technology for improvement and development purposes? It is encouraging therefore to consider that one of the quintessential characteristics of methods employed in school improvement research is an appreciation of "what 'could' be done in any particular context" (Hadfield and Chapman, 2016: 205).

Within EEIR, the requirement to understand the "application of technology in educational settings" has been identified as a "needed characteristic" (Chapman et al, 2016: 18) in order to further the field and continue to make rapid progress for the benefit of practitioners, researchers and policy-makers.

> Regardless of methodological challenges, the absence of a technological focus in EEI is becoming an increasingly untenable position in a society in which (ever more rapidly changing) technology is part of the everyday lives of both students and teachers, and has changed the ways in which people live (von Neuman, 2012). While education has not been at the forefront of these developments, there has recently been a very substantial growth in the use of ICT in and outside of the classroom, driven by practitioners, educational technologists and in many cases private companies. (Chapman et al, 2016: 19)

Albion et al (2015) in their conceptual paper on possible ways to integrate ICT in education point out that such an 'educational innovation' is likely to be governed by the same challenges and considerations as other educational initiatives – how one goes about building a vision, individuals taking the initiative and feeling empowered to experiment and apply novel approaches, monitoring and restructuring (Fullan, 1991). Ertmer and Ottenbreit-Leftwich (2013) argue that rather than "technology integration", the perspective of "technology-enabled learning" would better serve the purposes of understanding how learners (both teachers and pupils) might engage meaningfully in their practice using a variety of platforms and objects including digital technology. Importantly, new models of learning are emerging and applications are being designed that extend not just to pupils but also teachers. Chapman et al (2016: 19) suggest that the field of education is moving towards "hybrid models" where opportunities for learning exist within and beyond the classroom, but that this raft of change has been occurring outside the purview of researchers in EEI. They go on to observe that:

> This is unfortunate, both for the development of the field and for the development of ICT in education. . . It means that we risk being left behind as the world of education moves on, with our approaches becoming seen as akin to a Pentium processor-powered desktop. (Chapman et al, 2016: 19)

In order to conceptualise these potentially more collective, "hybrid" spaces for improvement and learning, it is important to define a few terms for the purposes of this study.

2.5.1 Definition of 'digital technology'

The term 'digital technology' may denote a range of different aspects related to contemporary technology use according to Selwyn (2011: 13-14), i.e.:

- "computing hardware, systems and devices (such as desktop PCs, laptop computers, tablet computers, interactive whiteboards, simulation systems and immersive environments);
- personal computing devices (such as mobile phones, 'smart' phones, personal digital assistants, mp3 players);
- audio-visual devices (such as digital radio, digital television, digital photography, digital video);
- games consoles and hand-held games machines;
- 'content-free' computer software packages (such as word processors, spreadsheets);
- worldwide web content, services and applications (not least web-pages, and web-based services);
- other internet applications such as email and 'voice over internet protocol' (such as *Skype* and web-based telephone services)."

The last decade or so has also seen a marked change in how users access software – where previously publishers and other providers would be more likely to transfer material onto CD ROMs for example, now users tend to download 'applications' online, and one device can usually accomplish most tasks without the need for physical peripheral software on separate discs or attachments. However, it is worth recognising that many, if not most of the narratives about the digital age are "framed within discourses of progress, transformation and the allure of 'the new'" (Selwyn, 2011: 12-13).

> Many general discussions of the digital age tend to be informed by a notion that the development of digital technology represents a distinctively new *and* improved set of social arrangements in relation to preceding 'pre-digital' times. . . This is not to say that 'new' digital forms are believed to be usurping *all* practices and processes that have gone before. Instead digitally based activities are seen to borrow from, refashion and often surpass their earlier pre-digital equivalents. (Selwyn, 2011: 12-13)

Interestingly, amongst the drive for the 'new', contemporary consumption and communication practices in daily life seem to simultaneously hint at increased interest in notions of 'vintage', and 'antique' artefacts and culture (Veenstra and Kuipers, 2013). The term 'new media' is used to describe a 'media ecology' "where more traditional media, such as books, television, and radio, are "converging" with digital media, specifically interactive media and media for social communication" (Ito et al, 2008: 8). Albion et al (2015: 658) suggest that teachers' use of ICT in schools is "much less intensive and extensive, and differs in usage patterns compared to their use outside school." This leads

to an argument for more 'blended' approaches to school improvement and teachers' professional development and learning. Leask and Younie (2013: 278) point to what they term a sparse area of literature that discusses the multiple forms of knowledge that practitioners need to develop high quality teaching practice. Shulman (1987: 8) lists for example (at minimum) content knowledge, general pedagogical knowledge (including strategies for classroom management that may transcend content knowledge), curriculum knowledge, pedagogical content knowledge (which Shulman calls teachers' own "special form of professional understanding"), knowledge of learners and their characteristics, knowledge of educational contexts and knowledge of "educational ends, purposes, and values, and their philosophical and historical grounds". The range and complexity of the kinds of knowledge that practitioners require necessitates different approaches to CPD, along with better, more effective knowledge management processes (Leask and Younie, 2013: 278). They cite an example from UK local government – IDeA (Improvement and Development Agency for local government, now known as Local Government Improvement and Development) that oversees knowledge management infrastructure that aims to support professional learning and networking, the sharing of 'good practice' and "both 'tacit' and 'explicit' knowledge" (Leask and Younie, 2013: 278), with no such equivalent system for the education sector. Spillane and Seashore Louis (2002: 94) highlight work by Huberman and Miles (1994) which suggests that shifts in professional practice are "unlikely to occur without socially supportive and (positively) pressuring environments":

> [P]rofessional community should be viewed not as an "add-on" to an already long list of panaceas for school improvement, but as a mechanism that can bring together what we already know about how change in teachers and schools occurs. Professional community—however defined—is nothing more or less than a shorthand term for the kinds of adult relationships in schools that can support individual change in classrooms. (Spillane and Seashore Louis, 2002: 94)

Albion et al (2015: 659) add that an indicator of how effective a knowledge management system might be to educators is how easily they are able to "access research-based knowledge for improving practice" – especially in this era of rapid change and innovations in information and communication technology (ICT), networks and connectivity. Learning with 'new media' in turn is seen as "a process of participation in shared culture and sociability as it is embodied and mediated by new technologies" (Ito et al, 2008: 9):

> [W]e rely on a framework of "genres of participation" to describe different modes or conventions for engaging with new media. Instead of looking to rigid categories that are defined by formal properties, genres of participation are a way of identifying, in an interpretive way, a set of social, cultural, and technological characteristics that participants recognize as defining a set of practices.

Might it be possible to enable the digital along with the more (what would have been previously termed) 'traditional' forms of communicating like in-person dialogue, paper surveys, plenary-style meetings and seminars and in the process, potentially 'enhance' digital experiences (e.g. Pathways and its multi-environment use)? One question to consider is, by the time the variety of tools, databases and

resources are deployed to produce a particular in-person conversation, survey or group discussion, are those initially 'less immediately digital' forms of work product now a hybrid of material that is difficult to categorise into digital or non-digital? Veenstra and Kuipers (2013: 365) suggest that current theories of consumption and 'use', which tend to be limited to dichotomies of for example 'rebellion' or 'adherence', 'new' and 'old', do not sufficiently understand and reconcile contemporary consumption and professional practices. Robinson, Hohepa and Lloyd (2009: 44) in their review of school leadership practice that promoted better pupil outcomes talk about "smart tools": "everything from whiteboards to classroom furniture, to software for tracking attendance and assessment data, to policy documents, to report forms". Tools are deemed "smart" if they "promote teacher learning about how to promote student learning" and have to meet two criteria: that they are based on valid theory and are well designed (Robinson, Hohepa and Lloyd, 2009: 44). The notion of using smart tools to support school improvement and leadership certainly seems to share some similarities with practitioners using a platform like Pathways, a hybrid of digital and 'other' resources, enacted for specific tasks. By the same token, school practitioners may not only consume or use resources but also contribute to their production through their own experiences and comment – not in the traditional sense of production but "produsage" (Bruns, 2008) where artefacts take on more of a 'temporary' identity and serve often very fixed purposes. To ensure that "produsage" outputs continue to be trustworthy and usable, Bruns (2008: 27) argues that negative contributions are first identified and neutralised, and that "produsage" communities therefore rely on a finely-balanced combination of community- and technology-based processes. As with the use of Pathways, and the "produsage" of audit and strategic plans and questionnaires that are downloaded from 'the source' and added to, amended, improved – another kind of mediation emerges that is used to maintain an acceptable degree of quality and usability across users.

Environments like Pathways, and those that go even further by offering a space for practitioners to share and "produse" externally – offer, – even with the most basic use of word processing software – a "development history" of content and the facility to access the contributions of individual participants (via the use of 'track changes' and 'comments'), as well as means of rolling back changes to a point preceding negative or inappropriate contributions (Bruns, 2008: 27). I argue that online platforms that house customisable tools provide structured spaces in which to 'safely' "produse" and meet around, with the outputs or outcomes of the different interactions absorbing some of the flavour of the processes themselves, rendering "cultural artefacts more than commercial products" (Bruns, 2008: 27). Parallels can be drawn with Pathways tools, and the original exploration of this study into 'school improvement in context'. Yet, if an action plan was now deemed an unfinished artefact, this begs the question, so what? Well, for one, it may help to make sense of what school improvement is or can be: a joint collaborative activity, with contributions from different levels – rendering documents that are almost never 'complete'. The idea that Pathways (and other platforms like it) potentially

provides a platform in which to hold these 'discussions' and "produse" in turn exposes one possible reason that some schools might take to Pathways while others might not. Creating and working in a space where "produsage" is commonplace and in a sense, respected, may be a characteristic that is developed within certain types of information ecologies. Some schools, organisations or teams may already have the capacity to work this way, but perhaps one in which the process of recording and rewriting is more alien quickly renders this kind of space irrelevant.

Studying the use of digital technologies as part of wider school improvement and situated practitioner contexts may lead to better understandings of how different environments and systems may be shaping and communicating individual and collective identities. The idea of the 'traditional' working with the more contemporary can be linked with network-type orientations or contingencies discussed earlier. Oliver et al (2017: 16) highlight an example of teachers sharing knowledge and expertise and the different modes of communication that might be deployed – teachers may rely on texts to "reify their practice", both in informal 'story' form and more formalised, structured accounts on multiple communication platforms. They argue that attempts to support teachers' sharing of practice "may be best served by finding ways to work with the day-to-day texts that are already part of teachers' practice, rather than by developing new formalisms and expecting teachers to learn how to write, read and interpret these independently" (Oliver et al, 2017: 16). Pathways might be conceptualised not just as a 'new technology' in the landscapes of school improvement and traditional educational publishing but an intersection of a mixture of technologies and more 'conventional' forms of communication and presentation. Its strengths can be maximised in recognition of the different types of adaptations and fits with school contexts and priorities. Equally, if the school's contingencies change, the adaptations to Pathways also need to be reworked to result in eventual 'fit' or temporary equilibrium (until the next contextual or policy change comes along), which may prove difficult over the long term, if resources are not there to keep Pathways relevant to the current market.

Ito et al's research (2010: 15) was an ethnographic study of youth, but "genres of participation" could also be applied to practitioners, across all different ages – how individuals engage with media is more a process of "interpretive recognition than a process of habituation or structuring". "Genres of participation" likely driven by interests, peer groups or specific tasks (Ito et al, 2008b) may support the recognition of certain "patterns of representation" and lead to engagement in more social and mechanistic ways (Ito et al, 2010: 15). As Muffoletto (2001: 2) observes, educational technology is not necessarily about devices, machines or other artefacts, but "about systems and processes leading to a desired outcome".

2.5.1a Network-type configurations and spaces

One way to start to conceptualise a space like Pathways that may incorporate digital, social, personal and professional interactions that take place in multiple environments might be taking on board elements of "affinity spaces" (Gee, 2004).

> Affinity spaces can be characterized by participants' engagements around shared interests or aims, varied skill sets, robust content generation, creations of various forms of knowledge (i.e., specialized and general, individual and collective, dispersed and tacit knowledge), and contributions as teachers and learners depending on their knowledge and skills . . . Moreover, affinity spaces can be understood in terms of both the organization of content and the interactions around it. (Krutka, Carpenter and Trust, 2016: 151)

Affinity spaces are often linked with Professional Learning Networks (PLNs) – where participants might engage in a discussion or topic of interest organised around a Twitter hashtag or online subject community. While this type of 'networking' function is not provided within the Pathways application itself, the idea behind affinity spaces bears similarities to the potential creation of a broader environment to facilitate professional learning and school improvement practice which may include both on- and offline communication. Groups of individuals or communities may be involved in a shared initiative or school improvement task (perhaps supported by Pathways and other digital technologies), where various interactions take place, along with the production of artefacts that represent the issues being addressed and individual and collective experiences of enacting that task. School self-evaluation might be such a task – one that should be undertaken using a coherent framework and supported by structures that promote systematic processes to collect a wide range of data and "inform action to improve pupil and professional learning" (Chapman and Sammons, 2013: 2). Another example might be smaller, more contained forms of teacher enquiry that are shared among a few members of a teaching team – such as lesson study or structured peer observation.

Reflecting on the dramatic decline over time of the uptake of postgraduate qualifications by teachers and changes in leadership preparation programmes, Hadfield and Chapman (2016: 211) class approaches such as lesson study, "walk-through approaches" (Finch, 2010) and "instructional rounds" (City et al, 2009; Petti, 2013) as "boutique inquiry-based processes". "Boutique approaches" are said to provide:

> [R]elatively discrete, small-scale, and highly focused inquiry processes that utilise a standardised range of qualitative and quantitative methods. These characteristics make them easier to introduce into a school's improvement approach – helping to ensure that they are implemented with a degree of fidelity and reliability – in that it is easier to keep them focused on the needs of the school rather than simply allowing a colleague to gain a masters' degree. (Hadfield and Chapman, 2016: 211)

The Guskey model of teacher change (2002b: 383) shown in Figure 7 (page 54), makes the point that it is not necessarily the professional development itself, but the "experience of successful

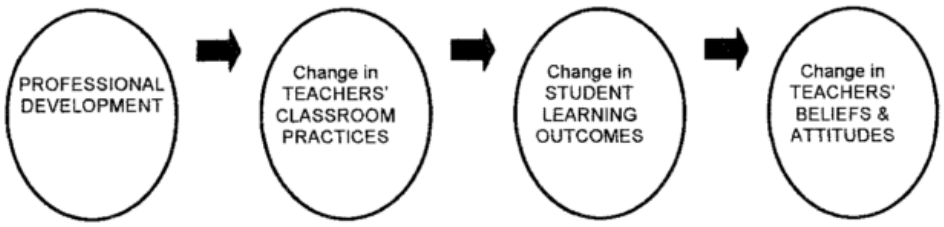
implementation" that makes a difference in changing teachers' attitudes and beliefs in favour of a new way of working, an intervention or approach to teaching and learning.

> [T]he key element in significant change in teachers' attitudes and beliefs is clear evidence of improvement in the learning outcomes of their students (Guskey, 1985, 1986, 1989). This model of change is predicated on the idea that change is primarily an experientially based learning process for teachers. Practices that are found to work – that is, those that teachers find useful in helping students attain desired learning outcomes – are retained and repeated. Those that do not work or yield no tangible evidence of success are generally abandoned. Demonstrable results in terms of student learning outcomes are the key to the endurance of any change in instructional practice. (Guskey, 2002b: 383-384)

Attitudes and beliefs about teaching are likely to be formulated from practitioners' classroom experiences (Guskey, 2002b). Teachers' beliefs are more likely to change if a new intervention or instructional strategy is attempted and yields evidence of improvement in pupils' learning outcomes. Timperley et al (2007: xxx) also assert that "[h]igher expectations cannot be taught or imposed independently of context. Rather, they develop as new teaching approaches are mastered and student learning is seen to improve".

One of the key messages for Pathways from this model is that 'outcomes' are defined broadly. In addition to cognitive measures, teachers may also investigate a range of other data such as attitudinal and behavioural indices, teacher assessments and quizzes, standardised tests, attendance, pupils' engagement levels in class activities, motivational surveys and attitudes to school, their class and themselves (Guskey, 2002b). "In other words, learning outcomes include whatever kinds of evidence teachers use to judge the effectiveness of their teaching." (Guskey, 2002: 384)

Figure 7: Guskey (2002b: 383) model of teacher change



2.5.2 Professional development and knowledge management in the era of digital technologies

One of the few papers found that reviews and unites a selection of literature in the fields of teachers' professional development, school improvement and digital technologies is authored by Leask and Younie (2013). Their article focuses on:

- the nature and quality of professional knowledge in addressing how to improve the quality of teaching by in turn, improving the research and evidence base that provide the necessary foundations for educational practice; and
- how digital technologies might be used to help practitioners to access this professional knowledge base.

Gaps in research and policy direction were identified that pointed to a lack of studies investigating how the research evidence base informs practice and how this then leads to school and system improvement, and the perception among researchers and practitioners that the research often presented in academic journals does not always address questions that teachers necessarily want answers to, and that the knowledge produced is "woefully lacking in systemic organisation and coherence" (Leask and Younie, 2013: 274):

> If those with responsibility for quality of educational provision in a country do not recognise the need for a research-informed knowledge base accessible to teachers, then the opportunity to reconceptualise teachers' continuing professional development (CPD) offered by the widespread availability of Web 2.0 communications and collaboration technologies may be lost. (Leask and Younie, 2013: 274)

Discussing teachers' professional learning, Spillane and Seashore Louis (2002) draw on the principles of andragogy – methods and practices of teaching adult learners and employing the classroom as a learning space for both teachers and pupils. Teachers, under the right conditions, may learn a great deal from recognising and reflecting on their practice, "unlearning and relearning what their students can do and developing a new appreciation for the resources students bring to the instructional situation" (Spillane and Seashore Louis, 2002: 91). It is disquieting to learn then that the content presented in online teacher professional development programmes, both formally and less prescriptive learning spaces, are often perceived by learners to be innovative in design, but lacking in pedagogical message and approach – particularly for adult professional learners:

> [M]uch like reading materials that have been digitized to function within the electronic medium, [pedagogy] has simply been transferred into, but not transformed by, the new environment: same stuff, different container. This transfer approach to pedagogy often results in a lack of alignment with the needs of the learners and with the technical tools chosen to support online learning. (Whitehouse, McCloskey and Ketelhut, 2010: 250)

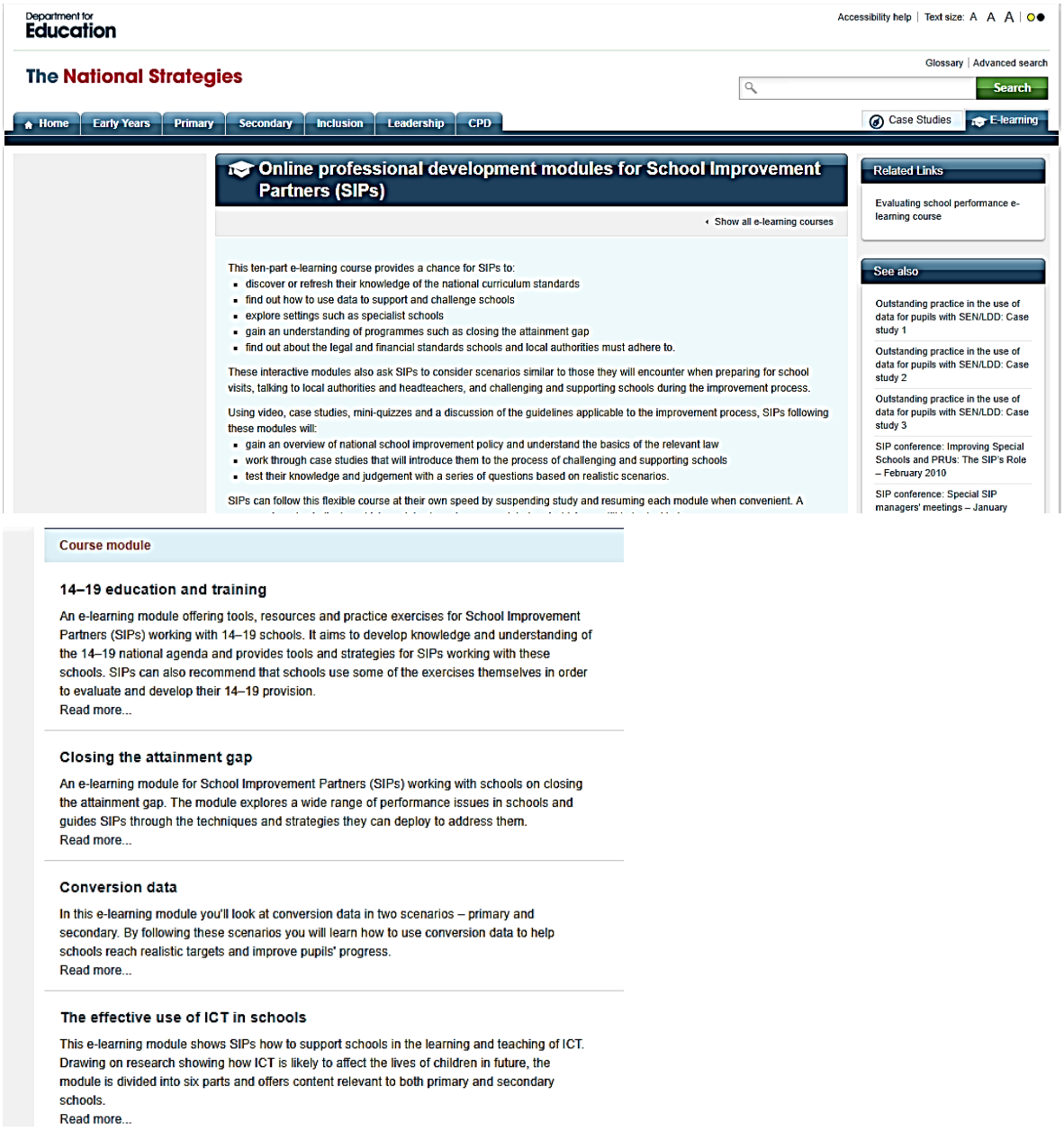
Parallels can be drawn between the potential affordances of professional learning spaces and practitioners' different ways of knowing. Markauskaite and Goodyear (2017) for instance, conceptualise how practitioners and educators might over time develop a kind of linguistic 'capacity' to handle the various 'code-switches' that might be taking place between these different types of knowledge. Markauskaite and Goodyear (2018; 2017) refer specifically to "epistemic fluency": "the capacity to recognise different kinds of knowledge and to work flexibly with different ways of knowing" (Markauskaite and Goodyear, 2018: [online]). Knowledge here might be conceptualised as for example, principles, classifications and structures (Hart, 1998: 111), attainment data, and research

evidence, and therefore be divided into enactments of "data-based decision-making" (DBDM) and "research-informed teaching practice" (RITP) which both form "evidence-informed school improvement" (Brown, Schildkamp and Hubers, 2017). Schildkamp and Kuiper (2010: 482) define DBDM as systematically analysing and "applying the outcomes of analyses in order to innovate teaching, curricula, and school performance" and implementing and evaluating these improvements and innovations. RITP is rooted in evidence-based practice which combines "practitioner expertise and knowledge of the best external research, and evaluation based evidence" (Asmussen and Weizel, 2010: 2). Groundwater-Smith and Mockler (2017: 125) remind us that "practice is inseparable from the knowledge forms and interests on which it is based and the cultural context within which it evolves". Sjølie (2014: 733) distinguishes between "theory *for* practice" (theory that enables practice) and "theory *about* practice" (theory that describes or explains practice), and agrees with Kvernbekk's (2005) argument that a large proportion of pedagogical theory in teacher education is treated as the former, when more of the latter might help teachers to develop better understandings about teaching, as well as the role of schools in society, and perhaps wider, less functional questions about education. Sjølie (2014: 731) notes that the term 'theory' is sometimes understood to mean 'research-based knowledge' – "knowledge that is generated with the aim of providing explanations, deeper understanding or guidance for practical activities". These different conceptualisations of knowledge as theory, research and practice can easily blur into one another, but are fundamental components of knowledge management systems in education, and the communities that form around them (such as professional learning communities, communities of practice and so on – see Appendix 12 on page 402). A resource like Pathways which spans a wide range of 'knowledge', potentially provides opportunities to engage with combining different types of knowledge, but may also expose the differences in understanding and definitions among practitioners when operationalising more 'abstract' concepts around school improvement.

2.5.2a Knowledge management in education and other sectors

According to Leask and Younie (2013: 275), the last time there was a "sophisticated and shared pedagogical language of practice" in the education sector was probably the National Strategies, a comprehensive system of pedagogy and content launched by the DfE in 1998, including award-winning web resources and professional development programmes. The government's implementation of the National Strategies was met with mixed reception by practitioners due to its perceived level of prescription and reduced opportunity for teachers' discretionary judgement (Day, Flores and Viana, 2007; Webb and Vulliamy, 2007). Leask and Younie (2013: 276) underscore the point about knowledge being dynamic in suggesting that "[s]tatic repositories are not therefore the answer; rather, dynamic repositories of knowledge need to be created and continually tested and refreshed". Parallels between Pathways and the structure and content of the National Strategies (DfE, 2011a: [online archives]) can be seen in Figure 8 (page 57) and analysis in the Woodland Press case study (Chapter 7).

Figure 8: National Strategies online professional development modules (DfE archives, 2011)



Approaches to translate research into practice in education are often compared to the medical sector. Cochrane (previously known as the Cochrane Collaboration) is a not-for-profit collective that houses reviews of published research in the health sciences. Formed in 1993, the network's objective is to systematically review research in order to facilitate the selection of appropriate interventions by health professionals, patients and carers, researchers, funders and policy makers. These individuals make up some of the platform's contributors who hail from over 130 countries. Their mission is to improve global health by providing "accessible, credible information to support informed decision-making". Increasingly in the literature, Cochrane is on the one hand credited with promoting methodological advances in the health sciences by developing "highly sensitive search strategies for randomized

controlled trials [RCTs]" (Lefebvre and Clarke, 2001 in Grimshaw, 2004: 748); and on the other, because they favour RCTs, indulging in "significant methodological bias" (Montresor et al, 2015: 1). While RCTs are acknowledged to be the "strongest, least biased source of evidence on particular therapies or medical interventions for clinical practice" (Montresor et al, 2015: 1), there is growing awareness that they also present methodological and practical challenges, for example in 'evidence-based medicine' (Greenhalgh, Howick and Maskrey, 2014). Petticrew et al (2014: 291) suggest that "systematic reviews need to continue to strive to incorporate more complex sets of evidence if they are to be credible and useful to users. This is particularly important when reviewing complex interventions." Indeed, this applies to educational interventions as well. Petticrew et al (2014: 291) go on to say that:

> Reviewing evidence on equity in particular requires methodological flexibility because the determinants of inequalities are upstream and lie in the living and working conditions. The relevant evidence, therefore, often derives from non-randomised and mixed-methods studies. The further development of meta-analytic and narrative methods for integrating non-randomised controlled trials (non-RCT) evidence will therefore remain a priority.

Returning to education, Leask and Younie (2013: 276) put forward that the internet has "revolutionised knowledge-sharing and knowledge-building across the education profession" and propose an education-specific search tool that might improve practitioners' access to knowledge and sharing. Leask and Younie (2013: 276) go as far as to argue that "having a CPD system that reaches every teacher, every year to provide professional learning on issues relevant to their specific practice" would be the 'gold standard' to which countries may try to aspire. These same authors dispute claims made by the OECD and UNESCO that an "up-to-date professional knowledge base to support educators' CPD" actually exists. They insist that their research with teaching practitioners indicates otherwise (Leask and Younie, 2009; 2013).

In my argument for Pathways to be considered as a potential 'environment' for practitioners' CPDL, I draw on Leask and Younie's (2013) four key components of CPD shown in Table 4.

Table 4: Four key components of effective CPD (Leask and Younie, 2013: 277)

Broader and deeper CPD	Sustained interactions and interventions give more breadth and depth than short or one-off courses …
Teacher influence	The more influence teachers [have] in tailoring CPD to meet their needs – the more likely they are to find it effective …
Awareness of teachers' career needs	Professional development programmes and opportunities should be designed to take account of the needs and priorities of teachers at different stages of their professional lives and careers …
Developing professional learning communities	Schools should … become 'professional learning communities' in which there are opportunities for support staff and non-teaching professionals to learn alongside teachers in CPD and similar activities …

The components in Table 4 (page 58)– adapted from GTC (2006; 2007) – highlight how teachers may not only participate in CPD but also influence CPD provision, and how it meets their needs and requirements at different career stages. Coming from the designer's perspective in an educational context, attempts might be made to weave together a set of design principles and a model for school improvement and professional development. Comparing Reeves' design principles (2006) used to analyse the Pathways design journey (Figure 9), and the major steps of the DASI (Figure 10 – page 60), several parallels can be drawn. Both configurations:

1. Call for an analysis and understanding of the context and nature of the practical problem of interest by researchers and practitioners.
2. Propose the collection of data and strategy design to develop possible solutions to the problem.
3. Call for reflection to enhance "solution implementation".

The models differ slightly in their starting points – the DASI asks to establish "clarity and consensus" on the general aims of school improvement and put student learning at the centre of any strategy or intervention developed in the process, whereas the DBR approach may apply to a whole host of different problems, not necessarily always to do with student outcomes. Equally, similarities can be found between the DASI and organisational design models that actually incorporate some form of 'redesign' in their approach, e.g. "contingency theory" (Donaldson, 2001), "organisational ambidexterity" (Tushman and O'Reilly, 1999), "design rules" (Baldwin and Clark, 2000). Each model calls for a good understanding of the organisation, adaptations, change, redesign and achieving an equilibrium with environmental and contextual factors that may influence the organisation's performance (Nissen, 2014).

Figure 9: Pathways 'journey' outlined following Design Research principles (Reeves, 2006: 59 – Figure 4.1)

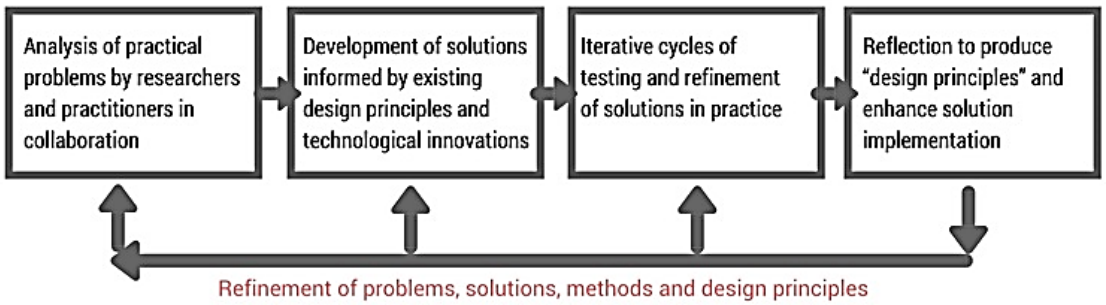
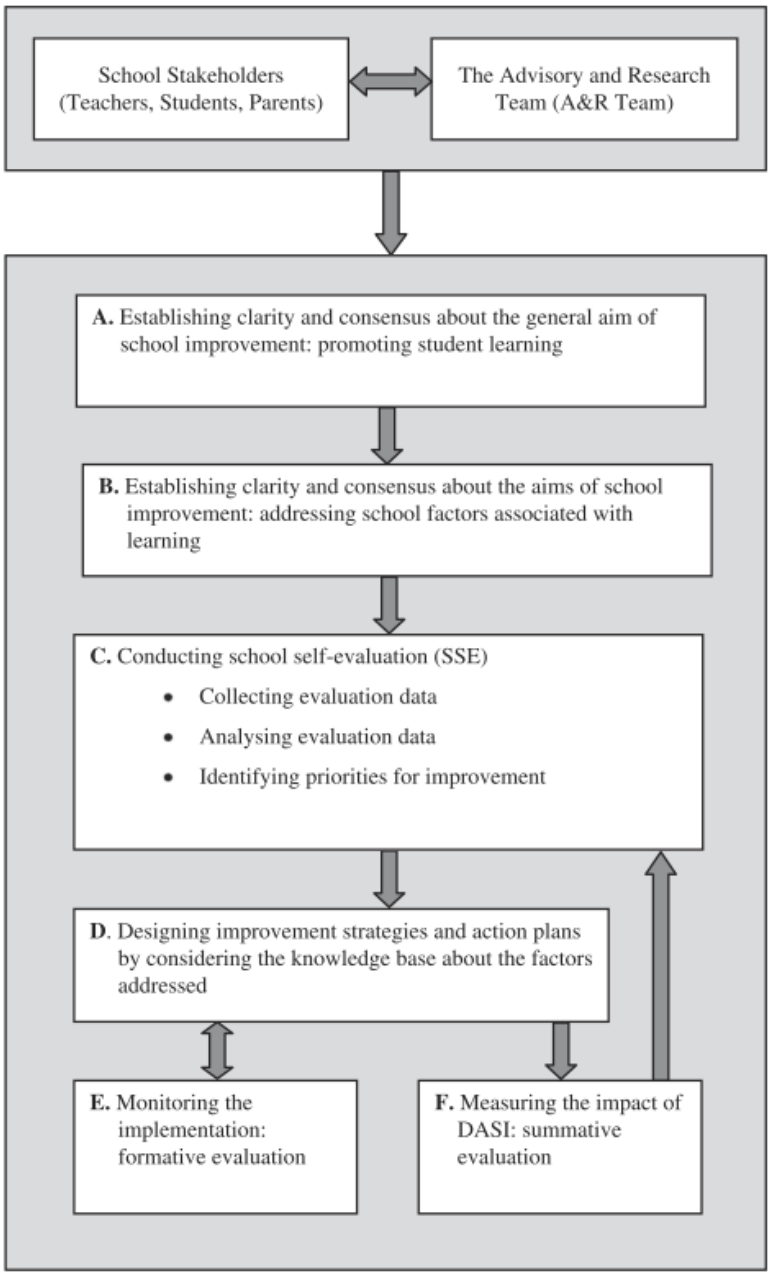


Figure 10: Major steps of the DASI (Creemers and Kyriakides, 2015: 109)



Leask and Younie (2013: 279) reflect on how "national knowledge management initiatives" introduced by a number of government, quasi-government and associations to systematise educational research evidence in the past have created a fractured array of smaller 'networks' that do not connect with each other. Leask and Preston (2010) suggest that the critical characteristics identified by teachers for effective online spaces include being able to:

- search between different kinds of research evidence (not just systematic reviews, meta-analyses or findings from RCT's but other types of smaller-scale evidence);
- find peers interested in similar issues and work collaboratively online to share information and documentation – both with known colleagues and more anonymously, and;

- work in a more structured manner with academics, policymakers, educational agencies and local authorities.

These characteristics present potential design implications on a resource like Pathways (which is not part of 'national policy', but has national coverage). Leask and Younie (2013: 280-281) list some of the resources developed over 13 years at a cost of over £20 million in public funding that were rendered unsearchable and most likely, unusable after the change in Government in May 2010, including: the Education Evidence Portal, Teacher Training Resource Bank, TeacherNet, Qualifications and Curriculum Development Agency, and Teachers TV amongst others. While English schools can currently access a variety of databases to source research evidence such as the Teaching and Learning toolkit (EEF, 2017), EPPI Centre (2016), University of York (IEE, 2018) and Evidence based Teaching Network (2017), there is still no comprehensive portal of research evidence that brings different types of studies together, which "poses challenges for the future funding and management of databases" (Leask and Younie, 2013: 281).

It may then be useful to view Pathways, or any other online resource with a similar remit, within an 'environment' or 'space' type framework that encompasses people, places and artefacts, both on- and offline. As such, some similar sounding terms are differentiated in Appendix 12 (page 402) that may be relevant to how Pathways might be conceptualised, now and in the future. For example, Pathways may provide a space for practitioners to take a step back and consider and reflect on their practice, and investigate the opportunities and possible problems of different types of experimentation. Terms such as Professional Learning Communities (PLCs), Personal Learning Networks (PLNs) and Communities of Practice (CoPs), that are commonly mobilised in this discussion of spaces and collective approaches to school improvement and staff development and learning are catalogued in Appendix 12 (page 402).

2.6 Connections between school improvement and effectiveness & teachers' professional development: potential and realised

The field of EER has made strong substantive and methodological links with the older field of teacher effectiveness, including the shared use of observation instruments (e.g. The ISTOF: International System for Teacher Observation and Feedback – Teddlie et al (2006)), qualitative investigation, and the development of newer understandings of teaching and learning (Muijs et al, 2014). Aside from the DASI which does take into account teacher effectiveness factors (Creemers and Kyriakides, 2006), one area that is peculiarly less established in EER is that of teacher professional development (TPD) (Muijs et al, 2014). According to Hattie (1999: 12):

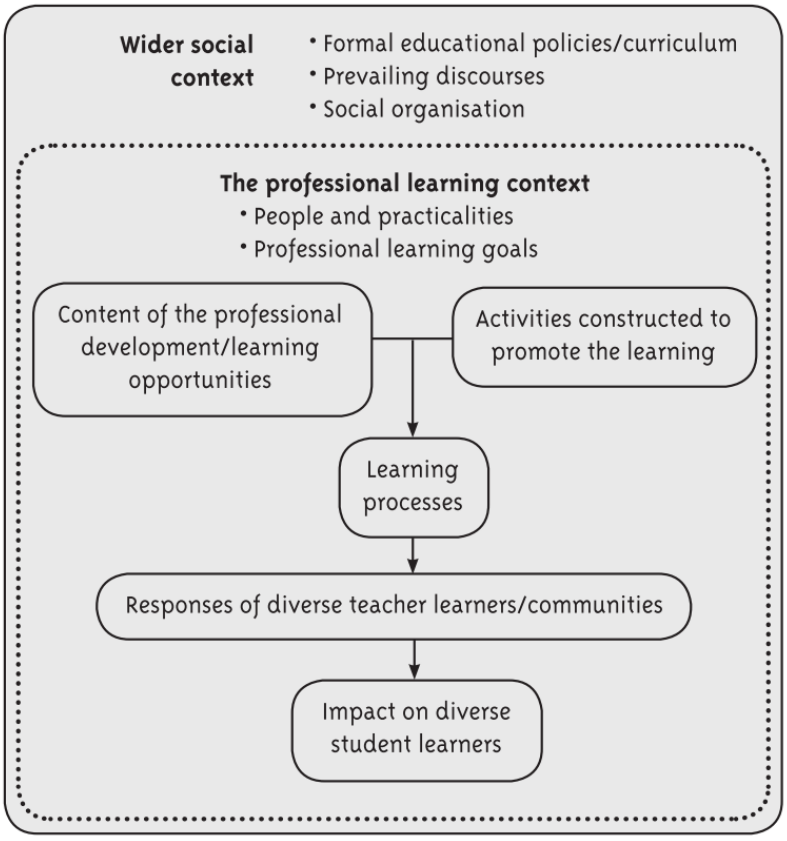
> Like their students [teachers] must set challenging goals, seek feedback on the effectiveness of their teaching on students, and constantly be attenti[ve] to improvement and innovating the methods which optimise feedback and meeting challenging goals.

Notwithstanding the numerous issues around clarity and agreement over the measurement of teacher effectiveness (Muijs et al, 2014), understanding teacher behaviours, teacher professional development and their relationship with changes in pupil outcomes is a critical element of developing improved education systems (Muijs, 2006; Borko, 2004; Marzano, 2003; Brophy and Good, 1986). As such, exploring some of the possible connections between EEIR and teacher development and learning seems warranted here.

2.6.1 Professional development and learning experiences

Muijs and Lindsay (2008) argue that the concept of CPD is often left 'ill-defined', and often confused with in-service training and on-the-job learning. It is encouraging therefore that Galloway (2000) takes a different approach by linking CPD with practitioners' professional identities and organisational goals. In their Best Evidence Synthesis on ways to promote teacher learning that support the improvement of pupil outcomes, Timperley et al (2007: xxiv) provide a framework to analyse the effectiveness of professional learning experiences shown in Figure 11.

Figure 11: Framework to analyse CPD experiences (Timperley et al, 2007: xxiv)



Of particular interest here are the sections in Figure 11 (page 62) that investigate the activities constructed to promote teachers' learning and the responses to diverse teacher learners and communities. How might a school improvement system like Pathways also promote sustainable teacher learning in order to help build leadership and learning capacities in schools? Much of what can be termed 'professional learning' might be informal, tacit and incidental (Timperley et al, 2007). How does this element feature in the five case study schools' improvement journeys and professional learning environments?

Timperley et al (2007: xxv-xxvi) list the two extremes of opportunities for professional learning that have little evidence to support them:

- "[T]eachers should be treated as self-regulating professionals who, if given sufficient time and resources, are able to construct their own learning experiences and develop a more effective reality for their students through their collective expertise" – conditions and processes that may promote learning are often more complex (Lipman, 1997; Saxe, Gearhart and Nasir, 2001; Timperley and Parr, 2006);
- "outside experts develop recipes for teaching (typically based on research about what works for students) then present prescribed practices to teachers with an underpinning rationale and monitor their implementation carefully to ensure integrity" – evidence indicates that the processes involved in changing teaching practices can be effective, however, the changes may have limited influence on pupil outcomes (Gottfredson et al, 1995; Van der Sijde, 1989), or once the recipe providers leave, the effects are not sustained (Stallings and Krasavage, 1986).

Between those two extremes, seven elements were identified by Timperley et al (2007) that both supported and promoted professional learning and impacted positively on pupil outcomes. These are shown in Table 5 (page 64).

Table 5: Elements that support professional learning and their provisos (after Timperley et al, 2007: xxvi-xxvii)

	This element promotes professional learning:	But…
1.	Providing sufficient time for extended opportunities to learn and using the time effectively.	Extended time is a necessary but not sufficient condition. How the time was used was more important than the provision itself (e.g. release from teaching duties). Limited time might be adequate for relatively narrow curriculum goals.
2.	Engaging external expertise.	Another necessary but not sufficient condition. Most interventions inevitably involve the engagement of external expertise.
3.	Focusing on engaging teachers in the learning process rather than being concerned about whether they volunteered or not.	What was more important was that teachers engaged in the learning process at some point, rather than who initiates the professional learning, or whether the opportunity is voluntary or compulsory.
4.	Challenging problematic discourses.	Typically, problematic discourses were based on assumptions that (1) some groups of students could not learn as well as others and/or (2) emphasised limited curriculum goals. The challenge to discourses typically involved "iterative cycles of thinking about alternatives and becoming aware of learning gains made as a result of changed teaching approaches." This links to the alternative model of teacher change proposed by Guskey (2002b). Discourses changed as (1) teachers' practice became more focused and teachers understood the impact of their practice on their relationships with their students in the classroom and/or (2) "teachers mastered new approaches to teaching that accelerated student learning". Crucially, change seemed to occur in iterative cycles, not in a linear fashion. (3) Related to curriculum implementation – changing the discourse involved moving the "focus from facts, procedures, and memorisation to processes of inquiry and the development of students' conceptual understandings" (ibid. xxx).

5.	Providing opportunities to interact in a community of professionals.	Where the intervention happened mattered less. Effective communities of professional practice were those that "provided teachers with opportunities to process new understandings and challenge problematic beliefs, with a focus on analysing the impact of teaching on student learning".
6.	Ensuring content was consistent with wider policy trends.	Generally, consistency with research findings and recommendations from professional bodies was found here.
7.	In school-based initiatives, having leaders actively leading the professional learning opportunities.	Leaders typically provided a supportive environment to: • promote opportunities to learn and implement/experiment with new practices in classrooms; • participated in the learning with teachers, and helped to develop a 'learning culture'; • provided and monitored "alternative visions and targets" for pupil outcomes; • created an environment conducive to distributed leadership, and developing others.

2.6.2 Critical levels of Professional Development Evaluation (Guskey, 2002a)

Guskey (2002a) identifies five levels on which CPD should be evaluated in schools. Discussing how schools might move beyond Level 1 (shown in Table 6 below) Guskey and Yoon (2009: 498) assert that practitioners at all levels should demand higher quality evidence from educational consultants, programme designers and resource providers: "[s]tories about what happened at one time in a single school or district may be interesting, but they do not justify broader implementation".

Table 6: Five levels of CPD evaluation (Guskey, 2002a)

Evaluation level	Main measures	Purpose of measure
1 - Participants' reactions	Initial satisfaction with the space/experience/provision	To improve programme design, communication and delivery
2 – Participants' learning	Newly gained knowledge and skills	To improve programme content, organisation and structure
3 – Organisation support and change	Leadership and organisational structures that may provide advocacy, recognition and facilitation	To chart journey maps of practitioners' experiences and potential inform future change efforts

Evaluation level	Main measures	Purpose of measure
4 – Participants' use of new knowledge and skills	Strength and quality of implementation	To improve and document how a programme was implemented from different perspectives
5 – Pupil learning outcomes	Cognitive, affective and psychomotor	To demonstrate impact of professional development and improve the next iteration of the programme's design

The aim is not to collect 'proof' of impact but good quality evidence that indicates whether an online programme or professional development may have contributed to specific gains in pupil learning (Guskey, 2002a). To plan a successful programme, designers should start from level 5 and work backwards – critical analyses of pupil assessment data, examples of pupils' work and other data such as attainment targets might be useful starting points to identify pupil learning goals. This is usually followed by investigating what instructional practices and structures might most effectively facilitate those outcomes, from both teaching and learning perspectives (Guskey, 2002a). Furthermore, Muijs and Lindsay (2008: 199) in their empirical investigation of Guskey's five levels as a framework to evaluate CPD identified an additional level – cost-effectiveness of different modes of CPD.

Guskey (2002b: 384) argues that attitudes and beliefs about teaching are likely to be formulated from, and influenced by, practitioners' classroom experiences, underscoring the point that evidence of improvement in pupils' learning outcomes usually precedes and "may be a pre-requisite to, significant change in the attitudes and beliefs of most teachers".

> Teachers who have been consistently unsuccessful in helping students from educationally disadvantaged backgrounds to attain a high standard of learning, for example, are likely to believe these students are incapable of academic excellence. If, however, those teachers try a new instructional strategy and succeed in helping such students learn, their beliefs are likely to change. (Guskey, 2002b: 384)

One of the key messages for Pathways identified earlier is that 'outcomes' can be defined broadly, i.e. including affective and behavioural as well as cognitive. Gray (2004) from his review of British studies in school effectiveness concludes that "there are differences between schools with respect to affective, social, and other non-cognitive outcomes" (Sammons, Davis and Gray, 2016: 55). Guskey (2002b: 384) too notes: "[i]n other words, learning outcomes include whatever kinds of evidence teachers use to judge the effectiveness of their teaching". Considering Guskey's Levels 2 to 5 in more detail, specifically in understanding the teaching and learning processes in each school and/or classroom, a need arose in this study to assemble how both practitioners and pupils might structure and perceive their respective learning experiences at different points in the school improvement journey. Linked to

the idea of knowledge-building within Guskey's five levels, Muijs et al (2014: 247) illustrate the synthesis of evidence by Timperley et al (2007) in Figure 12, which looks sequential, however in reality is more iterative – i.e. episodes of trying something new, analysing what worked and did not work so well, revisiting and perhaps adjusting conceptions and assumption, and then trying again (Muijs et al, 2014: 248). So for example, within Level 4 where practitioners apply their new knowledge and skills, an emphasis was placed during data collection and analysis to recognise the different kinds of knowledge and cycles of application (shown in Figure 12) that might take place as practitioners engaged with Pathways. This connection is also highlighted in the journey maps provided in Chapter 8 – where schools' travels through Pathways are charted against their individual school improvement plans and the 'push and pull' factors that might enhance, or in some cases, discourage, the acquisition and application of different types of knowledge.

Figure 12: Teacher enquiry and knowledge-building cycle (Muijs et al, 2014: 248, based on Best Evidence Synthesis by Timperley et al (2007))



Schools that follow the steps in Figure 12 and are organised for learning, questioning and where practitioners are given the space to think of alternative explanations, and operate as "adaptive experts" (Hammerness et al, 2005; Bransford et al, 2005) can be referred to as schools with "high adaptive capacity" (Staber and Sydow, 2002).

> Integrating new ideas about teaching effectiveness . . . into the daily practice of schools requires more than individual teachers understanding how they need to think and act differently. It also requires that schools become places for deliberate and systematic professional learning, where leaders are constantly vigilant about the impact of school organization, leadership, and teaching on students' engagement, learning, and well-being. (Muijs et al, 2014: 249)

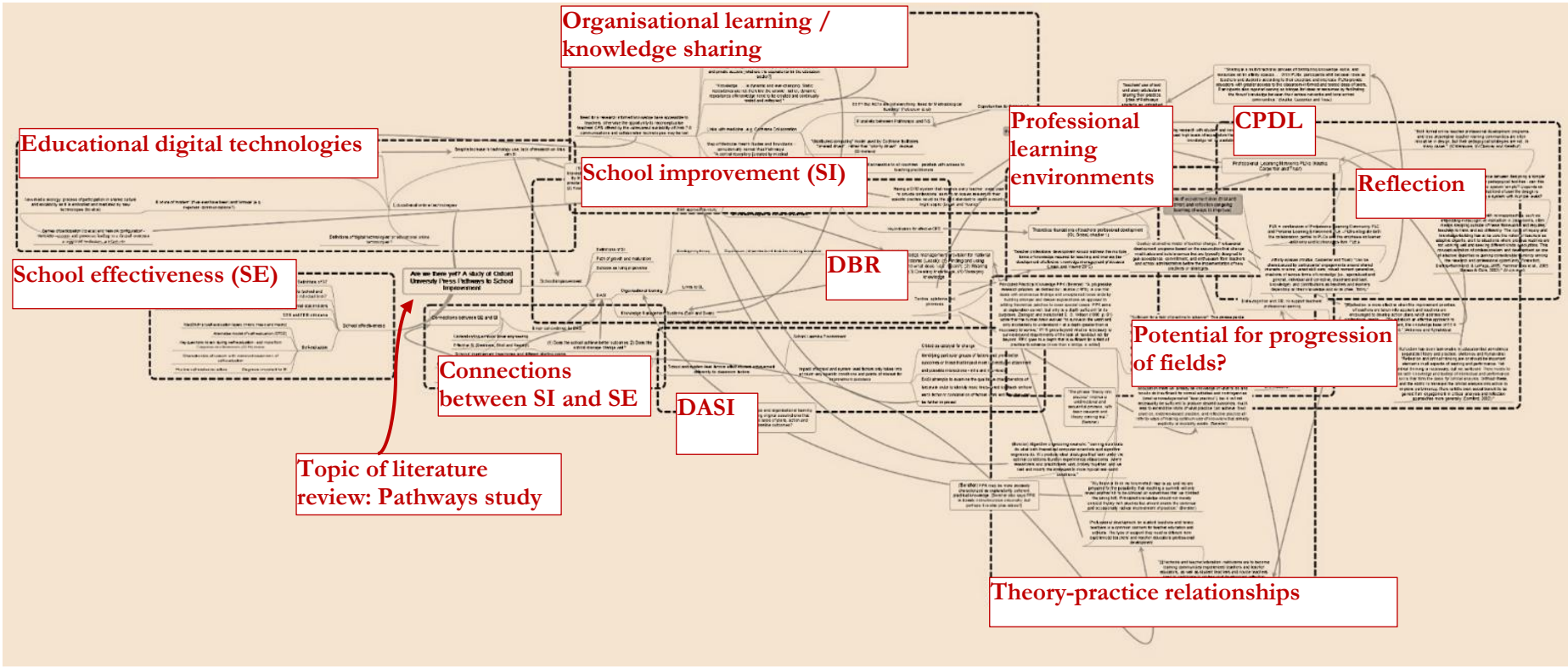
Summary

Using the technique of "feature mapping" (discussed in section 3.3.1a), this literature review has journeyed through the topics of school improvement, school effectiveness, the connections between the two fields, school self-evaluation, educational digital technologies and teachers' professional development. Due to the expansive area explored (including approaches to DBR detailed in Chapter 3), a mind map was drawn to illustrate how elements within each topic might be linked together with respect to this research study (Figure 13 – page 69). Figure 13 shows a 'zoomed out' version or 'bird's eye view' of the literature landscape. A more 'zoomed in' or detailed view of each topic is shown in Appendix 11 (page 388). The key points that inform the case studies and analyses are:

- the links between SE, SI, SSE, leadership, the DASI and Guskey's ideas of professional development and change; and
- conceptualisations of 'spaces' for practitioners' learning and school improvement, including the application of tools and enactments within and beyond digital technology platforms to manage and share different types of 'knowledge'.

Chapter 3 provides an account of this study's research design, methodology and approaches to data analyses.

Figure 13: Pathways study literature review mind map boundaries – a bird's eye view (please refer to Appendix 11 (page 388) for a more detailed view)



Chapter 3: Research Design and Methodology

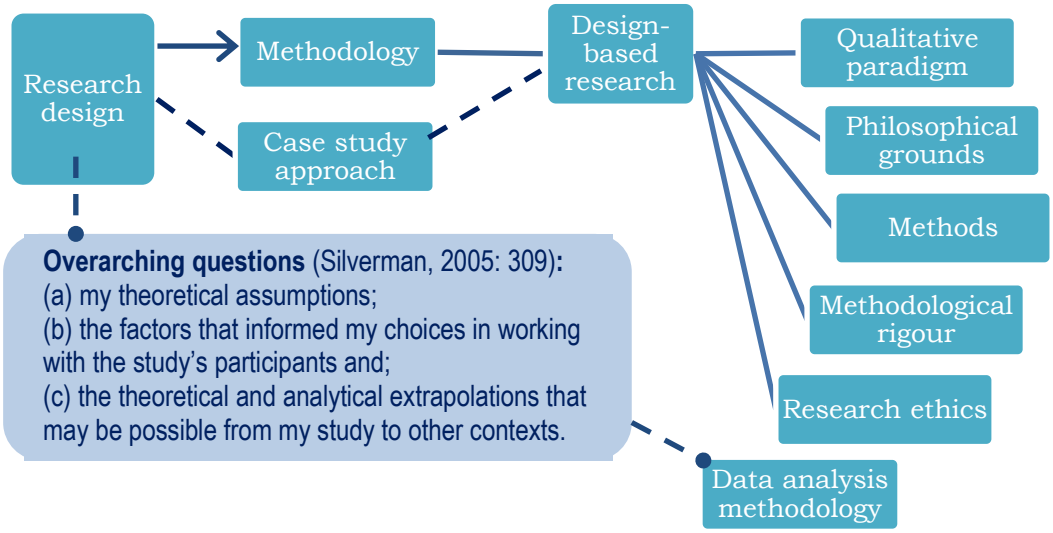
This chapter broadly follows the advice of Silverman (2005: 309) on ways to set out a study's research methodology. I will make clear (a) my theoretical assumptions, (b) the factors that informed my choices in identifying a sample and working with the schools and individuals that participated in the research project and (c) the kinds of theoretical and analytical extrapolations that may be possible from my study sites to other contexts. First, a distinction is made between the terms 'research design' and 'methodology' to illustrate:

- *how* the questions being asked in the study and the overall aims of the research - which form the basis of the **research design** - *link with*

    ⇨ the *theoretical and philosophical foundations* of how 'answers' to those questions were sought, and *meanings constructed* from the data collected using multiple methods – forming the **methodology** used here which is DBR.

The research design is seen as an overarching frame or plan of the study – in this instance, an embedded case study, while the methodology describes the actual foundations, structures and techniques of how the research was carried out (and is still continuing with respect to data analysis and links with study sites). Each component will be dealt with in turn. A diagram that highlights the links between the various components covered in this chapter is given in Figure 14.

Figure 14: Chapter 3 map – The linkages between the research aims and research questions and the research design and methodology adopted in the multi-method embedded case study



3.1 Research design

Research design is conceptualised quite diversely among commonly available methods texts. Cohen, Manion and Morrison (2011: 125) are among the few groups to make clear distinctions between *research design* and *methodology*; with the former defined as being driven by the overarching 'questions' of the study and the latter by more specific approaches (including methods) and underlying theoretical techniques. Yin (2014: 29) asserts alliteratively that research design is more about the *logics* of a problem as opposed to the *logistics*. Five essential components specifically related to case study research design are listed by Yin (2014: 29) as:

1. "the case study's questions;
2. its propositions, if any;
3. its unit(s) of analysis
4. the logic linking the data to the propositions; and
5. the criteria for interpreting the findings."

This mode of classifying research design is favourably wide-ranging and comprehensive, and in contrast to definitions found elsewhere (cf. Vogt, Gardner, Haeffele and Lynne, 2012; Hedges, 2012: 5, 25; Robson, 2011; Creswell, 2009: 3; Creswell, 2007: 42; De Vaus, 2001: 9-10), appears less bonded to particular research paradigms or methods (definitions of which will be refined in the next section). Each of the five items will be dealt with in turn, along with what Blaikie (2007) identifies as choices to be made before carrying out any social inquiry including the research problem and research questions. After an initial overview, I present the rationale for my choice of research design and methods of inquiry to address the first three components catalogued by Yin (2014) above. As components 4 and 5 contend with moving from data collection to interpretation and findings, these are merged with and presented as part of the *Data Analysis Methodology* section of this chapter.

3.1.1 The case study approach

3.1.1a Case study questions

This study's research objectives and research questions are listed in Chapter 1. Each of the objectives is connected to the research questions that most closely stem from the intended purpose of the objective. The more macro-level aims of my study – as listed in Chapter 1 – are to (1) explore the workings of, and practitioner engagement with, Pathways and other resources for school improvement; (2) study individual school improvement practice via an embedded multi-method case study and; (3) investigate the evolution of the Pathways themselves as a school improvement resource base (using a DBR framework). Depending on the question, I employed different methods, and

focused on specific perspectives both indicated with symbols in Figure 15 (page 73). One can see sometimes stark differences in approaches, e.g. eliciting views and perceptions from practitioners on the functionality of the platform (RQ1) required mainly data derived from interviews and observations in schools. In contrast, developing an understanding of how the evolution of Pathways was shaped and reconfigured based on inputs from Woodland Press, schools and this researcher (RQ3) called for interviews, meeting observations and gathering documents with platform designers, Steering Group members and other stakeholders at Woodland Press and school practitioners at different levels, along with a clear articulation of my involvement in the project, as the researcher, intermediary between schools and Woodland Press, and DBR 'agent' for the study. Hence, one of the sets of theoretical assumptions underpinning this research is the idea of "dynamic systems", which have four central features in common (Earl and Katz, 2006: 102):

- a process that operates on an iterative basis, and evolves over time;
- a process that has a feedback loop;
- a context that includes internal constraints that shape the image or micro-level subsystem in question; and
- a context that sets external constraints that shape the actual organisation or macro-level structure that takes place (Katz, Sutherland and Earl, 2002).

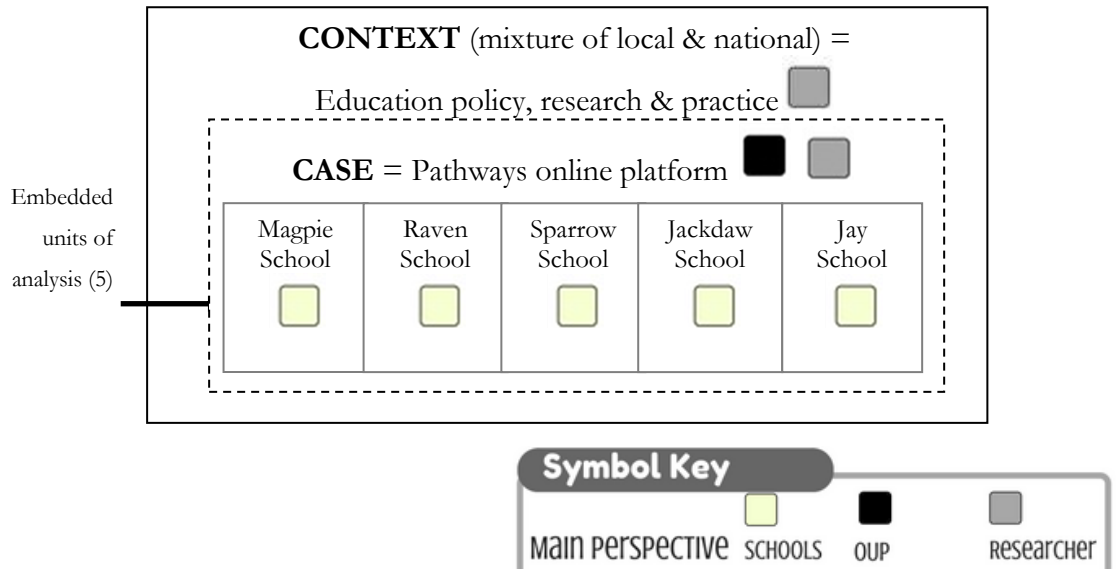
While these types of systems are unlikely to function neatly in the above order, an important principle of the research was to capture an understanding of each of the features and how they might assemble as a system of sorts in the particular contexts of this study.

3.1.1b Propositions & units of analysis

Stake (2003: 136) states that a case study is "both a process of inquiry about the case and the product of that inquiry… [where] the object of the study is a specific, unique, bounded system…". Yin (2014), Stake (2003), Merriam (1988) and Stenhouse (1985) all identify case study research as a way of developing optimal methods to understand a "case" (however it is defined); producing "thick descriptions", attempting to show "particularity", triangulating data sources and collecting data from multiple sites.

The approach taken in my research is the "single-case embedded study" (Yin, 2003: 39-43) where both the "global" or macro nature of a case (in this instance, *Pathways*) is examined along with the micro units, here a sample of *five primary schools* across England. The units of analysis are illustrated in Figure 15 (page 73).

Figure 15: The Pathways single-case embedded study design (adapted from Yin, 2003: 40)



The factors that informed my choices in working with the schools and individuals that participated in the project include:

- the intention to develop a holistic (macro-level) understanding of the Pathways platform and its connections to different contributing groups, i.e. Woodland Press, this researcher and the five primary schools;
- the intention to describe and analyse the contributing groups (at a micro-level) within the educational system ecology existing at the time of the research;
- the need to describe and analyse Pathways from different perspectives using a DBR framework that makes more explicit the connections and influences between the different contributing groups, and gain an insight into a heterogeneous combination of approaches to Pathways from practitioners and schools – leading towards a kind of maximum variation sample (Kuzel, 199: 42).

The design of this study, rather confusingly in the methodological literature, can be classed as both 'mono-method' and 'multi-methods'. This is because 'mono-method' (Creswell, 2011: 273; Teddlie and Tashakkori, 2009: 145, 149) denotes the exclusive use of only one paradigm, either quantitative or qualitative, in contrast to 'mixed methods' which denotes the use of both qualitative and quantitative techniques (Teddlie and Tashakkori, 2009). Using this definition, the Pathways study is situated in the 'mono-method' qualitative paradigm, but 'method' is unfortunately conflated with 'paradigm'. The term 'multi-methods' – incidentally also referenced by Teddlie and Tashakkori (2009: 148), along with Morse and Niehaus (2009) and Hesse-Biber and Johnson (2015) – refers to multiple methods carried out in parallel in one study, in a single paradigm. In the instance of the Pathways study, participant observation, semi-structured interviews, and documentary analysis were employed at six different sites

(five schools and Woodland Press) over the course of two years. The study was conducted within the English education context, with particular sensitivities to changes in policy at different levels (national/local authority/partnership/school) and following a framework of questions based on "dynamic systems" such as the DASI (Creemers and Kyriakides, 2012). The design is both longitudinal and cross-sectional as I followed schools and Woodland Press over time and studied their individual and group characteristics at each time point. This links well with Thomson's (2007: 571) methodological analysis of the longitudinal case history approach, reasoning that:

> "[T]he longitudinal dimension . . . privileges the individual case, and the cross-sectional dimension . . . privileges the social and the spatial context. It is argued that both aspects should always be kept in play in analysis."

She goes on to highlight the strengths of the approach, which again, fits with the longitudinal and processual elements of my research design:

> Most significantly, it enables a focus on the processual – on 'how' something happens over time. It is not simply a documentary method as it involves a massive condensation of primary data. The analyst must actively create a history from the archive. The temporal character of the data set means that specificity, concrete events, juxtapositions and coincidences, lie at the heart of the analytic story that is forged. (Thomson, 2007: 578)

Section 3.2.3 details how schools were invited to participate in the project, and the sampling procedures involved. As highlighted at the start of the chapter, the next steps in this Research Design & Methodology are closely linked to, and form vital parts of, the data analysis process of this study. Hence, the items "the logic linking the data to the propositions" and "criteria for interpreting the findings" (Yin, 2014: 29) have been merged with the Data Analysis Methodology section of this chapter. Before we get there, we will first develop an understanding of the *Methodology* applied in this study.

3.2 Methodology

While definitions for 'methodology' abound in the literature, unlike research design, relatively more has been written describing a taxonomy of sorts of methodology in the social sciences. One example is Outhwaite and Turner (2008: 1) who differentiate between methodology as "theoretical perspectives" and "specific research techniques, concepts and methods". The former in this study is encapsulated by the "dynamic systems" approach to the research design detailed in Section 3.1, while the latter comprises the study's methods detailed in Section 3.2. Hammersley identifies three genres; methodology: "-as-technique", "-as-philosophy" and "-as-autobiography" (2011: 20). Methodology-as-autobiography bridges the first two genres and underscores the context-laden foundations of social research, closely connected to the DBR approach. It represents an attempt to expose the researchers' interactions with research participants in a manner that assumes less of an 'objective' and/or

'normative' stance, and more of a 'zig-zagged' audit trail of how a study was conducted, revealing the researchers' belief systems and 'real-world' practice (Hammersley, 2011: 28). The motivations for such a methodology seem virtuous but their manifestations can be problematic. Certainly, there seems to be an increasing tolerance of texts that go down the 'confessional' route of methodology (more prevalent in the ethnographic tradition), however it is impossible to stay 'true' to the way events transpire – particularly if meanings are constantly being constructed and reconstructed, and procedures end up being so discontinuous that the resulting accounts do not make coherent reading. However, one's attempts to get closer to those events (as is the idea behind DBR), and try to present them in a more open, less 'sanitised' fashion, suggest some progress towards developing a better understanding of research methodologies and procedures. In the field of SER, 'objectivity' is justifiably seen as a worthy cause. Luyten, Visscher and Witziers (2005: 252) reassure researchers that although the critics of SER argue (equally justifiably) that every study is probably biased in some way:

> [T]his does not mean that striving for objectivity is useless. On the contrary, giving up the ideal of objectivity would render any research activity futile. The fundamental reason for the existence of scientific research is its capacity for generating information and knowledge that is valid regardless of ideological preferences.

This last quotation sets the scene for the following sections which discuss DBR as a methodology, in the context of the qualitative approach and philosophical grounds of this study.

The main portion of the next section is structured according to Blaikie's (2007: 33) "elements of a social research design".

3.2.1 Research strategy: Design-based research

This study addresses the research objectives and questions listed in **Part I** using DBR, which is generally viewed as a *research* methodology rather than a *design* methodology (Reimann, 2013: 44). Reimann (2013: 45) also traces its "intellectual pedigree" back to experimental educational psychology, design research in the natural sciences and engineering and participatory methods employed when designing new software.

> Design experiments were developed as a way to carry out formative research to test and refine educational designs based on theoretical principles derived from prior research. This approach of progressive refinement in design involves putting a first version of a design into the world to see how it works. Then, the design is constantly revised based on experience, until all the bugs are worked out. (Collins, Joseph and Bielaczyc, 2004: 18)

Collins, Joseph and Bielaczyc (2004: 16) put forward four essential factors that support the use of DBR in the context of studying approaches to learning and development; the need:

- to address theoretical questions about the nature of learning *in context* [current author's own emphasis];
- for approaches to the study of learning phenomena in the real world rather than the laboratory;
- to go beyond narrow measures of learning; and

- to derive research findings from formative evaluation.

The use of DBR also dovetails with the need for EEI to move ahead with insights into technology:

> The field of school improvement is, almost by definition, a multi-year endeavour, yet both hardware and software are changing at rates that make longitudinal study of their effects almost inherently irrelevant. (Chapman et al, 2016: 19)

This approach does not assume that any simple concepts of 'what works' can be identified, though it is intended to provide helpful input into theories of school improvement and to inform practice and practitioners. Nor does it assume transferability in different contexts though again, "fuzzy generalisations" (Bassey, 1999) may be possible. The aim is to – like Flyvbjerg (2004: 400) in his treatise on "five misunderstandings about case study research" – "demur from the role of omniscient narrator and summariser" but tell each school's and Pathways' story in its rich complexity, from different perspectives which may coalesce and conflict. I was attracted to the DBR approach in conducting this exploratory study due to its explicit focus on studying change and evolution of resources and for the large part, technological tools to support improvement in some way in practical contexts. This aligns well with the focus on the development, use and evolution of Pathways, the underlying aim of studying schools' improvement journeys and processes, as well as the wider social setting.

> [T]he main goal [of social research] is improving understanding of how things work in their particular settings. That information may be useful for improving the thing studied, but aiming the research directly at improvement [in decision making] risks failing to examine adequately the complexity of the way it works. (Stake, 2010: 122)

Parallels can be drawn between the principles that underpin DBR and those of SI. McKenney and Reeves (2012: 1) suggest that the basic idea of carrying out DBR, particularly for the first time, can be seen as "educational intervention" in itself:

> We know from our own research and experience that sustainable use of new ideas does not come when an intervention focuses on using new resources or changing overt behaviours. Real change can come when we focus not only on what and how things can be done, but when we also work to understand why. (McKenney and Reeves, 2012: 1)

In the quest for deeper understanding of school effectiveness and how schools go about their planning, practice and evaluation, the field of school improvement has grown and can be further extended using techniques such as DBR, in order to study complex processes happening in situ, as this study aims to explore and illustrate. Next, I outline the overarching DBR-focused principles were applied to this study's methods, and crucially, the 'problematisation' of each principle (using my journal entries) – following on from Heap's (1992) categorisation of 'research-as-science' and 'research-as-project':

- the "co-learning agreement"[4] which denotes a particular style of interaction between researcher and practitioner that incorporates notions of "reflexive, systematic inquiry", participation in ongoing action and reflection and initiating change within individual institutions (Wagner, 1997 in McKenney and Reeves, 2012: 18). The researcher acts as a "researcher-practitioner" while the practitioner fulfils the role as "practitioner-researcher" in each of their 'home institutions' (Wagner, 1997: 17). This mode of inquiry is aimed at making stronger links between the research methods, collected data and the data analysis and interpretation that will follow in the research design. Knowledge is collected, shared and interpreted on a cooperative basis between researcher and practitioner (for example via the means of Pathways self-evaluation tools) and changes proposed and/or put in place at Woodland Press and individual schools;

  Challenges: Two very distinct orientations emerged here, echoing Johnston's (2011: 111-112) expressed unease during his encounter with a DBR project about organisational change: the first seemed at home in a more "normative framework of educational research" with presumed sets of knowledge 'ready to apply' in different settings – e.g. where the researcher develops a "collaborative relationship with school leaders and teachers to reflect on their organisational behaviour and explore new and better ways to improve their practice." The second orientation was one that I was more at home with which emphasised the 'classical' social science approach, i.e. before any proposals for change are raised, the researcher (and others in the partnership) "must first study the social dynamics within the school, the network of relations formed by the various groups of social actors whose lives intersect within the organisation, their multiple points of view and interests, and the systemic connections between the school and institutions within the wider social system." In short, the analysis would come first, and implications later – an unfamiliar or less timely approach for stakeholders in schools and Woodland Press.

  The 'workaround': The reflection and analysis phases took place in parallel, with a recognition that outputs from one orientation might feed into the other, and in a sense, illustrate the complexities faced by teachers and leaders in their day-to-day practice – when does one 'take action' in order to be able to 'start somewhere', and when is it more appropriate to 'wait and see' and be more circumspect with one's plans, assumptions and previous ways of working?

- data was collected across a range of perspectives – i.e. Woodland Press, this researcher, university academic support – e.g. Professor Pam Sammons who acts as an expert adviser on

[4] This is in contrast to two other styles of cooperation identified by Wagner (1997: 17) - "data extraction agreement" and "clinical partnership". The former entails the "researcher as researcher and practitioner as practitioner" while the latter the "researcher as researcher & collaborator and practitioner as practitioner and collaborator".

Pathways – and school practitioners at different levels of management. Different sub-frameworks were applied to each perspective, with the predominant approach drawn from Organisational Learning (Argyris and Schön, 1978) and Knowledge Management Feedback systems literature (Bain and Swan, 2011);

Challenge and workaround: Here emerged a range of push and pull factors within the "negotiated ethnography" (Johnston, 2011: 112) space of the project, and an appreciation that the role of 'researcher', 'practitioner' and 'designer' were in many ways 'collapsible'. This certainly became evident and helped me make sense of the publisher's and school's data that was being collected. Later in sections 7.2.3 and 9.3.2 I considered how the 'design workspace' inculcated in Woodland Press corresponded with schools' 'improvement spaces', and how both settings provided opportunities for professional learning, understanding (and misunderstanding), synergy and conflict – rendering each other's setting less alien than at the beginning of the study.

- components of DBR or educational design research[5] projects (McKenney and Reeves, 2012: 27) were identified and applied – (a) the main foci (research objectives and research questions) of the study; (b) the development of the intervention, i.e. Pathways and schools' responses to Pathways and other tools for school improvement; (c) the theoretical contribution and relationships with Pathways; (d) research methods and research scope that support the investigation of (b) and (c); (e) methods and interpretations that are predicated on data collected using "reciprocity between research and practice" McKenney and Reeves (2012: 17)[6] and (f) practical and substantive contributions to knowledge.

  Challenges: There was a recognition here – particularly in the second year of the fieldwork of how unstable the ideas of 'knowledge' and 'learning' were at any given point, and the different components of the DBR approach identified earlier, and during moments of reflection (during my journal entries post interviews and observations).

  Workaround: Johnston (2011: 115) offers a lens to view processes of organisational change that might be emerging over time – a learning framework ("how learning leads to new patterns of behaviour when there is no readily available model to fix the problem, and no wise teacher in the background with the correct answer") that makes the following encounters more explicit: "'unsettling the understanding of participants', 'creating moments where new

[5] McKenney and Reeves (2011: 18-19) express a preference to use the term "educational design research" to distinguish from design research situated purely in engineering and human computer interface design environments. This paper uses "design-based research" to cover a wider reference base beyond the McKenney and Reeves volume.

[6] Notions of "reciprocity between research and practice" as advocated by McKenney and Reeves (2012: 17) where the "social design of research projects" (Wagner, 1997: 19), in particular the cooperation between researchers and practitioners becomes an essential component of the study's design.

> understandings and possibilities are opened up in the space between experiences and discourse', and 'deconstructing and reshaping the taken-for-granted"'. In a sense, Johnston argues that a more "therapeutic language of personal emancipation or enlightenment" starts being used, which highlights (and makes available for careful documentation) the vital social processes of learning that may lead to new insights, knowledge, and artefacts. Artefacts – for example, tools and templates from Pathways that were completed by practitioners during each of the four steps themselves became "tools to think with", and opportunities to "to see their practice in a different light before they can envisage new possibilities or alternative ways of doing things".

As Engeström and his colleagues (2001) proposed in their study of organisational change in a Finnish health setting, what was most pertinent to work together were the two types of scaffolding around the data collection and analysis phases: the explanatory framework, and the investigative design. Hadfield and Chapman (2016: 216) acknowledge that while qualitative researchers have historically tended to shy away from debates around causality, equally, there is a:

> [L]engthy history within school improvement of discussing individual notions of causality and the processes of social causation in the change process. These discussions have tended to wrap the idea of causality within theories and models of the 'process of change' ([Ainscow, Hargreaves and Hopkins], 1995), or 'processes of implementation' (Fullan, 1992), rather than to discuss it directly.

"Boutique approaches" (Hadfield and Chapman, 2016) mentioned in Chapter 2 are said to "push the discussion of causality much further", for example by considering the interactions taking place in the 'instructional' space, or by "comparing and contrasting research lessons within a lesson study and reflecting on why key differences come about" (Hadfield and Chapman, 2016: 217). A common feature of the different approaches is that they require practitioners to "explore the past, present, and future interactions that have shaped, are shaping, and will shape the teaching and learning in their classrooms. They all explore causality as a temporal phenomenon" (Hadfield and Chapman, 2016: 217).

This study also attempted to introduce opportunities for fulfilling the five purposes for mixed methods designs advanced by Greene, Caracelli and Graham (1989: 259) – which I would argue are equally applicable to multi-method research designs:

1. Triangulation – seeking multiple sources of evidence by systematically using different methods over time in an effort to reduce researcher bias and open up new possibilities both substantively and methodologically for the study and its participants;
2. Complementarity – enhancing the ability to build a richer picture of a site's context and school improvement journey by studying different perspectives and exploring newer, perhaps uncharted aspects;

3. Development – using one method to develop or inform the next, allowing for a degree of flexibility in steering the direction and scope of the research. For example in this study, working between the "co-learning agreement" between researcher and participants afforded by the DBR approach (highlighted next) and the collection and analysis of multiple sources of data to enrich that approach;
4. Initiation – being open to contradictory or paradoxical results and not being afraid to ask difficult questions that do not align with previous assumptions or beliefs;
5. Expansion – selecting the most appropriate mode of inquiry for each task. For example, while it was not possible for this researcher to sit beside each practitioner and observe their use of Pathways in real time, I opted to instead observe (and participate) in discussions between the headteacher and the teachers managing Pathways to try and understand how roles and plans were negotiated, and indeed if and how Pathways materials featured in those discussions.

Next, we will examine the specific methods and approaches used in the study.

3.2.2 Research paradigms: Qualitative inquiry & the philosophical context

> It is characteristic for a qualitative undertaking that the participant's perspective is not (entirely) known before the inquiry. Field work, as a consequence, requires a constant redefinition of what is problematic and needs a logic and process of inquiry that is flexible and open-ended (Jorgensen, 1989).

This study is situated within the qualitative paradigm and naturalistic settings that lend themselves well to both retroductive and abductive logics of inquiry. A retroductive strategy entails working 'back' from the data towards an explanation or theory of sorts by way of "creative imagination and analogy" (Blaikie, 2007: 9). The study uses elements of institutional and educational ethnographic and ethnomethodological inquiry as illustrated in Figure 16. The goal along the way was and still is to try to uncover the overlap between "research expertise/interests and practitioner needs/interests" (McKenney and Reeves, 2012: 89). The DBR methodology also asks that care is taken to engage with practitioners (respectfully and critically) in attempting to solve problems that:
(a) they perceive and care enough about solving; and
(b) which also fall within the researcher(s) area of expertise.

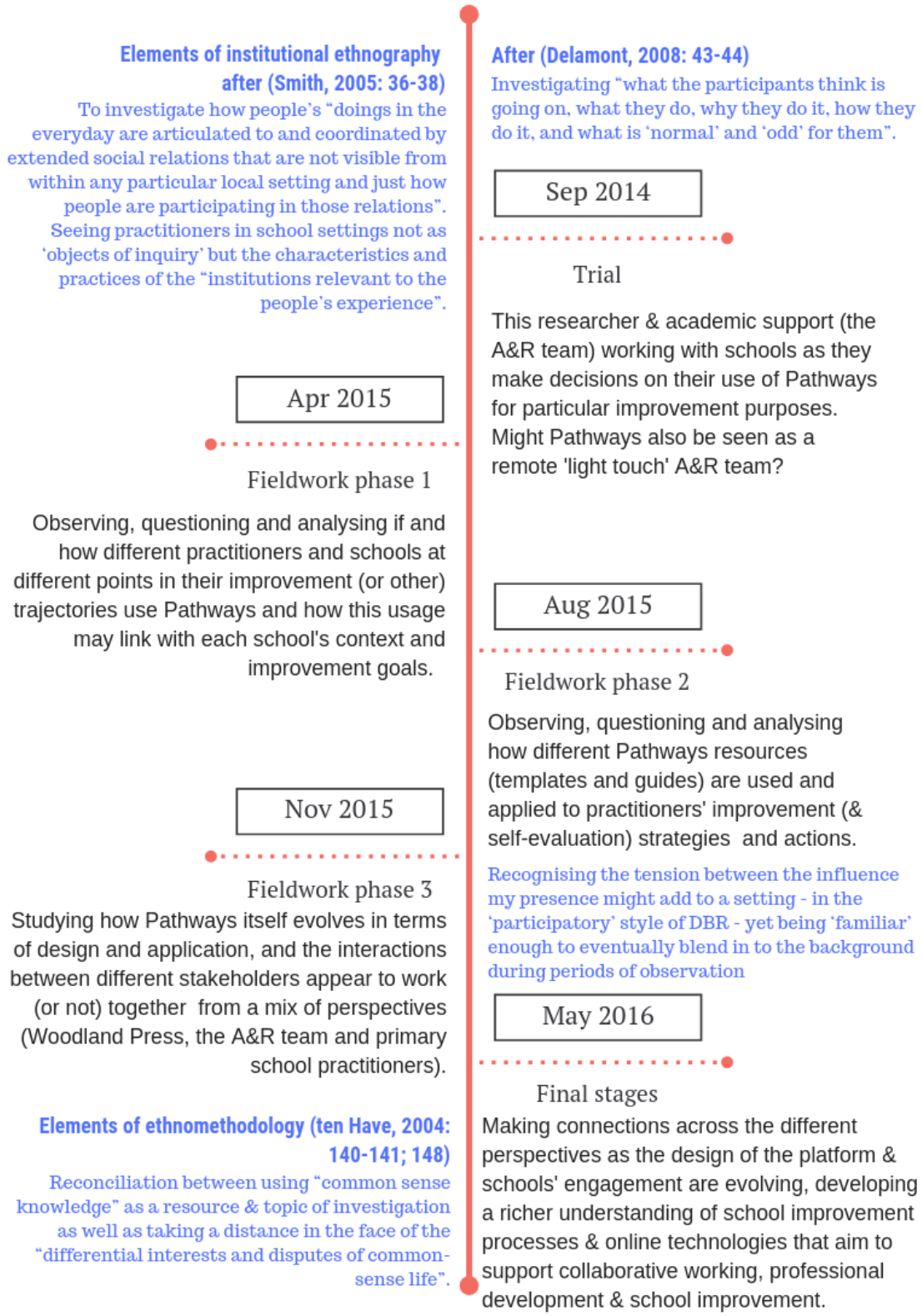
Figure 16 illustrates the timetable of the fieldwork, meld of different approaches that were employed to study school improvement practices in schools, and how the basic principles of these approaches link back to the DASI framework. Throughout the study, due to the divergent levels of participation

observed in the sample of five schools, a high degree of flexibility was incorporated into the design, inherent in the endeavour of qualitative research:

> [F]ailure to adapt to the situation being studied is likely to maximise reactivity and thereby to threaten the validity of the findings. Furthermore, the open-ended approach to data analysis which is characteristic of qualitative work means that ideas about what data are required will change over time; the requirements cannot be identified completely at the beginning. (Hammersley, 2011: 27)

The structure of questioning, both methodologically and philosophically applied to fieldwork in the study is shown in Figure 16 (page 82). Examples of practitioner interview schedules are shown in Appendix 5 (page 366).

Figure 16: Pathways study fieldwork timetable, DBR structure of questioning & philosophical context



3.2.3 Data sources & collection

3.2.3a Sampling

Two considerations were of importance here (Flick, 2009: 115): the people to be interviewed and observed or "case sampling" and from which groups the people would come or "sampling groups of cases". In the Pathways study, schools were recruited (for the trial and further stages of fieldwork) from a population of primary schools engaged in the past with Woodland Press in some way. 'Engagement' includes any or a combination of the following, where a school may have been:

- an adopter of a particular Woodland Press resource (e.g. Project X series, Numicon and so on) and expressed interest in other initiatives;
- a participant in a previous research project with Woodland Press;
- a Teaching School or judged Outstanding by Ofsted and asked to participate in a different case study for publication or video resource; or
- a participant in early focus groups and surveys about Pathways and Oxford Owl.

Headteachers at these 160 schools were written to in a joint email by Woodland Press and myself and invited to participate in this study and access Pathways. Ten schools responded and were asked to complete an initial context questionnaire (Appendix 4 on page 364) so that a final sample of between six to eight schools from a mixture of contexts[7] could be chosen. Five schools sustained their interest from the questionnaire through to the signing up to Pathways and now form the sample of this study. Figure 17 (page 84) and Table 7 (page 85) show each of the case study sites and school characteristics respectively. Documents related to the invitation email and ethical approval can be found in Appendix 1-1E (pages 335 to 358).

It is acknowledged that the sample is 'biased' in the sense that schools were already engaged in some way with Woodland Press and hence may have had a strong interest to participate in improvement efforts and initiatives such as Pathways. However, interest can and did wane even at the trial stage of this project. Initial excitement over a new resource and potential engagement with a researcher from the University of Oxford had to compete with, amongst other events, schools' daily routines, the prospect of an Ofsted inspection, external changes to education policy (the new NC and ways of assessing pupils for example) and staff turnover. The five schools that participated in the project set out to use Pathways, located on the Oxford Owl platform. Hence, to anonymise my data, schools were given pseudonyms - in each case the name of a matching bird.

[7] Taking into account factors (amongst others): geographical location (not clustered only in south east England for example but spread across the country), pupil number on roll, improvement trajectories, last Ofsted grade and stated school improvement goals.

The five sample schools are identified as:

1. Magpie School
2. Raven School
3. Sparrow School
4. Jackdaw School
5. Jay School

Figure 17: Fieldwork record at study sites

		Magpie	Raven	Sparrow	Jackdaw	Jay	Woodland
Interviews	Frequency	9	5	5	2	2	5
	Average duration (hrs)	1.0	1.2	0.8	1.3	1.1	1.2
	Total duration (hrs)	9	6	4	2.5	2.25	6.1
Observations	Frequency	2	1	3			7
	Average duration (hrs)	1	1	1			1.5
	Total duration (hrs)	2	1	2			11
Journal entries	Frequency	15	12	10	3	3	19

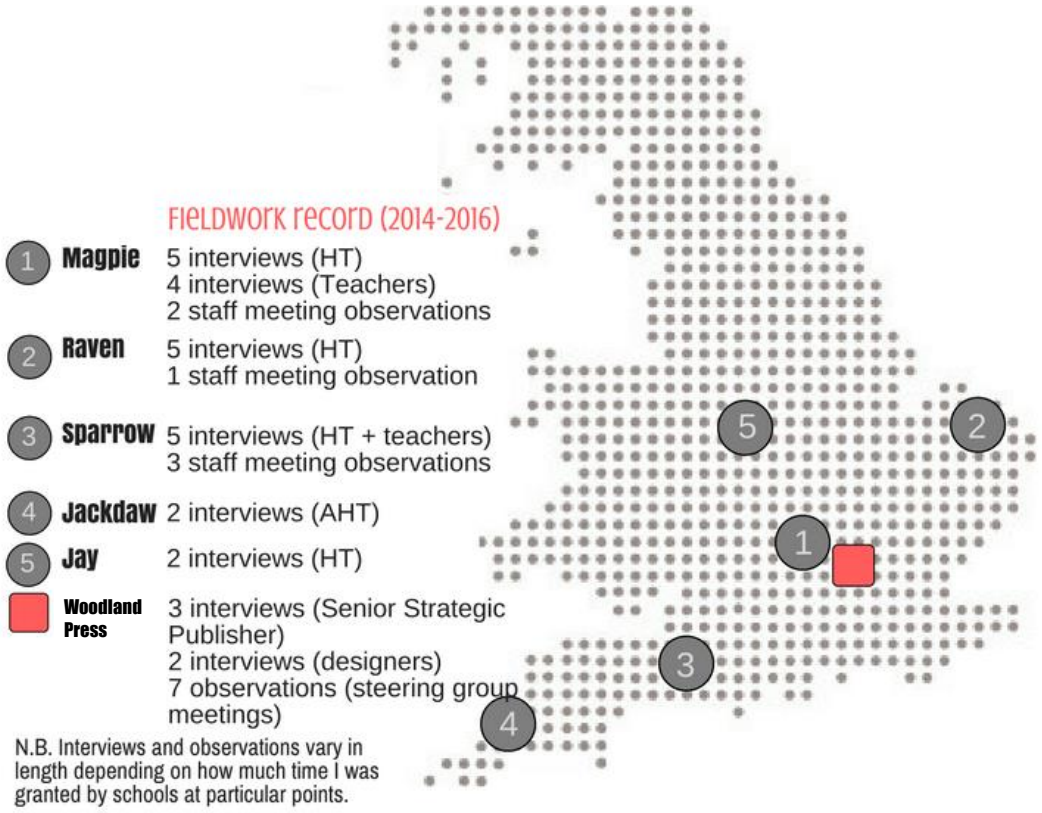


Table 7: Pupil populations in Pathways case study schools [Source: DfE (2016b)]

Measure (2015/16)	Magpie	Raven	Sparrow	Jackdaw	Jay	National
Age range	3-11	7-11	4-11	5-7	5-11	
Total number of pupils on roll (all ages)	479	313	120	383	212	4,679,382
Girls on roll	42.8%	53.0%	42.5%	46.2%	54.7%	48.8%
Boys on roll	57.2%	47.0%	57.5%	53.8%	45.3%	51.2%
Pupils with a statement of special educational needs (SEN) or education, health and care (EHC) plan[8]	4.4%	0.3%	0.0%	2.1%	1.4%	2.6%
Pupils whose first language is not English	33.9%	3.8%	3.1%	6.5%	19.3%	20.0%
Pupils eligible for free school meals at any time during the past 6 years	17.9%	32.6%	11.7%	13.1%	30.2%	25.4%
Absence	3.9%	4.0%	4.7%	3.3%	3.3%	4.0%
Ofsted last inspection date	02-Oct-13	03-Jul-15	09-Feb-11	27-Apr-10	29-Jan-16	
Ofsted last inspection grade	Good	Good	Good	Outstanding	Requires improvement	

3.2.3b Methods

This study used the following methods:

- Observations – participant - a mixture of unstructured and semi-structured;
- Interviews – semi-structured; and
- Documentary collection and analysis.

The challenges with DBR take the form of the complexities of real-world contexts (Collins, Joseph and Bielaczyc, 2004) and capturing and representing these in the study and writing; this technique does not lend itself well to experimental control and design (where the product design or "treatment" is changed throughout the study – in line with the 'design > evaluate > redesign' cycle) (Hoadley, 2004). Also, relationships between designers, researchers and participants are close (Hoadley, 2004); they 'feed off each other', more than, at least in writing and evidencing, more rigidly structured designs (like experiments and quasi-experiments). There is also the added layer of complication from interactions between the researcher and design team and practitioners, which is outlined in section 3.2.5.

[8] Does not include pupils 'with SEN' or 'with SEN but without statements or EHC plans'.

Nonetheless, these complications offer an opportunity to provide a more 'truthful', albeit messy, account of real-world research. The constraints rising from practice and design demands support the use of "engineering techniques such as rapid prototyping . . . As theory and findings emerge from the research, they can shape not only the evolving design, but also the evolving research apparatus" (Joseph, 2004: 236).

Wang and Hannafin (2005: 7) catalogue the different kinds of types and methods associated with DBR, including that of 'developmental research' (Richey, Klein and Nelson, 2004). However, Richey and Klein (2005: 25) argue that developmental research is quite distinct from DBR:

> [D]esign-based research . . . emphasizes the study of learning as a result of designing unique instructional interventions (The Design-Based Research Collective, 2003). It is also different from traditional research in instructional psychology, media comparison, and message design. However, well-conceived developmental research can offer a direct response to the many demands for research that is prescriptive and meets the pressing needs of practitioners (Richey, 1997).

DBR is also argued to be naturally linked to and enhanced by the use of multi-methods methodologies. Researchers often take on the roles of designers and researchers and employ a 'hybrid methodology' that focuses on "direct, scalable, and concurrent improvements in research, theory, and practice" (Wang and Hannafin, 2005: 6). The methods chosen for this study reflect the goals of developing a better understanding of school improvement practice *in vivo* alongside the evolution of schools as organisations, their improvement journeys and the Pathways online platform. As the research is exploratory, and situated in the qualitative, naturalistic domain, the methods reflect the need to ask open questions, participate and observe, investigate and analyse perceptions, actions and documents and construct patterns, refine and interpret, and be self-aware and reflexive. Stake (2010: 31) warns that "the evidence doesn't make it true" – we need to consider carefully what the evidence is and how it was derived, and what it may mean in terms of user confidence.

> The evidence makes us confident that what we are thinking is right. . . As researchers, we become persuaded which assertions will be the more dependable, and we counsel others to help them choose confidently a course of action. We are preparing evidence and understanding for users of research, the practitioners and administrators and policy makers. As users, to act with caution is important, and to wait for confidence is very important. (Stake, 2010: 117-118)

Stake (2010: 31) also argues that there is no single way to think qualitatively, but a great compendium of ways: methods adopted can be characterised as "interpretive, experience based, situational, and personalistic". Bar the "broadest of terms", fieldwork techniques, Wolcott (1995: 157) insists, cannot be separated and described independently from the research questions and aims:

> They are the tools of our trade. In the hands of an artist, tools of the trade produce art; in the hands of craftspeople, they produce craft. In the hands of the careless, they may also result in injury.

> Dialogue is the language factory that produces out of the actual the experiential knowledge that can then be further processed into ethnography. Experiential accounts cannot give direct and unsullied access to an actuality; actuality is always more and the other than is spoken, written, or pictured. What becomes data for the ethnographer is always a collaborative product. (Smith: 2005: 125)

The main purpose of carrying out interviews with participants – semi-structured in this study – was to build a rich, context-laden representational account of participants' perceptions of experiences and practice in relation to school improvement plans and strategies. I was unlikely to be able to access directly the exact 'facts' and thought processes leading to a particular statement using an interview (and perhaps any method). My objective was instead to extract as much context as possible in the given time frame of the interview, asking open-ended questions which would sometimes flow from previous responses and lines of questioning. Context in this case refers to aspects such as each school's improvement history, Ofsted results, pupils' academic performance, school climate and culture and strategic plans. Both Silverman (2007: 137) and Rapley (2004: 16) discuss the local and global situatedness of interviews; Pring (2000: 53) argues that while 'realities' are not necessarily different but constructed differently among participants, there is still a "framework of shared meanings", and these meanings are open to negotiation. This study uses a framework of questioning illustrated in Figure 19 comprising the DASI, and philosophically underpinned by elements 'borrowed' from institutional ethnography and ethnomethodology approaches.

> The notion of experience locates a subject in what is perceived, attended to, projected from past to future is already named and organised inter-individually in language. (Smith, 2005: 129)

Interviews in this study were used to obtain "unique information or interpretation[s]" held by practitioners (Stake, 2010: 95), and triangulate with data drawn from observations and documentary analysis. Following Pring's stated meaning of 'theory', my intention was to collate and analyse the "cluster of beliefs and values which underpin [participants'] understanding of things . . . which become the premises upon which those explanations hang" (2000: 57). 'Things' in this research refers to concepts such as school improvement, school effectiveness, each school's context and improvement trajectory to date, improvement practices and goals, as perceived and communicated by the different perspectives explored, including headteachers, senior management, middle leaders and other teachers. Other 'things' would be the Pathways online platform as perceived and put forward by Woodland Press Steering Group and design team. This research aims to develop tentative theories around schools' improvement processes in context and against the unifying setting of Pathways and its varied objectives and constituent resources using the framework of questioning outlined in Figure 19 (page 90). "'Facts', theory and descriptions of reality are interconnected concepts" (Pring, 2000: 76). In order to elicit a sense of what is implicit in practice, i.e. participants' "framework[s] of concepts and beliefs" (Pring, 2000: 78), it was vitally important to develop some kind of meaningful connection and mutual

understanding with practitioners. 'Meaningful' in this instance is meant from both the other participants' perspectives and mine – e.g. in the case of Magpie School, helping to transcribe handwritten notes by teachers during staff meetings into electronic documents. This was immensely useful according to the headteacher (and teachers) for planning purposes and to me for observation purposes. Rapport was built over time, and may have been helpful in drawing a type of "everyday discourse" from the teachers and designers in the context of this study:

> It requires that the researcher put effort into learning appropriate behaviour in a setting; showing respect for people in a setting; being a good and careful listener; and being ready to reciprocate in appropriate ways. . . Reciprocity is a critical component. . . It certainly includes telling the truth when the researcher is asked about the research, his/her goals in research, or his/her life stories. (DeWalt and DeWalt, 2002: 40)

This meant also being aware of when situations were sensitive and confidential, and where researchers might not be welcome to observe or participate. The questions used in the interview protocol and overarching principles of questioning are included in Appendix 5 (page 366). This links with how the DASI was incorporated into data collection procedures shown in Figure 19 (page 90). An example of a comparison between case study sites and the interviews that took place during the study is provided in Figure 18.

Figure 18: Case comparison example of Magpie and Raven Schools

Magpie School

Interviews at Magpie School were more frequent, varied and diffused. The location of our interviews sometimes changed at the last minute from the school to a local coffee shop – to reduce the level of potential distraction that might occur if the headteacher was being interviewed in her office. Content – while also rich and in the form of the school's engagement with Pathways amongst different members of staff and the two years of the research project – felt more 'distributed' across leadership levels, responsibilities and time.

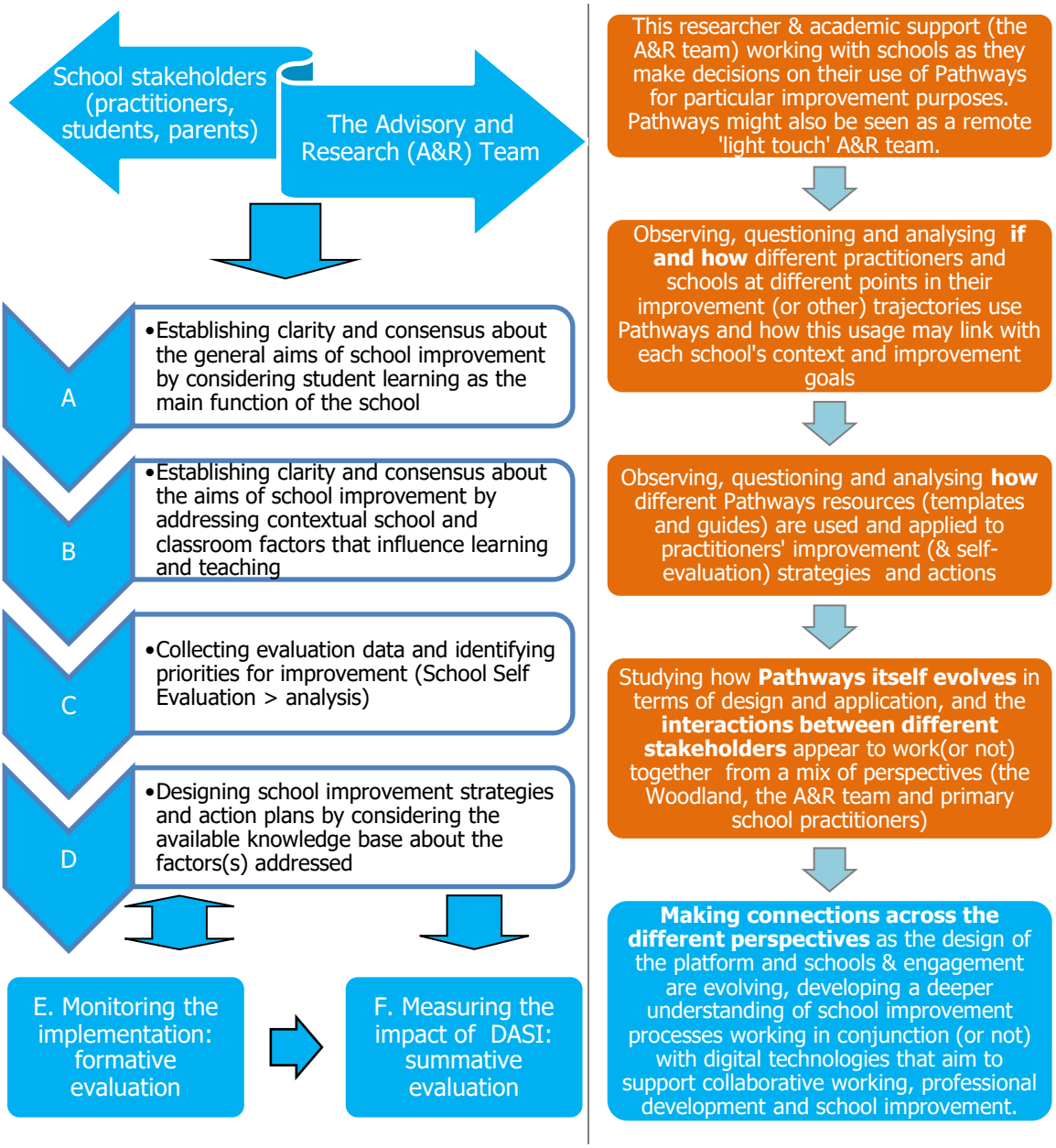
I was given access to interview all the classroom teachers involved in managing the different Pathways at the school, as well as the headteacher. In addition, I was allowed to attend staff meetings on the occasions that they discussed Pathways. It should be noted that this access was partly enabled by the relatively short distance I needed to travel to get to Magpie compared to the other four schools.

Raven School

Fieldwork at Raven School was characterised by a mixture of more extensive and shorter interviews with Ms Raven in person (in her office at school) and by telephone. Her responses to questions were overwhelmingly rich in content. For example, a question about the school's preparation for the new National Curriculum elicited a detailed and methodical response including a description of the International Primary Curriculum package that had been purchased, its different features and their relevance to her school's context.

I was given access to the headteacher, one governors' meeting and one senior leadership team meeting. Interview content overall seemed more 'concentrated' and more sharply focused on specific topics.

Figure 19: Linking the DASI theoretical model to the Pathways embedded case study & methods of data collection and analysis[9]



[9] **Left column:** Framework for questions, adapted from the DASI (Creemers and Kyriakides, 2012: 52-64) working in parallel with the **Right column:** How the framework relates to this study

Observations

Pilot observations began in late 2014. Observation sites include Woodland Press Steering Group meetings, school staff meetings, training days, and specific sessions where practitioners are using Pathways.

> The first responsibility of the observer is to know what is happening, to see it, to hear it, to try to make sense of it. That is more important than getting the perfect note or quote. Much of what we put down is an approximation that we can improve upon later – if we have a good idea what happened. (Stake, 2010: 94)

The act of observing, whether unstructured or structured, is theory-laden in some form (Pring, 2000). The aims of observations in this study were to:

- employ a form of scepticism (Neyland, 2008) and observe "everything" possible, regardless of whether the purpose was immediately apparent or not. From past experience of other research projects, it is not worth taking any event or visual setting for granted. Each school – borrowing from traditional ethnographic approaches – received the "treatment of strangeness" (Neyland, 2008: 100);
- maintain this sense of "strangeness" by supplementing observations with data collected via other means including interviews and documents (Neyland, 2008: 101);
- use familiarity. Neyland (2008: 102) advocates building a typology of the objects and events observed, in order to further understand future observations;
- maintain a consistent set of field notes that run the length of the research project and link observations to other data sources, in the style of a journal, and incorporating the use of analytical memos – all of which have been uploaded and coded in NVivo; and
- (returning to the basis of the case study design of this research) investigate school improvement processes, linking system inputs and outputs (Hammersley, Gomm and Foster, 2000: 234) and analyse patterns, configurations and sequences of events, gradually constructing a framework into which recurrent patterns might "crystallise" into concepts and tentative theories of practice (Waller, 1934: 289-90).

Documentary analysis

For the purposes of this study, I have defined 'documents' as products, constructed using some form of technology (Prior, 2003: 4) communicated other than by means of speech, observation or situated action. A variety of documents were and will continue to be analysed during this study including school improvement plans, strategic plans, school self-evaluation forms and curriculum plans.
As this method is smaller in scale compared with interviews and observations, this segment is presented as a summary; with a full version included in Appendix 6 (page 370).

3.2.3c Research rigour & methodological risks

Qualitative research articles often cite the 'alternative quality criteria' recommended by Lincoln and Guba (1985: 219) to evaluate the rigour of qualitative studies where: credibility is translated from internal validity in quantitative research; transferability from external validity; dependability from reliability; confirmability from objectivity and an overall adherence to "trustworthiness" (Lincoln and Guba, 1985: 289). However, as highlighted by Flick (2009: 384-385) in his description of "selective plausibilisation", some of these criteria become difficult to concisely express in a situation like a thesis where the researcher has to pick materials in order to illustrate their arguments and interpretations, but in a focused way to meet a limited word count. Hence where possible, I attempted to also meet these alternative criteria outlined by Lichtman (2010: 231):

- owning one's perspective and reflecting on subjectivity and bias;
- focusing on meaning;
- accounting for, and being sensitive to, context;
- collection of, and in-depth engagement with, rich data; and
- drawing out resonant/accessible conclusions.

Table 8 (page 93) outlines Bassey's (1999) suggested test for trustworthiness in case study research along with the measures that were taken in the Pathways study.

Table 8: Bassey's "developmental sequence" of a case study research project (1999: 75-77) and methods used

Developmental sequence	Measures taken
Prolonged engagement with data sources.	Carrying out multiple observations at each site across several months; gaining familiarity with potential participants
Persistent observation of emerging issues; *Triangulation of data sources, leading to analytical statements;* *Systematically testing emerging story against analytical statements*	Conducting constant comparison between interview themes, observation notes and documentary analysis; using "abductive" and "retroductive" reasoning (Blaikie, 2007) to move between and within data sources; producing 'chronicles' of individual accounts and comparing these with more generalised study-wide statements and published literature. "Perceptions must be identified, and the identifying mechanism will contain some of the very same elements which govern the use of the concept to be investigated. . . [Therefore, one needs an] external measure of comparison, including new ways of relating concepts and percepts. Removed from the domain of natural discourse and from all those principles, habits, and attitudes which constitute its form of life, such an external measure will look strange indeed. . . [S]uch an impression of strangeness reveals that natural interpretations are at work, and it is a first step towards their discovery." (Feyerabend, 1993: 76-77)

Developmental sequence	Measures taken
Employing a critical friend to challenge findings; *Having data checked by sources*	The DBR methodology incorporates member-checking during the feedback loops between schools and Woodland Press, via the A&R Team. Pring (2000: 131) advises that: "By sharing the problems, the questions and the tentative conclusions, [researchers will be] able to build up a body of *professional* knowledge, tentative perhaps, but knowledge which had withstood critical questioning." A large portion of the member-checking exercise took place when anonymised pen portraits of each school were discussed with participants – both as a representation of what was articulated to me, and what I observed, read and analysed, and as ideas for good practice from other (anonymised) schools.
Producing a detailed account of findings	Attempting to present accounts as they emerged combined with themes and descriptions of context where possible
Providing an adequate trail	Creating a case study 'repository' (Yin, 2003) stored in a password-protected area, capturing research documentation such as transcripts, project plans and fieldnotes.

DBR proceeds in a less linear, more fluid manner, compared to standard methodologies such as experimental research (Hoadley, 2004: 204). An awareness of the following differences and methodological challenges were required in this study:

1. A close relationship between researchers and practitioners and blurring of role distinctions;
2. The use of tentative generalization; results are shared without the expectation that universality will hold;
3. In addition to planned comparisons, the DBR approach also supports the following of "new revelations" – sometimes "tweaking both the intervention and the measurement as the research progresses";
4. The DBR approach treats notions of "fidelity to theory" as suspect, at least initially, which may facilitate a broader documentation of the design and its implementation and to "catch all relevant, but unanticipated, consequences of the design on the enactment" (Hoadley, 2004: 204).

Although I originally planned to follow the case study schools for only one year this was found to be limiting in terms of the interest in school change and improvement journeys. Fortunately, I was able to

extend the study to follow participant schools, particularly the three most engaged, for a period of almost two years. This allowed the study to become more longitudinal in nature, and take into account a sequence of events across two academic years and note the links with external policy changes. The need to capture as much rich detail as possible in this case study was crucial in formulating plausible proto-theories and drawing tentative conclusions from the resultant data between practitioners, designers and the A&R Team.

3.2.3d Ahead of and beyond reflexivity

As a prerequisite of DBR, the researcher, as participant-observer, attempts to immerse and blend into the study's settings. Hence, the need to monitor the possibilities of when my own agenda or framework that may influence proceedings and results becomes even more acute:

> Design-based researchers must not only document their perspective or starting point, but must also document any plausibly relevant interventional strategies used not only by participants observed, but also by the researcher herself or himself. On the negative side, it seems a little unusual to demand such self-reflection, straying close to introspective methodology. On the positive side, one can view this as the need to document design strategies, and who better to do this than the designers? (Hoadley, 2004: 205)

Lichtman (2010: 121) associates reflexivity with a "critical reflection on the practice and process of research and the role of the researcher". Indeed, this fits well with the procedures inherent in DBR of documenting one's own perspective and constantly comparing accounts with each other and with the plausibility of the researcher's involvement and interactions with participants in the study. While these procedures are fraught with challenge, the process of encouraging the same group of people to engage with theory, implementation of interventions and the collation and analysis of outcomes "encourages a greater degree of methodological alignment" (Hoadley, 2004: 205):

> Design-based research is, at its heart, an attempt to combine the intentional design of learning environments with the empirical exploration of our understanding of those environments and how they interact with individuals.

A more detailed account of my roles in the research is given in sections 7.1.4 and 7.4.3 of the Woodland Press case study.

3.2.4 Ethical considerations

Ethics can be viewed as a series of rules and guidelines, as well as "accomplishments" or outputs (Neyland, 2008: 139-140). The "accomplishments" that form part of this study are included in Appendices 1-1E (pages 335 to 358), including the CUREC checklist, approval email and accompanying documentation.

Some principles of research ethics are more non-negotiable than others, for example, "do no harm", and maintaining anonymity and confidentiality of participants (Lichtman, 2010: 54-55). Grey areas emerge when trying to define what exactly constitutes 'harm' and different levels of 'privacy'. When it comes to acting as a "neutral researcher", I agree with Lichtman (2010: 57) that there are no "easy answers", particularly in the framework of DBR. DBR studies, if undertaken according to specifications in the literature, open up additional layers of ethical challenge. For instance, the role of researcher in the "co-learning agreement" is multi-dimensional – as researcher-practitioner. Strong efforts (via the continued use of a research journal and analytic memos) have been focused on delineating between these different dimensions and when particular roles are taken on and the observed resultant series of actions and tentative consequences. As a middle-party between Woodland Press and schools in the context of this research, extra sensitivities needed to be addressed in terms of maintaining the confidentiality and anonymity of participants between perspectives or groups (for example, personal data of practitioners or classified corporate information of Woodland Press). Again, in line with DBR, I also include under the umbrella of ethics the capacity to disseminate the research to different kinds of audience, in a way that supports the professional development and furthering of knowledge among school practitioners and other stakeholder roles of the study. One of the privileges of being able to interact with practitioners and ask for their time and participation, is the potential for reciprocity. However, I refer to reciprocity in a broader, more long-term sense, where strategic attempts are made to facilitate knowledge exchange and critical questioning between the domains of policy, research and practice. While Wolcott's view is rather bleak, he does pose a worthy challenge by asking researchers to consider what happens after the field work and analysis are 'done':

> [There is often a lack of] capacity for, or commitment to, aggregating countless little studies into something bigger, something that collectively can transcend the limits within which most fieldwork studies are carried out. . . You will have to figure out what to do with your research, how to bring it to the attention of others. They need to know why you needed to know, and how your work moves things forward, regardless of whether your efforts have made the obvious obvious or dubious. (Wolcott, 1995: 133-134)

I see one of the advantages of using a methodology like DBR being able to make inroads into the 'after' portions of the research timetable. Specifically, to be able to observe, analyse and translate improvement processes as they take place and build tentative theoretical constructions around the different processes, in an effort to inform future practice and configure innovative ways of communicating those ideas. This may be a somewhat ambitious plan for a DPhil but one has to start somewhere. If there is a possibility of trying a particular methodology that has not been attempted before in the field, this space of learning and exploration certainly presents a fine opportunity.

3.2.5 My role in this study

My role in this study, including how principles of "reflexive design" (Richter and Allert, 2017: 1) were conceptualised, and multiple roles were sometimes negotiated in different spaces ('researcher-designer-practitioner-advocate') is detailed in the Woodland Press case study – sections 7.1.4 and 7.4.3. There I discuss the responsibility that I felt to not insist that Pathways was 'good for you' to schools, and to be able to suspend judgement both ways – taking a critical approach towards practitioners' improvement approaches in their schools, but also representing their perceptions and difficulties to the Woodland Steering Group. Just as I later discuss how practitioners' perceptions and learning experiences were articulated and analysed as context- and situation-dependent events, the same will follow in describing my role in this study – in an effort to render visible the "'embodied', situated and subjective" nature of the "interpersonal, social and institutional contexts" (Mauthner and Doucet, 2003: 414) that accompanied and influenced this research, its analysis and write-up. While DBR literature has on the whole, shed light on the messy, sometimes disconnected sets of decisions taken during the design, redesign and analysis stages, and their potential influence on learning environments and systems, Bang and Vossoughi (2016: 174) contend that on the whole:

> DBR has tended to maintain, either explicitly or implicitly, normative hierarchically powered decision-making structures and related assumptions of objectivity, paying little attention to the positionality of researchers or their social identities in the unfolding of work. More concretely, design decisions in much of design research are typically made by "experts" who inhabit privileged positions in the world and less often elaborate on efforts to engage in collaborative processes with practitioners, families, youth, or community members.

The research would not have been possible without two sources of funding: the first year (of university course fees) was provided by Woodland Press, and the final two years (course and college fees, and living expenses) by an Economic and Social Research Council (ESRC) scholarship. To Woodland Press' credit, I was given a high degree of autonomy in deciding the research topic, questions and mode of data collection. This was a great relief to me as questions around funding would inevitably arise over the course of the project. The main component of the research partnership that was emphasized was the idea of co-learning, and how innovative and new the application of DBR was to the study along with schools' and Woodland's engagement. This seemed to open up the conversation a bit more and allowing honest revelations to be communicated – such as no one stakeholder held all the 'answers' or 'solutions', and indeed, answers and solutions to what was also up for discussion. Woodland Press had to forge ahead with the platform's design of course, but this time with an observer in its midst attempting to document the various processes of change and potential learning. In this Pathways study, I strove towards developing a more participatory form of DBR with Woodland Press and school practitioners, in which, as Bang and Vossoughi (2016: 174) argue "the domain of the "researched" in a given project is expanded to include the relational, pedagogical, and design-based activity of researchers themselves". I certainly did not see myself as an 'expert', nor did I take the hierarchy as a given that Woodland Press were 'experts' either. Interestingly, this sentiment

was expressed by Mrs Woodland during our later conversations about how important it was to maintain a level of humility, as a publisher and designer. (Of course, being a business, I doubted that Woodland Press found it straightforward to be, or appear, 'humble'.) Walker (2011: 52) cites Brown's discussion of the Bartlett effect, where as more and more data are collected during a project, a methodological threat grows that says "the selection of small samples of data from this large data corpus will generally support the theoretical position of the researchers". An aspect I continually had to appreciate, at times with difficulty, was the research project's attempt to "create a cyclic relationship between theory, research, and educational practice" (ibid: 53). Exactly 'what' each type of knowledge was regarded as, and by whom was constantly up for negotiation.

I also had to be cognizant of how perceptions in the degrees of participation might differ within the research partnership. What I might have considered a relatively high level of participation – e.g. me observing and supporting a staff meeting in Magpie School – writing up meeting notes and group discussion outputs to be used at subsequent meetings, may have been viewed as a rather rudimentary level of participation by some of Magpie School's practitioners. Freebody, Markauskaite and Irwin (2011: 17) argue that:

> Researchers use, adapt, and extend the research procedures of the social and behavioural sciences to raise and answer questions of significance to their fellow researchers; but educators and social workers also face challenges that are so insistent and urgent that providing reliable evidence and actionable knowledge has broader social meaning.

The authors cite Heap's (1992) distinction between "research-as-science" – more systematic, disciplined inquiry, and "research-as-project" – a practical endeavour that is vulnerable to the subjective and non-uniform nature of human interaction and understanding. This study of Pathways was recognized as a collective partnership that straddles both type of research, rendering the 'scientific' and 'project' space even more uncertain. To mitigate some of these complexities, the additional responsibilities that I saw as part of my role were efforts to:

- be aware that implementation drift was ok and almost assumed by default (Greene, 2015: 113);
- appreciate how the research project was evolving, and could be simultaneously be regarded by different stakeholders as "practical, intellectual, social and ideological" (Freebody, Markauskaite and Irwin, 2011: 18); and
- appreciate and document how enactment and engagement with Pathways – by the staff at Woodland Press, practitioners at each of the schools and myself as a kind of 'intermediary' – could be shaped by a combination of Pathways and the school improvement landscape (locally and globally), "those using it; the context in which it is situated; and the manner in which it is introduced" (McKenney and Reeves, 2012: 161).

Essentially, this meant, not assuming that any one party necessarily knew the 'correct' way to engage with Pathways in their context, and that the exploratory nature of the research project offered opportunities to understand more creatively, how Pathways might be perceived, articulated and employed. Put simply, this translated to wearing the 'other' hat in whatever setting I appeared to be residing in – if I was in a school, I would try to recognise Woodland Press' and schools' balancing act between maintaining fidelity and flexibility to the platform, and if I was speaking during a steering group meeting with Woodland Press, I would do my best to channel the range of practitioners that I had encountered, and their experiences with Pathways and school improvement more generally. Appreciating these very challenging aspects was not easy, but also lay at the heart of what the study was about – trying to understand the sometimes incoherent and inaudible, and presenting the methodology and findings in the most honest and faithful way possible to both the 'research-as-science' and 'research-as-project' aspects of the study.

3.3 Data Analysis Methodology

In this section, I will illustrate how I moved between my research questions, methods and units of analysis (perspectives) and the substantive literature, and fieldwork of the study[10].

3.3.1 The logic linking the data to the propositions & criteria for interpreting the findings

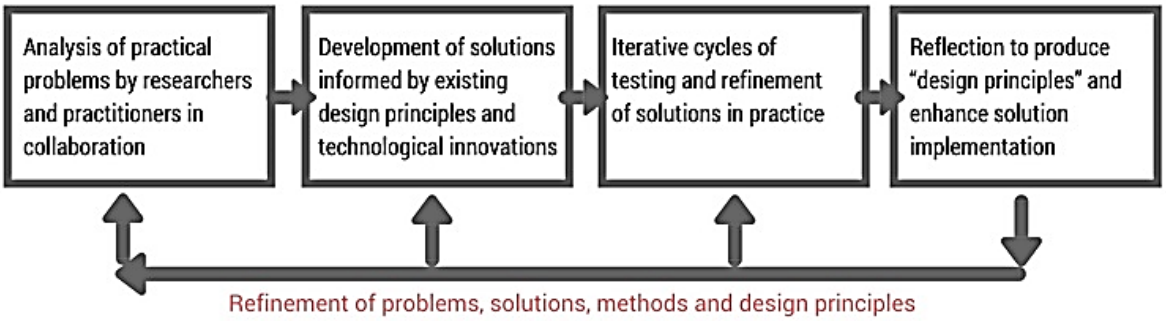
Linked to the overall DBR approach of this study, Reeves (2006) proposes a number of research design steps that outline how a programme, intervention or online platform might move from an assessment of needs to the design/redesign cycle. These steps (shown below and in Figure 20 – page 100) influenced my chosen approach for the Pathways embedded case study and how I attempted to link data and evidence from school participants to the 'design'/Woodland Press component of the research:

1. "Analysis of practical problems by researchers and practitioners in collaboration
2. Development of solutions informed by existing design principles and technological innovations
3. Iterative cycles of testing and refinement of solutions in practice
4. Reflection to produce "design principles" and enhance solution implementation" (Reeves, 2006: 59).

[10] This section is merged with Yin's "the logic linking the data to the propositions" and "the criteria for interpreting findings" (2014: 29) listed earlier in the chapter.

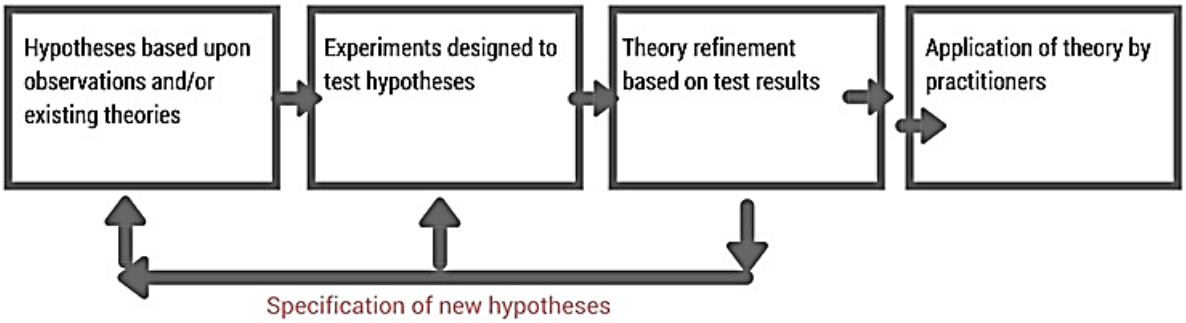
Reeves' (2006) four steps were used as a structuring device in the Woodland Press case study (Chapter 7), while the Guskey (2002a) five-level model of CPD evaluation was used as a framework in the school case studies (Chapters 4 to 6).

Figure 20: Pathways 'journey' outlined following Design Research principles (Reeves, 2006: 59)



These steps are contrasted with those from predictive research (Reeves, 2006: 59) shown in Figure 21.

Figure 21: Steps observed more in 'predictive research' (Reeves, 2006: 59)



Parallels can be drawn between the Pathways four-step system (Audit > Strategic planning > Take action > Evaluate impact) and the design of Pathways itself – moving from Reeves' (2006) 'analysis of a practical problem' to the development of potential solutions and designs and reflections on those designs and their enactment (in Figure 9 – page 59). However, moving from these design-related steps – more in line with the Woodland Press perspective, to a primarily school-focused experience and improvement journey, here using Guskey's (2002a) five-level model, was more challenging. A transitory device was employed in the form of Muijs et al's "knowledge-building cycle" (2014: 247) which, as detailed in Chapter 2, is based on findings from a Best Evidence Synthesis on teachers' professional development by Timperley et al (2007). Essentially, I sought to understand:

- How identifying responses to the following questions (Muijs et. al., 2014: 247):
    - what knowledge and skills do our pupils need to meet important goals?
    - what knowledge and skills do we as professionals need to meet the needs of our pupils?
    - how do we deepen our professional knowledge and refine professional skills?

    - how do we engage pupils in new learning experiences?
    - what has been the impact of our changed action on outcomes we value for our pupils?
- might:
    - help schools to further school improvement plans, ongoing professional inquiry and collaborative working strategies (related mainly to RQ1 and RQ2);
    - support practitioners in their use of a range of data and evidence in school improvement tasks (RQ2) – formulating questions also consistent with features of "double loop learning" (Argyris, Putnam and McLain Smith, 1985); and
    - help practitioners, designers and researchers to identify types of knowledge being applied when using different types of school improvement resources (RQ1, RQ2 and RQ3).

Using elements linked with Markauskaite and Goodyear's (2017) conceptualisation of practitioners potentially achieving "epistemic fluency" between theory, practice and professional learning – also highlighted in Chapter 2 (section 2.5.2), I then explored ways of framing 'knowledge'. Here, one of the key components of my findings was to highlight the differences and similarities between the articulated understandings of different concepts from each participant's perspective. These may indicate at one end what looks and sounds like a joined-up understanding of, for example, how Pathways 'should' be used from the Woodland's and schools' standpoints, and at the other end, a breakdown or mismatch between what schools and Woodland see as 'ideal' use. One salient example is the articulation during Woodland Steering Group meetings of Pathways as a *system* that is 'tried and tested' and (metaphorically) 'good for you' – something that will help schools sort their problems out *if* the system is followed as it is structured *every time* – i.e. with few shortcuts and diversions. To schools accessing different Pathways, it may appear that the structure is identical every time (i.e. the four-step system), and hence, a practitioner might pick and choose tasks to complete from one Pathway to another, rather than follow the structure religiously, arguing that if they know the structure already from the previous Pathway, why repeat those steps and tasks in a different Pathway? To some in the Woodland Steering Group, this mode of working comes across as illogical. To them, each Pathway is in fact *different* in *content*, and thus, *structure* as well, therefore each new Pathway warrants careful attention and adherence to the tasks and steps, otherwise the original purpose of Pathways (the content *and* structure) is lost. This example illustrates the passage from RQ3 (the Woodland perspective) to school participants' perceptions in RQ1. Related to this 'route' between research questions, Hadfield and Chapman (2016: 205) argue that:

> A practitioner attempting to bring about improvement within a given context therefore has to accommodate and work with very different forms of partial knowing from, for example, those possessed by academic researchers. Practitioners are faced with real-time 'action presents' (Schön, 1987) within which decision-making windows are time-limited, and they need to struggle with the planning and decision-making cycles and routines of schools.

I then considered how teachers' working practices, within this framework of the English education system – influenced also by international educational trends and interests – might correspond to schools' traversing their respective improvement 'journeys', or more specifically, a kind of 'orienteering expedition' where one has to know "what to look for, which way to go and how far it is. . . using a map and compass" – "it" being a destination that might be more elevated, or indicate progression of some kind (Ordnance Survey, 2016: [online]). Schools, practitioners and pupils undertake specific 'travels' towards certain landmarks, 'control points' and destinations in the form of performance targets in attainment and achievement, and a range of other accountability measures. The 'path' taken to these different destinations is distinct from school to school, and from time point to time point. There might be several 'possible routes' leading to one destination, and different means of 'travelling' there. Equally, there are a range of interpretations of what the target accountability measures mean in a practical sense across different educational contexts. This forms part of the question to be investigated. How does for example, "the early identification of disadvantaged children" advocated by Ofsted on their Twitter page translate into "improving life chances" (Ofsted, 2016) in everyday classroom practice at Magpie, Raven and Sparrow Schools and their different contexts? Returning to the orienteering[11] metaphor, where each expedition is a competition – schools also by the way of attainment and progress league tables, contend with the competitive element of education on a similar, but longer-term basis:

> Results are usually put on line within hours of the event so you can see how your time compares with other competitors. In unknown terrain the only way of knowing what to look for is to use a map and Orienteering is all about being able to read and understand specially drawn large-scale maps which show details of paths, . . . contours, streams, marshes, etc. (Ordnance Survey, 2016: [online])

Hallinger and Heck (2011) in their longitudinal study exploring whether schools could be classified by their patterns of school improvement conclude that 'location' in the improvement journey can be a unique identifier. They extrapolate from this that "we need not treat every school's context as completely unique" (Hallinger and Heck, 2011: 22). I in turn extrapolate from this that while contexts, locations and trajectories in schools' improvement journeys may differ, there may be broad patterns or clusters of characteristics that help to identify the types of support that schools may need (at one time/'location') in order to develop their capacity for change. Hadfield and Chapman (2016: 205) add that the increased uptake of school improvement methods has supported the formulation of

[11] Incidentally, Chris Argyris was an avid fan of the outdoors, in particular hiking. He is reported as saying that his best thinking was done "taking long walks" (Smith, 2001, 2013), which parallel some of the processes inherent in the school improvement cycle, but diverge when it comes to the 'time' element. Headteachers and other practitioners are not often afforded 'long walks' to formulate school improvement thinking and planning. They are more likely to be allocated a set period in which to develop and progress, depending on their starting location, and have to face the moral, professional and political consequences of their schools' performance.

"professional theories that allow practitioners to compare and contrast different contexts and improvement efforts" which in turn helps practitioners to make decisions. Practitioners' "professional theories" are framed as "systematic and contemplative understanding of the 'changing same' of their self-reflective judgements and the practical outcomes to which they give rise" (Hadfield and Chapman, 2016: 205). As mentioned in section 2.1.3, in tying together schools' improvement journeys within specific timeframes and leadership phases with Pathways design features, I used journey mapping to illustrate the 'cycles' of design and redesign within school's improvement tasks and Pathways itself. Journey mapping is highlighted fully in section 8.3.3 and Appendix 24 (page 472).

In bringing the findings of my research questions together, I then considered the three types of Aristotelian knowledge – episteme, techne, phronesis for two reasons:

- to understand how organisations might develop more precise methods of understanding and reflecting critically on practitioners' theories of action, and when they might choose to question those theories and their origins – akin to the mechanisms of single- and double-loop learning (Argyris and Schön, 1978);
- to develop a better understanding of the degrees to which particular types of knowledge might be applied to inform different kinds of decisions, the politics that accompany those decisions, and being able to trace the knowledge 'clusters' back to planned outcomes, and forward to perceived consequences.

Parry (2014: [online]) lists the different ways that episteme and techne are often confused with one another:

> Epistêmê is the Greek word most often translated as knowledge, while technê is translated as either craft or art. These translations, however, may inappropriately harbor some of our contemporary assumptions about the relation between theory (the domain of 'knowledge') and practice (the concern of 'craft' or 'art').

Parry argues that outside of 'modern science', one might detect a kind of scepticism about how theory could possibly be relevant to practice as the two enterprises are conducted on different plains.

> [A]t the level of practice, concrete experience might be all we need. And within science, theory strives for a value-free view of reality. As a consequence, scientific theory cannot tell us how things should be — the realm of 'art' or 'craft'. (Parry, 2014: [online])

Flyvberg (2006: 370) meanwhile, states that 'phronesis' "concerns values, and goes beyond analytical, scientific knowledge (episteme) and technical knowledge or know how (techne)." So, when does the techne of practical knowledge 'graduate' to become 'pure', scientific episteme knowledge and vice versa? This raises questions about the knowledge being propagated in different spaces – how do we know when to regard something as 'research', practical know-how or value judgements? And why do we need to know? Greenwood and Levin (2005: 50) remind us that the three different types knowledge are all equally valid but that the key is the "equal validity of these forms of knowing when

they are properly contextualised and deployed". In my data analysis, I deployed these 'intellectual virtues' as structuring devices for studying Pathways content, intended use and outcomes – from the perspectives of the actors being investigated in this study – a sample of five schools, another purposive sample of people at Woodland Press and the role and reflections of myself as a DBR actor and the researcher conducting her DPhil enquiry. I am also using these structuring devices on documents that originate in Pathways and spin-off into artefacts that are used in schools as entities onto themselves (school improvement plans, questionnaires for staff and parents, PowerPoint presentations and so on). I was therefore attempting to delineate the characteristics of each artefact, from the point they are 'produsedʼ, based on the research literature, users' practical knowledge, and what is 'felt should be included' – based on morals and values – to make an artefact 'complete' and/or usable in some form.

At this last juncture, I return to two previously mentioned models. The first focuses on the internal constraints that might shape an 'image' or artefact in each system, and the external constraints that shape the practical organisational structure that evolves as a result (Earl and Katz, 2006: 102). The second – the DASI (Creemers and Kyriakides, 2012) – Figure 19 (page 90), focuses on the clarity and consensus that must be established regarding (a) pupil learning driving school improvement and the main functions of the school; and (b) delineating the contextual and classroom factors that may influence teaching and learning. How do these established set of subsystems then translate into further subsystems being created to evaluate and identify priorities, and design strategies to address teaching and learning problems? Greenwood and Levin (2005: 49-50) point out that a big part of our 'knowing' is tacit – "we focus on the verb *knowing* instead of the noun *knowledge* because knowing emphasises the point that knowledge is linked to people's actions". What happens to the three types of Aristotelian knowledge (or *knowing*) along the way between expected use and actual practice? This is one of the ultimate domains of investigation in this research project. Crucially, it is being investigated from different actors' perspectives – the designers (Woodland Press), practitioners (who essentially take designed resources and translate them into artefacts for different purposes and audiences) and this researcher – observing from the inside and outside of the project.

I will now briefly explore details of the methods employed in this study.

3.3.1a Details of methods

A total of 28 interviews with schools and Woodland Press were transcribed and uploaded into NVivo (qualitative data analysis software). This total can be broken down into the following number of interviews per school (some of which also contain observational data): Magpie (11), Raven (4), Sparrow (5), Jackdaw (2), Jay (2) and Woodland (4). In addition, NVivo was used as a data repository to store my interview schedules, observation field notes (for example, 5 observations at Woodland Steering Group meetings), journal entries, analytical memos and documentary artefacts from the

different study sites. Holding all my data in one location allowed me to code the different documents using a common set of 'nodes' and themes, some of which emerged more inductively from the raw data, more deductively as concepts from the literature and a hybrid of inductive and deductive approaches. Different tactics were used to generate meaning - with reference to DBR and DASI-focused questions highlighted in Figure 19 (page 90) and based on guidelines offered by Miles, Huberman and Saldaña (2014: 277):

- Noting patterns and themes
  – going abductively between the literature and emerging themes in the interview transcripts and observation field notes; seeing the plausibility of different 'routes' from a 'problem' to articulated solution(s).
- clustering of characteristics
  – firstly on each of the schools in the sample, characteristics, attitudes and behaviours observed during Woodland Steering Group meetings and how these elements relate back to the literature. Clustering also took place with a narrative review of the literature. First, I carried out an "assessment of ideas" on each substantive area (Hart, 1998: 143) and then created a visual map of each sector's 'features' – classifying how each area's essential components might be linked or those showing specific gaps. A more macroscopic view of this mind map is shown in Figure 13 (page 69), as well as a detailed set of 'zoomed in' views in Appendix 11 (page 388).
- making metaphors, contrasts and comparisons
  – as data-condensing devices (e.g. picking and mixing, 'magpieing') – pulling together and delineating characteristics of actions, articulations and documentary evidence into group norms and social rituals.
- subsuming particulars from individual schools and practitioners into the general
  – making sense of everyday language and practice in schools or Woodland Press by zooming out to view different artefacts as part of subsystems or the whole dynamic system within the English educational context.
- building a logical chain of evidence (part of the school improvement 'journey') - finding intervening components and relationships
  drawing together a 'story' of schools before Pathways, during Pathways and after, against the backdrop of the constant changes to education policy in England during the two years.
- making conceptual/theoretical coherence
  - assembling subnetworks of concepts and constructs;
  - defining relationships and 'streams' leading up to those concepts and constructs where each stream is not just a causal chain but a *story* with an accompanying *theme;*
  - building a narrative to connect or discuss mismatches between texts, conversations and actions, attempting to understand how schools are planning their 'journey', and

> the events that transpire after, putting together a "*tentative* network narrative". Examples here might be how one school (Magpie) seemed to immediately take to Pathways, while at another – Sparrow – staff were very reluctant to take part but eventually one member of staff seemed convinced, and Jay School that was not able to take part at all (for different reasons).

The construction of the narratives in this study is based on the principles highlighted in Earl and Katz's (2006) metaphor of using data to paint that first picture – of a school, my involvement in the project and the system as a whole:

> "It is circular and iterative, as repeated passes lead to increased adjustment and refinement with the goal of a more honest representation, of a clearer image." Earl and Katz's (2006: 124)

Each artefact is examined according to these four questions (Earl and Katz, 2006: 104):

- What is your initial interpretation of these data?
- What patterns seem to be meaningful? Why?
- What messages emerge from consideration of these data?
- What is still confusing or not clear?

Again, for space considerations, a full account of my coding procedures is provided in Appendix 7 (page 372).

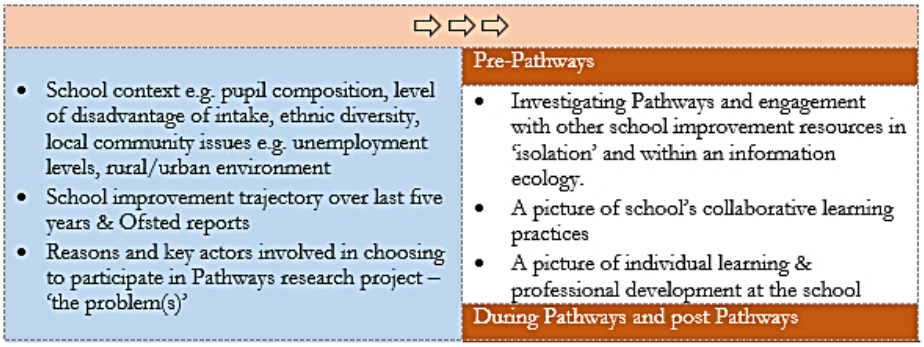
Summary

Chapter 3 has described the study's research design, including the use of case study to investigate both general and more particular features of teachers' and designers' practice, the methodology – the theoretical perspective employed (dynamic systems), and research techniques, concepts and methods – underscoring the context-laden foundations of the study and links with real-world practice. The application of design-based research was outlined, along with the use of multi-methods (interviews, observations and documentary analysis), the different contexts of the case study schools, how the DASI theoretical model was linked to the different methods of data collection, research rigour, ethical considerations and how my data analysis was conducted. I now set out my findings in Part II of the thesis, starting with Magpie School in Chapter 4, structured according to Guskey's five-level evaluation model (2002a).

Part II: Case studies of schools and Woodland Press

Case studies of three schools' experiences with Pathways are detailed here in Chapters 4 to 6 (Magpie, Raven and Sparrow). Two shorter pen portraits of Jackdaw and Jay Schools that put themselves forward but did not actually meaningfully engage with Pathways are provided in Appendices 20 (page 461) and 21 (page 465). Each case study opens with the issue of problem-setting within the specific context of each school, their performance trajectories and for what purposes practitioners had articulated their interest in engaging with Pathways and participating in this research project. Generally, the layout follows that of Figure 22. This is to help develop a detailed insight into participants' understandings and the purposes they appeared to have in mind in opting for Pathways and to explore the match or mismatch between 'the problem' as they articulated it and the planned 'solution' or strategies to overcome 'the problem' over time. I have chosen to frame the proposed focus or foci that schools planned for Pathways as 'the problem' or 'problems', but it does not mean that schools necessarily viewed the same focus or foci as 'problems' in a substantive sense. The construct of the 'problem' is used as a device to structure the case studies. Considerations were made throughout the research project about perceptions of participants towards Pathways both in terms of *structure* and *content* (Speight et al, 2016). The cross-case analysis then focuses on moving from the research questions to the proto-theoretical and practical aspects of the research. It should be noted that all schools and participants have been given pseudonyms. Some details have been altered slightly to prevent identification, e.g. dates and places.

Figure 22: Case study structure



Each case study details practitioners' engagement with Pathways using Guskey's (2002a) "Critical Levels of Professional Development Evaluation": (1) Participants' reactions; (2) Participants' learning; (3) Organisational support and change; and where possible (4) Participants' use of new knowledge and skills. Guskey (2002a) lists a fifth level: Pupils' learning outcomes, however due to this study's design and objectives, it was not possible to causally link pupils' learning outcomes in the case study schools directly to teachers' use of Pathways. Tentative links were made between practitioners' articulated and observed experiences with Pathways and specific improvement tasks and plans outlined at the start of the research project.

Chapter 4: Magpie School

Magpie School, located in south east England, gets its pseudonym from its headteacher (on several occasions during the research project) equating 'sharing good practice' amongst schools at training events and courses with 'magpieing' ideas from each other. The term 'magpieing' is not new – particularly in online educational articles about developing children's reading strategies and ideas for writing – and increasingly can be seen in documentation and articles related to school improvement (Rowland, 2015; Doherty, 2015). Writing for the National College for School Leadership, Aitkin and Spellman (2002: 2) called for a "magpie approach to improving teaching", where new ideas are sought but not adopted indiscriminately, with teachers "selecting what works in the school context and blending a range of approaches for success".

4.1 Context

Magpie School is a mixed, urban primary school in the south east of England. (Please see Table 7 (page 85) for pupil population data at all five case study schools.) At the time of my fieldwork, pupils at Magpie were aged 3 to 11 years (which included nursery, foundation stage and year groups 1 to 6). At the start of the 2015/16 academic year, there were 479 pupils on roll, making this a larger than average primary school. The average number of pupils per state-funded primary school in England as of January 2016 was 275 (DfE, 2016a). Magpie began as a 'first school' and later became a primary school in 2004. In November 2009, a consultation began for the school to increase its Year 1 intake from 45 to 60 pupils, making Magpie a two-form entry school. 28% of pupils were classified by the school with Special Educational Needs (SEN) status, well above the national average. Nationally, in 2016, 13.4% of pupils were reported 'with SEN' (either 'with statements or [Education, Health and Care] EHC plans' or 'with SEN but without statements or EHC plans'). The Warnock report (House of Commons, 2006: 28) stated that in 2005, 18% of all pupils in England had "some sort of SEN" and that this number was decreasing gradually from a peak in 2001. In 2007, the DfE reported 19.3% of all pupils in England as 'with SEN'. A local authority Autism Resource Base (ARB) adjacent to Magpie School catered for 13 pupils, all of whom had a statement of SEN. The school also built – using funds from a successful grant application in the local area – a sensory garden for autistic children in 2015. 34% of Magpie pupils had English as an additional language (EAL). While most pupils were identified as White-British in the school, the remainder were from a wide variety of ethnic backgrounds – the highest being White-Other and Pakistani. The percentage distribution between boys and girls is 57% and 43% respectively – a higher than average percentage of boys. (Nationally there are 51% boys and 49% girls.) The proportion of pupils eligible for free school meals at any time during the previous six years was 17.9%, below the national average of 25.4%.

The headteacher (referred to as Mrs Magpie from this point forward) stated that Magpie "used to be a school with lots of problems" but they had "turned it around", and now staff were more likely to stay put:

> *"People don't want to work in schools that require improvement because it's more work."* [Mrs Magpie_MS_Dec-2014[12]]

She added, however, that too few people were joining the teaching profession, and some cities attracted fewer applications for teaching posts because of the high cost of living:

> *"If a job is advertised – five years ago, there would be 70 people applying, now you'll be lucky to have five applying."* [Mrs Magpie_MS_Dec-2014]

Mrs Magpie herself had been in post at Magpie for nine years. She joined the school as a KS1 Coordinator in 2002, then moved up to Deputy Headteacher before being appointed headteacher in 2006.

4.1.1 Attainment and progress

This research project took place between 2014 and 2016, which coincided with a change to the NC in England and hence, changes to KS2 and KS1 assessment and the publication of schools' results in England. In order to provide some pupil performance context to each school in the project, I will present five years' worth of KS2 attainment and progress results between years 2012 and 2015 in:

- mathematics;
- English (reading and spelling punctuation & grammar tests and writing teacher assessments) and;
- progress measures from KS1 to KS2 in reading, writing and mathematics.

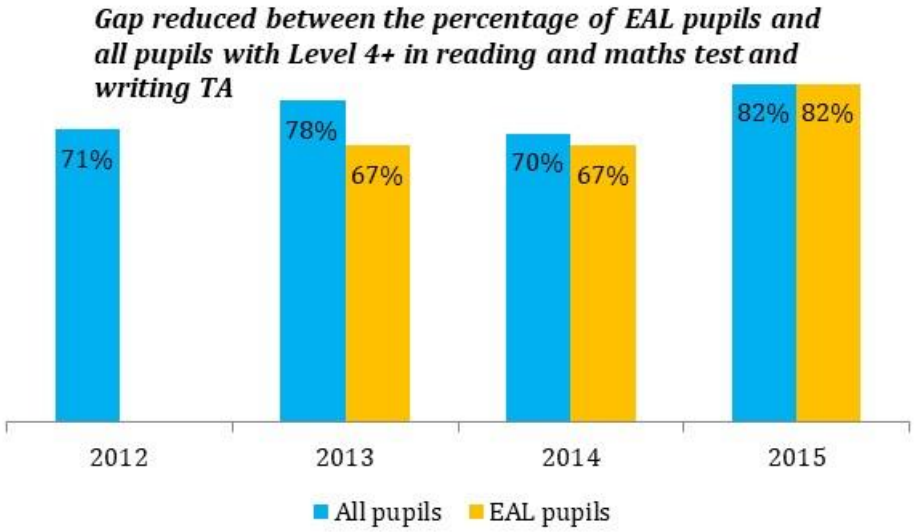
2014, 2015 and 2016 would have been crucial years during which to examine pupil performance in national tests for the schools taking part in the research project, along with their patterns of use of Pathways. However, this period also saw the transition and eventual change to the new NC and assessment procedures (DfE, 2013a). So, while it would not have been possible or advisable to make any causal claims, it would have been useful to try and understand some of the school improvement processes along with any tentative links between the use of resources like Pathways and results

[12] Denotes that this quotation belongs to the headteacher (Mrs Magpie) of Magpie School (MS) during an interview that took place in December 2014.

trajectories during this crucial changeover period. While comparisons cannot be made between results published in 2016 and the '2012 – 2015' period, what *can* be done is a study of schools' trajectories between 2012 and 2015[13]. Any connections and claims made in relation to Pathways during this period will also of course be tentative. It would also be possible to analyse and draw tentative conclusions from how different schools described their policies and practices in planning for and implementing the new NC, how practitioners dealt with the uncertainties of the new assessment system without levels, and the communications they had with parents and carers about managing their expectations.

Next, Magpie School's attainment and progress data will be discussed.

Figure 23: Magpie School – EAL and non-EAL pupils KS2 results gap [Source: DfE (2016b)]



The first chart (Figure 23) focuses on Magpie's impressive reduction in the attainment gap between pupils with English as an Additional Language (EAL) and non-EAL pupils – as 34% of Magpie pupils are identified as EAL. Figure 24 (page 112) shows a generally increasing trend in KS2 reading, mathematics, and bar a dip in 2014, in writing[14]. My first visit to the school was in December 2014, one day before the national publication of the primary school performance tables. Mrs Magpie talked about ways to "break the chain", to make connections between strategies that *might* lead ultimately to improved pupil outcomes, and putting together a plan to engage more parents:

[13] Indeed, even comparisons between 2015 and pre-2015 cohorts were made more difficult due to the complete redesign of the DfE performance tables website during the change of government from 'Conservative-Liberal Democrat Coalition' to Conservative in 2015. Year-on-year comparisons between 2012 and 2015 cannot be viewed or easily made without first 'hunting' for and extracting the 2015 data set in a suitable format on the new 'https://www.compare-school-performance.service.gov.uk/' site.

[14] The school experienced another dip in Writing TA in the 2016 KS2 assessments. The assessments are based on the new National Curriculum and so are not comparable with previous years' results, but Writing became one of Magpie's school improvement foci the following year.

"It's going to be a good year. Our writing's down, but it's [down] all over the country. Our argument is that if children can't speak, they can't tell a story, they can't write a story. They can't read, they can't write a story. The only way they're going to talk is via the parents. We have something called the Big Talk on a Thursday evening. Most parents don't do it. Teachers give them the plans for what they're going to write on the Friday to take home and talk it through with their parents. If the children haven't got any ideas, you know the parents haven't talked to them. Even if it's while driving to school, those five minutes, sitting over a meal. Showing children get parental support." [Mrs Magpie_MS_Dec-2014]

Ofsted (2013[15]) had also identified that in order to improve further, the school could make more teaching outstanding by creating "a language rich environment to improve pupils' talk for writing, particularly boys". At a later interview, Mrs Magpie continued to explain the challenges of getting more parents involved in their children's learning, and listed the different strategies being considered and trialled – I have identified each with a number in square brackets:

"We had three reading workshops last year, the parents that didn't need to come came. [1] We need to get out and find out why the others are not coming. 'Oh, we've got little ones'. [2] The crèche needs to be advertised more. Our Pupil Premium children tend to have little brothers and sisters. Because of that the parents don't come. But they're the parents that tend not to be at work so they should come. Other parents take time off work to come to the workshop. [3] We <u>have to</u> find a way of getting the parents in. Break the chain. [4] Making the timing convenient is important. 9am - drop off time, [is] good. [5] Cookery class with parents on Wednesday morning, parents who wouldn't normally come into school. But because they drop the children off, I grab them and say come and 'do some cooking'. [6] Need to have something on offer, cooking, bag of freebies, or get children involved in workshop. [7] We've got a double-decker bus now. Got all the children out onto the playground, they thought they were going to be told off. [Showing video of bus arriving] Carpeted bus. Secondary kids broke into it but now we can lock it securely." [Mrs Magpie_MS_Aug-2015]

Mrs Magpie then revealed a complete change in strategy to deal with the previous year's KS2 results – trying to understand where Magpie's priorities lie, again making connections – and praising Pathways for coming along during the implementation of the new NC:

"For the last three years, we were flogging a dead horse focussing on writing. But without reading, there was no point. If Ofsted comes and sees your writing is low, you <u>have to have it</u> on your action plan. Big Write, Big Talk, P4C [Philosophy for Children], [we are] going for [the] bronze [award]. We've introduced values instead of rules. [I am] <u>so</u> pleased to see Pathways – it provides a structure. I was looking for a strategy in 2013, found Pathways, has changed it for us." [Mrs Magpie_MS_Aug-2015]

[15] Not referenced to protect school's anonymity.

Magpie's pupils' Level 4 and Level 5 attainment are shown next in Figure 24 and Figure 25.

Figure 24: Magpie L4 or above attainment 2012-2015 [Source: DfE (2016b)]

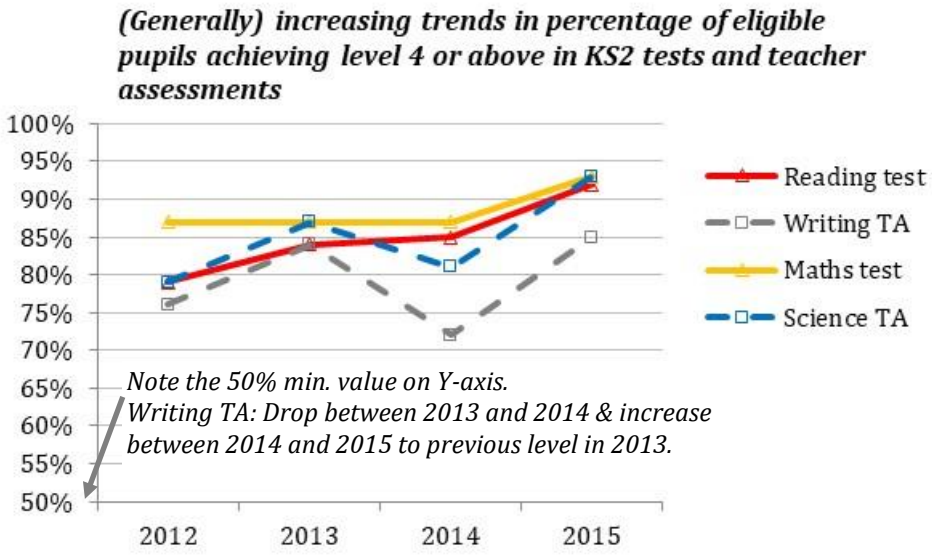
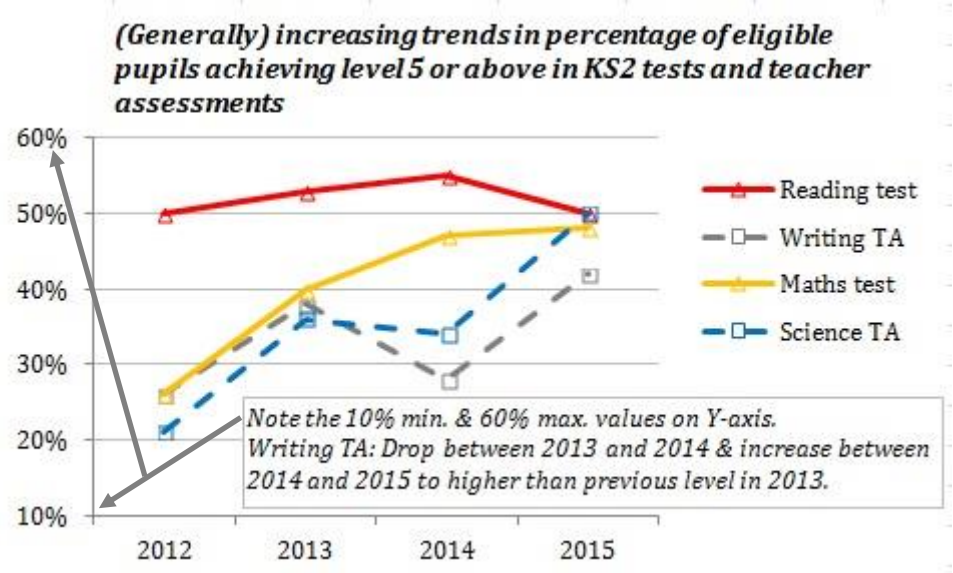


Figure 25: Magpie L5 or above attainment 2012-2015 [Source: DfE (2016b)]

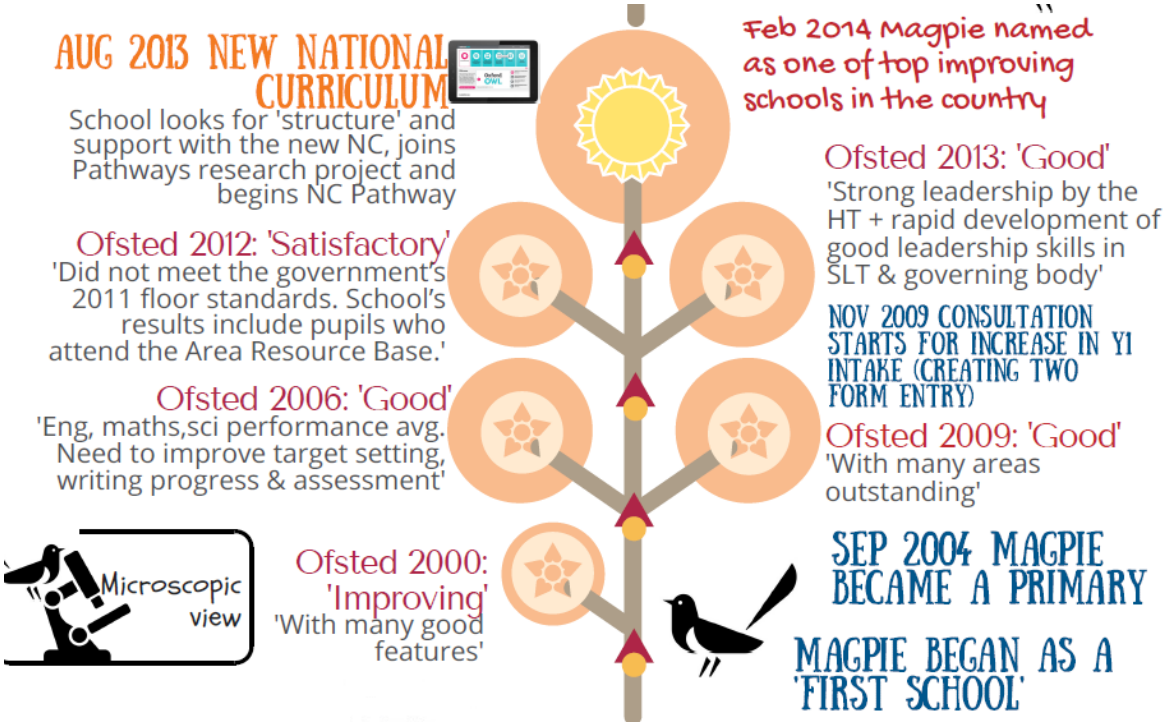


On the subject of accountability and performance, Mrs Magpie articulated a personal view that the reliability of Ofsted judgements was not always high and that there was "no such thing as an Outstanding School":

> *"I believe very strongly good schools can have something they are outstanding at. We want to be outstanding in reading but we are not an outstanding school. I believe schools are good, solid schools. If we become a school that is outstanding in reading, we can share that expertise with other schools. [It's] not looking at the real world. I went to visit a school in London [that was judged to be] outstanding, but it seemed good with outstanding features. They might have been outstanding for those two days."* [Mrs Magpie_MS_Dec-2014]

It is worth noting that Magpie was judged 'Good' in 2013. Their Ofsted history (taken from a recent research poster made for Mrs Magpie depicting their general performance trajectory) is illustrated below in Figure 26.

Figure 26: Magpie School's history and improvement trajectory including their Ofsted results



At that point in the interview I privately questioned how a school could realistically be outstanding for only two days, and also how that would manifest from the school's point of view and Ofsted's. On closer 'inspection', Mrs Magpie's comment fits with the broader context of changes in the Ofsted framework that have taken place over the last ten years intended to raise the bar – many 'Outstanding' schools found (and continue to find) that they have been downgraded. Magpie School for example in Figure 26 went from 'Good' in 2009 to 'Satisfactory' in 2012 after the introduction of new floor standards, which also included results from pupils with SEND status. Mrs Magpie's scepticism towards Ofsted judgements could also be based on other, broader reasons. This will be revisited in a later section. Some more specific questions related to Magpie School are addressed next, from a DBR perspective.

4.1.2 School improvement priorities

Before this research project began, schools that expressed an interest in participating in the research project were asked to complete a questionnaire detailing:

- the background and context of their school;

- school improvement plans and practice (including tools and resources used and partnerships with other schools) and;
- why they would like to participate in the research project.

The questionnaire template is included in Appendix 15A (page 418).

The *problem* for Magpie School – in the context of their school improvement plans and this research project – can be illustrated in part using the reasons given by the headteacher for why they volunteered to participate in the project:

> *"It is becoming more difficult to train teachers without the correct resources. We used Oxford Pathways for the New National Curriculum and it helped remarkably. I shared this with the 13 schools in the partnership and many of them used it.*
> *I am hoping that we can get more involved with the new Pathways. The new Outstanding reading schools Pathways will [help] our whole school focus tremendously."* [Mrs Magpie_MS_Oct-2014]

The use of the word "train" as opposed to 'develop' was noted but it could have been more to do with the more practitioner-focused vernacular often deployed when discussing teachers' search for alternative resources for CPD and training – particularly since the removal of local authority and National Strategies resources by the Department for Education post-2010.

Mrs Magpie stated once the research project began that the school needed to involve parents more in the learning process. Other school foci were given as: "improving reading for pleasure and becoming an outstanding reading school & improving phonics and writing in early years." The headteacher also talked about the need to improve the transition between early years and KS1 – particularly around the gap between the Early Learning Goals in the former, and working out where the children are meant to 'be' within the NC framework: "It's a wasted transition time." She expressed a hope that transition might be improved with the removal of NC levels. However, she also expressed her view that levels were not really 'going' anywhere but were merely being renamed, because schools were now expected to define attainment and develop ways to measure progress themselves.

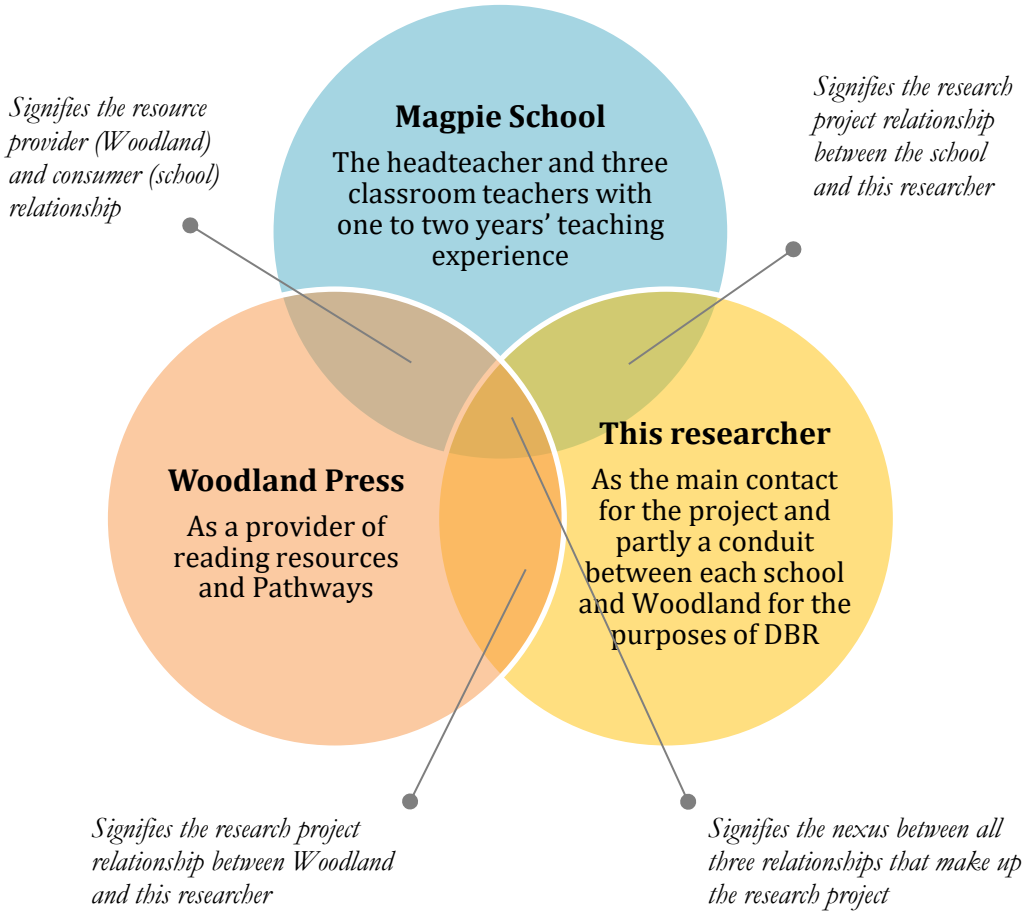
4.2 Engagement with Pathways

4.2.1 Level 1: participants' reactions and engagement with Pathways

The main stakeholders in this part of the DBR project are depicted in Figure 27 (page 115), indicating Magpie's prior 'consumer' relationship with Woodland and the newer relationship in the study. Even though the Mrs Magpie at the time, might not have been explicitly aware of the DASI framework, she and her staff seemed to already be operationalising the principles of DASI in our collaboration – for

example, being open to forming a collaborative relationship, akin to a collective Advisory and Research Team and including me in the school's improvement efforts, and engaging in dialogue in the team about teacher and pupil expectations for their teaching and learning.

Figure 27: Main stakeholders in 'Magpie School' case of the DBR project



The extent of Magpie's engagement with Pathways is highlighted next.

Figure 28: Magpie School's engagement with Pathways

(2013-2015)	*Managing & Implementing the New National Curriculum* – managed by an early career teacher, with guidance from the headteacher
(2014-2017)	*Building an Outstanding Reading School* – managed by the headteacher as part of her appraisal
(2015-present)	*Parental Engagement* – managed by two early career teachers, with guidance from the headteacher

Magpie proved to be a rich source of material in my exploration of how primary schools might take to Pathways and what could be learnt about their approaches and strategies to support school improvement and promote teachers' learning and professional practice. The headteacher spoke quite

openly about her pupils' attainment and progress, and challenges faced among the staff in their efforts to improve outcomes for all children. She volunteered to participate in this research project having been a consumer of Woodland resources previously, such as Oxford Reading Tree which matches books by reading levels to different 'bands' (which are used across different reading schemes in the UK). By 2016, her school had already 'finished' one Pathway (*Managing and Implementing the New National Curriculum*), and was in the midst of completing another two (*Building an Outstanding Reading School* and *Parental Engagement*).

This school's use was exemplified by the headteacher's application of the Teaching and Learning Responsibility 3 (TLR3) scheme to remunerate early career teachers to manage individual Pathways as part of an integrated school improvement plan and to foster professional development. With two years' teaching experience, Ms FET2[16] was awarded the TLR3 to manage and implement the new National Curriculum Pathway. Two other teachers (referred to from this point forward as Ms KS1 and Ms KS2[17]) began jointly managing the Parental Engagement Pathway in 2015, also on the TLR3.

> TLR3 payments are made to qualified teachers (at any level of experience) to carry out short- or fixed-term projects in their schools. The National Union of Teachers (NUT, 2013: 1-2) states that: "In order to qualify for a TLR payment of any kind, teachers' duties must include a significant responsibility that is not required of all classroom teachers and that
>
> a. is focused on teaching and learning;
> b. requires the exercise of a teacher's professional skills and judgement;
> c. requires the teacher to lead, manage and develop a subject or curriculum area; or to lead and manage pupil development across the curriculum;
> d. has an impact on the educational progress of pupils other than the teacher's assigned classes or groups of pupils; and
> e. involves leading, developing and enhancing the teaching practice of other staff."
>
> TLR payments came into force in September 2013, as a fixed-term teaching and learning allowance (DfE, 2013b).

Pathways was articulated by Mrs Magpie as more of a "strategic element" compared to operational-level responsibilities, e.g. Debbie Hepplewhite's training on synthetic phonics, or indeed Woodland Press' Read Write Inc programme authored by Ruth Miskin. The headteacher recommended "starting

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[16] Ms FET2 refers to a teacher at Magpie who has been anonymised. The code is as follows: F=Female, ET=Early Career Teacher and 2=Two years' teaching experience.
[17] Ms KS1 denotes a female teacher with one to two years' experience, teaching in key stage 1. Ms KS2 denotes the same but in key stage 2.

at the top" and touched on the topic of continuity planning and the 'precarious' nature of maintaining knowledge within the school:

> *"Unless you've got the backing of the headteacher for Pathways, it's not going to work. Take it from me, you can go into a school in [a town], speak to a class teacher, unless the senior leadership are supportive, it will stay in that one classroom. If it doesn't come from the top, it won't work. Keep it whole school. People can leave at any minute."* [Mrs Magpie_MS_Dec-2014]

One way to read this comment is to question Magpie's strategies for embedding OL – the fear of teachers leaving with knowledge and the remaining school workforce having to re-learn or worse, work backwards to 'undo' previous mistakes and fix problems without relevant information. The other way to look at this is Mrs Magpie's assertion that teachers' autonomy and professional development are important, but ultimately, they need to be underpinned by leadership support. Mrs Magpie seemed to regard the school as far more strategic than in the past, along with schools in England in general: schools, she said were more 'data-led' by default, and 'results-driven"'. A theme of 'follow-through' from plans to action accompanied the headteacher's descriptions of how her school works. The school had 'Must sheets' – documents that listed the more "business as usual" aspects of school operations. For example, there were Must sheets for the teaching of mathematics and for behaviour – including a code of conduct for the use of Facebook and other social media. The Must sheet acted as a checklist for teachers to verify the tasks that 'must' be carried out (or non-negotiables) in the school as part of a specific strategy, and was periodically revisited so teachers were reminded of things that needed to happen; and would be asked to explain why, if they had not.

Another example of 'follow-through' was detected from how the headteacher corrected her reference to meeting minutes during her interview, while also acknowledging that actions from meetings did not always happen:

> *"This was discussed last week... In our minutes for our senior leadership meetings, somebody had said to me, I didn't know that – it was a senior leader. I scrambled back through my minutes, not <u>my</u> minutes, not <u>their</u> minutes, <u>our</u> minutes, there it is. And we realised we don't always action things from minutes. So it can be said one 'minute' and forgotten the next. So, every meeting now, we go back and say what happened last week, what did we say we were going to do, and it's about people doing what they said they were going to do. Nine times out of ten in schools, someone has a great idea and within three months the school has moved on and forgotten it. We're trying desperately to go back to what we said we were going to do and doing it. And that's the 'Must sheet' again."* [Mrs Magpie_MS_Dec-2014]

In referring to 'our minutes', Mrs Magpie provided further evidence towards the ongoing theme of *mediated autonomy* running through the interactions I observed between her and different classroom teachers in Magpie School. I do not mean this in the Hegelian sense where autonomy is articulated as

an ontological or ethical phenomenon (Williams, 2001: 1) but as something more functional, akin to 'distributed leadership'. The idea of the latter places an emphasis on the leadership being diffused among different members of staff, whereas referring to events at Magpie School as being characterised by 'mediated autonomy' shifts the emphasis of the perceived freedom to act onto the early career classroom teachers, but also 'refereed' by the headteacher (and others in the senior leadership team) at different points. The headteacher explains the rationale behind the TLR3 and how it is "perfect" for what is required of the particular Pathway started a year before – *Managing and Implementing the New National Curriculum*[18]:

> *"You have to have it [Pathways] strategic from the top. The person chosen was not a senior leader but was felt to be ready to take on a project. She came to the SLT [Senior Leadership Team] meetings and staff meetings to deliver. It raised her self-esteem, her career; built her confidence. She's in her third year of teaching – she will go on to do something great."* [Mrs Magpie_MS_Dec-2014]

So here, I argue that 'autonomy' would describe the classroom teacher's ability to shape an action and/or outcome (Norman, 1994: 27), in this case, to influence how she and her colleagues might choose to manage and implement the new NC. The 'mediation' would be derived from Pathways as an educational technology resource, the headteacher's own autonomy and ultimate decision to appoint a member of her team to manage a particular Pathway (or 'learning walk') and provide 'buy-in' at the leadership level. This buy-in would include the language and structures required to support the team's subsequent course of action in managing a particular issue and Pathway.

4.2.2 Level 2: participants' learning from CPD and observed drivers for change

Several possible motivations for Magpie School's engagement with Pathways were observed, which may be linked to the drivers for change articulated by Mrs Magpie and the classroom teachers who participated in the research study.

First, Mrs Magpie appeared to be an "ardent supporter" of Oxford University Press resources and range of services, and acted as an advocate to other schools. She had recently been invited to travel to China with Woodland Press to demonstrate the Oxford Reading Tree. On her return, Mrs Magpie described her perception of the Chinese education system and context – where teachers were unlikely to pursue 'guided reading' (TheSchoolRun, 2018) as in the English context, but would be more likely to teach to a text book. I noted the stark contrast between Mrs Magpie's observation and my perceived idea of mediated autonomy described earlier.

[18] The introduction of the new National Curriculum was an immense policy change in England, hence why the NC Pathway was offered to schools for free on the launch of Pathways in 2013.

Second, Mrs Magpie articulated that the advice on improving parental engagement would be "coming from an external & professional body ([Woodland Press])" and not just the headteacher (or "muggins", as she later referred to herself).

> *"It's not just coming from me. It's a whole professional body like [Woodland Press]. They prefer it to be a professional body. Here's a questionnaire, here's an audit, much easier for me. Launch at the staff meeting, [we will] use [the] Parental Engagement booklet to work alongside. That'll be my tool for the INSET day. Bring it with you. A lot of downloading [otherwise] if online. Asking teachers to download one page from somewhere online [is difficult]. Each page is an action point. We can work through each point – the same points in the book as in the exemplar in Pathways."* [Mrs Magpie_MS_Aug-2015]

Linked with this idea of 'sharing the load', Mrs Magpie articulates a similar view on teachers' professional development.

Teachers' professional development context in Magpie

A mixture of inter- and within-county training was seen – by the headteacher – as the go-to option for professional development, rather than training delivered solely in or targeted towards the one school. Mrs Magpie listed the local authorities where recent training had taken place and been successful. She remarked that twenty years ago, training would have been more likely to happen within one's local authority (LA) and the cost of different courses could be very high (e.g. £450 for a day's training, or an outlay of £2000 to book a "decent speaker"). In contrast, she pointed to some training taking place at her school that was being funded by Woodland Press (separate from Pathways), and so school practitioners were only being charged £6.50 to attend, to cover lunch costs.

The school was also part of a '[county] alliance' and '[area] partnership'. The headteachers in the partnership met every term and organise subcommittee meetings. A 'partnership day' was held in January 2015, and described by the headteacher as a "*feel good training day about teaching. Independent thinking and taking back that solid message from the partnership about sharing*". [Mrs Magpie_MS_Feb-2016] Again, without necessarily being explicitly aware of the DASI, Mrs Magpie appeared to be promoting a professional development and learning setting built around peer support and collaboration (Antoniou and Griaznova, 2018), which seemed to extend the immediate school environment.

The theme of sharing carried through to professional development within the school, with the use of peer observation:

> *"What happens is, I give them a teacher standard, [which] relates completely to our SIP. E.g. 'set goals, stretch and challenge pupils of all backgrounds'... [which is] 1.2 of the teacher standards. Teachers are then paired up and they bring [observations] back to me. We do [teaching assistant] TA peer observations as well. It would*

be in... this folder... of good practice observed, what needs to be developed... I would have to go through those in term 5." [Mrs Magpie_MS_Feb-2016]

In combination with peer observation, a further example of follow-through was seen in the school's approach to monitoring pupils' writing progress:

"You'd have the Deputy Head, doing a 'learning walk' to see how things are happening. We have peer observation, people monitoring a specific subject, and we have writing moderation three times a year in our staff meeting." [Mrs Magpie_MS_Feb-2016]

The headteacher showed a keenness towards more collaborative professional development, where training courses were shared amongst groups of schools – other schools were invited to attend courses, Magpie School often acted as a venue, and teachers could potentially learn what other schools were doing and how. When asked about the relative advantages and disadvantages of having training with other school practitioners present – for example, within just one school, training can be more tailored to that school's particular context and set of experiences; but with multiple schools, tailoring can be more difficult – the headteacher answered:

"I would say the wider the field, you are going to get good questioning, because you've got a bigger field. People in one school know each other, and it's a bit like, if you make mistakes, you learn more. Therefore, if you're in a room with people sharing good practice, saying 'we don't do that', it's not good to think therefore we're not going to do it. You see how people do something in another school and you can see, ah, that's where I've gone wrong, this is a much better idea... By hearing what other people do in their school, you learn, get much better advice. It's called magpieing, we magpie everything with teaching. Sharing good practice." [Mrs Magpie_MS_Feb-2016]

Mrs Magpie's prime concern can be interpreted as a need to promote good practice in teaching and learning using professional development and appropriate resources from a range of providers, including Woodland, and other schools. She elaborated on what she saw as collaborative professional development, the idea of working with other schools, learning from each other's mistakes as well as good practice:

"Working together, with other schools, with secondary schools, with other staff. If you take the training to staff meeting and share it with others, it makes it collaborative. You go and observe someone else doing something different." [Mrs Magpie_MS_Feb-2016]

This was seen to extend into "general relationships and collaborative working" practices at Magpie that Mrs Magpie seemed to espouse when asked how she went about convincing staff and pupils of an idea: "not telling them, but giving them options." Two early career teachers at Magpie (mentioned

earlier and referred to as Ms KS1 and Ms KS2[19]) discussed the issue of building connections with some openness:

> *"There are a lot of quick staffroom chats where you have to have a good rapport with someone to be able to say 'We're doing this… What do you think? Would you be interested?' and without them even knowing we've already agreed it. That's happened quite a lot."* [Ms KS2_MS_Feb-2016]

The school was looking to implement a new structure for homework in order to improve parental engagement. The teachers both discussed the idea of making staff and pupils feel like "they have options" in the decision:

> *"It'll get taken to student council and it will feel like it was their idea, but [the named teacher council chair] will make them choose that one. But they would have chosen that anyway, it's more colourful."* [Ms KS1_MS_Feb-2016]

Autonomy, or the perception of it, was also mentioned when asked about how the early career teachers managed their Parental Engagement Pathway as newer members of staff at the school:

> *"Not standing on other people's toes. If it's someone else's area, to run it by them to make them feel like they've been included before we give it to the rest of the staff, making sure they have autonomy. We have an idea: 'Young Interpreters Club' with hats and badges. They're going to show people, new families around the school – child-led. We had to make sure to talk to the EAL person. [Mrs Magpie] suggested speaking to them. We wouldn't have thought of speaking to them. Because we're so driven by parental engagement."* [Ms KS1_MS_Feb-2016]

The feeling of autonomy amongst staff was brought up again when I asked the teachers how it was decided which year or class they taught:

> *"In this school, we get asked which year you prefer, quite unusual. [Mrs Magpie] will always try to accommodate. We're always allowed to go on courses. I just went on a course for £400 in London P4C [Philosophy for Children]. We're going for the Silver award. I've gone on level 2 training. When I've completed my homework, we can go for Silver, I think we're there already."* [Ms KS1_MS_Feb-2016]

This was balanced with the idea of mutual expectations and a culture of improvement:

> *"In this school, the ethos is not to just sit back and cruise. You have to show that you're improving and give back."* [Ms KS2_MS_Feb-2016]

[19] Ms KS1 denotes a female teacher with one to two years' experience, teaching in KS1. Ms KS2 denotes the same but in KS2.

So here, the idea of how, and how often school and teacher level policies were evaluated emerged, another key factor of the dynamic model used in the DASI (Creemers and Kyriakides, 2012: 39). Again, the model itself was not mentioned by research participants but general consistencies with the approach were observed.

4.2.3 Level 3: Organisational support and change

Some thoughts on how a problem is identified and described – and the role of reflexivity on the part of the researcher
As awkward as it might be to admit sometimes, it is easy to become confused when one is trying to understand a 'problem' as an external observer – working out if you have obtained adequate information from whomever you are speaking to in order to try and perceive the problem 'in their eyes' and experience. In my case, as part of the DBR project, I was both an external observer and somewhat 'internal' in that I had been visiting this school regularly and had learnt a great variety about them, particularly at their staff meetings. Trying to get to grips with the 'problems' being articulated by different practitioners at Magpie was becoming a challenge for me too. But after developing a relationship with this school for over a year, I also felt I had to pick my moments carefully when to ask difficult questions. I had just met with Ms KS1 and Ms KS2 who talked me through the Parental Engagement Action Plan (AP) they had put together based on the School Development Plan (SDP) and an AP template provided in Pathways. They said that the AP had to be checked through with Mrs Magpie before distribution to other staff.

Later that day, I was sitting with Mrs Magpie as she described the progress that had been made on the Parental Engagement Pathway (that was being managed by Ms KS1 and Ms KS2). She looked down the AP that they had put together, and compared it with the School Development Plan (the more top-level/strategic of the two plans):

> *"We do a progress report every term, [based on] the [School Development Plan] SDP – which is shared with parents... [Mrs Magpie reads off the Action Plan] "Attendance has to be improved with Pupil Premium children.""*

I asked how Mrs Magpie might describe current attendance of PP children.
She replied raising her voice slightly:

> *"It's actually higher than the whole school... Teachers have (middle class) assumptions about PP children, assuming they won't come to school. The whole point of parental engagement is to improve attendance, especially for Early Years, but it's whole school attendance."* [Mrs Magpie_MS_Nov-2015]

I hesitated. Had it seemed to Mrs Magpie that I had made the same 'middle class' assumption by asking that question or was she commenting on the action point in the plan? It was difficult to tell but

I quickly realised that I had wandered into a slightly different line of enquiry to the one my question had prepared me for. After talking things over a bit more, I understood that Mrs Magpie and her Pathways team might be facing an issue at multiple levels:

- attendance – but not the same attendance that was being planned for in the Action Plan;
- assumptions being made about pupils, their backgrounds and academic expectations – which emerged as the key issue from either the question I asked or how I asked it (or indeed a completely unrelated reason); and
- needing to improve relationships with parents – but first needing to understand which parents to target and how.

This encounter was brief but a valuable lesson in how questions and their timing matter, both as a researcher and practitioner. Again, the topic of *phronesis* had come up – what looked like a generic remark based on what might have been termed 'common sense knowledge' in an action plan appeared loaded with several assumptions, possibly remaining unknown until quick, reflexive moments like these. Mrs Magpie was saying that assumptions were being made on certain groups like PP children, I wondered about the challenge this presented if one was using research evidence which highlighted the differences in the home learning environment and access to enrichment activities children might have based on their socioeconomic status. How does one know when to use evidence to pre-empt issues and when to hold back and watch what happens? This provided me with feedback about the dangers of lumping together all 'hard-to-reach parents'. I also became mindful of the structure provided by Mrs Magpie – creating "hospitable conditions" which both enabled and in some ways, constrained, sometimes guided, the practices of her two newer members of staff, now acting essentially as middle leaders (Grootenboer, Edwards-Groves and Ronnerman, 2016: 518).

Dealing with 'the issue'

A questionnaire was sent out to parents asking for their views on how to improve communications with them a few weeks after the interview above. The results were reported as revealing but unsurprising:

- Homework was raised as a "big thing" according to Ms KS1:
  "There's not much scope for parents to engage. They wanted more work to do with them [their children]. We're thinking of projects, sheets of instructions… We're doing 'councils' this term, we could have a model council by the end. Parents who responded are the parents who always respond. We've gone around the teachers and asked them which parents are unwilling to engage, and created a list. Next step is to share it with staff and ask who's worked with these families. From the questionnaires, we have a list of parents who said they do want to help. So, those who've said they want to help with science, we'll give those names to the science coordinators." [Ms KS1_MS_Jan-2016]
- After learning about parents' views on homework, Ms KS1 agreed:

> *"Homework – after speaking to teachers, it's more of an after-thought. The other thing that came up was not being communicated to enough. It's quite hard. We have newsletters every short term (six times a year). Telling parents what topics are being covered, maths, English, science. They want a much more detailed description. Do you give them each learning objective? We don't want to overload teachers. Whether parents will do anything with the information. We are going to do an interim questionnaire online and hopefully get a bigger response."* [Ms KS1_MS_200116]

So, the initial audit with parents and staff had thrown up some potential practical problems with pupils' homework. Here was a new layer to the problem – weighing up what 'effective communications' were to parents who seemed to exhibit somewhat contradictory needs – possibly wanting more information but not always acknowledging the information they did receive. Also, what were 'effective communications' that did not overload teachers unnecessarily with extra tasks – for example, churning out information that might be verging on too much.

This led me to wonder if by default schools' strategies should be planned on the principle that not all the decisions people (in this case parents) make are necessarily always 'rational'. Parents are busy people too. The other reason could have been that the school wanted parents to engage but mostly on their terms, which is equally understandable from teachers' workload point of view. This problem was becoming more convoluted.

More information, targeted action

It was decided that a workshop for parents would be held in March (a 'Stay and Learn' lesson demonstration). Ms KS1 and Ms KS2 were discussing with Mrs Magpie proposed plans to engage parents in preparation for a staff meeting that afternoon:

> *"We are giving names of families to subject coordinators to reach out to."* [Ms KS2_MS_Jan-2016]

In response, Mrs Magpie said:

> *"Good idea, we can have a competition to see who can get the highest number of parents in for the workshop in March."* [Mrs Magpie_MS_Jan-2016]

In February, it transpired that (some) parents may not have been keeping up with school events – including those quite close to home:

> "*Parents don't read the newsletter. I just found out a dinner lady who has a child here – she didn't know an event was happening – Monday's Stay and Learn [in March]. We are making personal invitations*!" [Mrs Magpie_MS_Feb-2016]

Towards engaging with the assumptions of the DASI framework

Mrs Magpie and her team, without necessarily being aware of the DASI or Dynamic Model, seemed to be promoting the design of their school improvement initiatives based on educational research evidence sourced partially from Pathways, and The Key (2018), along with the Oxford School Improvement written reports (see also the Woodland case study and Appendix 22 (page 468) for more information on how the 'reports' were implemented alongside Pathways in Magpie School). Mrs Magpie seemed to consider the different factors and dimensions of school effectiveness from the perspective of different stakeholders in Magpie School, in supporting the collection of data from pupils, parents and teachers on the school's functioning. Every time we met, Mrs Magpie and Ms KS1 and KS2 appeared to have moved a previous school improvement project further with a new survey or trialling a new approach with their parents, and then eliciting information from the people involved about how particular strategies might be improved. Most of all, it came across fairly strongly that Mrs Magpie was trying to develop a professional community among the teachers who were managing Pathways and their colleagues, including teaching assistants, in engaging with educational research and taking different approaches to implement action and evaluation. The team also really seemed to engage with me and Pathways as a kind of Advisory and Research Team composite and participate in conversations about school improvement research – for example when I spoke to Mrs Magpie about work by Timperley et al (2007) around staff meetings, and their focus on pupil attainment and progress leading to better outcomes.

4.2.4 Level 4: Participants' use of new knowledge and skills

I asked Mrs Magpie, Ms KS1 and Ms KS2 what they were making of Pathways so far. Staff personalities and attitudes plus external research support/mediation were raised:

> *"What pulls this together is two people who are really keen, with an action plan! [Mrs Magpie smiled at the two teachers.]*
> *And great having Susie, we can't just say we haven't done anything since the last time you came. It's someone who leads it from the outside."* [Mrs Magpie_MS_Feb-2016]

Trialling different modes of communication was brought up too:

> *"Talking with parents on a Wed – learning that they don't read the newsletter – faster than a questionnaire! Sitting with the children for a few minutes and asking them things helps."* [Mrs Magpie_MS_Feb-2016]

This example stimulates the topic of "Inquiry habit of mind" – as another interpretation of events described so far. Magpie, and indeed other schools, in trying to fill the void left by the disappearance of local authority support and free structured resources previously supplied by the DfE pre-2010, could be viewed as adopting a precarious form of 'picking and mixing'. Schools are increasingly faced

with sourcing, interpreting, choosing, communicating and applying a variety of research and other evidence from different providers and decide 'what has worked'. The connotation of 'picking and mixing' seemed to be negative when mentioned at Woodland Pathways Steering Group meetings, for example. However, if school leaders are meant to have "well-developed inquiry habits of mind" (Earl and Katz, 2006: 108), are exploring, picking and incorporating (and discarding) information not part of that development? How does one keep 'inquiry habits' in some parts of leadership and switch it off or tone it down for the rest?

This subject certainly should be investigated in greater detail – the degrees to which certain skills and attitudes are applied at different times during the school improvement journey, and the consequences of these actions, as opposed to just the basic application of those skills. It seems a never-ending paradox – if you give professionals the tools to ask questions of their data, their teams, and help to develop their skills to constantly inquire and question, and challenge assumptions, tacit knowledge and expectations, will they not eventually question the system that may have supported them to develop those skills too? How does one 'trust' a brand/name/system based on previous results but still question its methods, and does this form part of the leaders' duty to continually challenge complacency?

This trust of the Woodland brand seemed to extend to Mrs Magpie's external interactions too, when Pathways was introduced to another school that she felt needed more support:

> *"'Another headteacher of a school in [same city]' talked to this head about using Pathways – they were told by a [sales-]rep. They were so far behind, it was scary. Had no strategic plan. They were told to get into Pathways."* [Mrs Magpie_MS_Aug-15]

This same approach to sharing again filtered through to Mrs Magpie's articulated expectations of this research and an exchange we shared about practitioners' own inputs melding into school improvement resources normally seen as being written by external 'experts':

> *"What the other schools are doing – we want to learn from other schools, what we can improve."*

I offer that *"there has to be a space like Wikipedia, that is moderated somehow".*
Mrs Magpie replies:

> *"Got you. Needs a structure to help teachers get to the point. Once you make it open source... you need the same structure, but it would be at the end of it. Right at the end you'd have an evaluation -- that's where people have done it. People who've done the audit, what's worked for them. When I did it, I wanted to see how schools who got a double-decker bus went on to do. We read through what schools had done before we did anything else. Outstanding reading school pathway: I would say, because I did that, that happened, and so on, not just, we got a double-decker bus. So people have reasons why to do that."* [Mrs Magpie_MS_May-2016]

I discussed with Mrs Magpie what other resources she might use for information purposes, or to look up an 'issue'. She said she subscribed to The Key (2018) and teaching unions (National Union of Teachers – NUT, National Union of Head Teachers – NAHT) to keep track of research. Mrs Magpie also explained that she was a member of the NUT rather than the NAHT because she wanted to gain access to research related to teachers, not headteachers. I was told that The Key cost £1000 a year and that it contained "*all educational research – online articles, mixture of research, some of it might be university-related but it's a mix. Only been using it for a few years."* [Mrs Magpie_MS_May-2016]

The main difference between The Key and Pathways was identified in terms of size and structure:

> *"The Key is massive, has everything. If I want a policy on health and safety, I twiddle with it, much bigger. [Mrs Magpie shows me an example on her computer.] I'll put 'White paper' as a search term…"* [Mrs Magpie_MS_May-2016]

The Key was seen as a 'safe' or contained search engine like Google, and in contrast to Pathways, content is amendable by users within the application itself and not just by designers and developers. Mrs Magpie noted:

> *"There's less on Pathways, so it's much clearer. Once you've used it once, you know exactly how it works. It gives you a template, action plans, you know exactly what it's going to look like. On The Key, you'd be searching for ages trying to get what you need."* [Mrs Magpie_MS_May-2016]

It was emerging that Pathways might be viewed as a more focused and structured form of support compared to other resources – smaller, and less difficult to navigate but also potentially holding less 'raw content'.

From broader theory to specific practice?

Another theme that seemed to be emerging was how Pathways (and other school improvement tools, and the process of discussing the matter at all) were being used to possibly ground strategies more in immediate practice. Ms KS2 described the idea of the "Stay and Learn" planned for March:

> "*Parents are going to drop their children off and meet [Mrs Magpie] for a general discussion about school values. That gives parents a chance to influence our school values for next year. (That's in the action plan. [Mrs Magpie] is ticking that off for us!)*
> *The parents will come to the classroom and watch a normal maths lesson. We thought what parents really struggle with – when we do open mornings – is it's quite gimmicky. 'Here's a carousel of activities that we don't actually do.' I mean you do, but not as an everyday practice. So we thought it would be good for them to see an actual maths lesson. This is the first time we're doing it in the morning, it's usually in the afternoon. We get a good turnout in the afternoon, but we thought if parents are dropping their children off in the morning*

anyway... We found that if we arranged things for when they picked their children up in the afternoon, they would come, so like this there are no excuses." [Ms KS2_MS_Feb-2016]

The opportunity to tangibly share the workload of a project in combination with a supportive senior leadership team and school ethos were also raised in relation to the two teachers working together on Pathways:

> *"[Mrs Magpie] will give us time out of our working day to work on this. Having two of us working on it – especially this kind of Pathway, it's made for two people! ([Ms KS2 interjects:] Bouncing ideas off, getting each other started early in the morning, reminding each other what the next steps are etc.!) Because we're in KS1 and KS2. Might have been too big a job on your own. Also, I don't see the KS2 teachers very often because you have different break times. It would take a lot more time outside of school hours. Now we just have quick PPA [Planning, Preparation and Assessment] time to talk to each other."* [Ms KS1_MS_Feb-2016]

Ms KS1 and Ms KS2 seemed also able to experiment, collaborate and reflect on their practice with each other, both when talking to me and during their time in and out of Pathways. This in turn, revealed another characteristic of the collaborative but again precarious nature of information ecologies within and surrounding schools in this age of online technologies – the idea of "produsage" (Bruns, 2008). Ms KS1 and Ms KS2 appeared to be using a variety of tools, some of them more pupil-focused, structured and designed to support their understanding of school improvement.
This leads to the next question concerning possible inhibitors and enablers in this space.

DBR episode

The 'art' (*techne*), 'science' (*episteme*) and value judgements (*phronesis*) of knowing when to question, trust (or do something in between) depending on the subject matter can be extended to different facets of school life, for example:

- Magpie's scepticism of Ofsted, as articulated by Mrs Magpie:
  "You can be outstanding one day, and the next, because you take in results from statemented children (as you should), you could become a failing school. Ridiculous." [Mrs Magpie_MS_May-2016]
- the insistence of Mrs Magpie that attendance at parents' meetings had to be 100% in the school's drive to maximise parental engagement. To achieve this, Magpie's teachers would be available at different times during the school day, and the children would be "held onto" so that each parent had to come in and "find their child". The headteacher admitted, otherwise, it was difficult to "get them in" to participate – for example, at parent workshops, a recent one on P4C – Philosophy for Children (The P4C Co-operative, 2017) attracted only 40 out of the school's 460 children's parents.

- an 'enforced democracy' in which staff were encouraged to fill in Pathways questionnaires and give their views:
  "[We] [g]ave questionnaires to staff and they couldn't leave the meeting without completing it. Dependent on rank in school or how you are with people generally – whether you get a good response." [Mrs Magpie_MS_Aug-2015]
- the importance of which kinds of 'personalities' were involved, but also what a particular strategy was about – exemplified by Mrs Magpie's comment that if their Deputy Headteacher said something, it was not taken on board, but another ['Named teacher'] received a different response [to Pathways questionnaires] because it was the National Curriculum", and that it was that ['Named teacher']; and
- the need to illustrate what an action is for – along the lines of Guskey's (2002b) alternative model of teacher change – before teachers buy into it:
  "*E.g. Iris Connect*[20] *- you need to show teachers how it can help them before they'll use it."* [Mrs Magpie_MS_Jan-2016]

The belief that Pathways is 'good for you' – reinforced at Woodland Steering Group meetings and even within Magpie School may have been playing out similarly to the outcomes of 'enforced democracy'. This, along with the complexities of determining the 'right' combination of *episteme*, *techne* and *phronesis* was illustrated by a short but telling scene that unfolded during a staff meeting at Magpie. The meeting's focus was how to increase parental engagement and was structured using various Pathways resources. As before, Ms KS1 and Ms KS2 were managing the Pathway with their headteacher Mrs Magpie.

The staff meeting began in a classroom with a short PowerPoint presentation delivered by Ms KS1 and Ms KS2, using a Pathways template populated with Ofsted's aims and expectations regarding parental engagement. Most teachers were present, as were teaching assistants. I was handed the revised Action Plan that had been changed after a discussion with Mrs Magpie.
Mrs Magpie left the room for a few minutes and when she came back (while the discussion activity was taking place) she decided not to sit at the 'head' of the table but moved round to the side of the table. The discussion activity took the form of a "carousel" – where groups of teachers sat at three different tables. Each group was tasked with writing on some sugar paper on the topic of parental engagement and after a few minutes, each paper moved to the next desk until all tables had filled out all three pieces of paper. There were about seven staff members at each table. Ms KS2 instructed:

"We have created an action plan for parental engagement exploring three priority areas.

[20] A video-based professional learning platform (IRIS Connect, 2018)

1. Ensuring parents are involved in creating the school vision.

2. To develop staff skills in working in partnership with parents

3. Improve the ways we communicate with parents.

We have written those key areas and our plans on how to implement them on sugar paper. Can you tell us what you think and give us ideas on what else we can do?" [Ms KS2_MS_Nov-2015]

After the carousel activity, the meeting presentation was resumed. Ms KS1 who was in charge of managing the design of the new school website presented the new layout on screen. The teachers appeared surprised, perhaps impressed and collectively said 'wow'. Proceedings continued with what was meant to be a 4-minute-45-second long Pathways video showing educational expert Jean Gross listing the dos and do nots of increasing parental engagement. After 3 minutes and 20 seconds, the video was abruptly stopped by Ms KS2, saying "*Had enough of her*". The group clapped.

Ms KS1 and Ms KS2 thanked the audience and went on to discuss how to restructure and narrow down a questionnaire for parents (also from Pathways). The aim they said was to get early years' parents in to improve attendance:

"We need to have a reason for why we want parents to come in. Every workshop we have, you say 'can we have it 2.15 to 3.15...' We need to make it more convenient for parents. The Maths Trail worked for parents, [we got about] 40-50 parents. [Planning, Preparation and Assessment] PPA meetings: we need to decide what works with parents and why we engage them. The whole purpose is to improve attendance. Talking to parents, keeping them coming in etc. - that is the purpose." [Ms KS2_MS_Nov-2015]

One teacher suggested that instead of the title on the front of the questionnaire that read "Background demographic questionnaire" that something like 'Background Information' was used to make it more accessible. Ideas on the sugar paper were reviewed, one was a 'craft afternoon' – getting children to write invitations to school. Ms KS1 suggested that a craft afternoon must be a whole-school event. One teacher asked if it would be the whole afternoon. Ms KS1 and Ms KS2 answered '*yes*'. Ms KS2 went on to say:

"*If you don't want parents coming in, you have to say why not.* [tries to get more ideas from teachers for parents to come in.] *Making Christmas decorations? Monday the 23rd, getting parents to come in. We have to be very organised with what you want to do with parents*."

Another teacher suggested that the afternoon be based on "*generic festivities like Diwali, Christmas, etc. – it could be called a 'Festive Fun' afternoon*." Ms KS2 nodded and said, *"We have to think this through - if we have a lot of parents, we need to have space."* The meeting wrapped up with 'thank yous' to different staff members and next steps.

Several features of the meeting stood out to me – linking back to extant literature on collaborative inquiry (Jackson and Street, 2005: 41) and "produsage" (Bruns, 2008) detailed earlier, the:

- presentation of school aims and priorities – taking the current school context as the starting point;
- problematisation of the day-to-day work (not making assumptions about what was going on, but questioning what seemed to be taken for granted);
- building out from what had gone before and what was already known;
- creation of visible and tangible communication exchanges and sharing information that enabled learning (e.g. situated learning or learning in a community of practice), which inevitably also may have made the teachers' work more visible and therefore open to criticism, in some cases potentially leading to reduced sharing;
- early career teachers acquiring more experience of how to present different types of information to their colleagues, some of whom may have been teaching for many years; and estimating the implications of showing a particular training or development video that is based on research evidence of best practice. When asked how come the Jean Gross video had been stopped before it finished, Ms KS2 responded:
  "Sometimes we have to be careful with the teachers here, they might take offence, especially with young teachers doing it. We've got quite a few teachers who've been here for a long time. They're harder to persuade. Not that they won't take things on but we have to pitch it really carefully. We thought the general mood was... so we thought we should stop." [Ms KS2_MS_Feb-2016]

This presented another 'DBR moment' represented by the following exchange between me and Ms KS1 and Ms KS2.

> Researcher: "How did you gauge this?" [i.e. knowing when to stop the video]
> Ms KS2: "*We see how things backfire in staff meetings all the time. When quiet descends..."*
> Researcher: "How do you think that video could be improved?"
> Ms KS2: "*Keeping them really short. That video was 5 minutes long. Keeping it to the 2 to 3-minute range is most helpful for the attention span of the staff. Concise points. And more ideas rather than background. Less of what not to do. Good practice ideas, how other schools have done it. Teaching, you've got to think, why reinvent the wheel all the time.*" [MS_Feb-2016]

The conversation continued. I wondered about Pathways being used as a space to run ideas past colleagues at staff meetings, and asked what other ideas had been fielded since the staff meeting in November 2015:

> *"We ran a few ideas that were shot down immediately. E.g. [classroom teachers] going outside in the morning to meet parents in the playground – they refused. Normally only the headteacher or deputy [does that]. We thought we could get a rota going. They said no."* [Ms KS2_MS_Feb-2016]

I suggested that many other schools do it and I was surprised that this idea was "shot down".
The DBR moment continued as I tried to untangle how the idea was shot down, and by whom.

> Researcher: "Why do you think going outside to see parents in the morning was not well received, in this particular school context?"
>
> Ms KS2: "*Because it's their time to set up. Some days can be very hectic. There's always something to prep for. [Mrs Magpie] wasn't in that particular staff meeting where we discussed this. We generally speak to [Mrs Magpie] or SLT before we go to the rest of the staff."*
>
> Ms KS1: *"SLT didn't like it. They didn't want to overburden us. I didn't think it was a big deal. By that point, 10 minutes before the lesson you'd think you'd be prepared already."*

I pursued the topic again when Mrs Magpie joined our conversation later. We were talking about ways to encourage parents to read the school newsletter:

> *"Parents say they want more information, but they don't read it... Can't send it with children to take it back, parents haven't got a printer, so we can't do that [email]. Only way is to have a secret somewhere in the newsletter that the children have to find, a little bird etc., spot the owl – have a newspaper competition where they have to look at the newsletter in order to answer the question. Average parents don't read the newsletter. Even Teaching Assistants who are parents don't read it. Until you can hone in on people who should know... we tried to have parent champion, that didn't work, people are busy. Class champion, TA champion, I don't know. something where they go out to meet parents at the end of the day."* [Mrs Magpie_MS_Feb-2016]

Ms KS1: *"We were talking about this before – teachers going to out to meet parents in the morning... Loads of schools do that."*

Mrs Magpie: *"I went to one part of the school (not yours, and not yours [nodding to Ms KS1 and Ms KS2]) and it was ten to nine, it was freezing, [I said] could you let them in? It's about going to greet the parents; 25 to 9 you should be ready. You could take turns. Just saying hello."*

Ms KS1: *"So many people commented on you being out there* [the HT]*, it was positive."*

Mrs Magpie: *"If we all did it... talking about 5 minutes..."*

Ms KS1: *"But nobody in SLT liked it."*

Mrs Magpie: *"Could it not be at 20 to 9, duty day... open the door, couple of minutes to let people in. That's a really clever one, isn't it? I think SLT thought <u>the staff</u> wouldn't like it, it's not <u>they</u> didn't like it. So, let's just go for it."*

[Ms KS1 and Ms KS2 agree to propose this.]

Mrs Magpie: *"Good, so it's not muggins saying it. Max of 5 minutes (good psychology of putting it). Opening the door to let them in. That way, if it's raining, you'll realise they're soaking. No teacher is going to want to stay out in the rain, it solves that problem, opening the doors. Secondaries do that. [St. Robin's] does it. They'll hate that."*

Researcher: "Why would they hate that?"

Mrs Magpie: "*It's a nice school up the road, if they can do it, we can do it."*

This case study outlines the idea of collective focus on school improvement and professional development topics via the use of Pathways along with other resources. The collaborative efforts and focus did not always translate to the whole organisation or team necessarily 'knowing' that Pathways was being used but it seemed clear to key users with the support of senior leadership. Ms KS1 remarked on the new approach to parental engagement in Magpie School that permeated discussions across the school and curriculum, e.g. in matters related to homework, maths, spelling and so on:

> "*Because there is a role for parental engagement, a focus, more people say if something is being organised, oh we must invite the parents… it's part of everybody's professional journey*." [Ms KS1_MS_Feb-2016]

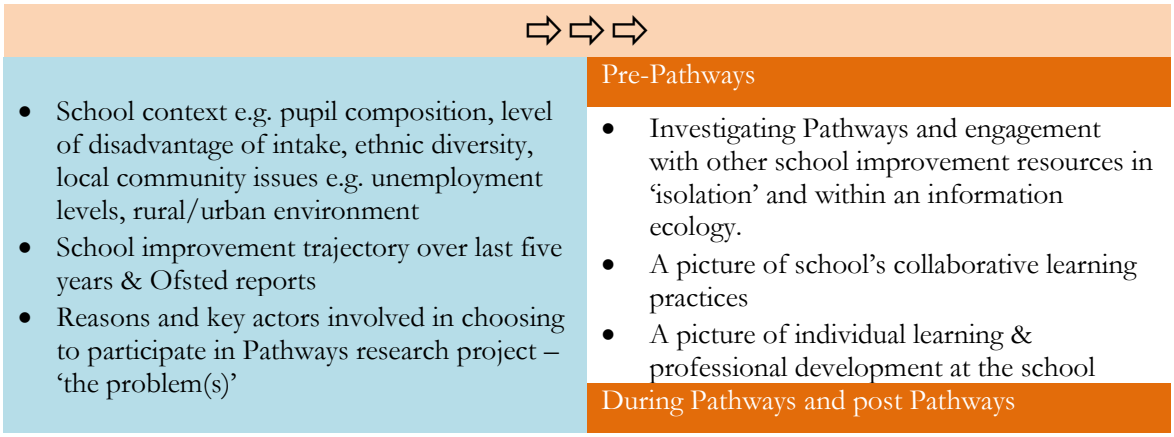
Summary

Pathways and other tools like it could potentially be seen as a platform to conduct and understand research, consider data, information and knowledge in different forms (*episteme*, *techne* and *phronesis*), apply evidence to practice, or at least question (previously) firmly held beliefs and consider other perspectives. The quality and utility of what was "produsedˮ seemed to depend on the type of leadership support provided, the users' and "produsers"' levels of interest and commitment, and the characteristics of the interactions that took place between different practitioner groups. Not all strategies might have made it through to implementation but starting points in exemplar action plans and PowerPoint presentations were provided in Pathways. Magpie's use of Pathways featured teachers cooperating to form "learning communitiesˮ (Mitchell and Sackney, 2009) and relationships that promoted collaborative inquiry with a Higher Education partner (Jackson and Street, 2005) – attempting to draw on an existing research evidence base (interspersed with practice) and integrate this with 'live' every day practice (also itself interspersed with research evidence). Pathways and similar online tools appeared to act as vessels for a kind of "conversational rationalityˮ (Alvesson and Karreman, 2011), a process through which practice and knowledge was developed, discussed and exchanged – a new technologies extension of "supportive school improvementˮ (Jackson and Street, 2005: 57).

Chapter 5: Raven School

Raven School, located in the east of England, was named after the most widely geographically distributed of all 'corvid[21]' birds. The executive headteacher, Mrs Raven, talked extensively about developing an international curriculum for her school, and broadening pupils' experiences and horizons beyond the more localised context of their school and home settings. Also, ravens (like other corvid birds such as the magpie) are known for their inquisitiveness and ability to adapt – attributes which I associated with Mrs Raven and her staff's efforts to rapidly move the school out from their Ofsted categorisation of 'Inadequate', into 'Good'.

(Figure 22: Case study structure – shown in Part II)



5.1 Context

"We appear to have lost our head..."

Raven is a junior school that – after their 'Overall effectiveness' had been judged '4 - Inadequate' and the school was placed in 'Special Measures' by Ofsted in the summer of 2012 – was eventually judged 'Good' in summer 2015. According to the executive headteacher of both the junior and infant schools – who will be referred to as Mrs Raven throughout this document - the previous headteacher of the junior school had been "in post, but absent"; Ofsted inspectors had arrived six weeks after she had apparently left. The headteacher of the linked infant school at the time (Mrs Raven) was asked by the junior school's governing body to take over and a 'hard federation' was formed:

[21] Corvid birds, from the 'corvidae' family, include ravens, magpies, jackdaws, jays, crows and rooks. They are also known as the 'crow family', for their adaptability to many different settings and extraordinary intelligence – having shown self-awareness in 'mirror tests' (Prior, Schwarz and Güntürkün, 2008) and tool-making abilities.

> *"There was no substantive head in post. The school was put into Special Measures in June [2012] and around that time the governors said 'we appear to have lost our head, would you take over and start in Sept at both schools?'"* [Mrs Raven_RS_Nov-2014]

"We need to start again."

The 'aftermath' of the Special Measures judgement was described as "a difficult two years of many changes". In 2014, when Mrs Raven had applied to join the Pathways research project, the priorities at KS2 stated in her initial joining questionnaire were to:

- "improve the quality of teaching overall,
- embed the use of the new learning programmes effectively,
- reduce gaps in achievements between pupil groups ([Pupil Premium] and gender),
- develop and strengthen governance [and],
- embed the new distributed leadership structure to ensure everyone understands the accountability for whole school improvement." [Mrs Raven_RS_Nov-2014]

Mrs Raven had been headteacher of the infant school for ten years, and had already instituted two Woodland Press learning programmes while in post there: 'Maths Makes Sense' and 'Read Write Inc'. These were subsequently introduced in the junior school after she took over the headship at both schools. By the time I met Mrs Raven, she had worked for 12 years as a headteacher (including the two years as executive headteacher of the infant and junior school federation).

5.1.1 Attainment and progress data

Figure 29 (page 136) shows a dip in reading and mathematics Level 4 attainment at KS2 in Raven School between 2013 and 2014 – the second year of the hard federation. In the school's 2012 Ofsted report, inspectors had noted:

> "Pupils' achievement from well above average starting points is inadequate and, by the end of Year 6, their attainment drops in English and mathematics to only average. There is significant underachievement among all groups of pupils, although occasionally a few pupils make good or better progress." [Ofsted_RS_2012]

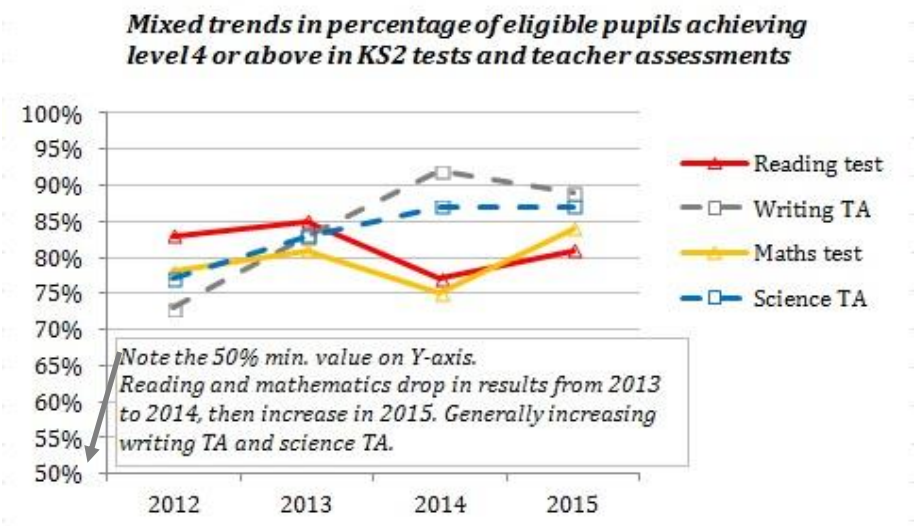
Inspectors had more positive things to say about Raven School in 2013 when they were judged '3', which in the space of a year had become 'Requires Improvement' (where previously an Ofsted 3 grade translated to 'Satisfactory'). Nonetheless, inspectors summarised:

> "The progress that pupils make is faster than in the past and the standards that they reach are higher."

[however]

"The progress that pupils make is not consistently good in all subjects and classes. Not all teaching consistently challenges pupils, especially in subjects other than mathematics and English." [Ofsted_RS_2013]

Figure 29: Raven School's KS2 Level 4 attainment



In October 2013, Mrs Raven had begun her training as an Ofsted inspector. Speaking to Mrs Raven in November 2014, she described what the training had involved so far:

> *"You are trained to interpret data, to interpret observational evidence and always to be thinking about evaluative or causative statements when you're writing. Because the pace of the lesson was fast, the children were engaged, they were learning effectively. It's very hard to see learning... There are proxies for observing learning, the children have their heads down and were focused, does this tell me that they were working hard and learning effectively? The training trains you to be careful about the vocabulary you're using and not falling into the trap of proxies of learning. The children were all looking at the teacher, they weren't listening, not paying attention, trap you wouldn't fall into after the training."* [Mrs Raven_RS_Nov-2014]

Instead, a trained inspector might ask:

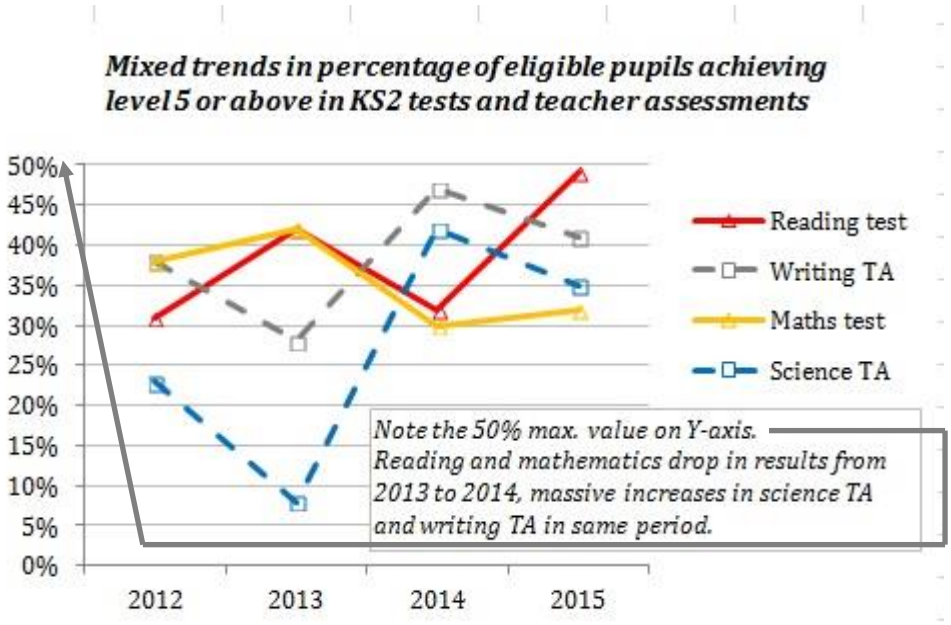
> *"What are they doing? Are they working hard, are they concentrating and producing a good amount of writing to good standard, and as you would expect from children in this year? And why is that happening? The teacher has been clear about the lesson, the objectives, how that's been communicated and the children know what they need to do and how long they have to do it. You put all that together and come up with three statements -- the children were working hard in writing at a good pace because the teacher's expectations were clear and there was a time limit set. So you can agree with all of that without being woolly."* [Mrs Raven_RS_Nov-2014]

Mrs Raven listed exactly how she thought the training had benefitted her as a leader:

You're trained how to be precise. You're thinking about what is happening, why is it happening, what would stop it happening, if it was like this would it be different... I'm asking questions and slipping in questions to move on their learning, I'm better at that because of the training. I think the training should be a prerequisite for headteachers because it's around school improvement." [Mrs Raven_RS_Nov-2014]

Reading attainment at Level 5 in Raven School increased between 2014 and 2015 as can be seen in Figure 30.

Figure 30: Raven School's KS2 Level 5 attainment



5.1.2 School improvement priorities

As with the other schools in this study, Raven expressed an interest in participating in the research project by completing a questionnaire (in Appendix 15B on page 419). The *problem* for Raven School – in the context of their school improvement plans and this research project – was given as:

"The challenge of the infant school is to maintain the existing high standards whilst using the strengths and skills of the existing staff to develop and coach the junior school staff.

Improvement priorities at KS2 are to improve the quality of teaching overall, embed the use of the new learning programmes effectively, reduce gaps in achievements between pupil groups (PP and gender), develop and strengthen governance, embed the new distributed leadership structure to ensure everyone understands the accountability for whole school improvement. Developing outdoor play and learning opportunities have been a focus over the past year, alongside a strong CPD programme for all staff." [Mrs Raven_RS_Oct-2014]

The reasons for joining the research were outlined as:

- *"Opportunities for networking, sharing best practice and critical reflection are essential for us on the journey we are on.*
- *We believe the local authority offer is inadequate overall and does not meet the needs we have*
- *A systematic approach to school improvement, without having to invent everything ourselves, would be of great benefit.*
- *Opportunities for Middle and Senior Leaders to engage in high quality CPD is of benefit to the Federation at this transitional point in its development."* [Mrs Raven_RS_Oct-2014]

Mrs Raven appeared to be focusing on aspects of teaching and learning from both the pupils' and teachers' perspectives – by emphasising the junior school's need to achieve consistency in their staff CPD provision and quality of teaching. The executive headteacher in Raven School also articulated a number of programmes being bought in to support their rapid improvement, including the IPC – International Primary Curriculum (Fieldwork Education, 2018) – for subjects other than English, mathematics and religious education. This package is linked to the new NC, and aims to provide thematic units for different age groups:

> *"We can log on and select from hundred, hundred and fifty thematic units on all subjects except literacy and maths, and except RE. We might choose a unit for year 5 called Myths and Legends, there would be a lot of history, geography, art, maybe some science etc. Would be more of a humanities project. Would give us eight weeks of learning. Teachers can build a map for the year group, at the start of the year, drop in thematic units across their school year, the IPC does a curriculum match tracker to see how much of the NC requirements are being met, percentage, fully matched to the requirements of the NC. Because it's international, it has the global dimension that the NC might not have. Additional perspective. Not a bolt on."* [Mrs Raven_RS_Nov-2014]

Use of Pathways at Raven School might be described as a lesser acknowledged type of mediated autonomy. Raven had to quickly move out of Special Measures and so its teachers (new and more experienced) needed 'freedom' and capacity to be able to develop their practice in line with the new leadership system and drive towards improvement. While the headteacher governed the use of Pathways tools, and distributed materials like questionnaires more as discussion points amongst her staff (rather than full-scale surveys), the reasoning given for this was that her team needed time and space (again, one would argue, freedom) to prioritise the improvement of their quality of teaching. They did not need extra responsibilities in the form of managing a Pathway on top of their efforts to improve pupil outcomes, while also managing and implementing the new NC. The support provided by Pathways was certainly needed or at least accessed, for teachers at Raven to develop their practice and as one of several approaches to school improvement for the headteacher. The changes in workload and professional practice required to lift the school out of Special Measures had created enough of a formidable set of demands on the teachers – the idea seemed to be that Pathways would

fit in homogeneously with the other school improvement resources already in place and hence not need to be explicitly 'named' as another resource to classroom teachers as such.

When asked why the IPC had been chosen over other curriculum packages, Mrs Raven expressed a need to move away from a "Eurocentric viewpoint". In history for example, on the topic of 'evacuation', more locally familiar resources may have been used in the past such as those from World War II, but the focus could be brought more into the present and expanded into less (traditionally) familiar but more contemporary territory by discussing issues such as refugee status and the modern-day equivalents of historical events.

> *"[The] big thing was living where they do, there is very little ethnic diversity in the local area. Basically, we're providing what the children need here, because it's not out there in their lives, apart from watching TV perhaps, and we have no local cultural diversity to draw upon. We have a Catholic church, CofE [Church of England] church and Methodist church, there's nothing else. We'd have to go to [name of nearest big city]."*
> [Mrs Raven_RS_Nov-2014]

Pattern of preparation

Details of how Mrs Raven described the school's preparation for the new NC and the joining of the junior and elementary schools in the hard federation are given in Appendix 16 (page 421). Mrs Raven provided highly structured, 'bullet-point' style verbal accounts of the different steps taken to first 'pilot' the IPC, visit other schools to see examples of use, and to familiarise staff with the IPC. Staffing structures changed dramatically in the junior school, allowing for expansion horizontally as well as vertically. Mrs Raven also spoke of trying to achieve consistency in the quality of teaching across the two schools.

Joining two schools – the "shared vision"

The application of the IPC was linked soon after with establishing collective aims for both the infant and junior schools:

> *"[The IPC] Served different purposes. New National Curriculum was coming. Needed a way through it. Needed to join the two schools together so the staff team felt there was a shared vision, needed to have a coherent plan that goes from start to the end in the primary years. Needed along the way, to protect the dignity and morale of the junior school staff. Didn't want them to feel done to, new project for all of us, new thing to do."*
> [Mrs Raven_RS_Nov-2014]

A theme of 'protection' began to emerge, that continued to run through Mrs Raven's description of Raven's school improvement journey. Again, related to mediated autonomy – but manifesting in a form of 'protective layers' to allow teachers to recognise and use their time to develop and improve

their practice – the IPC was seen as a means of providing an external scaffold that could unify staff from both schools. This feature also reflects how resources like the IPC (and Pathways) originate from an external organisation and represent artefacts that all members of staff can share and work through together – as opposed to an internal edict that may be bound with inter- and intra-school politics and histories.

Teachers' professional development

Mrs Raven articulated a focus on building a cohesive, cross-curricular learning-based curriculum for pupils, particularly in light of the higher bar set for each year group in the new NC. Eschewing the secondary-led subject specific lessons model (as pupils were still young) for topics and themes, she noted that:

> *"Expectations are higher. . . Children learn best when they are fully engaged and motivated. We needed something to hang our hats on. We've got to do all these things, whilst doing this and this, getting children enthused about learning, and doing a project on chocolate, even better! With the IPC – we thought long and hard about that – and saw it as a way of contextualising perhaps the new NC expectations."* [Mrs Raven_RS_Nov-2014]

In order to build the more "global aspect into the curriculum" mentioned previously, ICT resources for pupils also had to be improved and redesigned. The local authority was seen to be quite strict in that features such as YouTube videos were not usually made available due to safety concerns. At the time of taking on the IPC, Raven had to create its own ICT 'filtering' service that was more open but still had controls and e-safe policies in place. These policies were reinforced every half term but it meant that Raven pupils could "access more diversity through the web, video clips etc; those two [the IPC and ICT changes] went hand in hand" [Mrs Raven_RS_Nov-2014].

A number of CPD-related changes were put in place, for example, the 12 teachers in the junior school were paired with 10 teachers in the infant school in a "buddy system". Lesson study was used as an approach and underpinned Raven's CPD offering. Lesson study is defined by the TDT (2015: [online]) as a model of teacher-led research originating in Japan in which:

> [A] triad of teachers work together to target an identified area for development in their students' learning. Using existing evidence, participants collaboratively research, plan, teach and observe a series of lessons, using ongoing discussion, reflection and expert input to track and refine their interventions.

Raven used pairs rather than triads as that was decided to be more manageable with their particular context and school/staffing size. Partnership details were also apparently not reported back to Mrs Raven.

5.2 Engagement with Pathways

5.2.1 Level 1: participants' reactions

Figure 31: Raven School's engagement with Pathways

(2014-2015)	Closing the Gap – managed by the executive headteacher, with an evaluation produced by the deputy headteacher, assistant headteacher and inclusion leader using Pupil Premium data
(2015)	*Assessment without Levels* – managed by the executive headteacher, plus discussion with senior leadership team
(2015-2016)	*Parental Engagement* – managed by the executive headteacher, plus discussion with senior leadership team

Mrs Raven described Raven School starting with the Assessment Pathway. She also dotted her account with details of other resources being used besides Pathways:

> "*Looked at Assessment Pathway, useful to start with. Quite like looking at a wide range, lots there, got me thinking, with my Deputy. Thrashed out what we wanted it to be, locked in a room for an hour. I started with Pathways, but then looked at school websites to see what they were developing. I looked at The Key. Looked at their recommended/case study schools. Started with NAHT assessment commission report (Feb 14). That's originally where we got our information from.*" [Mrs Raven_RS_Jun-2015]

She then described activities undertaken with another member of the senior leadership team that resemble elements of collaborative inquiry:

> "*Sitting and pondering, then said to my deputy, talk you through what I've thought about, hour and a half later, we both have jobs to do. Deadline 29 June, we will present it to senior staff. They've three weeks to get their heads around it before the end of term. Assessment was the big one that was really nagging away at me. Pupil Premium one was a big one, especially with Ofsted.*" [Mrs Raven_RS_Jun-2015]

A sense of shared ownership emerged, related to the concept of 'mediated autonomy' and a recognition perhaps that healthy and open collaborative inquiry might be better cultivated in an environment where communications, no matter how problematic, are welcome, from whomever or wherever they originate:

> "*[There is] a general sense of organisational wellbeing. When people are off they are genuinely sick. People are generally positive. They know if there is a problem they can talk to someone about it, to me or SLT, and we'll sort it. It used to be based on cliques, if the leader liked you, you were ok... I'd seen it myself, staff would tell me too. Staff were being invited to give their views. Before some people would find out first, some later. Have a picnic, have some fun together, staff get together and play tennis, yoga class after school, quiz after school and fish and chips. Little things. It used to be cliques. Every year we need to evaluate what we're doing, not building on sand, [or] superficial 'everything's fine'.*" [Mrs Raven_RS_Jun-2015]

Later, Mrs Raven's description of the junior school's transformation indicated strong notions of succession planning and managing the capacity for change in Raven School:

> "*This year, feels like a better, different place to work, for the teachers, children. Proper systems, secure and safe, improvements are rolling through. It's so much easier to teach in a place like this. Children know how to behave, know expectations, understand the curriculum, we've created it. Three-year journey is pretty much spot on. We can now sustain big changes of staff without feeling that we've gone far back and have to start again. This year my Assistant Headteacher at the junior school will retire in July. So, we've got a brand-new Assistant Headteacher coming, [and] a new phase leader for KS2. Two big changes. This time last year, it would have been different. This year, we can carry on the momentum. Going into the fourth year, a nicer year finally.*" [Mrs Raven_RS_Jun-2015]

Certainly, further changes were afoot as Raven School dipped in and out of three Pathways over the course of the research project:

- Assessment without Levels;
- Closing the Gap (referred to as the Pupil Premium Pathway by Mrs Raven);
- Parental Engagement.

Engagement with Pathways at Raven seemed more 'fractured' and less clearly articulated compared with Magpie School, hence my use of the phrase 'dipped in an out'. This did not mean that their engagement with Pathways was in any way insufficient. Their use of other resources was articulated more explicitly, along with the feeling that Raven had in a sense 'graduated' from Pathways onto more advanced, greener pastures, where knowledge was not limited to one source like Pathways or Oxford Owl. Ironically, one of the possible consequences of enabling easier access to research evidence and good practice materials in a 'safe', structured system, could also be users developing the skills and confidence to look for knowledge outside of that system – skills that were perhaps acquired earlier but enhanced by this new resource. Interestingly, this was one occasion where I disagreed with the Woodland Steering Group in their declaration that the school seemed to be expressing shades of over-confidence, particularly towards the end of their engagement with Pathways. In contrast, I saw the admission as the school being more at a kind of crossroads and making efforts to plan their next move to sustain a clear focus and prioritise, which was maybe growing cloudier with so many resources inside and outside of Pathways available to choose from.

5.2.2 Level 2: participants' learning from CPD

A running theme of using Pathways materials to enable communication of research evidence and changes in practice was observed – particularly in the use of PowerPoints (e.g. from the Closing the

Gap Pathway), items to display to staff and parents (e.g. a poster detailing the criteria to qualify for free school meals) and staff questionnaires as foci for discussion, rather than individual proformas to complete. One revelation had taken me by surprise however, during an earlier conversation about how Mrs Raven used Pathways: "*We don't ever particularly sit down to evaluate... naturally every term."* [Mrs Raven_RS_Jun-2015]

How does one coach another member of staff through a strategy or intervention without using formative feedback from previous events? The key words in that first statement seemed to be "sit down". Evaluations, like risk assessments, happened periodically, sometimes in the form of paperwork but at other times, more in conversation form and action. Parallels can be drawn with what appeared to be a campaign directed at practitioners by the Times Education Supplement to abandon written feedback in classrooms so that teachers could save time, concentrate on teaching and instead, provide mostly verbal feedback to pupils (Rogers, 2016; Pinkett, 2016 [7; 13 Oct]; Ashford, 2016; Tidd, 2016). Written feedback, executed judiciously, may help pupils remember how their work was marked and why, as opposed to purely verbal feedback that (unless voice- or video-recorded) may be quickly forgotten. The same may have applied to the task of evaluation in Raven School – it did not mean that it was being abandoned altogether. But more that the debate hinged on the 'mode' of evaluation that would better enable schools to improve. Mrs Raven appeared to highly value the very precise and focused nature of the MAID analysis tool for example – a proforma designed for self-evaluation and audit type tasks that asks Pathways users to list strategies or activities to Maintain, Amend, Introduce and Discard:

> "*Done lots of talking, but we need hard data, can you put something together. In Sept for planning, we'll see what was successful, what can we do again, replicate, plan do review cycle. MAID – we do it now, over May half term, where are we up to with our SIP. [What happens with the ambers] Indicates that some things have been started but not completed. Some things happening a bit later, so amber. Staff sickness, amber. Will be green when they return. Project with camera (Swivel), tool to self-reflect, will be pushing out, some have tried it.*" [Mrs Raven_RS_Jun-2015]

So here, Mrs Raven and her team seemed to be employing elements of the DASI (again without citing or necessarily being aware of the approach) specifically around evaluation of the teaching and learning environment – for example examining more closely the opportunities for learning in different pupil groups, and potentially what could be improved (by both adding and taking away). Use of Pathways for staff learning and development, and again, modelling WAGOLL (what a good one looks like) for her teachers were highlighted:

> "*[My SLT] looked at the gaps of achievement between children with PP and not, how many PP children access clubs, we had an intervention class in Easter, baselining in April and updating last week, she's done that and produced a report. If it's always me, it doesn't get spread around. I'll get different resources, staff*

training from Pathways, use with staff. We used the Pathway till the end but we need a next lot of data, Ofsted evidence that we need to produce. They looked at what I did, and really understand the issues, having been through it, able to produce a document for themselves." [Mrs Raven_RS_Jun-2015]

I noted to Mrs Raven in October 2015 that it looked like she had, as usual, done a lot of research before starting her next Pathway on improving parental engagement. She had mentioned that two things had come out of using Pathways to question the problem:

> [Speaking about (1) getting parents' more engaged with pupils' homework] *We hope that children can talk more favourably (anecdotally) about the fact that parents understand what our expectations are for homework. Children might say I didn't remember what to do but I watched the video and that helped me. As well as more homework being completed. The spinoff is hopefully the children are more engaged. Their skill level increases, more active engagement with parents. Not all homework is written. It could be a counting game to do with your child. Makes you laugh when you play it, you learn more, what's not to like? Harder to reach parents -- Parental Engagement Pathway - good thing that came out was parents for whom school was difficult, they either don't see the value or they do but they don't know how to get their child engaged/motivated, we wanted to be able to reach out to them, making sure the homework is not always the same. Sometimes it's a game or it's some artwork they can create with their child.* [Speaking about (2) building greater participation by pupils' fathers] *The other thing was thinking about fathers, trying to engage with them a bit more. I've got a couple of male staff that have just joined, one of the things is to talk a little bit more to draw on the male interest.* [Mrs Raven_RS_Oct-2015]

I asked if she envisaged being able to investigate the problem from these angles without Pathways.

> "*No.. I think having the Pathways there, all the information in one place, it made me go through the process, even though this time I didn't create action plans, I didn't feel I needed that. The gathering of information in one place, I was able to read the case studies, look at the research, websites, look at the questions it was asking me to reflect on in the audit tool and things and the things that stuck out to me were the things I thought were gaps, but having that realisation that's where to put our focus. And also, to <u>m</u>aintain the things we were doing well, very clearly, they were coming out in Pathways as good practice. Some of the gap areas were things we needed to focus on. The Facebook one was quite straightforward. It was just one of those ideas sparked off by what we read. I was last year mulling over the effectiveness of the pupil learning record that we do based on the conversations with children. And I knew about this other school so I spent the summer looking at their website, reading the book etc. The head was coming to [the county] in September so I booked onto the conference. Once again, it's inspired me, the Pathways, to be able to see the research, case studies, audit tools in once place, allowed me to quickly analyse and identify gaps in my own practice and move away slightly and move on. I might have had to do a lot more work myself without having Pathways there to keep me on track.*" [Mrs Raven_RS_Oct-2015]

More of Mrs Raven's 'bricolage' approach to school improvement seemed to be materialising, in her recognition of the Pathways 'system', but also her mention of resources outside of Pathways that might inform her overall plan. I asked for more specific details about how these two gaps (around homework and fathers) were identified:

> *"Looking at questions in the audit tool, that makes you ask questions of yourself. When I looked at some of the case studies, if these had been examples of best practice, let me see what it was, like the case study about fathers, that I was interested to pursue. That struck a chord. We have a few fathers who clearly are single parents, and we're doing as much as we can to engage them. We're looking at gaps in our practice. When we run parents' sessions, who tends to come... Who's not coming, why? Harder to reach families -- what can we do. Gaps were identified along the way with Pathways."* [Mrs Raven_RS_Oct-2015]

I pointed out that this identification process involved, crucially, Mrs Raven (and other staff) being able to make their own connections between the audit data and possible external factors:

> "*Yes, I always read widely and keep myself well informed. That means when I do have an idea, I am able to match it back to existing knowledge, which was there but I wasn't sure what to do with it. It's gathering nuggets of information…"* [Mrs Raven_RS_Oct-2015]

I asked Mrs Raven to try to describe her approach to strategic planning:

> *"We will decide a lot of policy changes based on staff discussions, sometimes they will talk about something they see, we will build a time to discuss it as a result of that. Sometimes we're able to make an idea into action, or sometimes we need to keep talking about it as a group of individuals over weeks if not months. It's very hard to capture, when something clicks, something makes sense, if something fits with our ethos, we can see it working in our context. We've got a lot of experience on our leadership team, so we might waste less time going down avenues that lead nowhere, we are good at talking things through, problem-solving. We're good at approaching each other. We know what we want as an end product but we might not know what it would look like or how to get there and so we have coaching conversations between us. That's quite powerful."* [Mrs Raven_RS_Oct-2015]

So, having a clear 'end product' or destination (be it pupils' outcomes or noticeable change in practice perhaps) was again identified as the basis for the conversations that took place around improvement efforts – in line with the DASI's emphasis on ultimately targeting pupil outcomes.

5.2.3 Level 3: organisational support and change and links with school leadership

I started exploring more the idea of Mrs Raven articulating a desire to protect the workloads of her teachers as also a kind of 'mediated autonomy'. First, a sense of control, navigation or "setting directions" (Day, Gu and Sammons, 2016; Sammons et al, 2011; Day et al, 2009) had been identified:

> "*I will always know if the discussion is productive. If it gets to the point where we're not deciding anything... there are non-negotiables, deadlines we have to keep, what staff have to do. Complex organisation, tight structure, whether they like it or not, have to make it work. Need non-negotiable steps. But sometimes if we're heading in the right direction, that's ok too, to give things a go and see what happens. Staff feel trusted, more confidence to take risks. If we're all passive, we're not going anywhere.*" [Mrs Raven_RS_Jun-2015]

The second example came at the end of the research project as Mrs Raven and I reflected on her most recent action plan:

> "*We looked at our tracking software, to make sure it was suitable for the purposes we wanted, and by the end of last summer term, we were confident about what it was we going to be doing for Sep, which we did. In Sept, I attended some courses locally, did some reading, found out what people were doing, and essentially confirmed what we were going to be doing, how assessment on the ground was going to differ to summative tracking. We came up with a strategy where we could not overwork teachers. The only point of assessing was to inform teaching as opposed to report to anybody. We were lucky, our tracking system is really quite detailed, we could pull out any reports, without having to do any calculations ourselves. We had some staff training. The interim assessment details for KS1 and KS2, exemplification details have just come out over the last few weeks, they really do confirm the path we were taking. In terms of the Assessment without Levels Pathway, it was reasonably useful, but 18 months ago, when we were really thinking about it.*" [Mrs Raven_RS_Feb-2016]

This theme of control extended into two other dimensions of leadership practice in primary schools: "developing people" and "use of data" (Day, Gu and Sammons, 2016; Sammons et al, 2011; Day et al, 2009). I asked Mrs Raven how Pathways could 'work' if the tools were first scrutinised and chosen by her, and not individual practitioner-users:

> "*It's a workload issue. There is so much staff are doing outside of Pathways. Shared information, but I've decided which tools to use. Not added an extra online element to do. My Deputy, Assistant Head and Inclusion Leader have looked at all the pupil premium data and produced the next evaluation, not me. So now there is a structure in place, they understood what had to happen. From my initial model, we need to answer these questions . . . they then have taken that and produced the next documents.*" [Mrs Raven_RS_Jun-2015]

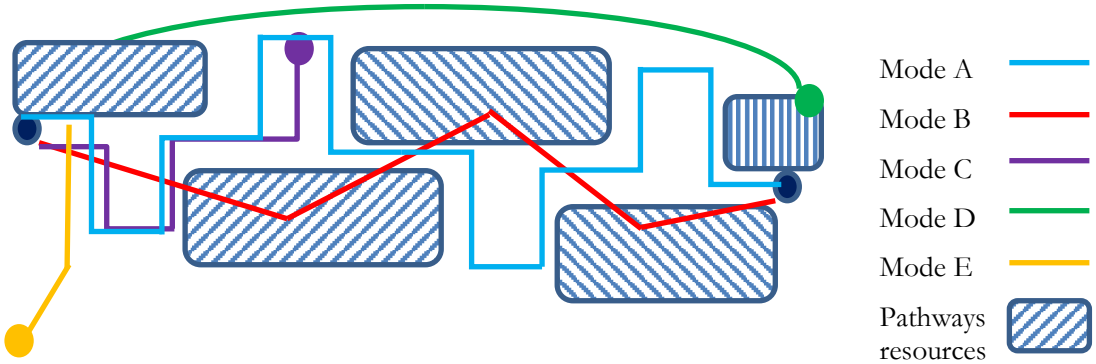
The "developing people" aspect follows through in the headteacher's next statement about distributing leadership tasks:

> "*They've [Deputy, Assistant Head and Inclusion Leader] looked at the gaps of achievement between children with Pupil Premium and not, how many Pupil Premium children access clubs, we had an intervention class in Easter, baselining in April and updating last week, she's done that and produced a report. If it's always me, it doesn't get spread around. I'll get different resources, staff training from Pathways, use with staff. We used the Pathway till the end but we need a next lot of data, Ofsted evidence that we need to produce. They looked at*

what I did, and really understand the issues, having been through it, able to produce a document for themselves." [Mrs Raven_RS_Jun-2015]

Returning to the metaphor of school improvement as a kind of 'orienteering course', Raven School's approach can be described as switching from one mode (A) to another (B) in Figure 32. Mode A sees Raven School starting from a particular point and following the 'set path' the first time – i.e. following the marked steps in Pathways and trusting the tools and guidance under each step to get them to their planned 'control point' or goal. This would have been early on in their improvement journey when Raven navigated their way out of their recent Ofsted Special Measures status towards their current 'Good' grade. Mode B is comparable to a more 'as the crow flies' route to their next 'control point'. They could have followed the set path again but instead, because they feel more able, familiar with the steps and confident of the 'space', they choose to take the more 'straight line' route, one that is more open terrain, perhaps unmapped, but ultimately a more direct, shorter route to their improvement goal.

Figure 32: Possible modes of 'orienteering' through the Pathways 'course'



Mode A

Mrs Raven listed the resources taken from the Closing the Gap Pathway and adapted to Raven's requirements:

> *"[1] Used PowerPoint for the staff meeting, [2] things for display, [3] questions for governors, [4] timetables, [5] staff questionnaires, [6] my bits and pieces. Took us up to about April. In the summer term, [7] Pupil Premium expenditure – a getting ready kit for Ofsted. [8] Summary statements that go on the website, ready for Ofsted."* [Mrs Raven_RS_Jun-2015]

Mrs Raven went on to describe a review carried out by the deputy headteacher of an intervention for Pupil Premium children using Leuven scales:

> *"You can see the difference between March and June. What she looked at then was all children, Pupil Premium and reading, writing, maths scores of their attainment and progress. At reception, who's made expected progress, 82%, how many Pupil Premium, 81%. Writing 84% all, 88% Pupil Premium, so we have made an impact and ditto in maths, 93 vs 94. We've had positive impact. We can see here, Y6 all pupils, Pupil Premium gap in reading, small gaps here and there, but at least we can now say what are the reasons for this. 94 vs 89, not bad going, nationally there is a very big gap. We can look at progress vs attainment, and talk about impact of interventions. We also look at impact on the wellbeing scores. Done lots of talking, need hard data, can you put something together. In Sept for planning, we'll see what was successful, what can we do again, replicate, plan do review cycle."* [Mrs Raven_RS_Jun-2015]

Please see section 5.2.4 of this chapter for a step-by-step account of Mrs Raven and her team's use of the Closing the Gap Pathway.

Mode B

A theme that emerged with Raven School (and indeed Jackdaw School later on) was the issue of how Pathways might keep the attention of a user like Mrs Raven who articulated an impression of the system and its materials becoming stale or "old hat" after being followed the first one or two times. What were some of the differences in characteristics between Raven and Magpie School for example, where at least three Pathways were followed fairly faithfully each time, with no mention of the system becoming familiar, so much so that they might think of skipping tasks and even steps to perhaps achieve their improvement goals even faster? Mrs Raven 'reviewed' Pathways for me when I spoke to her seven months after her first interview in November 2014.

> *"Very useful tool, can point you in a whole load of directions. Lots of ideas and tools. I tried to stick with step 1, 2, ... I'm not sure I'd always like to do it that way. The process is not wrong, but some things become more apparent ... you might see another school doing something [then] you might go straight to action. If you're less experienced, can plug in and go. Nothing lacking. You need the discipline to use it. Difficult for any tool to be one size fits all. I've started reading through the Assessment Pathway, I started looking at other schools' strategies, now thinking aloud with Deputy, we actually don't need to go through the whole process because in a sense we've already done it. If I had asked my Deputy to do this, and use Pathways, I'd know it would be a proper job. Benefit of experience I've got. In order to remain current, it has to deal with current dilemmas facing schools."* [Mrs Raven_RS_Jun-2015]

This is what I mean by Mode B – much in the style of trekking through a mix of terrains, perhaps progressing from a simple route to a more advanced course with multiple challenges, contours and gradients, Raven followed a line of progression from one Pathway to the next where the distance travelled was apparently shortened, but without some of the checks and balances of the original 'planned' route set by Pathways. One could define this as a kind of inter-Pathway progression, in

addition to progress made within one or intra-Pathway. If the platform that one has designed, amongst other resources that a school might be using or have used in the past, has played a part in enabling some of its users to 'graduate' out of a Pathway and seek other, more challenging or varied resources, would this be a positive or negative outcome? The answer may be dependent on from whose perspective one is examining these outcomes, what exactly these 'outcomes' are and one's views and preparation for inter-Pathway progression. Time and again, several members of the Pathways Steering Group at Woodland seemed surprised that a school would consider 'straying' from Pathways as the platform should have been able to meet all of their improvement needs. A resource like The Key for example was deemed valuable, but without any set ways of using the information:

> *"In The Key, you search, all the resources, no prescription about how to use them. Pathways genuinely is a pathway to self-improvement as opposed to a load of resources. E.g. assessment, I will look at everything that is out there, gather it all, read it all, and unpick it, I like this, principles - NAHT, I'll change the language, magpie. Pull it together until it fits what I want it to be. Collaborative but too much because you need to be clear. Making choices, knowing how you want it to look at the end and working towards that."* [Mrs Raven_RS_Jun-2015]

'Graduating' or moving on from Pathways: Modes C and D

It became apparent towards the end of the fieldwork that Raven was taking a combination of mode C – dipping into a Pathway and then going elsewhere when no new information could be located, e.g. Assessment without Levels, and mode D – starting a Pathway with a very clear end goal in sight and searching for and harnessing specific resources in Pathways to fulfil that goal, for example just the MAID analysis tool to work out next steps.

Examples describing modes C and D

(1) Comparing how Mrs Raven used the Closing the Gap Pathway (or PP – Pupil Premium as it's referred to by Mrs Raven) and Assessment without Levels, the idea of going back and forth with an end goal in sight describes mode D, but also going straight to 'take action' and then taking other resources (seen earlier in the journey) into account:

> *"I used it [Pathways] for the PP. I wanted to see how the tool was meant to be used, trusted the steps. Then I thought I had completed that one, still trusted the system, but realised with the Assessment Pathway, I actually had a lot of knowledge, I didn't need to go through those steps, I was ready to take action. Dependent on your level of need/experience, e.g. deputy, don't miss a step out. With hindsight, I will go in and read, go back and forwards, to look at the big picture. (I didn't do that for PP. So I can see how the system is put together)."* [Mrs Raven_RS_Jun-2015]

(2) Distinguishing between 'whole-school' and more 'one-off' use of Pathways – in this instance, the Outstanding SEND and Inclusion Practice Pathway, Mrs Raven seemeed to see the value in the

'system' for a new SENCO, so again the 'end goal' perhaps is in sight (mode D) but with the option of going elsewhere if needed (mode C):

> "*Not really [looking to use Pathways as a whole school] at the moment because none of them particularly was going to be for me, apart from engaging parents, which we already identified, would be whole school. Some of the newer ones, spelling, writing, we've already decided last Jan that improving spelling would be a big focus so we bought the Get Spelling programme,* RWI*, and used that block for that anyway. We've recently employed a new SENCO, she's doing the national SENCO training award, the outstanding SENCO practice Pathway, that might be useful for her. Except that she's now doing a national award, so she wouldn't need to follow that, although it might be useful background reading for her. We've been doing a lot of developmental work, training our staff for reasoning and problem-solving. We've invested a lot of money in doing that and getting consultants in.* [Mrs Raven_RS_Oct-2015]

(3) Mode D - the idea of agreeing the principles of the action required (in line with DASI) but coming at it from the other end of the journey:

> "*Once you had agreed the principles, it was a matter of finding something that suited the purposes that you have. Some schools probably fell into the trap of I like the look of that, ooh shiny package, that's what we're going to do and whatever the principles are/were, I came it from a slightly different point of view*." [Mrs Raven_RS_Feb-2016]

Example of Mode E

Standing just outside a Pathway or dipping very briefly into one, Mrs Raven decided to spend time looking for a different type of resource – one that was more 'current' to their specific needs. This brings up research evidence that indicates that proposed teachers' professional development and school improvement strategies should take into account the individual's and school's starting points. Pathways users are not prompted to first follow the 'self-evaluation' Pathway to potentially work out where they are in the improvement 'landscape' at any point, so even if there are resources in a Pathway that may come in useful to a school, they are 'hidden' behind the steps and prospect of viewing other previously-encountered resources along the way.

> *When I saw the Pathway on that I though, oh, don't need that, we've already done a lot of that, we've already spent a lot of time thinking about assessment and our new NC, I felt I don't need that assessment Pathway, so lots of things that were new Pathways, for us, they were old. I can see for other schools they might be perfectly placed, but where we are, I'm not sure what future Pathways will be useful, I don't know. We've got enough to keep it going. We're fine. It was just the engaging the parents, to add value to what we're doing anyway."* [Mrs Raven_RS_Oct-2015]

The other interesting feature of Mrs Raven's different modes of operation was the strong focus on setting directions, but also acknowledging that not all staff may see the end point straight away – if it

means 'going around the houses' for a bit and taking a few scenic detours in order to engage her staff – examples (1) and (2) below, or indicate to others her/their confidence in the route being taken (3), this was acceptable too:

(1) "*Being open, having good evidence why something is not negotiable. Might lose battles to win the war. If it makes them feel better, and it develops them, fine.*" [Mrs Raven_RS_Jun-2015]

(2) "*Leadership and experience of those in charge [matters]. I am always interested in looking at the latest research and pulling in the best bits that suit my purposes. Not all heads have the time or inclination to do that. What I like about Pathways is it is there to help schools navigate a course through all the things that are out there. But equally, if you have a good sense of what <u>is</u> out there, you might not need it. Depends on your circumstances. Whilst it covers the issues, they may be sometimes simplistic.*" [Mrs Raven_RS_Feb-2016]

(3) "*To a certain extent, when the Ofsted framework changes, it creates an industry of let's do character building in schools. British values. What? We've always done that but just not presented it in this way. [Researcher: Now it's behaviour] Yeah, that's right. [Researcher: Behaviour tzar] Nicky Morgan's pronouncement of having rugby players, the army to come and teach, build character. They are current issues, even though they are pooh-poohed, I need something short and sharp to say I'm ok.*" [Mrs Raven_RS_Jun-2015]

Talk of moving elsewhere from Pathways took us to the different trusted platforms and educational sources that Mrs Raven might visit on a given issue:

> *"Twitter, follow, subscribe to educational blogs, people I might agree with, leads to books, other sources, The Key. The rest of it, Google, I know other schools across the country, go back and see how they deal with things, GuardianOnline education, Telegraph education, Times education, Twitter. Reading books. Every night, I read on Twitter Steven Tierney, Mary Myatt (Ofsted inspector), follow certain schools. Tends to be online media. Without online media, I would email colleagues, trusted colleagues. Without online stuff I'd be lost."* [Mrs Raven_RS_Jun-2015]

Her interest in pedagogy and the neurological aspects of learning was also highlighted when asked for ideas about future possible Pathways:

> "*There are interesting aspects of pedagogy I like to build into my annual training programme for staff. What I do is I research it myself because maybe Pathways lacks that. For tonight I have prepared a training programme for an hour for my staff all around memory, memory retrieval and neuroscience, because that is linked to effective learning. It was something I started last year, it really had a positive impact on staff because it was around curriculum design and how often we are testing children, and we develop deep, embedded learning into our curriculum. . . Another aspect about pedagogy -- the whole idea of setting, streaming, mixed ability. . . how girls' and boys' brains function differently, what you can do more in terms of motivation, the effect of dopamine on children's emotional engagement in a lesson. It's really useful when schools are developing staff and*

they treat their staff as professionals, their pedagogy is being challenged and developed rather than always linked to subject knowledge." [Mrs Raven_RS_Feb-2016]

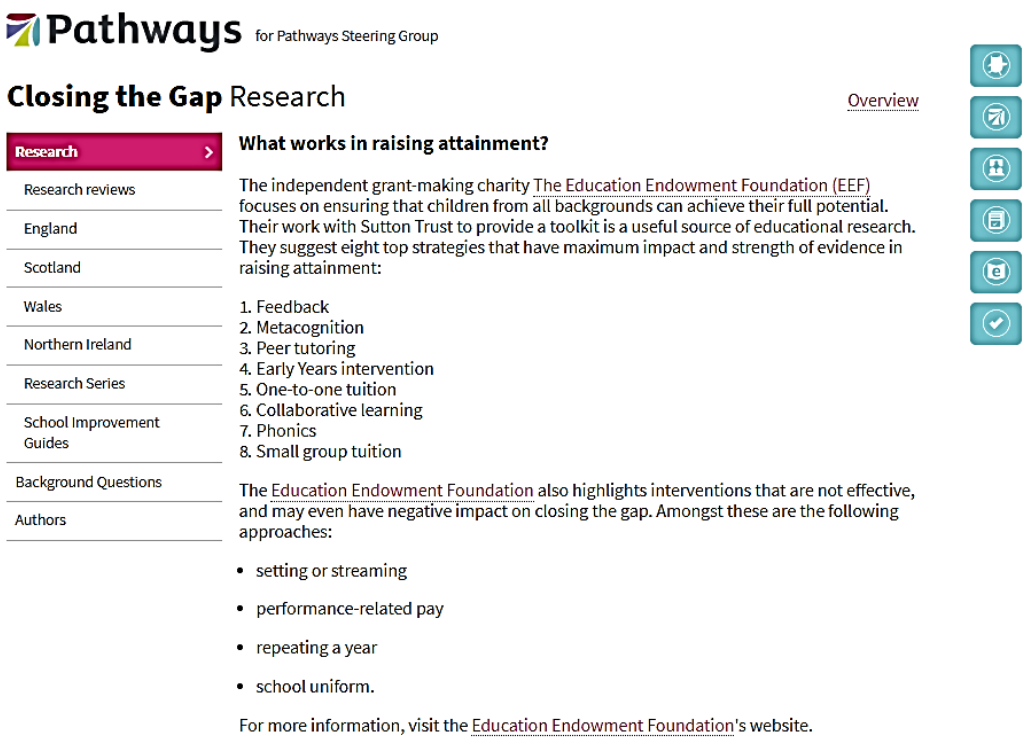
5.2.4 Level 4: participants' use of new knowledge and skills

Links with DASI model: Closing the Gap Pathway

I have chosen to link Raven School's reported use of Pathways tools with how Mrs Raven also talked about using different templates to support the understanding and enactment of specific goals amongst her staff. In this section, the qualitative aspects of, and assumptions behind, the DASI are dovetailed into Raven School's engagement with the Closing the Gap Pathway. The potential intersections at different points between the knowledge held in Pathways and the customisation of that knowledge can be illustrated by the artefacts shared with me from the Pathways platform, including audit exemplars, audit findings presentation and Pupil Premium evaluation report.

Every Pathway generally starts with a 'Research and background' section. The Research portion of the Closing the Gap Pathway presents the following summary taken from the Education Endowment Fund shown in Figure 33.

Figure 33: Closing the Gap Pathway research and background section



One stated function of Pathways is to bring together different sources of research evidence from other locations into one platform. Hyperlinks are included in the text so that users can venture out into

those external sites for more information. This is equally one of the paradoxes of a resource like Pathways in that it to some extent encourages exploration further afield but once users are outside of Pathways, they may stay there or travel elsewhere to seek support and hence not return to Pathways. One of the advantages then of the 'system' structure of Pathways and Oxford Owl is that it provides some scaffolding to users so that their explorations might be less 'directionless', and more targeted towards 'trusted' or familiar sites such as the EEF, NfER, DfE and Ofsted.

Raven's initial use of research evidence appeared to link closely with the main assumption of DASI that school improvement strategies are more likely to have a positive impact on pupil outcomes if the strategies are based on theoretical knowledge that has been empirically tested (Creemers and Kyriakides, 2015: 105-106). The implication here is that practitioners' reflections are insufficient on their own, if the feedback loop does not lead to some kind of externally-moderated research evidence in a wider setting.

Figure 34: Closing the Gap Pathway research evidence outline



Then, each of the four steps was visited in order of appearance.

Step 1: Audit

Task 1.1 Agree audit aims

Raven started with the Audit Exemplar 1 document. The Senior Leadership Team went through the exemplar and judged each 'Focused statement' on a scale from 1=Strongly Agree to 4=Strongly Disagree [and Not sure]. Evidence was written next to each focused statement, examples of which include:

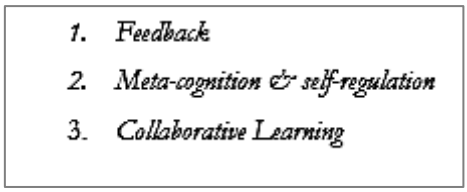
- *The performance of different groups of pupils is analysed effectively.*
- *The school draws on research evidence of what works well for meeting the needs of disadvantaged pupils.*
- *Class teachers and teaching assistants plan effectively for joint working with target groups of pupils, with regular opportunities for feeding back on progress and/or barriers.*

Raven's completed Audit template is shown in Appendix 17 (page 429). Another tool that was explored was the MAID analysis template. In addition to considering how to adapt some of the exemplar information in the template to their own context while adding other priorities, Mrs Raven also chose to communicate the Audit process and results to her whole staff team during an INSET day in March 2015. A Pathways PowerPoint presentation that helped to communicate the findings from the MAID analysis was also used that day. For example, next to 'What do we need to Amend?' was listed:

- *Formalise pupil progress discussions half-termly with target groups*
- *CPD on engaging and motivating pupils*
- *Ensure ALL staff move away from the historic view of what we expect from these children, in favour of higher expectations that the school can make a difference*
- *Job descriptions for key staff to formalise responsibility for PPG expenditure (YGL [Year Group Leader])*

A complete MAID template is included in Appendix 17 (page 429), along with other artefacts from Raven School's use of Pathways. Below excerpts are included from the different Pathways templates completed in Raven School that were shared with me in 2015.

The three most effective strategies to help 'close the gap' in Raven School were identified by the senior leadership team from the Teaching and Learning toolkit (EEF, 2017; Higgins, [online] – slide 12) as:


1. *Feedback*
2. *Meta-cognition & self-regulation*
3. *Collaborative Learning*

[Separate notes made by staff_RS_2015]

Notes were typed up and an action plan was created based on targets. Special mention was made of increasing engagement with parents:

> *"Use typical example of a WAGOLL (What a good one looks like) in Writing, Reading, mathematics in a year group and show a parent. Look at the gap and help parent to see how best to help and support their child."*

[Notes written on Audit Exemplar_RS_2015]

Notes on Feedback were given as:

> *"Most effective when it represents [Close the Gaps] CTG marking. Pupil mentoring represents an opportunity to discuss Feed up (where am I going?), Feed back (how am I doing?) and Feed forward (where to next?). (Create a crib sheet for teachers to use as an aide-memoire.)"*

[Separate notes made by staff_RS_2015]

Notes on Self-regulation and Meta-cognition:

> *"Direct and regulate their own actions towards their learning goals. Motivation, a sense of self as a learner, and internal locus of control are all essential for effective self-regulation. Reflection after a piece of work -> improves motivation to achieve goals. Do we highlight the importance of 'process' through displays e.g. working walls and comments that refer to the process skills of learning e.g. I did 3 drafts… I paid attention so I knew what to do… etc with a focus on behaviours for learning. Ensure we build children's perceptions of what learning involves – thinking about learning and talking about learning in a plenary.*
>
> ** Plan * Monitor * Evaluate over learning – 3 key features*

[Separate notes made by staff_RS_2015]

Notes on collaborative learning:

> *[Turn to your partner] TTYP… co-construction of learning… No hands up…*

[Separate notes made by staff_RS_2015]

Step 2 Action Planning

In step 2, it became clearer how actions were being matched to priorities identified during the Audit and MAID stages. For example, the associated action to help '*Formalise pupil progress discussions half-termly with target groups*' and develop '*CPD on engaging and motivating pupils*' (identified to Amend) can be linked to at least two tasks in Appendix 17: Step 2 – Action Planning (page 450):

> *Task 2 – Improve our dialogue with pupils to ensure we are actively talking about learning and reflecting on how pupils learn best during lessons. (Distribute support sheets to staff.)*
>
> *Task 4 – Agree to use clearer structure to Pupil Mentoring sessions to include the most effective point in dialogue: (1) Feed Up (where am I heading), (2) Feed Back (How am I doing?) (3) Feed Forward (What's next?)*

Linked to Introduce in the MAID which stated: *WAGOLLS [What a good one looks like] for parents to understand where gaps exist how high our expectation [sic] are* were the following tasks:

> *Task 2 – Improve the use of displays in school to show the processes of learning rather than just the outcomes.*
>
> *Task 5 – Send out invitation letters to parents where pupil progress is less than expected. In the subsequent meetings use typical examples of WAGOLLs to illustrate the expectations. Discuss the gaps and agree a plan with the parents to support the pupil in moving forwards.*

All tasks were scheduled for February 2015. An additional source of evidence showing how often Raven conducted their 'self-evaluation cycle' was found in their School Improvement Plan, specifically page 10 (Appendix 18 on page 457). I noted elements of two assumptions from DASI (Creemers and Kyriakides, 2012: 42) being applied – again without the school necessarily being aware of the Dynamic Model:

- differentiation – "looking at the extent to which the school places a greater emphasis on conducting evaluation for specific aspects/reasons of the policy for teaching." in Raven School's use and application of research evidence from the EEF in order to improve teaching, learning and feedback strategies, and;
- stage – "looking at the period in which evaluation data are collected" in Raven's clear schedule for formative and summative evaluation, also backed up by the action points and post-initiative review in later sections below.

Step 3 Take Action

One of the actions taken (Task 5 above) used a checklist 'structured under Ofsted reporting headings' to improve parental engagement with the Pupil Premium. This list is shown in Appendix 17 (page 451). Again, links were made between the initial Audit findings (for example: *Appoint a Lead Governor for getting the best from the Pupil Premium*') and the following action point:

> *The Lead Governor is accessible for parents of pupils entitled to the Pupil Premium to address any concerns they may have.*

Questionnaires with parents were also distributed, eliciting perceptions on children's behaviour and safety, and organising events to involve parents to celebrate their children's progress.

Step 4 Evaluate Impact

The full Post-Initiative Review exemplar adapted to Raven's context is given in Appendix 17 (page 452). Tasks and actions from Steps 2 and 3 were evaluated formally against success criteria, and plans for next steps. Two excerpts are shown below illustrating one 'partially completed' action (1) and (2) and completed action (3):

1) *Is there at least one display to show pupils (and parents) how children learn most effectively?*
   It was identified that '*Working Walls and similar are apparent in classroom*' but not in corridors. Performance was judged as: '*All teachers are not more aware of the importance of the reference points for*

pupils and WAGOLLs provide exemplar finished work too.' The next step was to '*Continue to promote this and ensure corridor displays also show learning processes*'.

2) *Meet with parents of targeted children to talk through planned support in school and ways to help at home.* The evaluation revealed that *'Not all parents have had meetings with their teachers to discuss planned support at home'*. Next steps were to make the focus for the following year '*a planned programme of support to parents of targeted children to provide additional support at home'*. This action is linked to the homework and Facebook initiative trialled the following year highlighted in section 5.2.2 of this chapter.
3) *Ensure all pupils eligible for Pupil Premium (PP) funding are identified. Parents supported to understand the significance of Free School Meals (FSM) claims for school funding for closing the gap.* Here, performance seemed more positive: *HT and middle leaders have completed a thorough analysis of all pupils and encouraged parents to claim FSM through reminders on newsletters and direct letters sent home.* A Pathways poster (Appendix 17 – page 456) asking 'Is your child entitled to a free school meal?' was also displayed in different parts of the school. Provisions were also made for new children starting in the school mid-year to ensure that they were reviewed for potential PP funding, and for Looked After children – for if they moved school that their PP information would travel with them to their new school.

Summary

The Raven School case has provided evidence for a more protection-oriented form of 'mediated autonomy', particularly in Mrs Raven's use of coaching. Raven School's 2015 Ofsted report noted:

> "Leaders are skilled at recognising and developing talent among staff and give them opportunities to take a lead in all aspects of the school's work. As a result, middle leaders, including subject leaders and those responsible for disabled pupils and those who have special educational needs, are effective in contributing to school improvement." [Ofsted_RS_2015]

A pattern of first following a Pathway and then during the second or third time round, not following the four steps closely – but taking some detours, was observed – but essentially Mrs Raven seemed to be getting to her required destinations. Mrs Raven may have approached other resources in a similar way, but something like Pathways possibly also vindicated the use of a mixture of resources and encourages (unwittingly perhaps) the exploration of other resources outside of Pathways.
Without the school being aware of or expressing knowledge of the framework to me, the measures taken by Mrs Raven reached some consistency with certain features and assumptions of the DASI, for example:

- promoting the design of the school improvement project (to close the attainment gap between Pupil Premium children and other pupils) using evidence that had been systematically tested (using data from the EEF and Pathways audit tools);

- proactively developing the school's strategies and action plans based on engagement with a wide range of research evidence, and applying that knowledge to findings from collective reflections with her senior leadership team;
- establishing mechanisms to conduct formative evaluation of school initiatives – for example the incorporation of the MAID analysis tool in regular improvement practice.

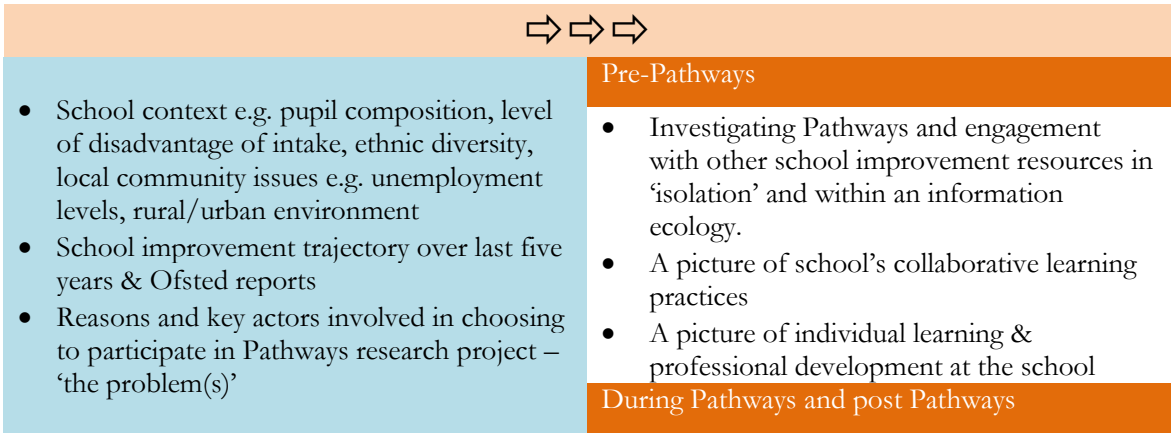
The Raven School case study has highlighted the executive headteacher's 'bricolage' approach in her use of Pathways alongside the explicit mention of other resources such as The Key, educational blogs and measures such as coaching conversations for staff. A pattern of Mrs Raven trying to protect the workloads of her staff emerged, which might be perceived by some external observers as a form of 'control', which may partially be the case in Raven School. But it seems important to recognise the possibility that in governing access to a new resource like Pathways for her staff, particularly in a period where the school was rapidly coming out of Special Measures, Mrs Raven may have also been enabling staff members' capacities for leadership and improvement of teaching and learning elsewhere in their practice. Two key features of the DASI emerged as important drivers for change: establishing clarity of improvement objectives and the use of educational research and other evidence to inform staff reflections (Creemers and Kyriakides, 2012) came across from interviews with Mrs Raven and documents and notes shared with me from the Closing the Gap Pathway. Different modes of Pathways use were described by Mrs Raven, starting from following the planned 'four-step system' route more closely, and ending with increasingly fractured use, skipping straight to certain tools, and a kind of graduation or moving on from Pathways altogether. In 2015, Ofsted recorded the following key findings from an inspection at Raven School that was graded 'Good', which seemed consistent with Mrs Raven's description of events and key actors in the school's improvement journey and engagement with Pathways:

- "The highly effective leadership of the executive headteacher and the executive deputy headteacher has brought about rapid improvement to teaching and achievement this year. As a result, pupils are making good progress.
- The new leadership team, together with governors, has been successful in driving improvement to make up for a legacy of underachievement.
- All inadequate teaching has been eliminated and teaching is now consistently good.
- Teachers have high expectations of pupils; this is evident in the large volume of good quality work they produce." [Ofsted_RS_2015]

Chapter 6: Sparrow School

Sparrow School was so named after repeated emphasis by the headteacher and classroom teachers of the small size of the school in most discussions involving Pathways or their school improvement plan. The headteacher's initial enthusiasm gave way to scepticism over what Pathways could actually offer to a school of their size and priorities. One classroom teacher eventually took on the challenge by linking her own professional development obligations with where Sparrow seemed to be in their school improvement journey.

(Figure 22: Case study structure – from Part II)



6.1 Context

Sparrow School is a small, rural, age 4 to 11 primary school in the south of England. When I first visited the school in 2014, the number on roll was 120. Boys made up 57.5% of the school population, 42.5% were girls. The percentage of pupils eligible for free school meals in the last six years was 11.7% – significantly lower than the national average (25.4%). Pupils were mostly White British, with 3.1% of pupils whose first language is not English, well below the national average (20%). There were no pupils on roll with a statement of special educational needs (SEN) or education, health and care (EHC) plan. The headteacher had been in post for 17 ½ years. It is worth remembering that the small number of pupils on roll greatly influenced the school's attainment and progress as a slight change in even one pupil's scores would have a bigger impact on the overall result compared to a bigger school where changes might be 'shared' more evenly among pupils.

6.1.1 School improvement priorities

Sparrow were looking to 'standardise' how different interventions and practitioner projects were being implemented across the school. The headteacher's plan was to somehow funnel the many strands of work using Pathways as a single approach:

> *"Coordinating lots of work that goes on separately. Staff meetings, minutes go in one of my files, but now can start to share 'individual pathways' and merge into a bigger pathway for the school. Drawing together lots of good work going on in my school already, and maximise the effect it has on the school."* [Mr Sparrow_SS_Nov-2014[22]]

In May 2015, the school had still not started to use Pathways from a whole-school perspective. I visited the school and learnt that there had been a "dip in reading" scores in 2014 at KS2 (Figure 35 and
Figure 36 – page 161). The initial questionnaire completed by the headteacher before their participation in the Pathways project began also stated that their 2014-15 key priorities were "to continue to improve attainment in maths across the school with a specific focus on girls and to develop a broad and balanced curriculum in line with the National Curriculum over the next 2 years".

6.1.2 Attainment and progress

As can be seen in Figure 35 (page 161), mathematics attainment was also variable and generally decreasing (possibly partly due to the small cohort size of the school where small or larger changes of even a few pupils can make a bigger difference in the overall school score compared to a larger cohort). Eventually, one classroom teacher decided to use Pathways to improve maths attainment via increasing parental engagement – this also neatly fit with her upcoming School Improvement Task that she needed to complete for her NPQH.

[22] Denotes Mr Sparrow = headteacher, SS = Sparrow School, followed by the date of the interview.

Figure 35: Sparrow School's L4 or above attainment 2012-2015 [Source: DfE (2016b)]

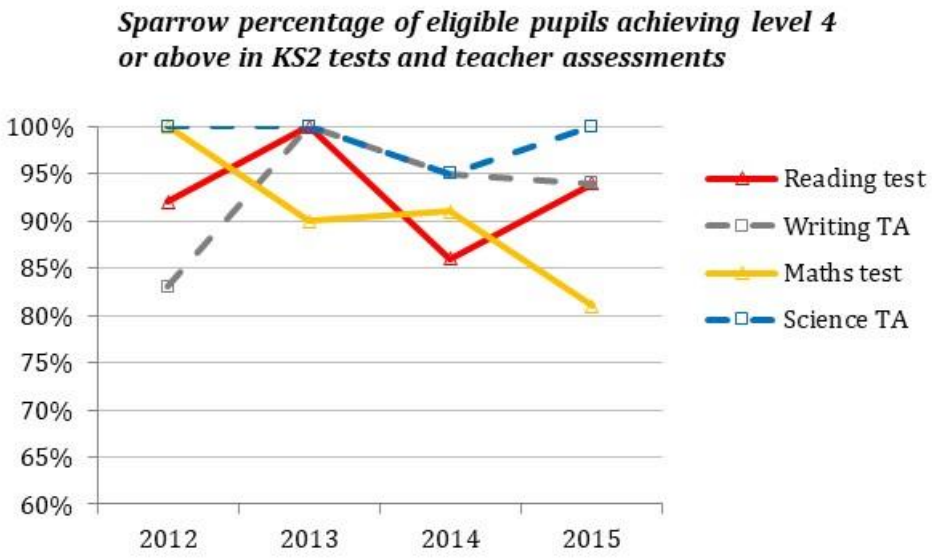
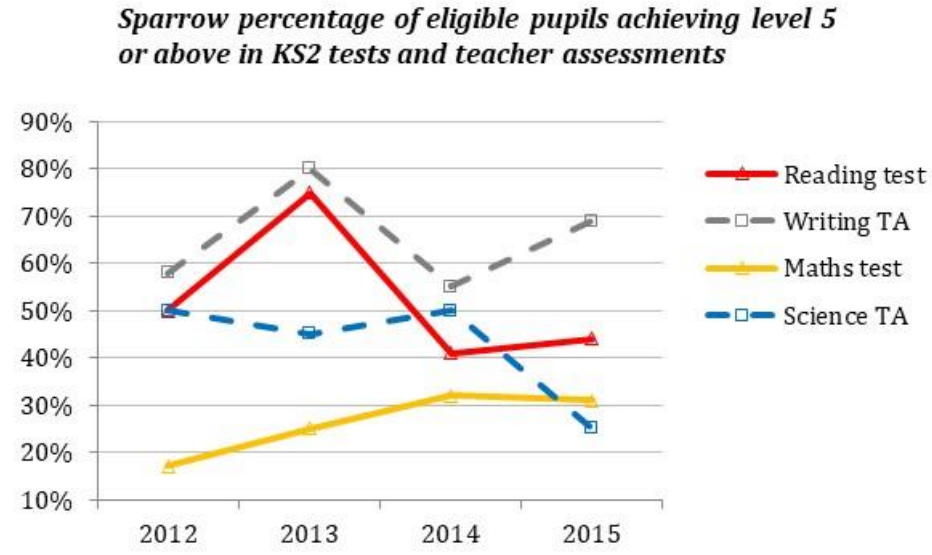


Figure 36: Sparrow School's L5 or above attainment 2012-2015 [Source: DfE (2016b)]



6.2 Engagement with Pathways

6.2.1 Level 1: Participants' reactions

Figure 37: Sparrow School's engagement with Pathways

(2015-2016)	*Parental Engagement* – managed by a classroom teacher with nominal senior leadership role, strategies enacted with other classroom teachers later in the year.

Sparrow School can be categorised as a reluctant adopter of Pathways. I visited the school three times, each time expecting to talk to just the headteacher, and perhaps one other classroom teacher about their school improvement plans and possible use of Pathways. On all three occasions I was greeted by

the headteacher and taken straight into their all-staff meetings. As a researcher, particularly following the design-based approach that allows for more flexibility in data collection settings, I was thrilled to have access to so many teachers and to be able to observe their staff meetings and be privy to conversations that they would have about the new KS2 assessment papers, and some quite frank views about the prospect of using a resource like Pathways. On the downside, I had to be ready to change my data collection procedures on the spot (more so at the first visit, after which I anticipated a change in plans second and third time round), and to try and maximise the opportunities I had in each meeting to talk to a range of practitioners about their definitions of, and approaches to, school improvement.

I wondered if this more 'on the spot' approach to introducing Pathways to the school staff was conducive to their needs, and would a more clearly articulated plan by the headteacher have been more successful in developing teachers' understanding of Pathways. It seemed as though I was being used to somehow 'win teachers round' in order to gain their support in implementing Pathways – a role that in other circumstances might have been filled by the headteacher or a sales representative from Woodland Press. Of course, I was neither. Nevertheless, in the spirit of the DBR approach to the research project, I persevered within existing parameters. Two features of Sparrow School's engagement in the research project stood out initially:

- Mr Sparrow and his staff were complimentary towards the support they received from their local authority, although there was also an awareness of it shrinking over time, and the need to look elsewhere for guidance.
- There was little time to talk one-to-one meaningfully or more strategically with the headteacher, about Sparrow's school improvement plans as most of my fieldwork was carried out with his whole team. Towards the end of the fieldwork phase, I carried on talking to a classroom teacher (Mrs Starling) who had taken on Pathways but also moved schools to take up her first headship role.

Unlike the local authority landscape perceived to be surrounding the other four schools in this study, Sparrow spoke highly of the quality and range of support available in their county, but also noted that schools were being encouraged to seek help beyond their network (in their case, a 'pyramid' of schools) and adapt to the newer system of Local Leaders of Education (LLEs) and Self Evaluation Partners (SEPs). The headteacher felt "lucky" to have an LA that still had 'subject leaders' who could provide training. When asked how the school determined which questions or problems needed addressing at any one time, his response was:

> *"[The] Pyramid would tend to buy in an "expert" to share with the network to guide in what questions to ask – LA would signpost. Been working very well. Maths is a focus in this LA. LAs are shrinking, so there is more use of Self Evaluation Partners (like myself) and LLEs. More networking. Can't assume the LA will*

> *still be around with expertise in five years' time. That is the future. We are being encouraged to look outside of the pyramid to 'find our own networks'. Me being an SEP really helps. We 'support' an outstanding school (as it were) nearby. We gain that way. . . Teachers in Pyramid are used to working together. It works very, very well. We're lucky because we've got a secondary school working with us. The primaries are all similar size and have stable staff."* [Mr Sparrow_SS_Nov-2014]

Five and a half months went by (including a Christmas break in between) till we were next able to meet. Our conversation returned to the topic of how the school was going to decide which Pathway to start – none had been selected as yet. I cited anonymised examples from other schools who articulated making their choices based on their School Improvement Plan and its listed priorities. This, Mr Sparrow said, made sense, however his next statement was puzzling:

> *I think the problem in my head as head is that the things we are going to focus on are not going to go anywhere, things like levels and all that. There's no right answer. They're not going to change. Key priorities <u>have</u> to be maths – it has to be our priority for the second year, and the new curriculum.* (HT_11May2015)

Initially, I did not understand if an issue was "*not going to go anywhere*" how it could not become a priority in Pathways. After some consideration and review of my observation data at Sparrow School staff meetings, it occurred to me that as with other schools in my study, there seemed to be a difficulty moving between more 'generalised problems' to 'specific', more 'localised problems' in one's own school. A comparison can to be drawn with the complexities faced by practitioners in adapting from more general solutions (or abstract theory) to context-specific solutions (Goldkuhl, 2013). What I first regarded as a dissonance transformed into an illustration of one of the key challenges regularly faced by teachers and leaders: how to 'graduate' from the general, more global, all-encompassing problems to the specific and local. In this case, what did the DfE's broader objective of replacing attainment levels mean for this one school? Also, what were the specific things that this school had to do to achieve a good or outstanding 'inspection' or carry on meeting other changing external requirements? Crucially for this research project, did Pathways feature anywhere in this headteacher's plans to make headway in the problem of assessment without levels, or the changes to the primary national (including mathematics) curriculum in 2014[23]? At that moment, it seemed unlikely. In this case study, the absence of consistency between Mr Sparrow's approach and the DASI seemed more evident. So far, ensuring clarity of improvement objectives and use of educational research evidence to inform

[23] Changes to the NC Mathematics curriculum in 2014 included: "Five-year-olds will be expected to learn to count up to 100 (compared to 20 under the current curriculum) and learn number bonds to 20 (currently up to 10); Simple fractions (1/4 and 1/2) will be taught from KS1, and by the end of primary school, children should be able to convert decimal fractions to simple fractions (e.g. 0.375 = 3/8); By the age of nine, children will be expected to know times tables up to 12x12 (currently 10x10 by the end of primary school); Calculators will not be used at all in primary schools, to encourage mental arithmetic." (TheSchoolRun, 2014: [online])

practice (Creemers and Kyriakides, 2012) had not been made apparent in Sparrow School's use of Pathways.

The problem of connecting the school's improvement priorities to Pathways was compounded by resistance from a classroom teacher who expressed the view that she could not see how Pathways or even the concept of 'whole school improvement' featured in her daily teaching practice:

> *From my point of view, and I don't know if I'm being really negative, it seems like an awful lot for a teacher to go through, as in time wise to pick out what you want and how.. the new early years baseline which is changing next year for early years, I go to the meeting that tells me what I need to do for it and how I'm going to do it, the assessments I've got to use, I don't know what that [Pathways] will add to what I already know and what I'm going to be doing. You see what I mean, there's a lot of thinking and writing down what you're going to do anyway.* [CT_SS_May-2015[24]]

Understandable concerns about increased workload and stress were emerging here. Incidentally, I learnt in 2016 that this same teacher had gone on long term sick leave – the reasons for this were not given but may partially reflect the impact of stress linked to workload concerns experienced by other teachers across the country. The teacher continued:

> "*Yes, there's an awful lot of material there but it depends on what stage you're in. I feel like I just want to teach my class and leave it at that. I'm more than happy for someone to use it like that. It needs time*." [CT_SS_May-2015]

The idea of recognising teachers' roles and stages of development in matching appropriate school improvement and professional development interventions rang true from the DASI and was a factor I passed on to Woodland Press as feedback around the design of Pathways – particularly the introductory display for new users. I explained to the staff in Sparrow that a school might determine a priority and then go into Pathways and get ideas, and it was perhaps more unusual to go about it the other way around. Paradoxically, had the headteacher consulted the Self Evaluation Pathway (one of the ten launched in 2013), what seemed like confusion around the diagnosis of the school's priorities may have been partially abated. The classroom teacher responded:

> *"I understand how it's all there to help with the planning... but (this is going to sound awful...* [she puts her hands up to her face]*) as a class teacher, I'm not in any teaching responsibility leadership anything, so from my point of view...* [Another vocal teacher (Mrs Starling) says '*go on, say it*' and then laughs.] *I teach my class, and I go to the courses about the new baseline, and reception, and I don't have anything to do ... I've got no, at the moment, I think, maybe, I'm not taking on board what I need to do, do you see what I mean?*

[24] Denotes CT = Classroom teacher in Sparrow School (SS)

[Mrs Starling: *because you're busy doing your...*] *This seems far-fetched from… [the day to day].*" [CT_SS_May-2015]

This raised the initial problem again, but this time in reverse: moving from 'special' or 'localised' cases to the more general – common enough in school settings but perhaps made more conspicuous by the headteacher's (initial) interest in Pathways. For the headteacher, this also indicated a possible disconnect in his layering of leadership – moving between transformational and instructional leadership seemed less obviously exhibited in Sparrow. Hopkins, Reynolds and Grey (1999: 37) certainly acknowledge some of the complexities inherent in strategic and action planning, and point to difficulties some leaders face in prioritising and 'synchronising', tending to 'act intuitively' rather than make use of available feedback loops.

The situation seemed further compounded by the staff configuration at Sparrow, the senior leadership team of which consisted of just the headteacher – a configuration more commonly found in smaller primary schools. Teachers who fulfilled additional roles in middle or senior leadership capacities were in some cases, but not always, remunerated via the Teaching and Learning Responsibility (TLR) pay scheme; however, often the additional responsibilities were taken on in a more unofficial capacity. One such teacher, Mrs Starling, unofficially designated the 'Deputy Head', seemed able to see how Pathways might feature in her professional development and Sparrow School's improvement objectives more widely. She was undergoing NPQH training, and put forward that she might be able to use Pathways materials to complete her first module in the course; the final assessment comprised three tasks, the first of which was to "lead a school change programme, lasting at least 2 terms, to improve pupil progress and attainment" (DfE, 2017). Mrs Starling reasoned in the meeting that if she took Pathways on, then the others would not have to worry about using it (that is, she could 'represent' Sparrow in the Pathways research project), plus she could help to develop plans to strengthen parental engagement at Sparrow, particularly for maths, and complete her research task for the NPQH. Here therefore an extrinsic motivation was identified, this participant could see utility in engaging with Pathways for her own professional purposes and learning. I thought it was important to point out to the staff in Sparrow School that they did not have to use Pathways at all and participation was voluntary, but if any of them could identify a possible use for Pathways to go ahead and explore the tools while they had a free subscription.

It was at this stage of the project that the potential role of Pathways as a professional development tool was reinforced. Mrs Starling had been a teacher for ten years, nominally held a senior leadership role and was looking to progress into a headship at her next school. The curriculum-like structure of Pathways could provide templates and background information with which to complete this progression.

6.2.2 Level 2a: Participants' learning from CPD – "Culture of inquiry"

My observations of Sparrow School during their all-staff meetings yielded a rich impression of how certain topics were navigated and decisions or common understandings arrived at, both individually and collectively. This exchange between all staff, including the headteacher about the new National Curriculum Assessment exam paper (referred to by the school as 'SATs') proved insightful. I caught glimpses of:

- how whole staff discussions seemed to take place, including the more dominant voices and how questions were fielded;
- the kinds of questions that were raised and the different types of response across staff roles – particularly between the headteacher and nominal deputy headteacher;
- a sense of the team's collaborative learning and inquiry practices, and willingness to explore new possibilities;
- the overall good humour shared between staff and what seemed like an open and transparent relationship between the headteacher and his team;
- how conversations shifted between the more macro-level (e.g. the issue of question and item design) and micro-level connections with the local school context and specific pupils' characteristics and performance.

I have included the full account of the staff meeting in Appendix 19 (page 458).

6.2.3 Level 2b: participants' learning from CPD – Mrs Starling's NPQH task

The following section details the journey taken by the only member of staff to engage with Pathways for her own professional development – which then may have had a knock-on influence on Sparrow School's efforts to increase parental engagement in mathematics. The name 'Mrs Starling' was chosen as she subsequently moved to a new school as a headteacher during the Pathways research project. The new school was also small and so was named 'Starling School' in this case study. The topic investigated by Mrs Starling using Pathways was still based at Sparrow School however.

Mrs Starling's travels through Pathways

The National Professional Qualification for Headship (NPQH) used to be a mandatory requirement for aspiring headteachers of maintained schools and non-maintained special schools in England. Since February 2012 (Parliament, 2015), the NPQH became an optional qualification for aspiring and

serving headteachers and heads of school. Mrs Starling, the nominal deputy headteacher of Sparrow School was pursuing her NPQH while at Sparrow, and also searching for a headship role nearby. Pathways offered a structure recognised by Mrs Starling as a valuable resource in her NPQH final assessment which consisted of three tasks:

Task 1: Leading in one's school (or agreed school setting) for an extended period on an actual school improvement priority.

Task 2: Leading for a short period in one's placement school on an actual school improvement priority, working closely with staff and school leadership.

Task 3: Attending a presentation and interview.

Pathways was used for Task 1. Task 1 focused on improving maths through parental engagement at Sparrow School:

> *"Various people had been on different courses, education you always have hot topics, and it's one of those hot topics - strengthening the links between parents and the school, and we saw that the teaching, we had maths review, everyone was doing the right thing, they were using CPA (concrete, pictorial abstract). We were using Numicon, Shanghai maths, all the right things, and yet we weren't getting those really top end results, and we just thought what other aspect can we tap into, where the resource is there but we haven't strengthened that link, so it was Task 1 - Parental engagement through taking part in lessons - seeing what we do in maths across the school, how programmes take place.*" [Mrs Starling_Jan-2016]

Mrs Starling went on to describe why maths had been chosen as a focus:

> *On the Ofsted dashboard - maths was quite strong, reading had a dip a year before, it was ok in July this year. What we go on is the three-year trend. For maths it had plateaued. This is where the school improvement plan comes in, you need to show progress, even if your results are very good before, they need to get better. So how far can we go with this? In reading there was a dip, but the dip was out of good figures. Spelling we dipped, SPAG. But that wasn't part of my remit.* [Mrs Starling_Jan-2016]

Task 1 had been completed and submitted before Mrs Starling eventually moved to Starling School as a new headteacher. Sparrow saw surveys conducted, results collated and analysed with moves towards implementation – all using Pathways. Surveys took place again after feedback to parents was given.

> *The proforma action plan, organise timescales, strategic plan, were lifted into the document I should have been using. It gave me a good starter, difficult when you've got a blank piece of paper, to just launch in, and think I was going to do particular things.* [Mrs Starling_Jan-2016]

Excerpts from Mrs Starling's NPQH Task documents are shown next to illustrate her use of Pathways. Where possible, for the purposes of analysing my case study data with reference to the wider academic literature, I have annotated the tables with tentative links to the DASI and literature on

teacher enquiry and the knowledge-building cycle (Muijs et al, 2014: 247) – approaches not mentioned by name to me by Sparrow School staff.

Table 9: Excerpt A from NPQH Task 1: Figure 5 (anonymised) [NPQH task_SS_2016]

Name of trainee: [Mrs Starling]; Name of sponsor: [Mr Sparrow]

Background	Trainee headteacher evidence
Title of the school improvement priority	To improve Maths across the school with a view to increasing achievement in both key stages through parental engagement and home learning. To increase children's confidence and enjoyment of Maths.
Scope of the school improvement priority	Whole school (small rural school with 120 pupils on roll) but with a focus on Key Stage 2 where there may not be the home school link that exists in KS1. [Sparrow] School has ability grouping in KS2 (70 pupils) for core subjects despite being a primary - classes are: Blue (highest ability), Green (middle), Yellow (lowest and youngest children). This grouping could potentially mean that year 6s can work alongside year 3s in the lowest group, conversely a year 3 could potentially work alongside year 6 in Blue Group, although this doesn't happen because of maturity, peer groups and self-esteem issues that may arise. The ability grouping was brought in ten years ago with the employment of a new core subject teacher so that differentiation can be assured for all children and the most able are stretched with challenging texts and problem solving. This meant that for the two classes of Lower and Top Juniors, in the mornings, they were split into three groups for Literacy and Numeracy. It was then further refined two years ago to having two quality mornings a week for each subject with a cross curricular morning each Friday. As the improvement task is set over two terms, the oldest children in the study are in year 5 in the summer term and then year 6 in the autumn term. For the purpose of comparison to show improvement, I am including excerpts from year 2 and year 5/6 data.
Reasons for selection of the school improvement priority	Attainment in Maths has dipped or plateaued in a three-year trend since 2012 in KS2 and shows inconsistency in KS1 see appendix one. With teaching at least good with large elements of outstanding practice in Maths, evidence of L.A. Maths Matters initiative in place, links established with cluster schools, I wanted to see if enhancing the home-school link through parental engagement could raise attainment and progress. The SEF data shows "good" improvement in progress and attainment, in line with National averages and often children have all made 2 levels progress. Expectations are now that children should achieve more than 2 levels progress which in current non-levelled testing, will mean that children will achieve mastery levels and be at the secure level of year band criteria. The last Ofsted inspection was in early 2011 and I feel that the excellent progress and attainment detailed in the report document is not true of the school currently. Staff meetings following SATs results in July 2015 have been a disappointment to all Key Stage 2 staff who have had teaching contact with the year 6 cohort during the year and feel a collective responsibility for the children. Conversion rates from EYFS to KS1 – 2014 L.A. Data Pack suggests that progress is Good overall and has been for the last three years. Data for 2013-14 showed that in reading and writing conversion rates were generally above the L.A. figures except for our one lower attaining pupil who made less progress than the L.A. average. In Mathematics, our conversion rates were either in line or slightly below the L.A. averages.

Stated intentions to engage pupils in new learning experiences in order to achieve better maths attainment

Identifying focus, differentiating the context between key stages. Notion of 'experimentation'.

Paying attention to 'focus', 'stage' and 'differentiation' aspects of DASI

Recognition that changes are needed to develop pupils' knowledge and skills, and possibly deepen professional knowledge of staff to improve maths attainment & progress outcomes and enjoyment

	I wanted to do this project to really bring about some sustainable change which would have good outcomes for the children in terms of progress and attitudes to learning through increased engagement with parents. It is difficult with the current transition phase of monitoring progress and assessing pupil progress both of which are yet to be decided by the DFE. It is however possible to monitor two terms progress with objectives and any mastery achieved through our school tracking system – Pupil Tracker (SPTO) [School Pupil Tracker Online].
Leaders, teams and stakeholders worked with	All the teachers were initially involved as this confirmed their commitment to positive change to current working practices to bring about the necessary shift in approach alongside their teaching teams. Through the implementation of the task, the non-teaching teams (one TA per class and our interventions TA) were all involved in the delivery of the project and communication with parents. Governors were aware of the initiative and invited to take part in events and to have experience of aspects of the project e.g. Presentation of Mathletics software. Governors also were presented with the Calculation policy which was agreed and adopted by the FGB [Full Governing Body].

Notion of bringing about sustainable change that persists even after Mrs Starling moves school to take up a new headship

Looking at 'stage' and 'quality' aspects of the DASI

Involving different stakeholders in improvement efforts (DASI)

The highly formalised and structured nature of the NPQH task template allows for more consistencies to be drawn with some of the assumptions behind, and features of, the DASI, and the teacher enquiry and knowledge building cycle (Muijs et al, 2014: 247 based on work by Timperley et al, 2007). Practitioners were less likely to be aware at the time of 'the DASI' as a framework, however similarities can be observed between the activities that staff were reportedly participating in at Sparrow School and the Dynamic Model (Creemers and Kyriakides, 2012). From Excerpt A, one can see that the school improvement priority is clearly articulated in the beginning of the template, and links with notions of engaging pupils with different learning experiences – involving improving pupils' mathematics attainment via the development of more effective parental engagement and forging stronger links with the home learning environment. The focus of the improvement strategy being proposed was identified as key stage 2 pupils who may have had weaker access to opportunities for home learning. Ability groupings were listed, which links with the recognition of differentiation of approach. The task refers to pupil attainment data, and mentions the home-school link, but with no explicit reference to educational research literature on how the home-school link may manifest. There seemed to be a recognition of stage, where mention was made of Sparrow School's last Ofsted report findings and how changes in assessment and practice over time may have influenced pupil's outcomes in mathematics. Multiple parts of the school community appeared to have been engaged in this priority, including teachers, teaching assistants, governors and parents.

6.2.4 Level 3: (Glimpses of) Organisational support and change

Sparrow's headteacher, although initially enthusiastic about implementing Pathways, seemed to grow more taciturn as the research progressed. It took a few attempts to agree to a visit after one year had passed, the last of which was cancelled on the day when Ofsted turned up at the school with apparently no notice. In May 2015, Mr Sparrow, referring to Pathways, admitted that he "hadn't led on this very well". He added:

> *"I have to confess that we haven't devoted any staff meeting time to this. What is the timescale in terms of us working with you? We will have to think about the next school year before you know it. We want to help you and help ourselves as well, in the nicest possible way."* [Mr Sparrow_SS_May-2015]

There was evidence at staff meetings of mixed messages being transmitted by Mr Sparrow and rest of staff on whether Pathways would be useful to support them in their school improvement journey. In the end, organisational support and change came from the nominal Deputy Headteacher rather than the Mr Sparrow, and change instigated via a more extrinsically motivated goal (the NPQH task).

Mrs Starling*: I need to talk to [Mr Sparrow] about this because there is something on here that would help me with some research I'm doing at the moment, if he's agreeable, I can go with that, parental engagement, which is part of our school improvement. This is actually perfect for what I need. He may say just go with that and I can use the things I need. Then we don't need to do the reading thing, I think the reading thing was the driver at the time for N wasn't it. Would that be a good thing? You can go on and use it whenever you want but I'm happy to go on for parental engagement and just do it…*

[Another teacher seems to ask if that is really ok. Mrs Starling says she has to do it anyway.]

Classroom Teacher (CT): *from my point of view, I feel quite happy to talk to people about what I do in my classroom, if someone's giving me new ideas, fantastic. But it's the spending time of organising the planning...*
Mrs Starling*: I'll check with [Mr Sparrow], but it is something useful... the governors... parental engagement is a school hot potato at the moment. . . It can be a whole school thing and this gives me the toolkit really which is great. Was just looking at the audit, summarise findings, governor presentation, brilliant.*

I asked how the Sparrow team might attempt a task like improving parental engagement if Pathways did not exist:
Mrs Starling: *I would probably gather my little very simple plan, by looking at documents, Ofsted have got a whole document on parental engagement. I'm just looking at grade descriptors for parental engagement, and I'd go from there.*

Mr Sparrow: *The Ofsted website is superb, good for things like that. And to be fair to Ofsted like [Mrs Starling] said, their stuff is really simple these days, not daunting, the Ofsted website is a favourite. Also, I have to say I don't get three days to do things either, small school, just doesn't happen. It's worth bearing in mind.*

Mrs Starling: *Ofsted do facilitate you doing it. This [Pathways] is going to facilitate. Ofsted say we need this, this, this and this. So you think, all right, I know what I need to do, I will put it in some kind of plan. So you have taken that step to provide grids and set it out in a lovely way.*
Me: *So, Ofsted is the first step and then maybe Pathways is the next one?*
Mr Sparrow: *Ofsted are very into A4 documents. They've cut right back on paperwork, exactly what you need.*

6.2.5 Level 4: participants' use of new knowledge and skills

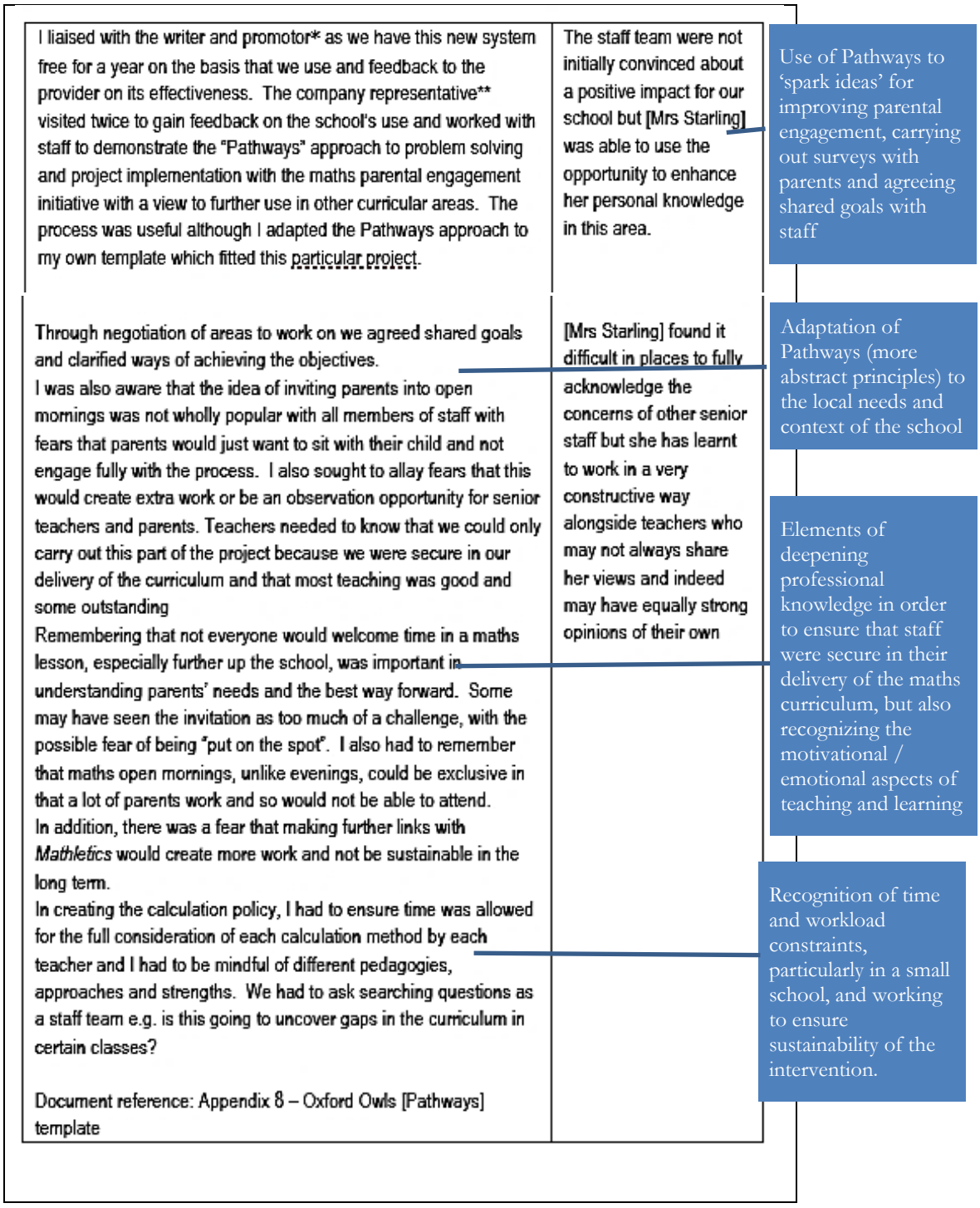
Mrs Starling's potential use of new knowledge and skills that may have been gained from Pathways (amongst other resources) was analysed according to interviews with Mrs Starling, and documentary evidence from her NPQH task where her improvement work was assessed by Mr Sparrow after the intervention had taken place (mentioned in Excerpt A). Specific features of Pathways use were recorded that link with Hall and Hord's (1987) catalogue of phases of participation, also listed in Muijs et al (2014: 199): initial non-use, followed by "orientation (information seeking), preparation, mechanical use of the skill (day-to-day), routine use of the skill (establishes pattern of use), refinement (varies use depending on context), integration (coordinates use with colleagues to gain greater impact), and renewal (re-evaluates quality of use and modifies to increase impact)" Muijs et al (2014: 199).

Table 10: Excerpt B from NPQH Task 1: Figure 5 (anonymised)

Part: **Competency: Partnership and collaboration**

Trainee headteacher evidence Supporting the school vision through planning for improvement	**Sponsor verification, additional evidence and grade – Very Good / Good / Moderate / Poor**
A large part of the task is based on partnership and collaboration and I realised the importance of encouraging and sustaining even more positive relationships with our already very supportive parents and committed hardworking staff. I was always keen to relay my personal enthusiasm for this very positive project, but I was also mindful of some parents' hesitance with Maths as a subject with so many having had bad experiences themselves which often made them reluctant to help their children. I was also concerned that children may feel threatened rather than helped by the presence of their parents in lessons. In order to work in a systematic way and as a tool for implementation I used Oxford Owls Pathways.	**Sponsor grade: Very Good** [Mrs Starling] had the opportunity to work with a large publisher, OUP, on a specific project previously and it has been an interesting experience for her to work alongside a consultant [in reference to the researcher] on this project.

Recognition of the values element of teaching and learning, in addition to the 'know-how' and 'know-why' aspects of knowledge.



I liaised with the writer and promotor* as we have this new system free for a year on the basis that we use and feedback to the provider on its effectiveness. The company representative** visited twice to gain feedback on the school's use and worked with staff to demonstrate the "Pathways" approach to problem solving and project implementation with the maths parental engagement initiative with a view to further use in other curricular areas. The process was useful although I adapted the Pathways approach to my own template which fitted this particular project.	The staff team were not initially convinced about a positive impact for our school but [Mrs Starling] was able to use the opportunity to enhance her personal knowledge in this area.
Through negotiation of areas to work on we agreed shared goals and clarified ways of achieving the objectives. I was also aware that the idea of inviting parents into open mornings was not wholly popular with all members of staff with fears that parents would just want to sit with their child and not engage fully with the process. I also sought to allay fears that this would create extra work or be an observation opportunity for senior teachers and parents. Teachers needed to know that we could only carry out this part of the project because we were secure in our delivery of the curriculum and that most teaching was good and some outstanding Remembering that not everyone would welcome time in a maths lesson, especially further up the school, was important in understanding parents' needs and the best way forward. Some may have seen the invitation as too much of a challenge, with the possible fear of being "put on the spot". I also had to remember that maths open mornings, unlike evenings, could be exclusive in that a lot of parents work and so would not be able to attend. In addition, there was a fear that making further links with *Mathletics* would create more work and not be sustainable in the long term. In creating the calculation policy, I had to ensure time was allowed for the full consideration of each calculation method by each teacher and I had to be mindful of different pedagogies, approaches and strengths. We had to ask searching questions as a staff team e.g. is this going to uncover gaps in the curriculum in certain classes? Document reference: Appendix 8 – Oxford Owls [Pathways] template	[Mrs Starling] found it difficult in places to fully acknowledge the concerns of other senior staff but she has learnt to work in a very constructive way alongside teachers who may not always share her views and indeed may have equally strong opinions of their own

Use of Pathways to 'spark ideas' for improving parental engagement, carrying out surveys with parents and agreeing shared goals with staff

Adaptation of Pathways (more abstract principles) to the local needs and context of the school

Elements of deepening professional knowledge in order to ensure that staff were secure in their delivery of the maths curriculum, but also recognizing the motivational / emotional aspects of teaching and learning

Recognition of time and workload constraints, particularly in a small school, and working to ensure sustainability of the intervention.

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* Referring to me. Throughout the study, no matter how many times I tried to correct participants, I was often confused as a member of Woodland Press staff, but somehow simultaneously recognised as a researcher (which was perplexing). Also 'promotor' is a common misspelling of 'promoter'.
** Again, referring to me.

Issues around establishing the clarity and objectives of the intervention were mentioned, and how different members of staff may have had diverse views and pedagogies on mathematics teaching and learning. Also, the potential opportunities and challenges with engaging an intervention that may require the development of new skills and professional learning, as well as uncertainties around existing and/or previous practice were acknowledged. These are critical points to consider for how pupil outcomes might be influenced, and to some extent, how school leadership might 'mediate' teachers' learning experiences and practice.

Mrs Starling reported a strong and favourable response from parents because homework was now emailed to them:

> *"It wasn't such a mystery, parents saying I don't know how to do that, I'm useless at helping my child, we had things like that in the first instance. 'We did it differently at school', 'I'm rubbish so it doesn't matter if you're rubbish' kind of thing, so that's what was driving us forward. People said it was handy, I produced a calculation policy, and a booklet to show exactly how we did things. You often get parents saying 'I don't know how you do it now'. Very favourable overall."* [Mrs Starling_Jan-2016]

I asked Mrs Starling which parts of Pathways she had used:

> *"I made up my own surveys and looked at the ones on Pathways, about 6 months ago. Looked at the whole thing and remember being sparked with ideas with how to set it out etc*." [Mrs Starling_Jan-2016]

This notion of Pathways 'sparking' ideas rang true in at least two other schools in this study. I asked what conditions were like getting buy-in from other staff, and what was the "most prominent factor in getting it to work", she answered:

> *"Not really about getting colleagues onside, but the factor for me was time. I was teaching full time and I found that incredibly difficult to do with other leadership things. This was just one leadership aspect, on top of full time teaching and the time management was my biggest thing. Setting it out in achievable timescales was the thing for me. If I had sat down and done it just as my project, for my job, it would have been wonderful. But it was just very stressful. I worked extra hours, evenings, it was a short timescale, so it had to be done."* [Mrs Starling_Jan-2016]

I pressed further on what support she may have or have not received from her colleagues:

> *"Support - staff were very good, once I outlined everything and they knew it wasn't going to be a huge amount of work, they committed to the outcomes for the children. Staff were supportive but in terms of driving it, it was just me."* [Mrs Starling_Jan-2016]

Where leadership support would also be crucial to help move individual Pathways along, it was apparent here that a strong driving force was necessary – as well as an unmovable deadline:

> *"In a smaller school, [it's] quite common to do everything yourself. Loads of other projects going on at the same time. I don't think anyone used Pathways but there were sports initiatives, reading was down or was it spelling, [spelling, yes], spelling, yeah. We had things in place, although the subject leader for that - second year of teaching, so she didn't have a great overview but there was lots of things going on. There always is. Teachers are accountable in your performance management, and you have a review halfway through the year. Because everyone's so busy, we look at the performance management and think oh gosh, I forgot I had committed to that. People don't usually do things, but I had to because I had a time limit on my submission. So, I had to do it."* [Mrs Starling_Jan-2016]

Crucially here, Mrs Starling's time limited submission emerged as a key driver, both in using Pathways and completing her NPQH task. During the course of our interviews, Mrs Starling also listed what other resources she had sought during the task:

> *"Calculation policy, many policies nowadays, looking at other websites, doing academic research, different things I've read. Countywide in Scotland - seem to be proactive in parental engagement, ours wasn't greatly lacking, it just needed that tweak to get it back to where it should have been really."* [Mrs Starling_Jan-2016]

Pathways was used much like an inventory might be during a project management phase:

> *"I used the templates, read the exemplars, initially to get an idea to see if you're doing the right thing. Like a tick box exercise kind of, that I was including the right things in my strategic plan that I used and had to submit. It was very good in that respect."* [Mrs Starling_Jan-2016]

The idea of Pathways being used as a 'tick box exercise' might not fill some of the Steering Group in Woodland Press or those who engage in EEIR with confidence that Pathways was being used in the 'best' or most intended way. Were the complexities of the intersection between Pathways and schools' improvement efforts lost in this case? Mrs Starling's next comment jerked me away from that quick judgement:

> "*One of the barriers [of Pathways] … some of it was a little bit simplistic. The examples were good, as a starting point, for baseline research. Just so you're not faced with a blank piece of paper*!" [Mrs Starling_Jan-2016]

So now Pathways was perceived as too simplistic, and its templates more of a 'tick box exercise' in themselves, after a different classroom teacher had initially found Pathways to be complicated, daunting and irrelevant to her teaching practice. On the surface, these remarks seem contradictory, however, Sparrow in its own way and staff collective, seemed to be painting a trail of how some users might end up travelling through Pathways – first encountering Pathways via a somewhat confused introduction, possibly identifying how Pathways and one's priorities might (temporarily) align, and finally, 'moving on' from of Pathways into other spaces and perhaps practices.

Mr Sparrow noted the following in a brief conversation with me in 2016, anticipating that at least one early career classroom teacher who had recently joined Sparrow School might engage with Pathways as part of their professional learning and development:

> *"[We're in a] Busy, busy world. NPQH and [Mrs Starling's] career aspirations, made a real effort to use it. I think [CT2] (in second year of teaching and really enjoying it) and doing a subject she actually loves now, so she might use Pathways. I think people like [another teacher] and CT3 find it difficult to do, however we sell it to them, they'll see it as something extra to do. Even if they know it's a support etc, which it is, it involves getting your head round the whole thing and using it.*" [Mr Sparrow_SS_Jan-2016]

Table 11: Excerpt C from NPQH Task 1: Figure 5 (anonymised)

Competency: Modelling excellence in teaching

In creating the calculation policy, I researched recent pedagogies to ensure that my teaching was truly in-line with current approaches and methods. For example, I checked that concrete pictorial and abstract from Singapore Maths were embedded in my classroom strategies and that written methods showed a clear line of progress from number lines, partitioning through to standard written methods that show a deep understanding of the processes within. The exercise proved to be an effective way of effectively monitoring teaching strategies and the subject knowledge of teaching staff, also of routinely sharing methodology so that approaches were standard practice e.g. using manipulatives at every stage to ensure deep understanding.	**Sponsor grade: Very Good** [Mrs Starling] started her career with us as an NQT and she has always been a truly reflective classroom practitioner.

Link with DASI assumption that school improvement projects can have an impact on student learning outcomes only when these projects are based on valid theories

Competency: Learning focus

I have really seen this task, from the outset, as a wonderful opportunity to add another dimension to our already dedicated teaching team. I did encounter some slight resistance and concern from some members of staff who were naturally concerned about parents wandering around their classrooms during open mornings and the extra work that some of the project would naturally incur. However, with the aims of increased progress, improved attitude to learning and hopefully a life-long love of Maths in our sights as outcomes, it was not difficult to inspire others with the promise of full support. Lack of understanding on the parents' part had always been seen as a barrier to learning and having a more open informing approach and getting everyone on board, sharing a common goal was critical to success. Changing age old procedures and keeping parents "at bay" didn't seem relevant any more. Engaging parents to really help their children and embed a culture of "can do" in addition to creating opportunities for learning to happen at home to support their experience in class has shown some great non-data successes.	**Sponsor grade: Very Good** [Mrs Starling] has always had a very clear vision of what she wants for the children in her care and this work has certainly helped her to realise that not all of the staff team start with that same vision but they can be persuaded to develop a shared vision under her effective guidance.

Involving different stakeholders in improvement efforts (DASI)

Competency: Partnership and collaboration

This task is all about partnership and collaboration, getting people on side in order to raise the children's attainment and increase their enjoyment in Maths. Discussions with Governors had shown the need for further parental engagement so I knew that they would be fully supportive of our open mornings as a strong aspect of the initiative. One teacher in particular wanted to know what kind of structure the mornings would take, how many mornings there would be, how long they would be and would it disrupt her class's learning in any way? I fully understood how this initiative could be seen as disruptive and unwelcome in some classes. The teacher most concerned runs the lowest ability group for Maths where year 3s can work alongside year 6s who have difficulties with the subject. This in turn can present behavioural problems although it is the best working environment for specific learning delays in the subject. I realised that the mornings had to be carefully structured to ensure that initially parents were there to see how the curriculum progresses through the school (e.g. the whole school works on Place Value during the morning), how it is taught, what resources are used, how staff are deployed to help etc. I decided to structure it so that members of the school council met parents at the entrance foyer, took them on a tour of the classrooms and explained what was going on. This was the same for all parents regardless of where their children were learning at that time. They could go round to tables and see the children working but they all had a time limit in each class of 5 minutes and then had to move onto the next.	**Sponsor Grade: Very Good** [Mrs Starling] has always valued the support of parents but this project really focussed her on how informative focussed questionnaires and surveys can be in any form of school based action research. She has learnt how gratifying it is professionally to receive positive comments from parents which can then be quoted in a wide range of documentation as evidence of true impact.
Feedback from parents was 100% positive in general when questioned about enjoyment and if they felt better equipped to help at home, especially with the calculation policy in place:* a really interesting and fun morning, I didn't realise how hard a subject could get as you go up the school" * I loved all the interaction and to see how the children enjoy Maths, I can see how to help XXXX at home and that's brilliant!" "I was impressed by how the children can use mental Maths so quickly with quite difficult calculations that I found tricky! **Appendix 10 (survey answers)** **Appendix 11**	

Establishing clarity and consensus about the general aims of school improvement by considering student learning as the main function of the school (DASI)

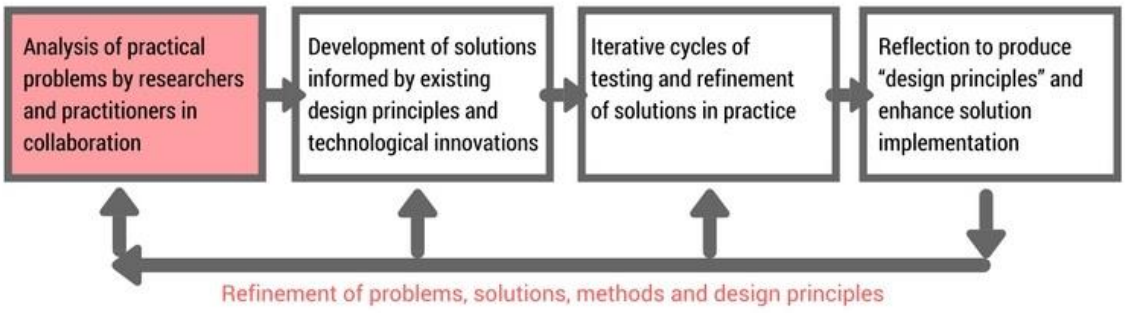
Ofsted noted in their last 'short interim inspection' of April 2016 that the headteacher, staff and governors had "worked hard to improve mathematics this academic year following a dip in the 2015 results and this is proving effective." Sparrow School had sustained their 'good' judgement from their Feb 2011 inspection.

Summary

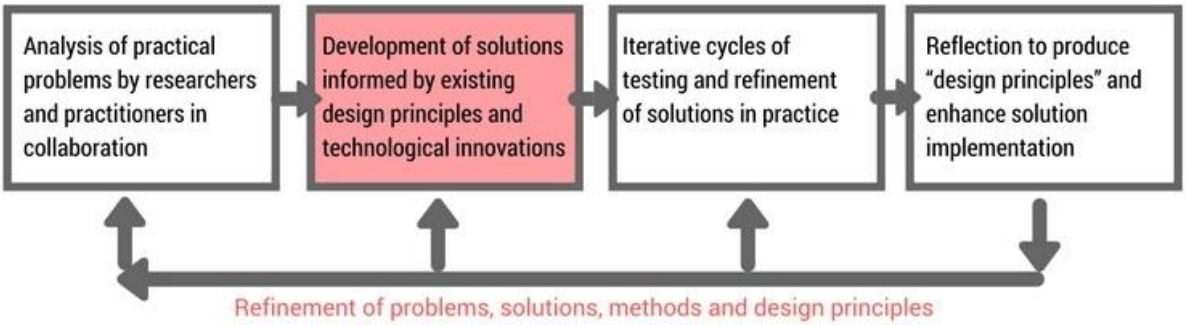
The purpose of Sparrow School's initial engagement with Pathways came across as confused, and not fully aligned between the aims of the headteacher and the rest of his staff. Staff seemed to be reluctant adopters of Pathways – particularly as the initial idea appeared daunting to at least one classroom teacher who voiced her concerns. The school is small, with only the headteacher forming the senior leadership team. Several classroom teachers had been carrying out extra leadership responsibilities but were perhaps not always rewarded financially or by title. Mrs Starling, nominally the deputy headteacher, 'converted' her extrinsic motivation to complete her NPQH and aligned the task with Pathways templates and underpinning purpose. The task materialised as an intervention to improve pupils' attainment in mathematics and increase parental engagement. Engagement with Pathways in the end seemed to help the school meet its improvement goals in mathematics but use overall seemed more functional, but also developmental for Mrs Starling as she moved to a new headship of another school soon after.

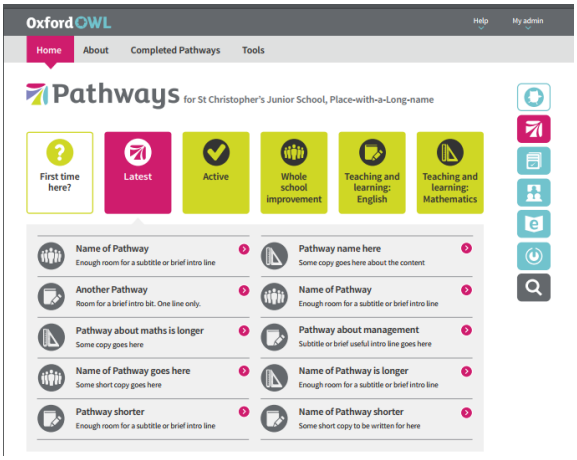
Chapter 7: Woodland case study

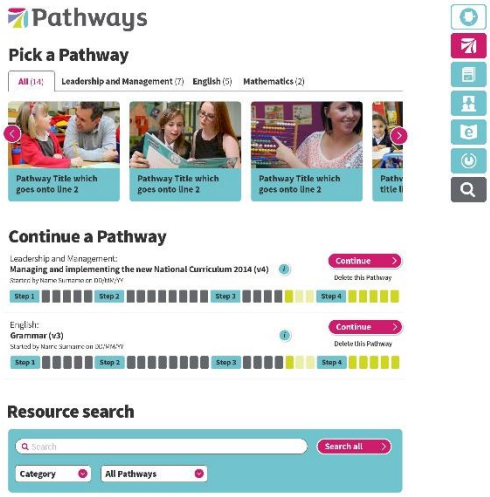
The overarching aim of this case study (the third aim listed in Chapter 1) was to investigate, using a DBR framework, the evolution of Pathways as a school improvement resource base. The objective was to map the evolution of Pathways as a platform and its constituent resources, taking into account the different inputs that are linked with its development including schools, its designers and advisory group and this researcher, using the DASI and Guskey frameworks as theoretical lenses. The specific research question that drives this case study (distinct to the five school cases) is: how were Pathways and its constituent components designed, against a background of school improvement and school effectiveness literature and how is it evolving in the light of experiences of schools and practitioners' use of Pathways? An important feature of this chapter is to illuminate the potential networks and disconnections between the overall DBR methodology of the study and approaches to school improvement and professional development, such as those highlighted in the DASI and Guskey frameworks. This chapter has been removed to protect the confidentiality of Woodland Press.



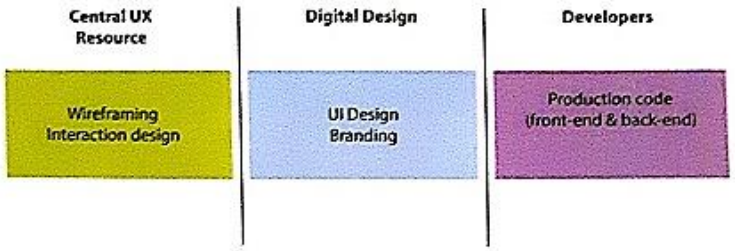
[25] Anonymised to correspond with references to 'Woodland Press' in this thesis.


Analysis of practical problems by researchers and practitioners in collaboration
Development of solutions informed by existing design principles and technological innovations
Iterative cycles of testing and refinement of solutions in practice
Reflection to produce "design principles" and enhance solution implementation
Refinement of problems, solutions, methods and design principles


OxfordOWL
Help
My admin
Home
About
Completed Pathways
Tools
Pathways for St Christopher's Junior School, Place-with-a-Long-name
First time here?
Latest
Active
Whole school improvement
Teaching and learning: English
Teaching and learning: Mathematics
Name of Pathway
Enough room for a subtitle or brief intro line
Another Pathway
Room for a brief intro bit. One line only.
Pathway about maths is longer
Some copy goes here
Name of Pathway goes here
Some short copy goes here
Pathway shorter
Enough room for a subtitle or brief intro line
Pathway name here
Some copy goes here about the content
Name of Pathway
Enough room for a subtitle or brief intro line
Pathway about management
Subtitle or brief useful intro line goes here
Name of Pathway is longer
Enough room for a subtitle or brief intro line
Name of Pathway shorter
Some short copy to be written for here

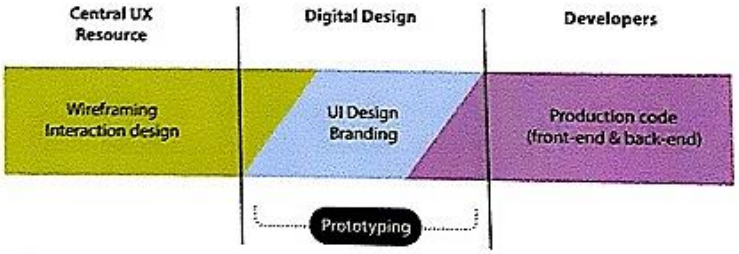

Pathways
Pick a Pathway
All (14)
Leadership and Management (7)
English (5)
Mathematics (2)
Pathway Title which goes onto line 2
Pathway Title which goes onto line 2
Pathway Title which goes onto line 2
Continue a Pathway
Leadership and Management:
Managing and implementing the new National Curriculum 2014 (v4)
Continue
Delete this Pathway
Step 1
Step 2
Step 3
Step 4
English:
Grammar (v3)
Continue
Delete this Pathway
Resource search
Search
Search all
Category
All Pathways

SILO STRUCTURE



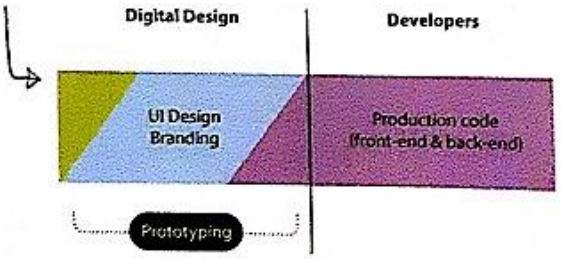
RAPID PROTOTYPING

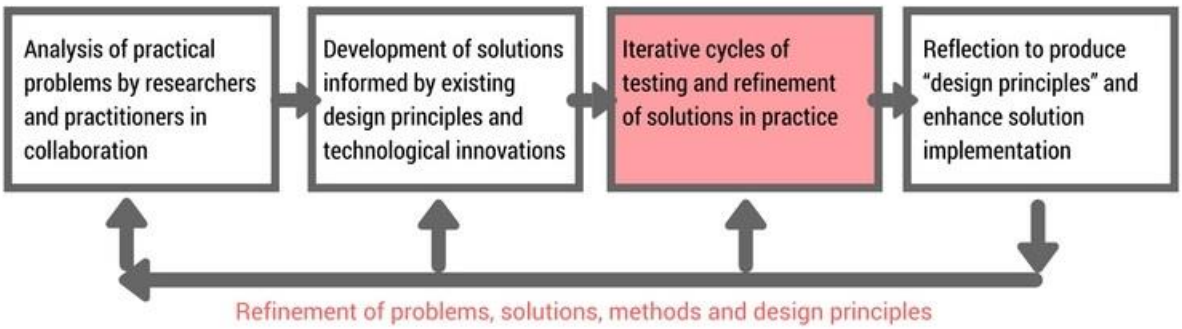
Large project
e.g. new service

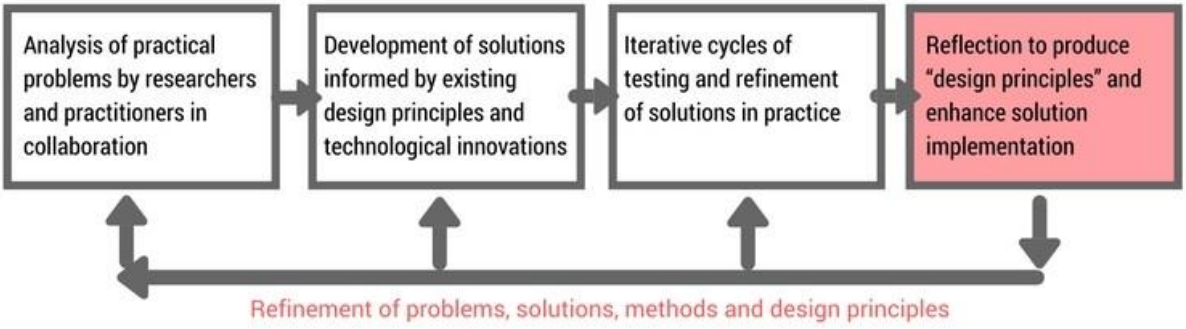


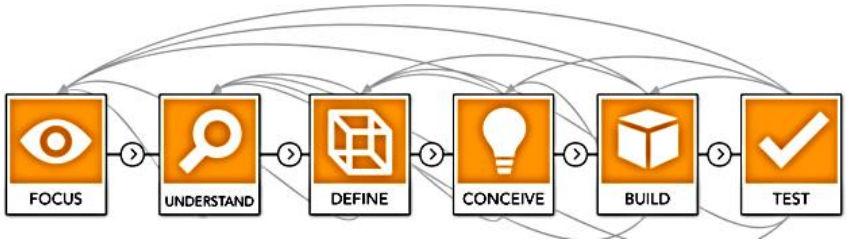
Business Req.
User Req.

Small project
e.g: extension to existing service; individual features; pre formal publishing proposal




Analysis of practical problems by researchers and practitioners in collaboration
Development of solutions informed by existing design principles and technological innovations
Iterative cycles of testing and refinement of solutions in practice
Reflection to produce "design principles" and enhance solution implementation
Refinement of problems, solutions, methods and design principles


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FOCUS
UNDERSTAND
DEFINE
CONCEIVE
BUILD
TEST

Summary

Chapter 7 has weaved an intricate picture of Woodland Press, and their role in the evolution of Pathways as a platform and its constituent resources. This case study was framed according to the four design principles or 'control points' of design-based research, i.e. the analysis of practical problems by this researcher and practitioners in collaboration; the development of solutions informed by existing theoretical perspectives and technological innovations, the testing and refinement of solutions in practice, and the use of collective and individual reflections to produce design principles and proto-theories, which may enhance solution implementation. The chapter has outlined practitioners' early

impressions of Pathways, along with perspectives from different stakeholders in Woodland Press –

and this researcher's role in the study. Ideas around the 'pedagogic messaging' of how information in Pathways might be communicated to practitioners was broached – and Pathways' historical links with the National Strategies, plus the origins of the 'Pathways' initiative, the design/redesign cycles during various consultative meetings, the links and gaps between educational research and practice, the correspondence between the 'generic' school improvement cycle and the use of flexible 'design patterns' in digital technologies design (including the application of the Global Experience Language or GEL), the 'push' and 'pull' factors inherent in maintaining fidelity to the design, as well as flexibility, design-based research 'moments' – which outlined how the research project and design cycles fed into each other, and the interface between schools' improvement journeys and Pathways steps, and design principles (later illustrated via the use of 'journey mapping'). Next, the Cross-Case Analysis and Synthesis of findings are set out in Chapter 8, followed by Discussion and Conclusions in Chapter 9.

Part III: Cross-case analysis and Synthesis, Discussion and Conclusions

Chapter 8: Cross-case analysis and Synthesis

All five school cases are now examined alongside the Woodland case study in the following cross-case analysis. Broadly, data from each school case and Woodland were reviewed several times, first reading through all the interview transcripts, observations and documents, as whole data sources, followed by the more 'fragmented' data sets with codes and sub-codes that had been applied in NVivo. Next a profile of analytical memos was made of each case, a point-by-point summary underneath a set of headings consisting of my research questions. This was done on paper and then typed up so they could be uploaded into NVivo. These summaries were then recoded in NVivo (using the same codes and sub-codes in the first round, with new codes added if needed). From there, a cross-case matrix (consisting of Table 14 – page 220 to Table 18 – page 244) was constructed in Excel for each research question, broken into smaller sub-questions, comparing all five school cases and the different perspectives from Woodland. I then created a column titled 'Overall' to provide my own summary of the cases – a first round of 'cross-casing'. This was completed after all the individual cells of the schools' and Woodland's cases were filled in. Another layer of analysis was then required, comparing the first round of cross-case data with reference to the DASI and Guskey frameworks. Generally, I was assembling patterns and interrelationships (Bazeley, 2013: 285) between cases and codes/sub-codes underneath each research question. I also sought out divergences between the cases and wrote those up in the cross-case matrix.
Finally, a cross-case synthesis was created by bringing together my analytical memos from each of the earlier readings of the case data sources, the point-by-point summaries and cross-case matrix.

The chapter is structured according to this study's research questions.

8.1 RQ1. What are the views and perceptions of practitioners in their use of Pathways around the functionality of the platform and its tools?

Comparing the contexts of the five schools in the study, Raven, in their efforts to move out of Special Measures and with a relatively new Executive Headteacher on board seemed to be starting from more 'foundational' and 'developmental' phases of school improvement (Day, Gu and Sammons, 2016: 240) at the beginning of the research project, in comparison to the other four schools. Staff in Magpie and Sparrow were moving between 'developmental' and 'enrichment' phases in their diagnoses (at least initially) to improve their pupils' reading attainment and progress. Mrs Magpie seemed more willing to

revert to the 'foundational' phase with the implementation of the new NC and increasing parental engagement by positioning early career teachers to lead on Pathways (while mediated by the headteacher), collectively progressing through the remaining phases of school improvement towards 'renewal' and 'graduation' (Day, Gu and Sammons, 2016: 240). Sparrow staff's initial foray into Pathways appeared to be less collective, until later when their goal to improve maths attainment and progress was well under way, and managed by a classroom teacher with nominal senior leadership responsibility. Mrs Jackdaw seemed to have joined the research project and Pathways based on somewhat confused expectations to mentor or 'support' other schools through Pathways, and expressed notions of starting off in the 'enrichment' and 'renewal' phases – particularly highlighting their experience with Read Write Inc (RWI). The team in Jay seemed to start from 'developmental' and 'enrichment' phases, in their efforts to improve their maths attainment and progress up to standards similar to their English scores; however the school seemed forcibly moved back to the 'foundational' phase after a difficult period of leadership and staffing issues. These different phases of school improvement may have also influenced each of the five schools' (direct and indirect) contributions to the design and feedback of Pathways (please see the journey maps shown under RQ3 in section 8.3.3).

The two most 'avid' users of Pathways (Mrs Magpie and her teacher team and Mrs Raven) came across as sceptical towards the Ofsted inspection system and its intentions. In contrast, Mr Sparrow and his staff seemed to be devoted supporters of their local authority and Ofsted (specifically their offer of 'one-page A4' resources), but more sceptical in their views towards Pathways (bar Mrs Starling). Neither Mr Jay nor Mrs Jackdaw expressed strong feelings towards Ofsted, and neither engaged with Pathways in the end. All five schools were engaged with a number of Woodland programmes such as the Oxford Reading Tree, RWI and Maths Makes Sense (MMS) however, and clearly valued these curriculum resources. The leadership staff at schools that were more involved with RWI and MMS (Jay and Jackdaw) seemed less inclined towards engaging with Pathways as they perhaps believed they already had many of the structures and opportunities for CPD offered by the former resources (that were also on offer in the latter), but interestingly, in a more directive and prescribed manner. Mrs Magpie and Mrs Raven articulated aspirations to develop more awareness of the 'outside' (e.g. Magpie staff collaborating with other schools in their CPD provision), and the 'international', new, less familiar (Raven and the IPC). Mrs Raven also chose to learn more about Ofsted from the inside and train as an inspector, and not rely on external sources of information to devise possible solutions towards her school's recent Ofsted judgement – to introduce and ensure consistency in teaching and learning across the school, along with improved approaches to teachers' learning and development. There was also the notion of wanting to raise the expectations of the community around Raven School for their children's attainment and progress. The headteacher and some of the classroom staff at Sparrow appeared to favour the familiar, while Mr Jay and Mrs Jackdaw also looked towards existing

strategies to draw upon for their future improvement. (This impression was noted during the period of the research project but of course, the schools may have been engaging with other resources outside of my purview during and after the fieldwork phase.) In contrast with her counterpart at Magpie, Mrs Raven seemed more comfortable working within a 'bricolage-style' framework, picking and mixing between different approaches, building a kind of 'jigsaw' of diagnoses, evidence and potential solutions – perhaps emboldened by the school's recent release perceived to have been earned by overcoming a difficult Ofsted judgement. The headteachers of Magpie, Jackdaw and Sparrow seemed to have less 'to prove' to the outside world, while Mr Jay encountered more staffing and school performance challenges over time, which were reported later on in the study.

Overall, perceptions of all headteachers in the five schools (and assistant headteacher in Jackdaw) were positive regarding the quality of the structure and content of Pathways resources and Oxford Owl more widely. Materials on the whole were described as rich in detail, comprehensive and neatly structured. The benefits of having the resources in 'one place' (i.e. templates and guides for practitioners in Pathways and materials for parents and pupils on Oxford Owl) were frequently extolled.

Table 14: RQ1 cross-case summary - views and perceptions of practitioners in their use of Pathways

Overall	Woodland	Magpie	Raven	Sparrow	Jackdaw	Jay
Magpie School followed steps faithfully each time; others think some of Pathways is "old hat" (after periods of initially favourable and varying use – Raven and Sparrow, or initial perceptions in the case of Jackdaw.) Material could become out of date quickly; no contact between users and with outside environment (later on a blog was created). Access: Difficult to 'buy' Pathways as you have to go to a different website, and probably have to involve the HT and bursar. This mirrors the way schools purchase resources elsewhere.	"Good for schools", steering group view that Pathways should be the only resource schools need. Expectations about how quickly resources can be updated differ between steering group and designers. Less appreciation of the web-based landscape that teachers face - where they can usually look up resources for every task, and have to work out how to select sources of evidence, combine them and put them into practice. Difficult for steering group to understand that teachers might not know what counts as 'evidence'.	Each Pathway followed quite faithfully each time. Mixture between an expectation that Pathways would have 'everything', but at times also the need to look in different places for resources if necessary.	Pathways inspired HT with new ideas but after the first two, she felt some of the information was "old hat".	Pathways perceived as too vast and detailed for a small school. No senior leadership team officially in existence except the headteacher. One teacher took Pathways on for her own PD (NPQH task).	Pathways seen as too simplistic for the particular school improvement journey they are on.	Pathways seen as too complicated.

Each school's general sentiment towards Pathways appeared to have been driven by how the resource was first introduced and the momentum of engagement sustained by the headteacher of each school. This fits with earlier school improvement research on the prime importance of schools' leadership in driving improvement. In Magpie, Pathways was enthusiastically adopted by a proactive leader and soon became part of daily practice with the first free National Curriculum Pathway being picked up and used prior to my first contact with the school. It appeared that Pathways' templates and accompanying materials were consulted for each subsequent task planned in this school's chosen improvement topics. Specific teachers were compensated via the TLR3 scheme in order to manage each Pathway. This demonstrated priority and financial investment in staff and their professional learning and development. The two teachers who took on the Parental Engagement Pathway both expressed how useful it was to work on one Pathway together and test ideas out on each other before presenting them to the headteacher and/or whole school. This indicated that a collaborative approach was preferred where these two staff members learned together in using this Pathway. Tasks and steps could also be divided according to each one's key stage of responsibility, and data sought taking into account the particular context of the year groups being surveyed. As the teachers were in the early

stages of their careers (between one to two years' experience), they also found working together more collaborative and beneficial to share collective knowledge and practice. One aspect that was particularly appreciated was the structure (the four-step system divided into tasks), felt to be especially relevant to them as new teachers. The headteacher also recognised the value of the structure as it was consistent across all Pathways and hence allowed for ease of handover to other staff, and facilitated presentation to the whole school. Feedback on this aspect held a critical implication for Woodland – particularly around the maintenance of the structure of Pathways as opposed to having standalone resources outside of a fixed system of steps and tasks.

Overall, Pathways was viewed as a more strategic element in comparison to the operationalised commitments in Magpie. There seemed to be a sense of 'sharing the load' when it came to the research project and putting into action parts of their school improvement plan – a partnership formed between the school, me (and the research team) and Woodland. Mrs Magpie mentioned a few times the notion of sharing responsibilities for example in using the term "our minutes" in reference to senior leadership meetings, rather than "my" or "their" minutes; organising collaborative professional development events among several schools (sharing the costs and opening up the field of questioning); and talked openly with her classroom teachers (and me) about improving communications between teachers and parents. Pathways appeared to provide a platform in and around which to hold productive and relevant conversations about possible ways to improve and "produse" (i.e. both produce and use) written artefacts, continually amending them and resubmitting them for approval. Creating and working in a space where "produsage" is commonplace and revered, may be a characteristic that is developed within certain types of information ecologies such as that evident in Magpie School. These points link with past research that highlights the importance of the principal in supporting middle leadership.

For staff in Raven School, Pathways was seen as an additional source of knowledge and research evidence during the school's improvement journey out of Special Measures. The school applied two Pathways in quick succession. However, after approaching the third Pathway, some of the information was seen as obsolete and at a more rudimentary level compared to what Mrs Raven felt that she required or indeed, was expecting. After a successful turnaround, this headteacher was also vocal about using a range of other resources to supplement the material available in Pathways such as her knowledge and training as a newly qualified Ofsted inspector, The Key, materials from the National Association of Head Teachers, Fischer Family Trust 'Aspire' training, a tracking system called Learning Ladders, the Times Education Supplement, Rising Stars (an education publisher and software provider), TheSchoolBus (2018) (a school improvement and teaching and learning resource provider), number of educational blogs (e.g. by Daisy Christodoulou, Robert Bjork, David Didau and Daniel Willingham) and following influential personalities on Twitter (e.g. Mary Myatt and Steven Tierney).

Interestingly, of all of these resources, Mrs Magpie mentioned only The Key as an additional source of information and research evidence, while Mr Sparrow spoke about guidance documentation provided by Ofsted. Returning to Raven School, one aspect of Pathways that was valued by Mrs Raven in the beginning was the structure but this also later became perceived as a slight hindrance as the headteacher preferred to move straight to the tasks and templates without having to engage more deeply and progress through the 'system'. 'Push factors' seemed to influence Raven's use of Pathways, i.e. the school reacting to a negative external judgment by Ofsted in contrast to 'pull factors' for Magpie. In addition, initial time pressures may have played a part with Mrs Raven perhaps wanting quick solutions, juxtaposed with the perception of 'boredom' with the four-step system after the goal of coming out of Special Measures had been achieved. Pathways was possibly associated specifically with the 'old Raven coming out of SM' phase or a remedial intervention – particularly as she voiced several times how she 'didn't need it anymore' and saw some of the resources as 'old hat'. This executive headteacher, who already came across as confident in the beginning of the research project (and extensively experienced from her headship of the infant school on site), seemed to become even more confident in her leadership and the junior school's capacity to improve after moving out of Special Measures. Mrs Raven was looking towards enhancing her teachers' pedagogical approach in the classroom, and more specific issues around pupils' learning strategies and evidence from neuroscience. In Magpie, the professional context seemed such that Pathways fit fairly neatly into their organisational set up, and in a sense, provided a 'hospitable' space to support middle leaders and their headteacher in their efforts to enact change across the school.

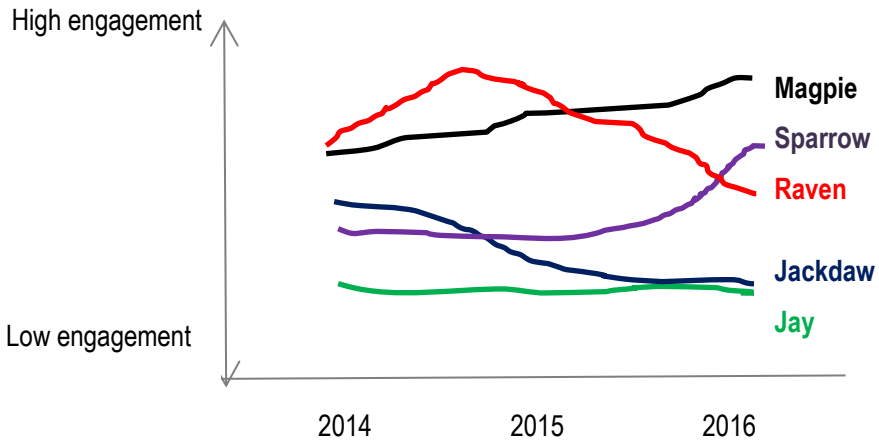
In Sparrow, the structure and content were initially seen as overwhelming by some school staff, particularly as there was no senior leadership team (bar the headteacher) and only 120 pupils on roll. Many of the teachers already took on extra responsibilities on top of their classroom roles, and were only sometimes compensated financially via the TLR scheme. Pathways was seen as an extra burden to look after in addition to their daily routine, rather than as a supporting resource to aid their routine and achieve their school improvement goals (which staff seemed to have trouble identifying and articulating to me). Nonetheless, the structure and content of Pathways were seen as very beneficial by one teacher with a 'nominal' senior leadership role in the school. Perhaps more influenced by her extrinsic motivation, she adopted it to progress through her NPQH 'school improvement' Task.

In Jackdaw, the purpose of Pathways seemed unclear to Mrs Jackdaw from the beginning – in relation to where the school was in the school's improvement journey. Once the assistant headteacher who participated in the research was able to engage a bit more with Pathways, she, like Mrs Raven (but much earlier in the project) expressed that the steps, templates and research material were perceived to be not advanced enough, or "old hat" for the school in relation to her perception of the school's location in their particular school improvement journey.

For Mr Jay, Pathways was initially seen as a possible resource of support during the school's journey – where the headteacher was attempting to improve their pupils' maths attainment and also promote distributed leadership practices amongst staff. When the school ran into staffing difficulties and received an unfavourable Ofsted rating ('Requires Improvement'), the possibilities around Pathways had changed for the headteacher. The inspection report cited problems with Jay School's leadership and lack of focus on Pupil Premium funding, lack of consistency of literacy and numeracy across the curriculum, under-developed systems to track pupil progress, falling short of the statutory requirements for special education needs provision, and not enough pupils "making expected or more than expected progress in mathematics by the end of Year 6" (Ofsted, 2016[28]). It became seen as more of an additional burden on top of normal responsibilities – again much like Sparrow in the beginning of their engagement with Pathways and in contrast to Raven which saw Pathways more as applicable in a time of need after the school had been placed in Special Measures. This may link with literature which suggests that weak schools often lack the capacities to improve, but a change in leadership may stimulate improvement.

Figure 52 below illustrates my analysis of the five schools' engagement with Pathways over three years. A summary about each school's participation follows the figure.

Figure 52: Variation in individual school engagement with Pathways over the period of the research project



To summarise the engagement of the five schools in the study:

[28] Not referenced to maintain school's anonymity.

- Magpie, in particular the leadership and classroom teachers engaged eagerly with Pathways, following the four steps and tasks through one Pathway in 2014, a second starting in 2015 and a total of three Pathways by 2016.
- Raven's headteacher, along with some of her senior leadership team engaged with a total of three different Pathways – the first one (Closing the Gap) was followed through step-by-step, while the remaining Pathways (Assessment without Levels and Parental Engagement) were skipped through for ideas and specific resources adopted to inform engagement with additional non-Pathways resources. Use of Pathways waned over time until Raven appeared to have lost interest in Pathways and preferred other approaches to improvement.
- Sparrow was a reluctant adopter of Pathways initially, but its engagement increased via one classroom teacher who used Pathways to inform her professional development and to help improve parental engagement and pupils' maths attainment. Mrs Starling's engagement took off towards the end of the research project as it fitted well with this teacher's timeline to achieve her NPQH qualification and complete her required school improvement task. This suggests that Pathways was used for instrumental and strategic purposes.
- Jackdaw's assistant headteacher seemed initially enthusiastic about participating in the research project, but after exploring a few of the materials in several Pathways, decided that the school did not need Pathways. Pathways was seen as too simplistic and basic for their particular school improvement journey.
- Jay also seemed somewhat interested in engaging with Pathways but it became difficult to talk to the headteacher after a short period had passed in the research project. When the school was struggling with a number of difficult issues around staffing and pupils' attainment, Mr Jay bowed out of the project quite early on.

8.2 RQ2. What role does practitioners' use of Pathways play in supporting schools' improvement journeys and practitioners' professional development experiences?

8.2.1 Pathways as a potential tool for task 'mediation' and enabling leadership capacity

Pathways appeared to offer several opportunities for 'mediated autonomy' within at least two of the five schools in the study. Magpie's headteacher distributed a portion of leadership activities and roles, and in the process, a kind of individual, professional 'autonomy' via the strategic use of TLR3s to support staff to focus on particular Pathways. Woodland, as an external arbiter of educational research evidence and school improvement resources (a role that might have formerly been fulfilled by Magpie's local authority) was seen as a reliable, professional body to support the staff at Magpie

through their improvement plans. Hence, the 'mediation' to the school improvement efforts that were being made was partly furnished by the headteacher and Pathways as the digital technology – both as sources of guidance, support and direction or 'leadership'. Raven used the system, templates and links to materials as discussion pieces among members of the senior leadership team and in the Closing the Gap Pathway – to present research evidence and strategies around the Pupil Premium to whole school staff. Questions in surveys for example became agenda items and open-ended sources of inquiry among the headteacher and her team. By contrast in Sparrow School, the headteacher was less active in managing Pathways. Here, the merits of Pathways had to be first recognised by one of the school's teachers as her own professional development resource before Pathways materials could be applied towards Sparrow's overarching aim of improving their pupils' attainment in maths. Similar to Magpie School, Raven School's improvement efforts also seemed partially 'mediated' or connected indirectly by Mrs Raven's steering and direction- and boundary-setting, with the help of Pathways as a kind of 'route map'. Sparrow School's improvement journey appeared to be mediated by firstly, Mrs Starling's individual professional learning and development needs, which were secondly, facilitated by Pathways resources as a kind of route map or navigation system – and so the 'mediation' took place at two levels.

Table 15: RQ2 cross-case summary table (a) - practitioners' use of Pathways in supporting schools' improvement journeys and practitioners' professional development experiences

Overall	Woodland	Magpie	Raven	Sparrow	Jackdaw	Jay
Notions of distributed leadership, as well mediated autonomy offered by Pathways as well as external artefacts to talk around and communicate research evidence (crucial difference with searching for resources independently), (possibly inadvertent) notions of supporting lifelong learning – adults discussing problems/topics around one or several resources, and therefore making the topic less abstract	Seen as a 'one stop shop' online 'consultant' that is more budget friendly than having in-person support. Pathways acting as a kind of 'light touch' A&R team or online consultancy, but perhaps Woodland need to be clearer on the final purposes of the outputs that teachers create – can they be used in other parts of their practice (e.g. in preparation for Ofsted, professional development plans), do these uses need to be made more explicit?	Use of TLR3, aim to improve reading, parental engagement and implementing the new National Curriculum (NC). Pathways provided presentations for staff, templates to amend and work around, not a blank page, developing skills and expertise of newer teachers (1-2 years' experience), building confidence to deal with other, sometimes older staff, present ideas, negotiate with teachers and SLT. Woodland name indicated trustworthiness.	Pathways provided artefacts such as research evidence, templates to examine pupil performance data, and the MAID analysis tool to work around and discuss problem areas that could be improved. Rather than doing full surveys - questions served as talking points to investigate further, e.g. using the EEF Toolkit. Initial use followed the prescribed steps but eventually, the executive headteacher had moved on to other resources for herself and her staff.	Pathways provided the basis for a classroom teacher to complete her NPQH school improvement task. Pathways was perceived as useful for a standalone school improvement and professional development task, but seemed too big of an ask as a resource to access more widely because of its size and complexity. School also participated in NfER test trials. Reflective conversations that I observed took place over other artefacts (outside of Pathways) such as example test papers and the potential uses of Pathways resources, but in a less focused way.	No reported application of Pathways materials, only some preliminary investigation. Identified as a read Write Inc (RWI) school, many whole-school strategies were expressed as being based on RWI concepts and training.	No reported application of Pathways materials, some preliminary investigation. Issue of 'handing over' responsibility by the executive headteacher (EHT) voiced as an issue - problem of autonomy among teachers, middle leaders and lower rungs of SLT. Also a Read Write Inc (RWI) school, but problems cited in maths (mastery). EHT voiced hope that whatever was achieved with RWI could be translated into maths as well.

Mrs Magpie initially proposed to engage with Pathways as a kind of hub school, wanting to 'spread the word' among other schools in their area partnership and those that they worked with closely in their professional development provision. Mrs Magpie also talked about using Pathways as a base for more collaborative professional development, perhaps to further embed the learning within the school – with templates and guides used as discussion and presentation pieces for larger tasks, as well as individual learning and development, particularly for early career teachers. The research project also appeared to provide a 'canvas' to experiment on and sketch out possible strategies to improve specific aspects of parental engagement and reading in Magpie School. As a researcher and external observer, I was privy to conversations discussing pupils' and parents' questionnaire results, staff meetings and action plans organised around Pathways resources, and attempts to solve practical problems involving communication to parents and staff, and access to school information. As in Raven School, Pathways appeared to spark ideas in team discussions in Magpie School, but unlike Raven, Magpie participants remained very close in adherence to the four-step structure even after starting their third Pathway.

Again, like Raven, Pathways was used in conjunction with other resources like The Key and evidence sought from other organisations. Magpie's leadership support for their continued use of, and trust in, Pathways seemed strong. Early career classroom teachers expressed feeling enabled to act more autonomously and develop their own professional practice, while collaborating with other practitioners using Pathways materials as a basis for wider communication and debate. This mode of working was expressed as fulfilling but also one that promoted more transparency in their communications with colleagues and decision-making procedures.

Raven's leadership support manifested more in the form of workload protection – Pathways resources were still used but by proxy (that is, not credited explicitly by the executive headteacher to other staff as 'Pathways' templates), particularly towards the end of their engagement with Pathways. Staff in Magpie, Sparrow and Raven seemed to apply their knowledge from substantive issues such as improving parental engagement in combination with other practitioners' views and professional experience, moving from more global problems to local, practical solutions. In interacting with other staff for the purposes of completing Pathways templates, staff in Magpie and Sparrow expressed the view that they had become more experienced in questioning accepted organisational and individual assumptions, dealing with colleagues at different levels of the school hierarchy, and being given the opportunity to take the lead in achieving specific school improvement goals (while also learning, and eventually 'knowing' when to 'not stand on others' toes'). Thus, Pathways seemed to have built these teachers' confidence in dealing with school improvement tasks and their leadership capacity.

The next figure accompanies Table 15 (page 226) to illustrate when and how Pathways seemed to have featured in each school's improvement, collaboration and professional development journeys. Commentary is provided underneath Figure 53 (page 228).

Figure 53: Potential proto-theories of how Pathways seemed to feature in each school's improvement, collaboration and professional development journeys

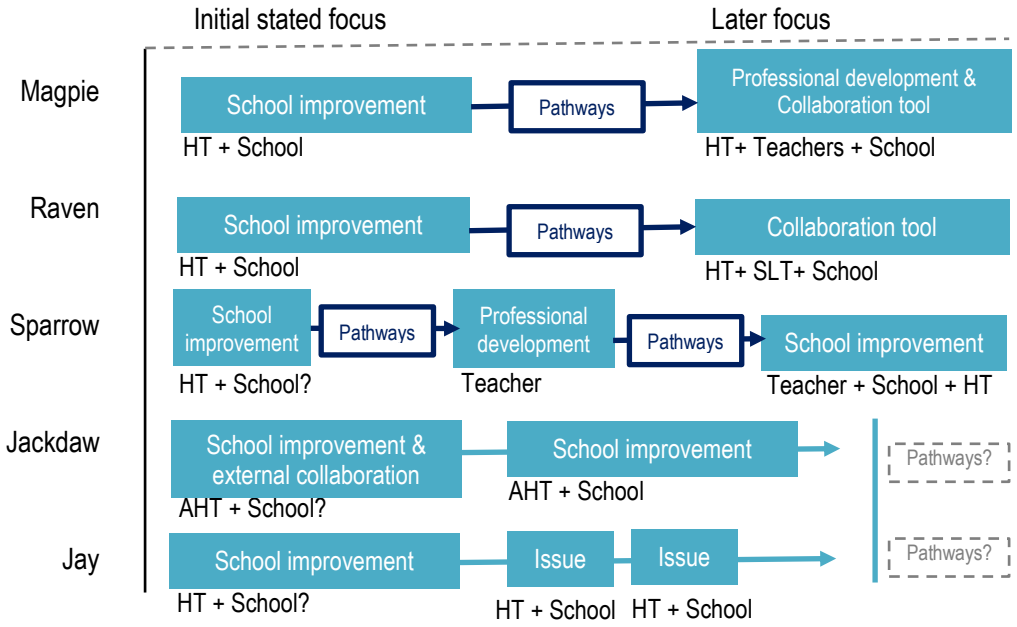


Figure 53 indicates how the adoption and use of Pathways appeared to 'mediate' the collective change or conversion of one group of processes into another in each of the five schools.

- In Magpie School, the headteacher had already engaged with Woodland's printed school improvement 'reports' with her staff (particularly to improve pupils' reading attainment) and the National Curriculum Pathway, and identified the school's improvement goals going forward. Prior to starting the Outstanding Reading School and Parental Engagement Pathways (perhaps when the NC Pathway began, or even well before), Mrs Magpie was attempting to develop outstanding teaching practice, and improve school community and communication aspects across the school. Pathways seemed to provide the resources and 'space' to 'convert' these goals into a means of providing opportunities for professional learning and development, and collaborative working for individual teachers managing Pathways and her staff collectively as the knowledge diffused more widely. Concerted efforts seemed to have been made to communicate to staff, parents and pupils the school's use of Pathways and Oxford Owl. A potential proto-theory here might be that Mrs Magpie seemed able to see the potential benefits of Pathways in her school's specific context before attempting each one. This may have stemmed from experiencing the application of information in Woodland printed reports such as Building an Outstanding Reading School and projecting similar outcomes. The reports acted as a tentative source of evidence that could show a "change of teaching practices" leading to "changes in student outcomes", which preceded Mrs Magpie's "change in beliefs and attitudes".

- Similar to the situation in Magpie School, Mrs Raven and her staff had begun the school's improvement journey out of Special Measures before engaging with Pathways. In contrast to staff at Magpie, Raven School staff had to also contend with a challenging Ofsted judgement. Pathways was added to a bricolage of approaches to move out of Special Measures, including a range of non-Pathways resources that became more wide-ranging and eventually in a sense, took over from Pathways towards the end of the research project. Here, the initial conversion resembled one from a set of well-defined school improvement goals to an opportunity to collaboratively review research evidence, analyse past practice, plan future actions and combine different resources between the executive headteacher and several key members of the senior leadership team. The 'mediating' role of Pathways lay in supporting, encouraging and perhaps even enabling Mrs Raven to 'spark ideas', and explore additional sources of information and learning within Pathways itself and beyond. Pathways was not widely 'advertised' across the school; the executive headteacher took charge of managing each Pathway, but the resources were used nonetheless by several members of staff as discussion and planning tools. The proto-theory here might be that Mrs Raven seemed able to see how specific resources in Pathways 'fit' into the 'collage' of approaches to school improvement that were being applied in moving Raven out of Special Measures. She did not seem the type to take 'leaps of faith', but rather to plan meticulously and be able to articulate the origins and execution of those plans to external observers. Mrs Raven seemed to appreciate the consistency of the MAID approach. However, she liked to move to new approaches and appeared to become 'bored' by repetition in the Pathways model, especially the four-step system.
- In Sparrow School, the trigger for overt engagement with Pathways was borne out of an extrinsic goal on the part of a teacher with nominal senior leadership responsibilities. First, Mr Sparrow's initial expressed intention to use Pathways to streamline all the different approaches to teaching and learning in the school (particularly around pupils' reading) seemed to convert into a possible professional development opportunity for Mrs Starling – almost directly related to her work towards a new headship qualification. This engagement with Pathways was then converted back into a wider school improvement goal situated around improving pupils' attainment in maths and increasing parental engagement. The driver for this work was Mrs Starling, guided by Mr Sparrow. Pathways in this case appeared to mediate the school's collective involvement in school improvement and an individual's professional development needs. So the proto-theory here is that Mr Sparrow's initial 'conversion' seemed to support Mrs Starling's projection from her own professional development to her school's improvement plans.
- In Jackdaw School, Pathways was expressed as a potential enabler to help staff such as the assistant headteacher to support other schools in their improvement goals and effectiveness

(and not staff in Jackdaw itself). This mediation did not transpire as the original expectations of the research were partially confused. On reflection, in the spirit of the DBR approach to the study, I could have asked if Jackdaw might want to use Pathways to support a partner school that they knew of who had maybe put out a call for help to achieve a specific task, or one that was already in its trust of schools that was in the midst of improving their professional learning and development provision. However, ethically, I felt it was right to leave the impetus to use Pathways, either in her own school, or elsewhere, with Mrs Jackdaw. Here, the idea of potentially improving the signposting in Pathways and Oxford Owl arose for Woodland, so that practitioners might be inspired to use Pathways as a mediating tool to work collaboratively with other schools, in a partnership or mentor-mentee capacity.

- In Jay School, Mr Jay had outlined his school improvement goals, and Pathways was potentially going to act as a mediating tool with his staff in order to distribute more leadership responsibilities and professional learning experiences. On reflection here, it felt ethically right to let Jay School leave the research project, rather than invite it to engage with Pathways further and add another resource to its efforts to overcome some of its staffing and pupil attainment issues. However, an important learning point emerged for Woodland in how to let Pathways 'speak to' practitioners in schools experiencing difficult circumstances in a way that communicates the range of resources potentially available to support staff and how Pathways might feature early on in a school's challenging improvement journey. In contrast, Raven School had already identified (along with Ofsted) 'what' needed to improve on the ground and strategically, and needed support in working out 'how' to do so. In Jay School, the more strategic goals had been identified by Mr Jay but less so the 'what' that needed to happen on the ground (in the classroom, the staffroom and so on), and so the trigger to engage with Pathways perhaps was less clear.

8.2.2 Pathways as a potential 'school improvement space'

Pathways seemed to provide a 'space', both online and offline, for conversations to materialise in schools around concepts such as 'improvement', 'development' or 'effectiveness' that might usually be viewed by practitioners (and researchers) as rather abstract and amorphous. Using different tools, templates and guides, a series of 'unfinished' artefacts were created to support each school's improvement journey, which also contributed towards practitioners' CPD. Mrs Magpie appreciated that the stimulus to improve parental engagement in her school was "coming from an external and professional body" such as Woodland. Her 'conversion' towards trusting Woodland to support the school perhaps started before the launch of Pathways in the form of the printed school improvement reports. Mrs Magpie also seemed to value the concept of 'sharing the load' – particularly in relation to staff CPD, where she sought to organise more collaborative events attended by multiple schools in

one room, in order to benefit from wider fields of questioning among the different teams and levels of experience. This mode of working extended to how Pathways was managed in Magpie School – the load was distributed between early career teachers (one for the National Curriculum Pathway, and two for Parental Engagement) who were perhaps thought to be more open to learning and developing their knowledge and professional practice using a resource like Pathways, mediated by the headteacher at different points. The classroom teachers expressed experiencing positive notions of autonomy and control over their work and development. They also learned about how to design and analyse questionnaires, manage whole staff meetings, broach new ideas with older, more experienced staff members, generate action plans and work through the school's improvement plan with the headteacher. Conversations around strategies for school and classroom improvement appeared to take place around Pathways artefacts and other resources like The Key – ostensibly outside of the Pathways/Oxford Owl platform itself – with communication, collaboration and reflection taking place in an asynchronous manner to the digital portion of the efforts being made. In line with the idea of produsage and artefacts never being quite 'finished', or up for discussion, Magpie's information ecology seemed able to cope, possibly even thrive within this mode of working. Pathways in a sense provided a substantive space in, and on, which to base a new kind of learning community – sometimes between the teachers managing each Pathway and headteacher, or more widely among the bigger staff team.

The Raven case exhibited notions of a lesser recognised type of mediated autonomy – one that took into account the school's starting position in its school improvement journey. It seemed to have harnessed the collective professional 'power' of the team but by Mrs Raven restricting access to Pathways resources to perhaps allow other programmes of improvement such as coaching, lesson study and the headteacher's Ofsted inspector training to contribute to the fold. In contrast to Sparrow School, both Raven and Magpie appeared to be more comfortable reflecting on their practice with reference to external research evidence and learning theories. Sparrow School seemed more confident with the Holistic (or Reflective) Approach to reflection (Golby and Viant, 2007) where some members of staff appeared to place more weight on their own individual or team's knowledge and past experiences rather than educational research evidence and theory. Raven's explicit use of the MAID analysis tool to improve the attainment and progress of the school's Pupil Premium children indicated strong intentions by the headteacher and her senior leadership team to reflect critically on their previous and current practice, and use other resources to amend and replace strategies that did not lead to favourable pupil outcomes. Mrs Raven noted that she used modelling techniques with her staff such as 'What a Good One Looks Like' (WAGOLL), in both the classroom and the Pathways environment. Much like Mrs Starling in Sparrow School, Mrs Raven's use of Pathways helped to 'spark ideas' and ways to support additional, sometimes more diverse ways of solving problems. For example, in exploring ways to support the increased engagement of fathers in their children's learning, the use

of social media to encourage buy-in from pupils and parents, and skill development for teachers managing pupils' homework assignments. Raven, unlike the other four schools, exhibited characteristics that ran the gamut of the range of orienteering routes through the Pathways course – (1) at first faithfully following the four steps of a Pathway (Closing the Gap), (2) then sourcing a variety of materials from different programmes, including Pathways to inform the school's responses to the new assessment landscape and to engage more parents, and (3) starting Pathways but finding that opportunities for learning lay elsewhere, and hence moving on to other modes of school improvement. The idea of picking and mixing seemed at odds with practice expected at Woodland where a sentiment consistent with "a close adherence to the Pathways approach could be good for you" was observed in discussions by some at Steering Group meetings.

Magpie, supported by early career teachers managing Pathways and therefore more likely to require, or be open to, scaffolding in their improvement practice, seemed most comfortable approaching each Pathway as a 'new' adventure every time. For Sparrow, the end goal was a more targeted effort to move from a bigger, global challenge (the new NC, assessment and accountability framework) to a more local, specific problem of raising pupil attainment in maths. For Mrs Starling, the adventure was also more personal (Figure 53 – page 228) – leading towards the prospect of a professional qualification that would take her beyond Sparrow School. Sparrow staff's initial reaction to Pathways seemed to stem from worries around excessive workloads, and in contrast to staff at Raven, possibly having less of a stalwart support in their leadership to limit the flow of information or access to resources, and thus assemble a bricolage of planned responses to school improvement problems. As mentioned earlier, these responses may have taken place outside of Pathways and staff interactions with the research project. For example, Sparrow School staff may have engaged more actively within their Pyramid partnership or through support from their local authority. Here, the idea of 'school improvement working spaces' emerged – somewhere between or amongst the online and in-person spaces created from Pathways (and other online resources) and the conversations that happen around them in order to complete a set of tasks. What was happening in this combination of spaces, and how might this influence practitioners' use of Pathways, and sustain or diminish their engagement with the school improvement goal itself?

8.2.3 Pathways as a potential space for professional learning: Development based on DASI (Creemers and Kyriakides, 2012)

In this section, each of the DASI steps is linked to evidence observed in the case study schools of potential improvement practice and professional learning. An example of a tentative approach to 'single' and 'double loop' learning was documented in Magpie School and their pupil questionnaires measuring pupils' enjoyment of reading where several high performing pupils had interpreted a couple

of the questions in a way that surprised the headteacher. I described the incident to my supervisor when on my return from fieldwork. She was left uneasy (understandably) from the ethical implications of Mrs Magpie 'checking' survey responses with individual pupils that were meant to be anonymous. In contrast, I expressed optimism at these developments as I felt that I had witnessed another 'DBR moment': one that illustrated the benefits of 'double loop learning' – assumptions believed to be held by some pupils about reading and what helped them to improve and engage at different levels were discussed and fed back into the Pathways 'loop'.

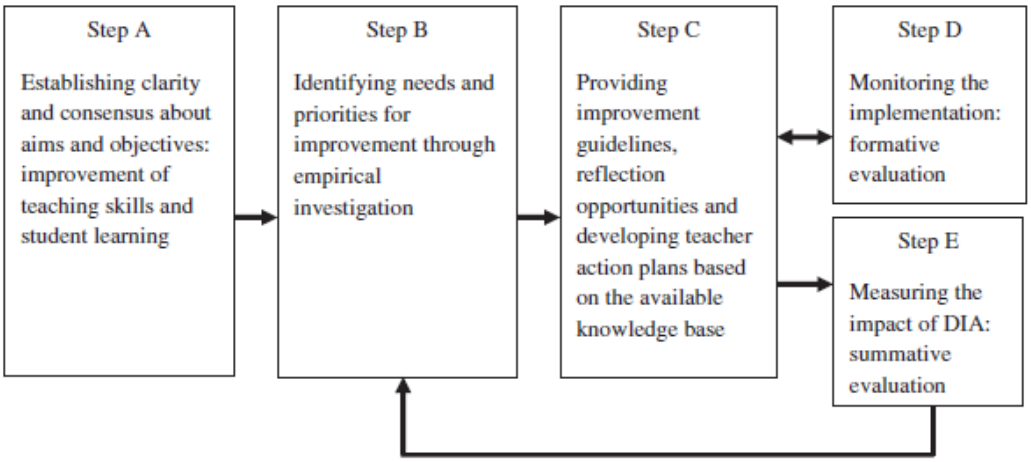
In Raven School, eliciting data from colleagues using Pathways surveys and completing the MAID analysis tool helped senior leadership staff to explore educational research evidence about the attainment and progress of children eligible for Pupil Premium funding and communicate their findings to all other staff in Raven. Pathways was one of several different resources used to increase consistency in teaching and learning practice in both the junior and infant schools. A theme that emerged with Raven (and indeed Jackdaw School later on) was the issue of how Pathways might keep the attention of a user like Mrs Raven who articulated an impression of the system and its materials becoming stale or "old hat" after being followed the first one or two times. In Sparrow, one of the aims of adopting Pathways became how staff could engage parents in their children's learning of mathematics, without staff feeling threatened, and being able to add value to some already effective teaching practice. Here, assumptions about what teachers might consider to be challenges to their teaching practice were discussed and potential solutions and compromises planned.

Table 16: RQ2 Cross-case summary table (b) - practitioners' use of Pathways in supporting schools' improvement journeys and practitioners' professional development experiences

Overall	Woodland	Magpie	Raven	Sparrow	Jackdaw	Jay
Pathways as practitioners' Professional Learning Environment (PLE), add the collaborative in-person aspect to build a kind of Professional Learning Network (PLN). "PLNs integrate both the collaboration central to Professional Learning Communities (PLCs) and the emphasis on learner autonomy and technologies from Personal Learning Environments (PLEs)." (Krutka, Carpenter and Trust, 2016: 151) During produsage, materials created from templates become artefacts and 'templates' / resources in themselves. Issues around what counts as research evidence and where teachers go to source information arose. Also, patterns of how information is then governed or mediated within schools emerged.	Woodland perhaps need to also 'establish clarity and consensus about the general aims' of Pathways – is its asynchronous nature a benefit (collaboration happens in-person rather than online in 'real time'); how can they accentuate this so users recognise the possible advantages of implementing SI this way? Publishers' collective impression that schools need evidence simplified to the extent that the end product sometimes barely resembles the original research. But this doesn't mean it's good or bad necessarily as there has to be some transformation from raw research into communicable findings.	Progressing from one Pathway to the next, developing newer staff in the process. Engaging with an external A&R presence. Other resources explored including The Key, school improvement printed reports, external training events.	Rapid turnaround out of SM was the top aim, and unifying systems in the infant and junior schools. Pathways used as one of several resources to introduce stability and consistency in the junior school. Other resources explored including the EEF Toolkit, Twitter, online sources like blogs, TheSchoolBus, and Rising Stars, Teach Meets	NfER test trials. Whole staff meetings discussing exam papers and relationships with specific pupils. Other resources explored often listed as Ofsted.	Not applicable	Not applicable

When my research project first began, it was planned as a study spanning the fields of school improvement and digital technologies. After learning more about Magpie School's collective approach to school improvement, Raven School's approach to knowledge sharing and Mrs Starling's future career plans, it became apparent that the study was now also spanning new territory in the form of practitioners' professional learning and development. This is when it seemed pertinent to study the use of Pathways with reference to the Guskey (2002b) alternative model of teacher change and framework for evaluating CPD. Antoniou, Kyriakides and Creemers (2015) meanwhile had developed the Dynamic Integrated Approach (DIA) to teacher professional development – a means of integrating the areas of school improvement with practitioners' professional development and learning. As such, this newer framework underpins this section on the potential links between Pathways and DASI. The five case study schools' approaches to school improvement are examined next to each of the Steps in Figure 54 (page 235).

Figure 54 The Dynamic Integrated Approach to teacher professional development – major steps to implementation – Fig. 2 (Antoniou, Kyriakides and Creemers, 2015: 542)



Step A: Establishing clarity and consensus about aims and objectives: improvement of teaching skills and student learning

In this study, the senior leaders of three schools (i.e. the headteachers of Jay and Sparrow and assistant headteacher of Jackdaw) seemed to bypass Steps A (above) and B ('Identifying needs and priorities for improvement through empirical investigation'), and move straight to Step C ('Providing improvement guidelines, reflection opportunities and developing teacher action plans based on the available knowledge base'). Mrs Magpie, Mrs Raven and Mrs Starling in contrast appeared to attempt strategies consistent with Steps A and B with the help of Pathways. Part of the successful implementation of Pathways appears from my cross-case analysis to lie in schools recognising the need for Steps A and B. What may be regarded as professional judgement (by practitioners and the individuals/groups surrounding them), and a host of other types of evidence appeared to override the need for Steps A (establishing clarity and consensus about teaching and learning) and B (prioritising through empirical investigation) – for example in Sparrow School. However, professional judgement and evidence also form the basis of decision-making capacity in empirical investigation – so was it a case of knowing the 'dosage' of professional judgement vs 'pure' empirical investigation to apply to a given situation? Another question that emerged from the cross-case analysis was one about assessment of actions at each step – is a kind of 'checklist' helpful to schools to ensure that important steps are not omitted, much like checklists used in hospital settings, to verify patients' status and required care? Or does the notion of checklists encourage a tick box mentality? Are there better ways to check vital signs of schools?

There is evidence from the cross-case analysis of some practitioners iterating between Steps A, B and C in their use of certain Pathways, i.e. using information from Step C (developing plans based on

available evidence) to inform steps A and B and vice versa, until they reached a kind of 'implementation equilibrium' in step C and proceeded with a more defined and stable plan of action.

Step B: Identifying needs and priorities for improvement through empirical investigation

'Diagnosis' (ideally) may happen here or in between Steps A (establishing clarity and consensus about teaching and learning) and B (prioritising through empirical investigation). For schools that skip this step, diagnosis may happen during Step A (perhaps too early for some) or possibly too late in Step C (developing plans based on available evidence), e.g. in Jay School and with Mr Sparrow.

This is also a crucial phase when the value of tasks and tools within Pathways can be fully appreciated and put into action. The recognition of Step B is fundamental to the possible added value of Pathways being materialised by staff at all levels of the school. Notions of autonomy 'mediation' and 'enablement' emerged here. If it is decided that a school already has a path to follow or the intended direction is already 'clear' from other available evidence and/or professional judgement, Pathways may be seen as irrelevant and an 'extra step' on the way to 'taking action'.

Teachers more generally often voice the feeling of decreased autonomy in schools, and constantly rushing to meet unclear targets and respond to external changes in policy and Ofsted requirements. Step B is a stage when some autonomy seemed able to be reintroduced into the way schools operate – for example in Magpie, Raven and Sparrow Schools. Of course, this depends on how something like Pathways is implemented across the school. The implementation of Pathways may also reduce the impression of autonomy if the tasks are introduced in a rigid, prescriptive manner. However, this approach is also more common and maybe more applicable to the initial stages of a school attempting to come out of a negative Ofsted rating such as Requires Improvement or Special Measures. In this instance, autonomy might be implicitly introduced via a resource and 'school improvement space' like Pathways.

Step C: Providing improvement guidelines, reflection opportunities and developing teacher action plans based on the available knowledge base and Step D: Monitoring the implementation

Raven School's headteacher's approach offered different opportunities for reflection for SLT, and the capacity, time and space for teachers to focus more specifically on the teaching and learning programme. Improvement efforts were dispersed across the staff structure, mediated by the headteacher and rest of senior leadership. My findings are derived from observations and interviews with the headteacher, these schools' attainment profiles over three years, and only a selection of teachers in some schools, linked with the external performance rating by Ofsted.

Magpie's headteacher's approach more explicitly and openly offered opportunities for reflection to all practitioners, parents and pupils as each group had completed surveys, contributed to discussions at different points and attended meetings and workshops (e.g. staff meetings and parents' workshops).

This more explicit approach with Pathways affords different prospects for collaboration and reflection amongst staff, pupils and parents. There may be potential problems with this approach as well; not all voices may be heard equally; more vocal parents are perhaps easier to remember, although in some instances silent parents may also stand out. However, not engaging with different stakeholder perspectives also has drawbacks.

Orientations towards Pathways as a means to promote school improvement were adopted in Magpie and Raven Schools but in rather different ways related to collaborative enquiry, PLCs and produsage. A summary of common themes between Magpie, Raven and Sparrow Schools is shown below.
Magpie and Raven Schools' profiles of Pathways use corresponded in the following ways:

- what seemed like a 'love-hate relationship' with Ofsted, approaches to mediated autonomy (encouraging notions of collaborative inquiry, lesson study and coaching in Raven; and the use of the TLR3 and collaborative inquiry in Magpie), building protective layers to support succession planning and staff retention, which followed a 'pattern of preparation';
- use of a range of sites and external artefacts to talk around (the IPC in Raven, The Key in Magpie School and Sparrow School's participation in NfER test trials, and Mrs Starling's completion of the NPQH). Pathways seemed to be used to communicate research evidence to members of staff, with aims appearing to drive everything forward. This was in contrast to Sparrow School's aims which came across as a bit mixed, or unknown, initially to me at least. Sparrow was in comparison to Magpie and Raven, a very small school where leadership was distributed differently, and more nominally;
- non-reliance on LA resources (Magpie and Raven) – which seemed the opposite of Sparrow School who spoke of working within a local 'Pyramid', and Mr Sparrow acting as a LLE and Self-Evaluation Partner for the County Council;
- Three Pathways were attempted by Magpie and Raven Schools, with the former following an approach closer to Mode A (in Figure 32 – page 147 of Chapter 5) and the latter towards Mode B;
- Practitioners in Magpie School seemed more openly self-critical about use of Pathways compared to Raven School. However, Sparrow could also be classed as 'open' as I had access to all staff (but they are a small school).

Compared to Magpie and Raven Schools, from what I observed and could understand from staff exchanges, Sparrow School seemed more ambivalent when it came to the sequence of steps advocated by Antoniou, Kyriakides and Creemers (2015: 542). Of course, these steps were not made explicit to each school during the research project, but acted as more of an implicit guide to practitioners that agreed to use Pathways, and as a frame of reference within the DASI theoretical model.

However, as part of engaging with Pathways and Mrs Starling's NPQH, pupils in Sparrow were able to take part in new learning experiences and interventions that might have improved their enjoyment of maths, and different members of staff participated in new approaches to communicate with parents and deepen their professional and subject knowledge based on their professional stage and expertise. There also seemed to be greater recognition of the values element of teaching and learning, in addition to the 'know-how' and 'know-why' aspects of knowledge, as documented in Mrs Starling's NPQH task.

8.3 RQ3. How are Pathways and its constituent components designed, against a background of school improvement and school effectiveness literature and experiences of schools and practitioners' use of Pathways?

Table 17: RQ3 cross-case summary table (a) – Pathways cycles of design and redesign

Overall	Woodland	Magpie	Raven	Sparrow	Jackdaw	Jay
Design checks and balances: between literature and what's possible by designers; quite crucial equilibrium to achieve between what might seem like a good idea or be "good for schools" and what might realistically be used in schools, e.g. providing a survey with all possible questions to ask – how will a teacher decide which questions are essential?	Tile structure for website [see Woodland case study for evidence], authors sought based on specialist areas, [Pathways may be reliant on authors to know the best way to communicate to practitioners. Is this sufficient?] Woodland name important in channelling trust to schools.	Pathways makes research evidence seem accessible, in digested pieces of writing, and the four-step system.	Pathways seen as something to "hang your hat off" – Woodland gaining experience in sustaining the interest of schools who have used multiple Pathways and feel like they have 'graduated' to other resources.	Difficulty in accessing Pathways material due to vastness of platform, and small size of school – introduced relevance to the needs of classroom teachers in all schools facing workload challenges.	How to interest schools who feel that they are already Outstanding and so do not need 'support' from a resource like Pathways.	In contrast to Jackdaw, how to interest schools who feel over-burdened with staffing and school improvement problems – and highlight the ways Pathways might be able to save time rather than expend more.

Four 'design principles' were investigated in the Woodland case study:

1. "Analysis of practical problems by researchers and practitioners in collaboration
2. Development of solutions informed by existing design principles and technological innovations
3. Iterative cycles of testing and refinement of solutions in practice
4. Reflection to produce "design principles" and enhance solution implementation"

On the whole, Woodland's respected name, associated trust and familiarity with schools and vice versa appeared to position Oxford Owl and Pathways in good stead with primary schools. Noticeable similarities between the format and content of Pathways to preceding National Strategies seemed to be an advantage in many ways, but could potentially be a drawback for some practitioners with less than fond memories of the National Literacy and Numeracy Strategies era. Many of the authors who had been commissioned to write for Pathways had also written for the National Strategies and this proved useful to Woodland as the authors seemed to understand the style and content required of a resource like Pathways. Several of the academics who were recommended to write for Pathways were seen to sometimes have extensive knowledge on a particular topic but necessarily the style of presentation required for a practitioner audience. [Interview with Miss Woodland_Jun-2013]

The pioneering journey embarked on by Woodland in their launch of Pathways and shift of resources online in 2013/2014 – certainly within the more traditional educational publishing industry – bore some similarities to schools' acclimatisation to the new NC across all key stages, accountability standards and assessment structures and procedures. Schools (and Woodland) were also tasked with periodically adapting to changes to the Ofsted inspection framework. In the meantime, the UK as a whole was adjusting to the newly appointed Conservative government who had won the general election in 2015 – a change from the Conservative-Liberal Democratic Coalition of 2010.

Resources that may have previously helped to inform the curriculum and teachers' CPD such as the former National Strategies and guidance and research reports released by the DfE and QCDA had quickly been archived with the change of government. Educational advice and support from local authorities was fast depleting in some boroughs more than others, as indicated by schools in this study such as Magpie and Raven. It seemed that the market had opened for other providers to create resources to help 'orientate' schools through this new teaching and learning landscape, but this would have to be funded by schools in a time of declining budgets.

Woodland and the case study schools also seemed to be adapting to the increased use of digital technologies, not just for parents and pupils but also teachers' professional learning and development. Woodland were steadily moving more of its content online, while also being mindful that some schools still preferred to use hardcopy resources. This observation can be compared with my 2013 interview with Mrs Woodland indicating that Woodland Primary had not yet gone online – some of their resources were still on CD-ROMs. Pathways and Oxford Owl appeared to be the publisher's first wide-ranging forays into the online school improvement market. Magpie was an interesting school case that attempted to straddle both the digital and print divide – perhaps indicating that rather than act as a hindrance, the divide could actually serve a purpose – by helping to enable teachers' learning and development in schools and elsewhere (at home or on the move). One additional component in

the mix that seemed critical was communication, particularly of the practitioners managing a Pathway or the senior leadership – the affective and behavioural aspects of practitioners' digital-print experience of Pathways – was this a 'third space'? For example, Stoll et al (2006: 221) propose that capacity is a complex composite of "motivation, skill, positive learning, organisational conditions and culture, and infrastructure of support." This would require that Pathways as a school improvement resource that enables teams to build capacity also somehow enables practitioners to develop and nurture different facets of this composite – creating a kind of 'third space' (beyond the usual digital and in-person spaces) which may house a professional learning community that combines both on- and offline environments.

Woodland, along with other educational publishers also seemed to be grappling with a change to the organisation's sales model – where books and CPD resources might have been previously introduced by sales representatives in schools face-to-face, practitioners now had more access to online products, being able to test them or engage with them and a range of other knowledge directly via social media. Pathways as an online tool was still being sold face-to-face; but for how long would this model be sustainable? In line with the DBR approach to this study, when I revisited this issue with Woodland in 2016, it seemed that the model was continuing but with 'higher level' sales representatives delivering the Pathways message to practitioners.

8.3.1 Remembrance of National Strategies Past?

Interestingly, none of the five case study schools mentioned any similarities between Pathways and the National Strategies. When I asked the school research participants a question about whether they saw any parallels between Pathways and previous DfE or other resources, still none of them mentioned the National Strategies. This does not necessarily mean that they did not see any similarities between the two resources. On reflection, I could have asked participants more explicitly about their perceptions of the National Strategies and the programme's approach to the design of teaching and learning materials and professional development, and any possible links with Pathways that participants might have perceived. At the time of the field work, I had decided not to bring the National Strategies into interviews, so as to not confuse the relationship between the two resources.

In Magpie, Raven and Sparrow Schools, Pathways was likened to a local authority-type resource, particularly welcome in boroughs where local authority support seemed to be shrinking. The notion that 'following Pathways is good for you' sometimes indicated by some in the Woodland Steering Group is perhaps similar to the model that informed the National Strategies. In other online domains, resources appear to have moved into different terrain, e.g. Te@cher Toolkit (2018), Twitter personalities, educational bloggers who are able to communicate in real-time with their users and

readers, something not available in Pathways. Equally, some of Mr Mole's statements about the 'digital customer' also seemed rather far removed from some of the basic needs of practitioners who do not enjoy high speed internet access by default.

Members of the Woodland Steering Group had written for the NS and worked as Ofsted HMI. These characteristics of the group, along with the familiar challenge of a designer of any platform or programme adhering to principles of fidelity and flexibility may have inevitably led to what I observed as a tug-of-war between Woodland providing a series of choices to school users for how to perform a task, but also having a preferred way of making those choices – and this coming up against some schools' preferred ways of working, or how organisations 'have always done it'. Here were emerging configurations of 'realistic' implementation in schools, and design patterns of Pathways in Woodland.

The pattern of 'top-down initiative' perceived by some with respect to the National Strategies is interesting to explore in relation to Pathways. Certainly, the four-step system can be perceived as top-down (for example in Sparrow School initially and Raven School throughout), but almost the opposite was found in Magpie School where the approach to Pathways was flipped, and the system was managed by early career teachers – nonetheless, still mediated, supported and indeed spearheaded by the headteacher. Once Pathways became part of Magpie School's response to implementing the new NC however, the early career teacher managing Pathways was given space to decide which resources to use, which templates to try and what sort of questions to ask other staff about their implementation plans. Similar to the NS, the pedagogical style of how Pathways is delivered to practitioners is very much in line with more of a 'transmission' perspective (Pratt, 2002) – the platform houses the background research, the guides, the blank and filled in templates and planned 'route' through an issue via the use of steps and tasks. Incidentally, Smith et al (2004: 409) in their review of the National Literacy Strategies (NLS) and National Numeracy Strategies (NNS) suggested that:

> [N]ew 'top-down' curriculum initiatives like the NLS and NNS, while bringing about a scenario of change in curriculum design, often leave deeper levels of pedagogy untouched.

Woodland had started to look for evidence of the impact of their resources, usually based on a 'big idea' and pedagogical approach – e.g. Read Write Inc. Leadership was seen to be a vital driver of change in schools attempting to implement the whole-school interventions on offer. There has also been growing interest in efficacy testing and evaluation so that claims about impact could be evidence-based and trustworthy, building on Woodland's existing reputation for high quality resources.

8.3.2 What roles do the improvement journeys and experiences of schools and practitioners play in shaping and influencing the design and redesign of Pathways?

Sparrow highlighted the need for Woodland to consider more deeply the influence of teachers' stages of development and professional experience on their engagement with Pathways – another factor supported by the DASI. Sparrow also provided evidence for Woodland to reconsider how schools' conversations around moving from macro- to micro-level problems took place, and how they might involve a resource like Pathways. For example, how to encourage practitioners to reflect using research evidence, in addition to their own past and collective experiences. Lastly, Sparrow provided a basis on which Woodland might consider strengthening the professional development aspects of Pathways, and introduce more cues for teachers to recognise when they have worked towards a new skill, and how that might influence their pupils' outcomes.

Notions of layering had emerged – in terms of school leadership as well as the use of technology and other communication tools in schools' improvement tasks. Principals and other school leaders seemed to apply different layered elements to their schools' improvement journeys, but other potential implications in task emphases and focus were being added to these layers in practitioners' use of digital technology in the form of Pathways. Schools' use both inside and outside the research project provided opportunities for Woodland to understand, in an individual school, who might be using Pathways, who might choose to purchase Pathways, and how tasks might be distributed amongst staff, in some instances between multiple Pathways. Although Pathways was provided free of charge to all five case study schools in this research, only some Pathways were freely available for all schools and other content was paid-for. These more school-based decisions seemed to also influence and be influenced by how Pathways might have been 'sold' or indeed introduced to the school – for example were these introductions primarily mediated by a sales representative or had Pathways 'sold off the page'? This was a critical question particularly in light of the wider platform Oxford Owl acting as Woodland's 'digital destination' for schools (and parents) – many of the users would be classroom teachers who might come across Pathways while perusing free e-books or professional development materials elsewhere on the platform. Woodland originally anticipated that sales representatives would be interacting more with headteachers or others in senior leadership. Despite headteachers having less time to interact with sales representatives, than for example, literacy coordinators, Woodland market research indicated that the latter seemed to not 'get' Pathways, whereas headteachers did. Sales representatives also struggled to 'get' and then explain Pathways to school staff, plus Pathways, compared to a 'big ticket item' such as RWI (which was far easier to explain) was a less profitable sale for representatives. As a consequence of such issues, Woodland moved to a new model, whereby higher, more strategic level representatives would talk to schools about Pathways (likely to be members of senior leadership). So still, the introduction to this vast online resource would be mediated by a sales representative. However, Woodland had recognised that they were having to

'educate the market' by moving from selling teaching and learning resources (to teachers) to leadership and management resources, but not necessarily always to staff in leadership and management roles in school. The Woodland model for a time appeared to have a problem with sales representatives being able to access senior leadership staff in schools.

Strategically located 'tasters' such as short pieces of research that I suggested might give potential users a preview of what Pathways contained were initially seen as difficult to organise due to the registration paywall. In an attempt to try and ease the tension between Woodland's aspiration to give some resources away for free but to also better understand the demographic of potential users, between 2015 and 2016, marketing for Pathways changed to allow for tasters to be accessible outside of the paywall. This was an instance when I expressed concern that schools could not have better access to research evidence outside of Pathways, in order to help raise the profile of accessible, bitesize pieces of educational research evidence with practitioners, but to also potentially link them to Pathways in the future. Improving access to research evidence, helping schools to navigate research and giving practitioners the chance to feed into the resources themselves – other suggestions I made in the DBR study for Woodland to engage with were seen as steering the organisation into more of a 'thought-leadership' role – only desirable if done with a specific purpose.

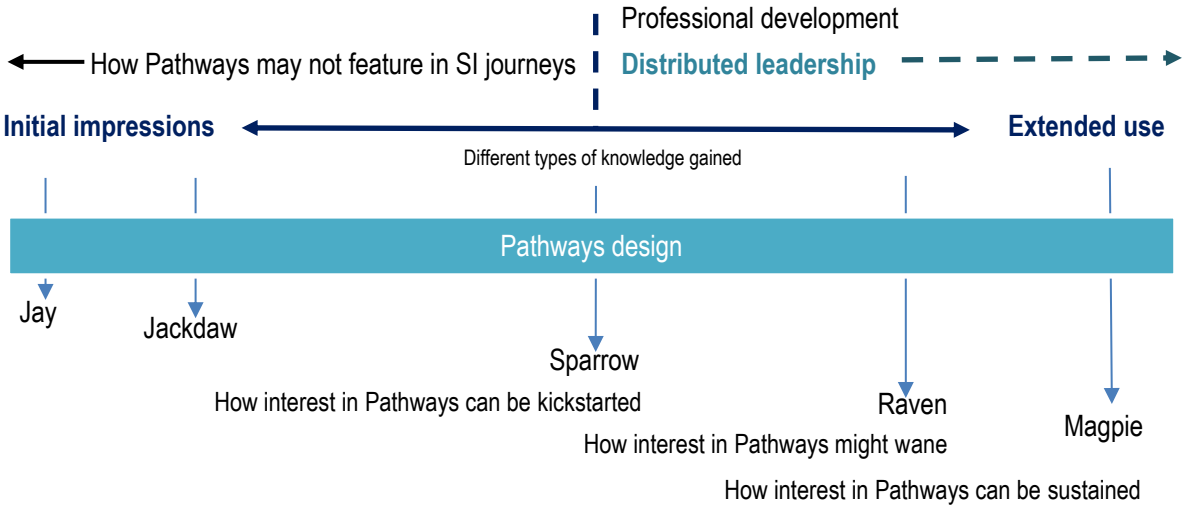
Several parallels can be drawn between the use of design patterns to build an online resource like Pathways and templates designed to support school improvement such as those in Pathways. I began to see Pathways more broadly as a type of 'design pattern' for school improvement, focusing on fidelity to the system, as well as allowing some degree of flexibility for the user.

Schools came at different points in their improvement journeys which had diverse aims, so each would have adopted Pathways at different junctures. Both Raven and Sparrow alluded to the outcome of 'graduating' out of Pathways into other resources – both from an initial impression that Pathways might be too complicated – in Raven's case, the headteacher wanting to protect her teachers' workload, and in Sparrow, one particularly vocal classroom teacher and headteacher voicing concerns over workload. Towards the end of their engagement however, Mrs Starling suggested that Pathways materials were too simplistic and Mrs Raven proclaimed whole Pathways were 'old hat'. This was in contrast to the Magpie School case where the headteacher who moved on from Magpie to a headship in a smaller rural school just before her retirement in 2016 adopted Pathways for her new school's improvement tasks, taking this researcher with her in an effort to further extend her relationship from the partnership between Magpie School, Woodland and the research project.

Table 18: RQ3: cross-case summary table (b) – Pathways cycles of design and redesign

Overall	Woodland	Magpie	Raven	Sparrow	Jackdaw	Jay
Schools come at different points in the journey, each journey has its own context and idiosyncrasies. Need for Woodland to understand that schools won't just use Pathways on its own for SI - they will probably use other resources too. If they just relied on Pathways it might be problematic.	Lack of understanding as to why a school would not want to use Pathways - e.g. Jackdaw School who was introduced but ultimately felt that Pathways was not advanced enough for their SI journey. Initial issue with sales representatives not being used to how to 'sell' Pathways to schools. Now Woodland employs a 'head rep' who manages the sales.	School aiming for outstanding features and improved pupil outcomes in reading. Pathways used as a display/artefact to talk around in staff meetings	School moving out of Special Measures. Pathways documents discussed among SLT. Alternative type of mediated autonomy where teachers are given time and space so they don't have to manage Pathways themselves; information is mediated through SLT.	Idea that too much detail can be daunting for some schools and perhaps there needs to be different levels or tiers to ease teachers in.	Idea of some schools perceiving Pathways as too simple and not advanced enough for higher performing schools	Idea of some schools seeing Pathways as a 'burden' rather than a support in their time of apparent need.

Figure 55: Potential input from case study schools' improvement journeys into Pathways' design



Overall, perceptions of Pathways by the case study schools were positive and this has been documented. However, one of the responsibilities I felt with the DBR approach of this study was to focus some attention on why a school might *not* see the value in a resource like Pathways or find it hard to engage with the Pathways approach to support school improvement. Most case studies produced internally (within Woodland) might only consider positive rather than negative cases – and this would likely be contributing to survivorship bias over time. By contrast in school improvement research it is important to identify barriers and the role of context and personalities in order to better

understand SI processes and journeys (bearing in mind schools can decline as well as improve in terms of measures of student outcomes, climate, processes and external ratings). In the next section, I use 'journey maps' to illustrate both the 'pull factors' that may attract school users to Pathways, and 'push factors' that may detract potential users from Pathways.

8.3.3 The use of 'journey mapping' to analyse potential feedback loops between Woodland, the five primary schools and this research project

One of the main original contributions to knowledge of this study is how the fields of educational technologies and school improvement might come together more explicitly to inform each other's research and practice, and perhaps form a new shared space. This is illustrated using 'journey maps' of schools' travels through Pathways alongside their individual school improvement plans and the 'idealised' set of steps mapped using school improvement and effectiveness literature.

Journey maps have in the past been employed in other sectors outside of educational research such as social entrepreneurship (Ortbal, Frazzette and Mehta, 2016), product life-cycle and planning and user experience journeys in digital technology platforms (Marquez, Downey and Clement, 2015). Journey mapping is used as a tool to help service providers to "understand the steps required to perform a given task" (Marquez, Downey and Clement, 2015: 135). Ortbal, Frazzette and Mehta (2016: 250) extol the benefits for journey mapping for resource providers: (1) the visual nature of the exercise can be used to organise discussion around sections of a resource and promote debate and dialogue among users and designers; (2) the potential of collaboration and learning experiences to create and analyse journey maps with a variety of stakeholders; (3) having the opportunity to address the sometimes non-linear nature of user (and designer) journeys, and connect usage with users' context and examples of day-to-day problems.

The journey maps presented next attempt to bring together the findings from each of the case study schools and Woodland's case study of technology design in school improvement. An example reading of Magpie School's journey map is given overleaf, with a full set of readings provided in Appendix 24 (page 472).

Summary of components:

1. Name of **school**
2. Comparison of a **scenario** or specific task taking place in a school, the **school's improvement goals** and how they were articulated, and the **school's goals in adopting Pathways**
3. **Pathways stages** of engagement in relation to the four phases of school improvement (Day, Gu and Sammons, 2016: 240)

4. **Collective school improvement phase** in the school based on the scenario or task being worked on at the time – not necessarily just the 'whole-school' improvement phase but the phase or stage specific to a task or practitioner managing Pathways at the time

5. **Actions**: what practitioners did to link their school improvement goals with Pathways resources

6. **Touch points with Pathways et al**: practitioners' specific interactions with sections of Pathways and other relevant resources

7. **Impressions**: Practitioners' views, perceptions and emotions/attitudes towards their interactions with Pathways

Scale symbol	Description
++	Strongly positive views/feelings
+	Positive views/feelings, for example confidence, satisfaction at seeing a change in pupils' outcomes
?	Ambivalence towards Pathways resources (structure and/or content)
-	Some degree of negative views/feelings, for example stress or nervousness
--	Strongly negative views/feelings, for example practitioner' lost interest to the point of abandoning Pathways

8. **Pull factors**: Features of Pathways design that attract potential school practitioners – often linked with the more positive Impressions listed in the journey map

9. **Push factors**: Features of Pathways design that may detract potential school practitioners – often linked with the more negative Impressions listed in the journey map

Magpie journey map – example reading

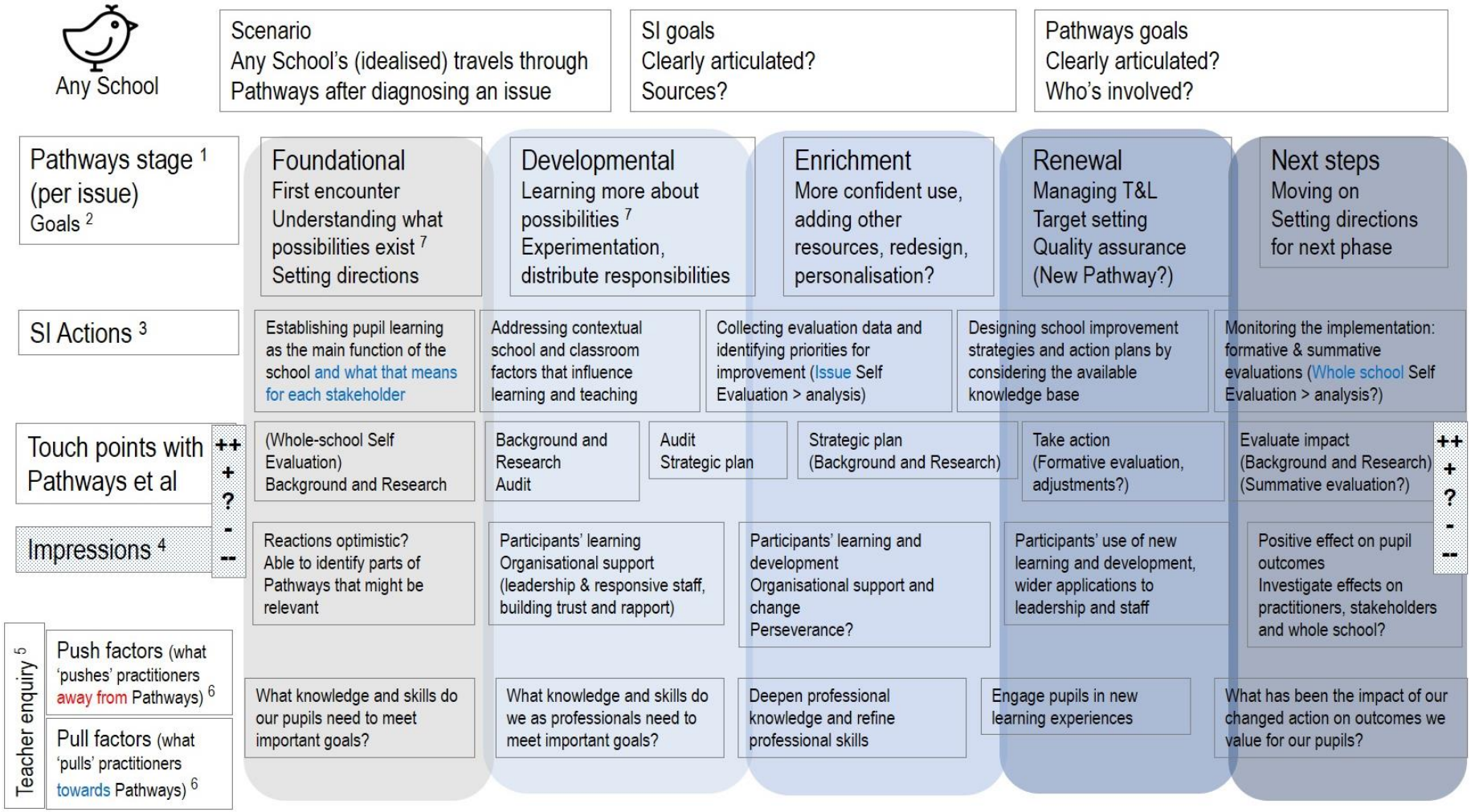
Magpie's school improvement goals came across as clearly articulated by the headteacher – to improve reading and other outcomes through increased parental engagement. The stated purpose for choosing to adopt Pathways was that the school was finding it more difficult to source high quality professional development and teaching and learning resources with shrinking local authority support.

Reading horizontally: Mrs Magpie made explicit links between Woodland's printed school improvement reports and the four-step system of Pathways. Overall, there seemed to be a trust of the Woodland/Pathways approach to school improvement – a trust in the four steps and series of tasks underneath each task. It was perhaps easier for Magpie staff to follow each Pathway faithfully as early career classroom teachers managed two of the three Pathways. Iterative design and redesign of strategies based on new information seemed to take place at each stage.

Reading vertically: There was a direct pairing of Woodland's written reports and each step in Pathways, so the goal at each stage seemed to be 'spelled out' for all staff. This perhaps contributed to Pathways being viewed as a trustworthy resource, even though rich in content, the level of detail was seen more

as an advantage to practitioners' professional learning rather than 'information overload'. However, the efforts necessary to spread the potential benefits of adopting Pathways had to be communicated to staff and other stakeholders across the school, to maximise engagement and positive pupil outcomes.

Figure 56: Journey mapping ('idealised' steps through a school improvement journey and Pathways) – key for numbers in superscript below shown overleaf



Key for superscript numbers in idealised journey map

1. Four phases of improvement (Day, Gu and Sammons, 2016: 240) - "focused interviews to discuss the school's improvement trajectories and the school's leadership since the principal's appointment."
2. Core leadership practices (Day et al, 2009: 25)
3. DASI (Creemers and Kyriakides ibid)
4. After Guskey (2002a) ibid.
5. Teacher enquiry and knowledge-building cycle (Muijs et. al., 2014: 247) ibid
6. Push-pull factors – terms used in geography (World Atlas, 2018)
7. Stakeholder journey map (Ortbal, Frazzette and Mehta, 2016: 256)

Figure 57: Magpie journey map

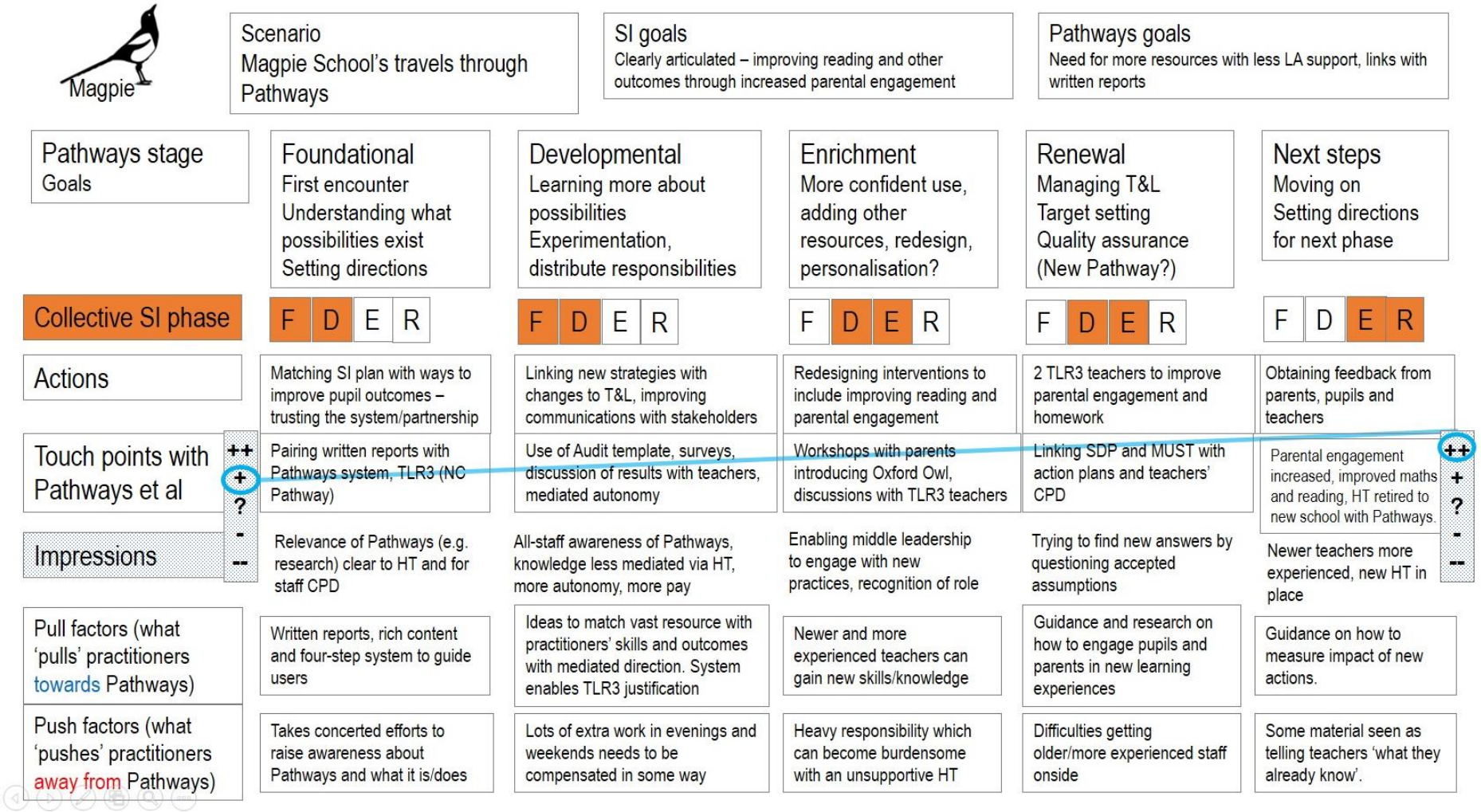


Figure 58: Raven journey map

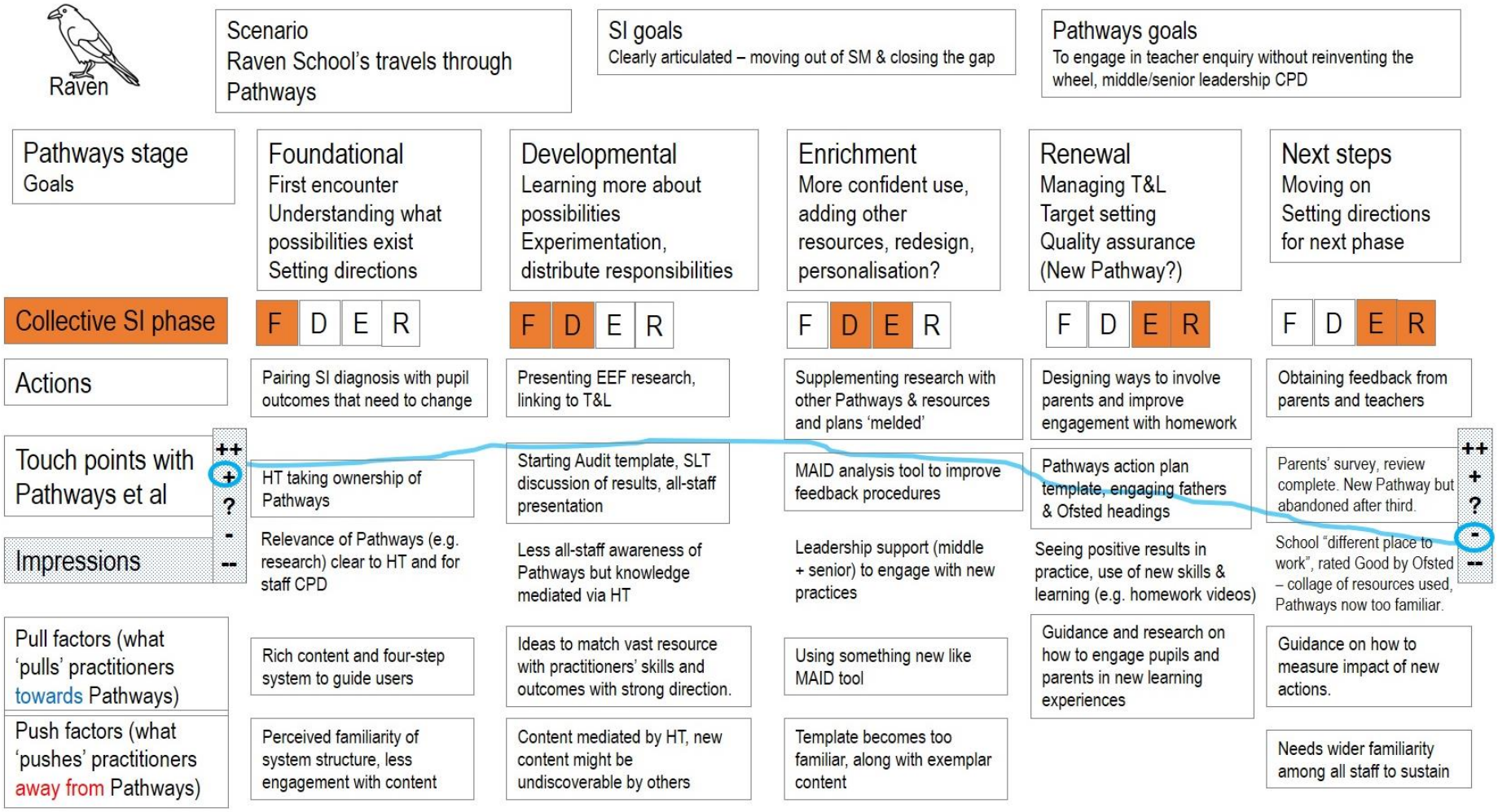


Figure 59: Sparrow journey map

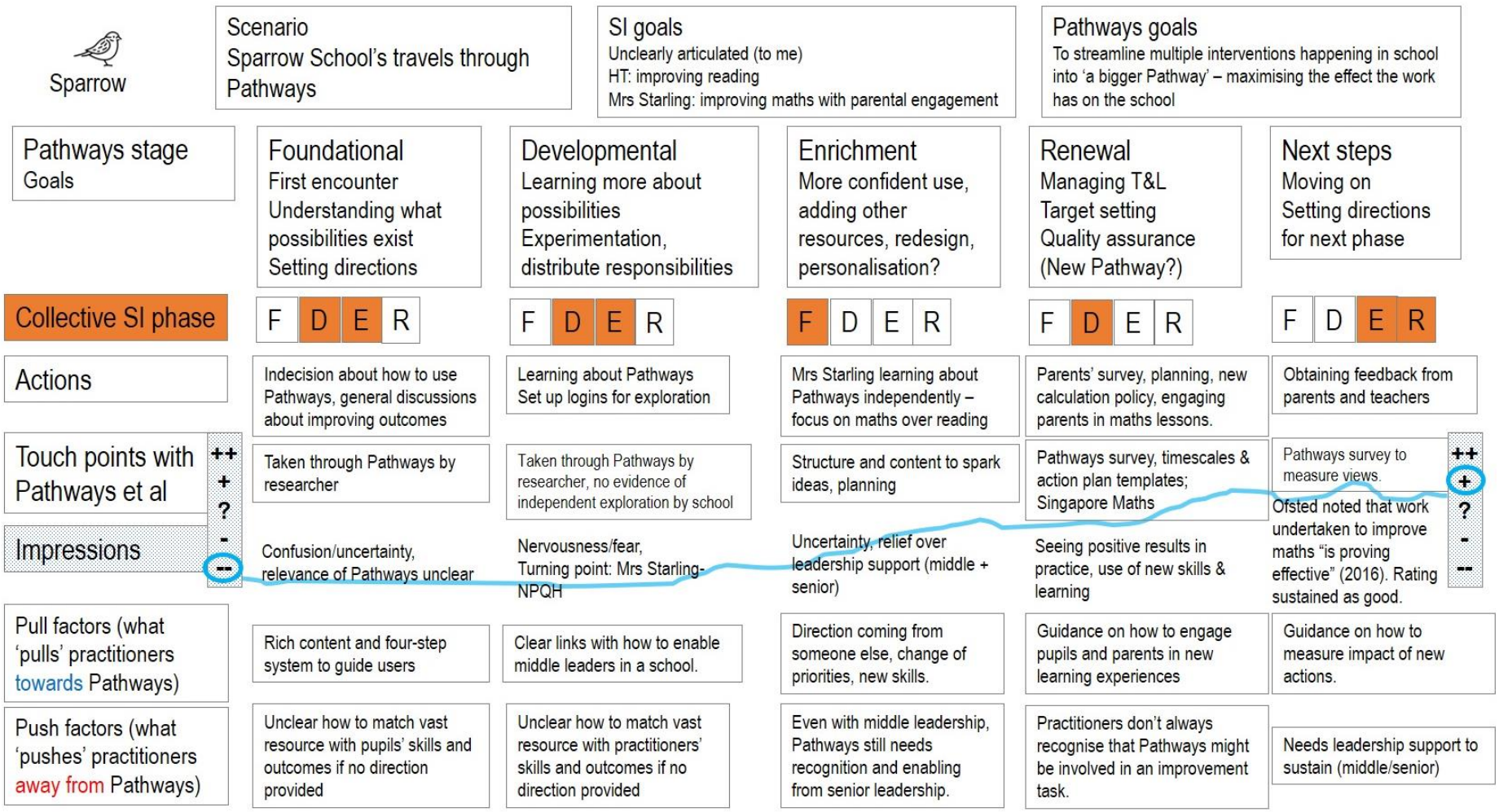


Figure 60: Jackdaw journey map

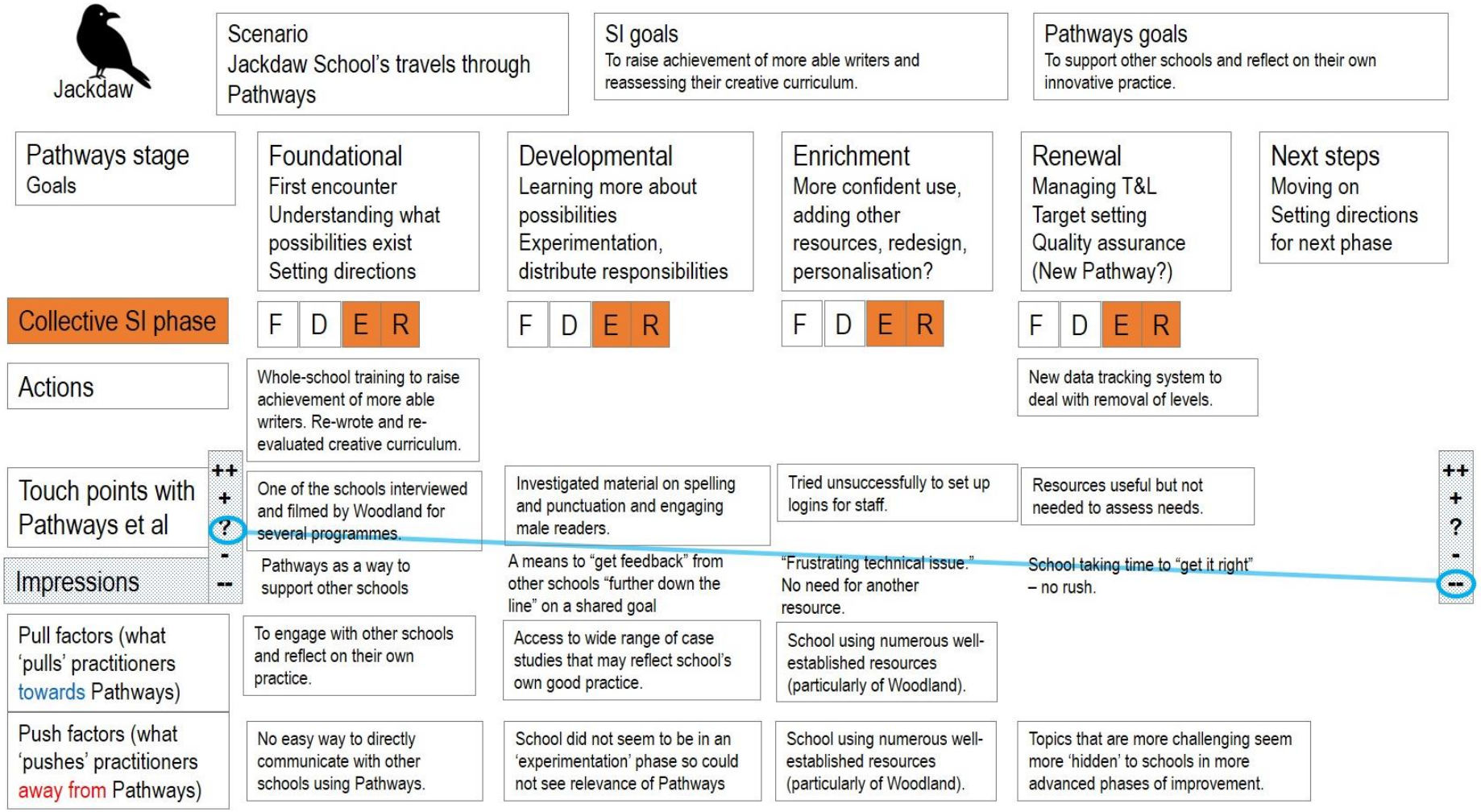
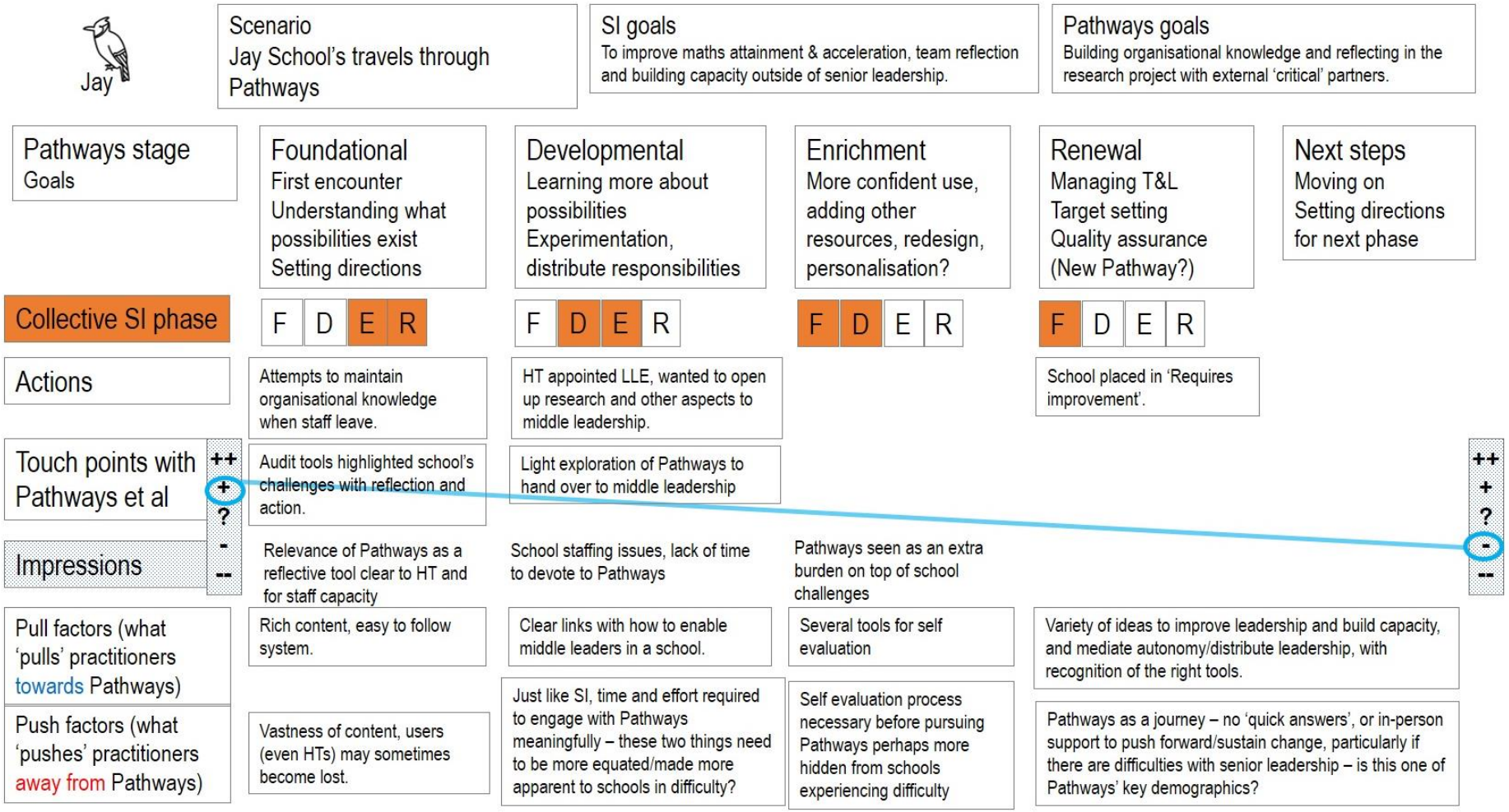


Figure 61: Jay journey map



Summary

This cross-case analysis and synthesis has provided an account of the patterns, interrelationships and occasional disconnects between the individual case studies, embedded within the wider study of the Pathways platform and its array of resources. The chapter was organised according to the study's research questions. The questions asked about the context-specific views and perceptions of practitioners in their use of Pathways and each school's level of engagement, how Pathways may have featured in supporting schools' improvement and professional development journeys – where notions of 'mediated autonomy', leadership capacity and hybrid 'school improvement spaces' were explored, particularly in implementing some of the principles underlying the DASI, and the feedback loops that fed into the design of Pathways – including the use of journey mapping to chart school improvement phases with 'push and pull factors' associated with the development and use of an online platform such as Pathways.

Chapter 9: Discussion and Conclusions

This study sought to explore the workings of, and practitioner engagement with, a new online resource for schools called Pathways for school improvement. The project used a DBR framework that attempted to capture school improvement processes in context alongside the development of the online platform itself as it evolved over the first two years of its operation. The study combined the approaches and evidence from the fields of school improvement and digital technologies for teachers' professional development and collaborative working purposes – two fields often studied in isolation. I have presented findings from three main perspectives. The first focuses on practitioners' experiences and perspectives in the form of three extensive school case studies (Chapters 4 to 6) and two shorter pen portraits (Appendices 20 – page 461 and 21 – page 465) linked to five schools that agreed to participate in my study and were interested in the potential of Pathways. The second focuses on Pathways as envisaged by Woodland Press, and it takes the form of an analysis of the senior publishers' and platform designers' views and the role of the Pathways Steering Group. The third perspective is based on my reflections and contributions as a researcher and participant in the research, linked to both my work in contributing to the Woodland case study and engaging with schools in conducting the case studies and the cross-case analysis. This aligns with the design-based framework where my research and reflections were fed back as part of the active and ongoing development of the Pathways system. My research investigates, describes and analyses how Pathways approaches to school improvement were perceived, interpreted and used in five different primary schools across England, and how educational theory and practice were assembled and communicated by Woodland and within the research project itself. The preceding Cross-Case Analysis and Synthesis chapter was structured around the study's main research questions (RQs), this Discussion and Conclusions chapter uses its stated research objectives (ROs) as a framework to place my findings in context with other literature in the fields of EEIR and educational digital technologies. It also identifies limitations and future directions for research in the growing field of online approaches to support schools.

9.1 RO1. Gathering views and perceptions from staff and other stakeholders in schools and Woodland Press on Pathways development and use in schools

The views and perceptions about Pathways expressed by the study's participants were found to be influenced by (and perhaps also influence) the mesh of characteristics that help to make up each school's professional and improvement context. From their pupils' characteristics, schools' improvement goals and starting points, to their staff composition and working routines – for example the events and conversations that transpired when Pathways appeared on the scene – it seemed that schools' responses were either more collective or individual depending on practitioners' initial expectations and impressions

of Pathways. Each case study reveals unique differences but the cross-case analysis also explores common themes and patterns. These impressions included school leaders and teachers being able to project ahead to see the end goals of the school's improvement journey and Pathways outputs – and recognise when overlap might occur. Crucially, this overlap also intersected with practitioners' willingness to engage with more unfamiliar, external resources and organisations for guidance and support. The headteachers of Magpie and Raven Schools for example repeatedly indicated their interest in working with surrounding communities, schools and other practitioners (sometimes geographically further afield) to improve their pupils' outcomes and for their staff to engage with a range of CPDL opportunities. This finding resonates with comments by school improvement researchers:

> The school effectiveness and improvement research base clearly shows how school turnaround and improvement primarily involves engaging the community and changing culture, not structures, as a route to success (Reynolds, 2010). School accounts of turnaround and improvement tend not to endorse artificially ratcheting up achievement scores or teaching to the test as their modus operandi. Ordinary schools with extraordinary improvement say little about externally imposed standards and accountability but conversely say a great deal about community and context (Harris, Muijs, Chapman, Russ and Stoll, 2006). (Harris et. al., 2015: 2)

Specific mention has been made of CPDL (DfE, 2016c; Cordingley et al, 2015; Cordingley, 2014; Timperley et al, 2007) in addition to CPD to highlight the additional learning aspect that emerged during practitioners' use of Pathways – particularly in the case of Magpie School's early career teachers and Sparrow School's Mrs Starling who used Pathways to support her NPQH task that linked with her personal leadership goal of becoming a headteacher.

9.1.1 Context-shaped and situated responses to Pathways

The contexts, environments and 'formations' in which these five schools' and Woodland Press' varied interactions with Pathways took place are summarised below. At least two interlinked levels of context were found:

- the (multi-level) organisational setting and its commonly understood routines and obligations among its stakeholders both internally and externally; and
- individuals' situated routines, practices and responsibilities, also influenced by more macro-level organisational, local and national policy enactments.

It was important to consider participants' individual and collective voices and their surroundings in each Pathways-related, school improvement and professional task or event being analysed. Kelley and Dikkers (2016: 397) for instance suggest that many tasks involving different levels of leadership both directly and indirectly influence the achievement of organisational goals and "provide *affordances* to engage and align the emergent and voluntary leadership actions of others". They illustrate this idea with the example of the collective action created by (and among) school leaders and teaching practitioners around collaborative exercises in analysing data, or developing school improvement goals (Kelley and Dikkers, 2016: 397).

Meanwhile, the school or staff room environment is shaping and being shaped by individual and collective 'performances' – similar to Weick's idea of enactment (2009) where individuals in organisations make sense of their environment by contributing towards its construction (which in a more collective sense, may reciprocally influence the individuals' approach to building that environment). Riveros, Newton and Burgess (2012: 210) note:

> [I]t is only by enacting the environment that we end up learning about the environment. This implies that actions are dependent on environmental constraints and, at the same time, the environment is transformed by people's creative performances.

This then has implications for how practitioners may develop notions of mediated autonomy discussed later in this chapter, section 9.2.1. It also provides insights into the processes of school improvement planning and enactment and how they link with staff and OL. Guskey's model of teacher change underscores the importance of the affective change necessary in teachers' professional development experiences (Guskey, 2002b: 385), but also recognises that change does not always happen this same way every time. The model makes the point that teachers' attitudes and beliefs about a new intervention are more likely to change only after observing explicit changes in pupils' outcomes and evidence that indicates the effectiveness of a specific teaching and learning intervention (Guskey, 2002b). Differing patterns of responses were documented over time between Magpie and Raven Schools – the headteacher and teachers of the former staying faithful and apparently more committed to the Pathways system over three years of use; whereas the executive headteacher of the latter seeing some of the resources as redundant after about a year, possibly (at least partially) due to Mrs Raven and her team's perceived experiences of 'renewal' and 'graduation' phases of school improvement (reflecting an important external improvement in the school's Ofsted grade).

For Sparrow School, shaky first impressions may have influenced practitioners' lacklustre engagement in the beginning, but interest was sustained across the school with the emerging leadership of a classroom teacher with no official senior leadership title. In my reflections on the Sparrow case, I saw parallels with Huberman's (1981) study of a school district's implementation of the Exemplary Centre for Reading Instruction (ECRI) programme which found that the initial phase was characterised by anxiety and confusion among practitioners. This was followed by a period of slowly reducing anxiety and uncertainty, and an increase in the levels of 'mastery' of the system. Overall however, Huberman concluded that it was difficult for teachers to link the strategies of the ECRI programme with changes to pupils' outcomes – and so a cloud of ambiguity overshadowed the intervention and its purpose. A similar situation was observed in Sparrow School where considerable time and effort had been expended by the classroom teacher Mrs Starling in using Pathways to improve attainment in mathematics via the engagement of parents and promoting home-school links. Other staff in Sparrow took some convincing that the idea would yield positive results:

> *"I was also aware that the idea of inviting parents into open mornings was not wholly popular with all members of staff with fears that parents would just want to sit with their child and not engage fully with the process. I also sought to allay fears that this would create extra work or be an observation opportunity for senior teachers and parents. Teachers needed to know that we could only carry out this part of the project because we were secure in our delivery of the curriculum and that most teaching was good and some outstanding."* [Mrs Starling_NPQH task_2016]

Again, the possible mutual influences of contextual, social and emotional aspects on teachers' professional learning are highlighted, specifically focused on the potential formation of professional learning communities:

> [People] learn through practice (learning as doing), through meaning (learning as intentional), through community (learning as participating and being with others), and through identity (learning as changing who we are). Professional learning so constructed is rooted in the human need to feel a sense of belonging and of making a contribution to a community where experience and knowledge function as part of community property. Teachers' professional development should be refocused on the building of learning communities. (Lieberman and Pointer Mace, 2008: 227)

Here, emerged the notion of 'situated cognition' (Robbins and Aydede, 2009), which shifts the examination of cognitive processes, learning and development from the 'isolated individual' to a situation in which the individual both acts and interacts (Riveros, Newton and Burgess, 2012: 209). A more integrated and context-sensitive approach to school improvement can therefore be appreciated (Riveros, Newton and Burgess, 2012). For example, with regards to Magpie School's use of Pathways, Mrs Magpie revealed the importance of the contributions and support of the headteacher and middle leaders as drivers. This links with other research that has highlighted the importance of leadership. Mrs Magpie as a school leader created "hospitable conditions" (Grootenboer, Edwards-Groves and Ronnerman, 2016: 518) under which her teachers could try to effect change in their new middle leader roles. The support that Mrs Magpie provided appeared to be more than paying lip-service to 'accepted' ways of being, but included observable "material and structural backing" (Grootenboer, Edwards-Groves and Ronnerman, 2016: 518), for example, engaging in meaningful conversations about how individual teachers might contribute to Magpie School's improvement journey. From a DASI perspective, Mrs Magpie appeared to be facilitating her teachers' improved engagement in whole-school improvement work, improved opportunities to develop greater efficacy as classroom practitioners and middle leaders and the promotion of peer support and collaboration (Creemers and Kyriakides, 2015). Crucially, Mrs Magpie, through her dialogue with teachers and leadership backing inside and outside of staff meetings, was playing an important role in enhancing the school learning environment (SLE) and "shaping teacher and student expectations and in the development of the perceptions of various stakeholders" (Creemers and Kyriakides, 2015: 102) about engaging with parents and pupils' homework and attitudes to reading.

My research points to the potential of newer, more collective ways to think about leadership practices, and studied how schools attempt to monitor different organisational routines using Pathways and other resources for school improvement. This is why, later in this chapter, I suggest that schools have a kind of 'consciousness', just as individuals do and this links to notions of OL. If we think of schools (made up of teachers, pupils, parents, administrative staff, leaders, artefacts drawn from teaching and learning experiences, improvement plans and so on) as 'conscious' entities, where the sum of the different strands of knowledge combine as a flexible, moving 'gestalt' type entity, we can also start to consider concepts such as 'leadership capacity', in connection with schools' 'capacity for change'. This links with arguments by Kelley and Dikkers (2016: 396):

> We are not seeking to "distribute" leadership but rather to build on the knowledge that leadership is distributed and that both individuals and collective groups participate in carrying out leadership tasks. We believe that this descriptive model can be used to strengthen leadership capacity by providing information to schools about the distribution and presence of leadership practices (tasks, tools, and routines) that support teaching and learning. It is then the work of leaders in the school to make sense of the information and to act on it by enacting or revising leadership practices.

This importance of leadership capacity (in addition to schools' capacity for school improvement) triggered the idea of mediated autonomy on the part of classroom teachers managing Pathways. Mediated autonomy starts more from the individual practitioner's ('situated') perspective and their development with respect to school-based tasks. This is in contrast to conceptualising school practices as leadership being distributed amongst different school roles – in a sense looking 'from the other side' at tasks that might start from the premise of "senior staff must entrust others and create a culture of openness where individual expertise is recognised and individuals are empowered" (Hamersley-Fletcher and Strain, 2010: 872-873). Silins and Mulford (2004) suggest that staff in more challenging schools (lower socioeconomic status for example) may sometimes have more opportunities to exercise greater autonomy for making decisions – which fits with Donaldson's (2001: 2) argument that organisations with more 'organic' structures may also be amenable to participatory approaches to change. Schön (1987) argued that professionals reflect 'on action' as well as 'in action', suggesting that an additional layer of professional knowledge may materialise that is neither 'general principles' nor explicit problem-solving knowledge and expertise related to decision-making and reflection (Markauskaite and Goodyear, 2017: 52). Matters are complicated further when we consider how Eraut (1994) 'smudges' the (now not very clear) distinction between theory and practice:

> Much professional work deals with complex situations that require the use of complex knowledge that defies simple forms of representation. These problems do not challenge only researchers, they also have a huge influence on early career learning. (Eraut, 2007: 404)

Eraut identifies four distinct but interrelated strands of professional practice, which are all relevant to the 'propositional knowledge'/'practical knowledge' divide, and incorporate aspects of sourcing and operationalising feedback:

> "(1) *Assessing clients and/or situations* (sometimes briefly, sometimes involving a long process of investigation) and continuing to monitor them;
> 2) *Deciding what, if any, action to take*, both immediately and over a longer period (either individually or as a leader or member of a team);
> 3) *Pursuing an agreed course of action*, modifying, consulting and reassessing as and when necessary;
> 4) *Metacognitive monitoring* of oneself, people needing attention and the general progress of the case, problem, project or situation." (Eraut, 2007: 406)

The materials offered in the audit, planning, action and evaluating impact steps of Pathways may be applicable to each of Eraut's (2007) four strands – and be combined into a kind of integrated individual-collective 'performance' – which through conversations and enactments – may lead to further professional knowledge. My research provides examples that fit with this notion of an integrated performance, for example, Ms KS1 and Ms KS2 in Magpie School working together with Mrs Magpie to assemble a programme of strategies to try and increase parental engagement – amongst others, writing, and rewriting action plans, talking to other teachers about incorporating elements of homework and out-of-school events that they were managing separately, and making PowerPoint presentations and carousel activities for whole staff meetings. Markauskaite and Goodyear (2017) refer to how knowledge may manifest as artefacts that represent phenomena and human actions or processes. For example, a list of Pathways tools involved in a task might be seen as a "mimetic, symbolic representation of an object", but a list of guidelines and planned actions in a tool around that same task might be the "mimetic, symbolic representations of actions and ways of doing" Markauskaite and Goodyear (2017: 249). One possible implication of delineating different types of knowledge and discourse in school improvement is the potential to better understand the links between EER and school improvement processes. The DASI that informed my research underscores the value of collecting data about the "functioning of factors at the classroom and school level to identify teacher and school improvement needs, respectively. In this way, an evidence-based and theory-driven approach to improvement can be gradually developed" (Creemers and Kyriakides, 2015: 105). Proposing the idea of variants in the types of artefacts and conversations that might take place around a particular school improvement task as linked to an evidence-informed approach has two further implications. It helps to inform and provide supporting accounts of the factors that are associated with the variation in educational effectiveness as well as why and how these factors may integrate different theoretical orientations to effectiveness (Scheerens, 2013). Finally, the idea of variants may support the movement from solely 'evidence-based' approaches to more 'evidence-informed' school improvement that takes into consideration a wider range of knowledge and expertise, including teachers' professional judgement, pupil performance data, and results from in-school formative evaluations.

Building leadership capacity is linked to the concept of distributed leadership (Silins, Zarins and Mulford, 2002; Silins and Mulford, 2004). Evidence of building practitioners' leadership capacity was identified from Mrs Magpie's use of Pathways and her leadership support as a combination of resources to mediate early career teachers' autonomy, and Mrs Raven's more open, 'bricolage' assembly approach to gathering resources to structure her school's improvement strategies. As argued by Riveros, Newton and Burgess (2012: 211):

> [P]rofessional learning in schools is better seen as embedded in teachers' practices. We believe that through this conceptualization professional learning communities gain a richer description of professional learning and teachers' agency in schools.

9.1.2 Pathways' potential relationship with diagnosis and school self-evaluation

In Magpie and Raven, bigger portions of solution mapping (Bain and Swan, 2011: 678), problem identification (Harris, 2002: 105) and diagnoses of knowledge and skills needed by pupils to meet specific goals (Muijs et al, 2014: 247) seemed to have happened before schools began Pathways. This probably shaped the decision to engage with Pathways initially as well as then setting the tone for how Pathways was viewed collectively in both Magpie and Raven Schools – providing a clear space to strengthen diagnoses and carry out tasks in a specific way (linking the printed reports directly to Pathways action points in Magpie School and using the suggested MAID analysis tool for example in Raven), and thus a focussed way to plan and engage in improvement practice. In Sparrow, Jackdaw and Jay, the diagnosis stage seemed still underway after Pathways had been started, which may have confused practitioners' ideas of what Pathways was and what it was for. Sparrow, with its small number of pupils on roll, Jay (in its increasingly precarious state) and Jackdaw (in its relatively stable state) seemed less comfortable with the idea of temporary destabilisation by experimenting with an unfamiliar resource such as Pathways and also may have lacked confidence and perhaps immediate capacity for such a focussed approach.

While research supports the idea that school improvement should be owned by the individual school, its teachers and pupils (Harris, 2002), it is important to not equate Pathways with school improvement by default. The schools that did not engage with Pathways as much as Magpie and Raven, or exhibit characteristics of 'owning' each of the Pathways that were started, may have been 'owning' their school's improvement efforts using other means. At Woodland Steering Group meetings, there seemed to be an implication from some members that if a school was not engaging enthusiastically with Pathways then their whole approach to school improvement was quite possibly flawed. My research does not provide evidence on this point, since the two schools that did not engage with Pathways also proved hard to study as they were not very responsive to follow up contact after the initial visits. This is reflected in the lighter touch 'pen portraits' (in Appendices 20 – page 461 and 21 – page 465) produced for these schools in comparison to the other three case studies. I did collect external data (Ofsted reports and national

assessment results) that suggested one school (Jay) were struggling to meet external accountability demands, and address issues related to leadership.

Initial impressions of Pathways may be linked to how schools approach self-evaluation. MacGilchrist (2000) identified three dimensions to SSE: the micro (focusing on teaching and learning in the classroom), meso (management structures influencing classroom practice and student outcomes) and macro ('big picture' whole-school improvement). Different portions of Pathways are relevant to each of these dimensions, sometimes in combination. However, if a practitioner is working in a specific dimension that does not mirror the dimension perceived to be Pathways, this is when misfit may occur. For example, Sparrow School's classroom teacher (CT) who voiced nervousness at the prospect of the school adopting Pathways expressed how she was picturing more 'micro', classroom level responsibilities while Pathways looked to her to be very much 'macro', whole-school level. Also, it may not have been clear to this member of staff whether the process of self-evaluation advocated by the Pathways approach to audit was taking place for development or accountability purposes (MacBeath, 2005: 46; MacGilchrist, 2000: 327; Rogers and Badham, 1992: 5). In practice, of course it is quite likely that both purposes were influential at least in some schools. For example, Raven had received a poor Ofsted judgment, which may have been a strong catalyst for school improvement activity, and Pathways was seen as a useful way to focus the school's efforts, at least initially. In analysing the attributes of successful schools that they had worked with and in, MacGilchrist, Myers and Reed (1997: 104) defined schools as learning organisations and intelligence as:

> [A] range of collective capacities schools have that enable them to achieve their goals successfully. It involves the use of wisdom, insight, intuition and experience as well as knowledge, skills and understanding. These intelligences provide something analogous to the fuel, water and oil in a car. They all have discrete functions but, for their success, need to work together.

9.1.3 Pathways' potential relationship with schools' efforts towards accountability

The types of artefacts generated in Magpie, Raven and Sparrow Schools across their varied school improvement journeys can be seen as contextualised outputs that contribute to notions of 'collective school improvement'. Bereiter (2014: 7) argues that "the phrase "theory into practice" implies a unidirectional and sequential process, with basic research and theory coming first." While sometimes, in more informal settings, the more tacit understandings of how decisions might have been made may remain hidden, documenting practitioners' different types of engagement in a task via the use of surveys, presentations of research evidence and collectively generated audit data may illuminate some of the school improvement processes that influence a school's effectiveness. Korthagen (2017: 387) suggests that:

> Traditionally, in analyses of this problem, the focus has been on the question of how practice can become better linked to theory. Only relatively recently have practitioners and researchers considered the option of reversing the order and linking theory to practice (Korthagen, Loughran and Russell, 2006). Underlying this shift in focus is that more attention is nowadays going to the question of *how teachers learn*.

This claim however tends to ignore some examples from the early 2000s in England of how academics and practitioners might formulate ways to exchange knowledge between their different domains: e.g. the School-Based Research Consortium Initiative that took place between 1998 to 2001 (sponsored by the TTA - Teacher Training Agency, Government and CfBT) and their theoretical contribution towards the idea of "situated generalisation":

> The encouragement of teachers to engage in their own research was given added emphasis, signalled by an apparent increasing use of the phrase 'engaging in and with research'. The replacement of the term evidence-based practice with evidence-informed practice during the life of the Programme reinforced the role of teacher volition in interpretation and judgement in the use of research produced by others. It also facilitated teacher involvement and paralleled the use of the term by the DfEE [Department for Education and Employment]. (Simons et al, 2003: 351)

Bereiter (2014) proposes more than a 'bridge' be built between research and practice – a 'ladder' in the form of "principled practical knowledge" (PPK). He uses the analogy of algorithm engineering – where according to Chimani and Klein (2010), the first steps undertaken by developers is to try and make sense of a more theory-driven algorithm and attempt to implement it practically and faithfully. In contrast to how for example cognitive scientists may sometimes work with learning scientists, algorithm engineering tends to produce "conceptual artefacts that work in a definite enough fashion that they can be implemented and adapted" (Bereiter (2014: 13). Bereiter's application of the word 'artefacts' is certainly insightful here, as he goes on to describe a more contextualised form of knowledge, principled practical knowledge (PPK):

> [G]eneralizable knowledge that can come out of design work but that is not presumed to contribute directly to the advancement of learning theory or any other basic theory. . . Informally, PPK may be defined as know-how combined with "know-why. (Bereiter, 2014: 5)

Engagement with different issues via Pathways may provide a means to document the PPK observed, communicated or apparent in a specific improvement task. Pathways tools seem to have provided users with new opportunities to implicitly engage with knowledge 'conversions' and 'transformations' that support improvement efforts:

> Principled practical knowledge is both procedural and declarative. It is knowledge of how to achieve practical objectives but it is also knowledge that can be communicated symbolically, argued about, combined with other propositions to form larger structures, and so on. (Bereiter, 2014: 5)

Moreover, the publishers of Pathways, Woodland Press from its inception sought to use research and professional evidence to underpin its approaches, hence the role of its Steering Group and commissioning processes. Materials in Pathways come from a variety of sources including academia, teachers and leaders, former Ofsted HMI, educational consultants and authors in educational publishing. At times there seemed to be tensions between how much information to display for the purposes of understanding, and for completeness – perhaps a research topic in itself. Brown and Rogers (2015: 81) sum up at least three key questions around this problem: (1) what represents a 'successful combination' of formalised and

practitioner-held knowledge (and I would argue, to whom), (2) when the right calibration of 'evidence-informed practice' has been reached (here Brown and Rogers suggest that the onus to do this lies with the researcher), and (3) how to devise ways to measure the first two questions. All three questions apply in this study and would benefit from further, larger scale research.

Returning to the idea of OL, the use of Pathways may support practitioners to question assumptions underpinning certain types of knowledge and evidence, which influence practitioners' responses to external accountability measures and to leaders and schools' own priorities and visions for school improvement (that may overlap but also be distinct):

> We know or think we know which way is up, and we are prepared for the possibility that reaching a summit will only reveal another hill to be climbed (or sometimes that we climbed the wrong hill). Principled knowledge should not merely connect theory with practice but should enable the continual and occasionally radical improvement of practice. (Bereiter, 2014: 14)

Links can be drawn with Magpie School's engagement with Pathways in questioning what the problems with Pupil Premium children's attainment might have been, and actually opening up the scope of the enquiry to other pupils to elucidate possible underlying mechanisms in teachers' expectations and engagement with parents more widely. Mrs Raven expressed how she started questioning and considering how to further support the role of fathers in pupils' learning experiences.

In addition, Raven School's leadership structures and scaffolding indicated efforts to protect classroom teachers' and members of senior leadership's workload. This ties in with Altrichter and Kemethofer's (2015: 32, 34) argument of how "accountability pressure" from inspections may fine-tune principals' attentiveness towards stakeholder reactions and quality expectations:

> Matthews and Sammons (2005) recorded a sharp decrease of poor lessons in schools which were in "special measures" after an inspection had unveiled unsatisfactory practices, while reactions were more inconsistent in other schools.

Raven was referred to as a "hard federation" by the executive headteacher "formed when two or more schools are governed by a single governing body or joint governing body" (Chapman and Muijs, 2014: 4). This is in contrast to a federal "collaboration", also termed "soft federation", "where one or more governing bodies delegate some but not all of their powers to a subcommittee" (Chapman and Muijs, 2014: 4). Jones and Tymms (2014: 328) point to the possible side effects of inspections and accountability – including the focus on short-term solutions at the expense of more long-term development – an approach that seemed incongruent with the approach taken by Mrs Raven.

Raven can also be recognised as a cross between a "performance federation" (consisting of high and low performing schools) and "cross-phase federation" (junior and infant schools in the case of Raven) (Chapman and Muijs, 2014: 11). The authors cite evidence of better student outcomes being linked to performance federations (Chapman and Muijs, 2014: 32). In this thesis, the case studies reveal that

Pathways resources could be used as tools for stimulating more structured critical reflection, and as part of teachers' ongoing learning. Mrs Starling's formalised engagement with her NPQH task aligned well with the facilities for reflection using educational research evidence provided in Pathways. This fits with findings from other research that drew on teachers' perspectives. For example:

> As teachers engage in ongoing learning, reflecting is a critical element in order to identify ways to improve. One teacher shared, "I'm a better teacher because I spend more time thinking about my practice and augmenting it through amazing resources that I never would've discovered on my own. (Krutka, Carpenter and Trust, 2016: 154)

However, reflection without the foundations of what being an effective teacher might mean is unlikely to promote improvement of itself. Antoniou and Kyriakides (2011: 308) argue that reflection is more effective if it also takes into account individual teachers' own improvement needs and priorities and is linked to using research evidence accumulated from effectiveness and improvement studies in CPD:

> [T]o establish an effective approach to teacher professional development, the knowledge base of EER should be taken into account. Every effort to train teachers inevitably should refer to what an effective teacher is or how an effective teacher should behave in the classroom in order to maximize the learning potential of the students. That is exactly the reason why teacher professional development programs should be linked with the results of EER. (Antoniou and Kyriakides, 2011: 308)

Pathways may be seen as a way for school teams to gain feedback on leadership practices (see Kelley and Dikkers, 2016), and 'translate' knowledge between theory and practice – by making more explicit links between the two domains and applying the 'new' knowledge to a practical problem. Might the space between theory and practice be regarded as a 'third space' – situating potential professional learning communities (PLCs) in a specific context and multiple environments, on- and offline (Riveros, Newton and Burgess, 2012: 204)? Lave and Wenger (1991) discuss the idea of situated learning within the concept of communities of practice where learning is experienced as context-specific. Recent work on Assessment for Learning supports this idea of shared context. Stobart and Hopfenbeck (2014: 39) suggest that the emphasis of the development of 'learner identities' is:

> [O]n the processes of negotiating roles and active social interaction, which in turn modify the teacher-learner contract, with assessment being done with the learner rather than to the learner. Motivation is not seen as separate from learning but as part of developing a learner's identity. . .

This idea of a possible 'canvas' or school improvement space for 'experimentation' is also supported by the affordances of micro-enquiry – which links to notions of "produsage" discussed in the literature review:

> [A]n iterative, evolutionary process aimed at the gradual improvement of the community's shared content. Such gradual, probabilistic processes do not ensure against temporary reductions in quality as poor-quality contributions are made by individual produsers, but over time the shared community resource is expected to improve in quality as long as such negative contributions are outweighed by the impact of a larger number of positive contributions. (Bruns, 2008: 27)

Documents (such as those in the Magpie School case) are moderated by individual teachers and perhaps whole groups in order to reach a 'final' version – which also intersects with teachers' expertise, and how they are perceived as professionals in that space by their colleagues. Bruns (2008: 27) suggests that the "principle of community evaluation means that there is a good likelihood for negative contributions to be discovered speedily" and therefore an impact on the social status of such contributions – potentially ensuring that future contributions will be judged more critically from the beginning, which in turn might provide an incentive for users to avoid further marginalisation by improving the quality of their contributions. This however can be complicated by hidden social structures and power dynamics within teams – for example Mrs Raven's recognition and stamping out of what she termed 'cliques' in the junior school so as to promote fairer information distribution across staff.

Reflection and critical engagement arguably are and should be important components of teachers' learning and development. However as mentioned earlier, Antoniou and Kyriakides (2011: 294) warn that critical engagement is a necessary but insufficient condition on its own. Besides taking into account individual teachers' improvement priorities, EER, particularly the Dynamic Model and DASI (Creemers and Kyriakides, 2012) could be used to develop a more integrated approach to teacher professional development:

> There needs to be both knowledge and bodies of intellectual and performance skills that form the basis for critical analysis. Without these, and the ability to translate the critical analysis into action to improve performance, there is little overt social benefit to be gained from engagement in critical analysis and reflection approaches more generally (Cornford, 2002). (Antoniou and Kyriakides, 2011: 294)

A report by CUREE on how teachers use research evidence states that experiences which help teachers progress in their professional learning and practices include experimentation, collaboration with external parties, taking appropriate risks and "analysing and critically reflecting on the evidence and on practice" (CUREE, 2012: 12). The idea of experimentation links well with the potential affordances of Pathways as a space for professional learning – for example in Mrs Raven's approach of mediating teachers' autonomy to improve Pupil Premium children's attainment using highly structured tools like the MAID and EEF toolkit. Returning to my original argument about Pathways artefacts potentially supporting practitioners' efforts towards 'collective school improvement', Bell et. al. (2010: 40) advance that:

> When research engagement involves more than one practitioner, application of research to existing standards and contexts is richer…. As the number of teachers expands, so does the number of working contexts and the relevance of working standards. In these situations it becomes more important to identify key principles and the underlying theory in order to adapt research findings from elsewhere or from micro-inquiry safely.

Hopkins, Ainscow and West (1994) suggest that greater reconciliation between approaches to school improvement and school effectiveness research may be reached through concerted efforts to further develop theoretical frameworks. While this study of Pathways does not profess to create a new grand theory of school improvement, one of the aims of the DBR approach of the study in using an empirically

validated theory such as DASI, is to try to formulate proto-theories (identified in Figure 53 – page 228 in section 8.2.1) and 'potentialities' in this Discussion and Conclusions chapter, that may help to enhance understanding between school improvement processes and effective outcomes. Bringing together the elements of principled practical knowledge (PPK), produsage, school improvement and accountability and how they might work together to engage practitioners in reflective, critical and evidence-informed enquiry is a means of achieving this aim.

9.2 RO2. Mapping schools' improvement journeys, how they might (or might not) link with Pathways approaches and resources and the interactions among teachers and senior management

This section brings together findings from schools' improvement journeys and their relationships with teachers' professional development and learning. The three potentialities of Pathways detailed next are all to some extent overlapping, interrelated and mutually influencing. However, in highlighting three broad 'capabilities' of the system, I am delineating the essential aspects of each in order to cluster groups of features together, and therefore specific types of knowledge and practice found in the different primary school contexts of this study.

9.2.1 Pathways as a potential tool for task and autonomy 'mediation' & enabling leadership capacity

Based on data collected from teachers and school leaders, Pathways provided an information and signposting role for teaching and learning and school improvement resources previously more likely provided at local authority and national levels. A momentary guiding boundary appeared to be drawn around the research evidence and advice available on a specific issue being 'mapped out' by Pathways, which in turn seemed to provide a safer 'course' for some practitioners to orienteer across – i.e. Mrs Magpie and her staff, Mrs Raven and Mrs Starling. For Mrs Jackdaw and Mr Jay, the Pathways 'course' may have come across as more of a risk, compared to some of the other courses they were already navigating on their schools' improvement journeys. For Raven School, implicit in how Pathways was managed by Mrs Raven was the notion of workload protection, mediated and facilitated by the provisional border surrounding the Pathways system and its finite selection of resources. In Magpie School, both Pathways and participants' engagement with the research project provided a kind of 'canvas' for practitioners to experiment with different approaches to increasing pupils' reading attainment and parental engagement. Hence, a range of different kinds of potential opportunities for task-mediation emerged in each school setting, not always only realised through Pathways:

- In Magpie School, Mrs Magpie distributed and shared leadership responsibilities with early career classroom teachers, while they exercised a level of autonomy by managing the minutiae of Pathways and what needed to be achieved under each step and task. Opportunities for professional learning and development were also described by Magpie staff in their experience of Pathways. See Magpie's journey map in Figure 57 (page 250) and example reading in section 8.3.3.
- In Raven School: ideas were said to have been sparked by Pathways materials, thus engendering wider information searches and exploration beyond the Pathways 'nest'. See Raven's journey map in Figure 58 (page 251, section 8.3.3.) and example reading in Appendix 24 (page 474).
- In Sparrow School: an individual teacher's professional development needs provided extrinsic motivation to lead the school's collective involvement in improvement efforts. Here, one potential that could have been better realised was the self-evaluation function of Pathways that seemed lost to Mr Sparrow. See Sparrow's journey map in Figure 59 (page 252) and example reading in Appendix 24 (page 475).
- In Jackdaw School (Figure 60 – page 253 in section 8.3.3 and reading in Appendix 24 – page 475): Pathways was described as a potential collaborative tool to work externally with schools in a mentorship capacity, however, it was not straightforward to do so within the Pathways system as it was designed, particularly as there was no means for users to communicate with each other on the platform.
- In Jay School (Figure 61 – page 254 in section 8.3.3 and reading in Appendix 24 – page 476): the self-evaluation function of Pathways may too have come across as opaque to Mr Jay – the school ended up in difficult circumstances (staffing and leadership problems, coupled with a 'Requires Improvement' Ofsted judgement), and again, the potential for Pathways to be viewed as a non-burdening/non-threatening means of supporting and guiding practitioners out of a problematic course perhaps was not recognised or seen as practical.

In discussing task- and autonomy-mediation by way of school leadership and the use of technology, comparisons can be drawn with one of Spillane's earlier descriptions of distributed leadership:

> From a distributed perspective, leadership is a system of practice comprised of a collection of interacting components: leaders, followers, and situation. These interacting components must be understood together because the system is more than the sum of the component parts or practices. (Spillane, 2005: 150)

However, in highlighting the 'autonomy' facet of practitioners' work in Pathways, the focus is switched from the higher-ranking leader seen to be 'distributing leadership' or more strategic levels of school improvement aims, to the perspective of the early career teacher, the nominally appointed middle leader or other individual managing key aspects of the implementation of that work using Pathways. Spillane also broached the notion of mediation by the setting or location in which the work occurs:

> Our distributed framework involves two core aspects: principal plus and practice (Spillane 2006). The principal plus aspect acknowledges that multiple individuals are involved in leading and managing schools. The practice aspect prioritises the practice of leading and managing and frames this practice as emerging from interactions among school leaders and followers, *mediated* by the situation in which the work occurs. In our view, practice is more about interaction than action. (Spillane, 2009: 70, present author's emphasis)

Here is where I would tentatively combine the tasks driven by school improvement, and how they might be mediated by school leadership and a technological space and collection of resources such as Pathways. Interactions were taking place not just among individual staff in each school, but also written documents, PowerPoint presentations, and surveys:

> [T]he different meanings taken from the artefact at the heart of these practices, texts or technologies, are never detached and absolute, but they are mediated by the social practices in which they are embedded (Barton 2007). (Bourque and Bourdon, 2017: 484)

It would be an understatement at this point to say that autonomy as a concept is difficult to define, operationalise and evaluate (Hamilton, 2013: 17). In combining elements of autonomy and notions of mediation via digital technologies and leadership, I am also mindful of advice by Hawisher and Selfe (2000: 56) against the enthusiastic adoption of technology in the absence of a critical perspective. Lamy and Hampel (2007: 82) suggest that "for many of the positive aspects [offered by technology] . . . there is a corresponding negative impact". However, the idea of school improvement tasks being mediated by human interaction as well as the space and artefacts made available through a digital technology platform can be further strengthened.

Hamilton (2013: 19) asserts that the interpretation of 'autonomy' in the context of twentieth century thought is "grounded historically in the political field" and denotes a kind of "freedom from external control" (Benson and Voller, 1997: 4) – for example from government, organisation or similarly substantive group. In the context of the Pathways study, I am borrowing the concept of autonomy from the field of language learners' use of technology, where practitioners undertaking school improvement tasks using Pathways may face several shared challenges – the negotiation of autonomy in relation to the technology itself and/or the teacher/leader, time-bounded mastery of new vocabulary and practices, and ultimately reaching a level where practitioners are able to communicate with others and achieve planned goals using common understandings. Littlewood's (1996) definition of a language learner's autonomy is relevant here:

> "(1) autonomy as a communicator depends on (a) the ability to use the language creatively, and (b) the ability to use appropriate strategies for communicating meanings in specific situations; (2) autonomy as a learner depends on (a) the ability to engage in independent work (e.g. self-directed learning), and (b) the ability to use appropriate learning strategies, both inside and outside the classroom;

> (3) autonomy as a person depends (in the . . . language learning context) on (a) the ability to express personal meanings, and (b) the ability to create personal learning contexts, e.g. through interacting outside the classroom." (Littlewood, 1996: 431)

In reviewing Littlewood's framework, Kessler and Bikowski (2010: 43) add that "there is no recognition in this framework of the domain of autonomy as a collaborative learner." Collaboration as an aspect of professional learning in school improvement is addressed in sections 9.2.2 and 9.2.3.

Of interest here is also Hamilton's (2013: 19) breakdown of the duality of the meaning of 'autonomy': (1) as a cognitive, more intrinsic appreciation of one's own ability to shape their life course, based on one's recognition of what is "valuable and worth doing" (Wall, 2003: 308); and (2) more extrinsically, where one is able to exercise some freedom over "institutional choices" (Ciekanski, 2007: 112). This is where I argue that access to a resource like Pathways potentially provides practitioners with choices – some aimed at the school, others perhaps at practitioners' own learning – along with the structure to exercise and present those choices for further consideration by a 'mediating' role – possibly a school's senior or middle leader. To emphasise, the kind of autonomy being referred to here is one put forward by Trebbi (2008: 35), that denotes freedom which is relative to the sociocultural context within which practitioners dwell, and as such, more of measure of how constrained one might be from surrounding circumstances. 'Professional learning' in the context of Pathways might consist of for example, how to carry out a survey or build an action plan, implementing strategies that can be used to question long-held institutional assumptions, or pick up implicit cues for how to communicate with other staff while protecting each other's professional identities.

On the leadership side, there is a recognition that "although beliefs can influence knowledge acquisition and use of technology, context also plays a role in teachers' uses of technology" (Ertmer and Ottenbreit-Leftwich, 2010: 264). Evidence from the current study and past research indicate that leadership plays a crucial role in facilitating and promoting the integration of technology in the school context (Anderson and Dexter, 2005). Increasingly, school leaders need to be meaningfully engaged in technology initiatives in their schools to show support for their use and model 'best practice' (Anthony, 2012; Stuart, Mills and Remus, 2009). Levin and Schrum (2013: 47) provide a self-assessment template of questions – which can be viewed in Appendix 25 (page 477) – for schools to consider when adopting a new technological resource.

9.2.2 Pathways as a potential space for professional learning

It seemed to come as a bit of a surprise to the Woodland Steering Group and senior publisher that I had just spoken to when a few months into the research project, I referred to Pathways as a source of teacher professional development. Pathways had up to that point mainly been known as a 'school improvement

system'. In my view, such framing had implied that the main 'actor' in this school improvement system was the 'school' as a collective, and within that collective, perhaps the headteacher and/or members of the senior leadership team enacting specific parts of Pathways as part of a wider ranging school issue. This was supported by Mrs Woodland's early comments that headteachers 'get it' – i.e. the potential role that Pathways could play in a school, but classroom teachers might not. Identifying Pathways as a source of professional development implied (again to me) that the actors could now be pictured more as individuals, and so in addition to the 'school pulling together' to improve, there would also be personal professional needs for individual teachers that Woodland and each school might want to meet. This idea implied a change in how Pathways was perhaps viewed within Woodland Press itself, and how the varied understandings in Woodland may have been shaping and were being shaped by the mixture of impressions and understandings that were emerging, in turn, from each school's documented composite of experiences. So for example, when a teacher logged in to Pathways, were they logging in as a 'representative' of the school – to meet the improvement needs of the school as a whole, or were they there to fulfil their own professional learning and development needs? This became an increasingly important line of enquiry as the research progressed, an 'assumption' that I was questioning in the feedback loop that was the Pathways DBR study. This example illustrates my own process of reflection on the case studies as they were in process and how this was fed back to the publishers to support the process of on-going review and development of Pathways in which this DBR juncture provided a specific opportunity for input. Recognising practitioners as individual actors corresponded with how the steps of the DASI, and by association, the Dynamic Integrated Approach to teacher professional development (Antoniou, Kyriakides and Creemers, 2015) seemed to have been implemented by Magpie, Raven and Sparrow Schools (without being aware of the DASI or DIA models). For instance, practitioners were able to explore the different opportunities for professional learning when completing "Step A: Establishing clarity and consensus about aims and objectives: improvement of teaching skills and student learning" – shown in Figure 54 (page 235), by working through the Research and Background information, Audit and Strategic Planning steps of Pathways. Through in-person, more collective discussions with senior leadership and other practitioners, Step B was then attempted – "identifying needs and priorities for improvement through empirical investigation" and experimentation and then reflection and self-evaluation. (For more evidence of practitioners' potential learning journeys, see also the journey maps and example readings in section 8.3.3 and Appendix 24 – page 472.)

This idea of Pathways as a potential resource for professional learning and development within a school improvement system then led to an examination of the differences between professional learning and professional development. I started considering if there were aspects of Pathways that practitioners might be learning, both explicitly and implicitly, for example when they logged in to download an audit template, or a survey for parents – were there elements they were picking up about the structure of the documents, the question phrasing, the use of Likert scales? Or in the guide about how to analyse questionnaire data –

were some teachers now considering the differences between qualitative and quantitative data and how each approach potentially influences one's data analysis and interpretations? Certainly, there seemed to be elements of opportunities for practitioners to participate in one or more of the "four epistemic projects of professional learning" identified and theorised from Markauskaite and Goodyear's (2017: 49) research with professional educators:

(1) *Reflective rational*: linking theory with practice
(2) *Reflective embodied*: forming fine-tuned professional skills and identity
(3) *Knowledge building*: creating knowledge for the future
(4) *Relational expertise*: Working with other professionals and clients.

Links also emerge with the DASI, where practitioners are meant to engage with educational research evidence in their reflections and efforts to design school and classroom improvement strategies, and not solely rely on their own experiences to support critical appraisal of their practice and others'. During the DASI step that calls for the collection of evaluation data to help identify priorities for improvement, and even earlier, during the school-wide establishment of clarity and consensus on student learning as the main function of the school, and a recognition of contextual factors that influence teaching and learning – evidence can be consulted from the academic literature, resources such as Pathways, The Key and other portals. However, Cordingley (2013: 9) suggests that the potential opportunities for the "*development* and *mediation* of research-based tools to sustain and embed CPDL within day-to-day practices and provide coherence" is not yet being realised [present author's emphasis]. The challenge comes in how school leaders and staff may attempt to consolidate different types of evidence and apply a coherent understanding of 'theories' and 'evidence' to their pupils' learning in context. Also, whose responsibility is it to move knowledge in the field (wherever it may be) forward – practitioners or researchers, or both, and how?

I would argue that using a resource like Pathways provides some means for practitioners to engage in professional learning experiences, in addition to supporting their longer term professional development. Furlong et al (2000) explore some of the contentions and debates around the notion of 'professionalism' proposed by Hoyle and John (1995) which centres on three issues: knowledge, autonomy and responsibility, for example:

> It is because professionals face complex and unpredictable situations that they need a specialised body of knowledge; if they are to apply that knowledge, it is argued that they need the autonomy to make their own judgements. Given that they have that autonomy, it is essential that they act with responsibility – collectively they need to develop appropriate professional values. (Furlong et al, 2000: 5)

Moss (2017: 59) suggests that part of the 'art of teaching' involves the exercising of judgment via the adaptations of classroom strategies so that the teaching takes into account the specific approaches that might support a particular group of pupils and their individual 'starting points':

> Taking such variation into account is essential to good teaching. The capacity to exercise such judgement well depends upon being attuned to the specifics of teaching and learning in its local context and situating what happens here in the longer trajectory of which this moment in assessment is part. (Moss, 2017: 59)

Moreover, Furlong et al (2000) essentially ask and try to understand throughout their volume, what is the nature of professional knowledge? Can professional knowledge be underpinned by 'scientific principles' and 'applied' in a practical context? Interestingly, they also cite Dale (1989) who proposed that the 1980s saw an increased shift for professionals' perceptions, including teachers', from notions of "licensed autonomy" to "regulated autonomy" – which also demonstrated to the wider public a slide towards "greater governmental scrutiny" (Dale, 1989: 15). I mention this as a comparison with the tools and templates in Pathways that potentially could be seen or used other settings as a means of 'control' by senior leadership in schools (although I found no evidence of this in my research). My research reveals that Pathways was used in many different ways, including to distribute leadership, mediate teachers' or specific task autonomy, or indeed provide a structured space to 'produse' artefacts (Bruns, 2008), experiment and formulate reasonings and justifications practitioners' engagement with school improvement and the research findings have provided examples of all of these various uses. Adams (2017: 168) highlights the discontinuities documented in her narrative approach to teachers' professional learning in mathematics when "[t]eacher professional learning is frequently referred to as "continuous professional learning". She proposes that: "[b]eginning with one's current knowledge, beliefs, and practice and then working backwards in order to better understand these aspects enables a deeper critical awareness of one's professional life" (Adams, 2017:168). Mason (2010: 24) draws attention to the value of teachers having "spaces for reflection on experience in enabling change" (Adams, 2017: 168) and conceptualises learning as the "transformation of attention":

> That is, learning has taken place when people discern details, recognise relationships, and perceive properties not previously discerned, through attending in fresh or distinct ways, and when they have fresh possibilities for action from which to choose. (Mason, 2010: 24)

In my exploration of Pathways as a potential space for practitioners' learning and school improvement, the topic of Professional Learning Communities (Senge, 1990b) arose as another possible account that might closely describe the kinds of practitioner interactions taking place around Pathways tools and the enactment of tasks. Stewart (2014: 28) for instance suggests that:

> Appropriate conditions and characteristics of PD [professional development] augment the potential for depth of understanding that leads to change in teaching practice. This is a shift from passive and intermittent PD to that which is active, consistent, based in the teaching environment, and supported by peers in a professional learning community (PLC).

Mindich and Lieberman (2012), from their study on the effectiveness of different PLCs, found evidence to indicate that more successful PLCs consisted of teachers within the same school, who were more autonomous in deciding their learning aims and had gone through some level of training on how to collaborate. I would argue that Pathways' four-step system and series of systematised tasks under each

step provided opportunities for practitioners to independently explore and select elements of theory and practice that may have been of interest, and also may have guided them in how to collaborate with others in producing specific 'artefacts'.

Curiously, in comparison to PLCs, there is less mention in the academic literature of PDCs or 'professional development communities' (see Zygouris-Coe and Swan, 2010; Pellegrino et al, 2017), and so my focus turned to teachers' learning and its relationship to teachers' development. The evidence from the current study indicates that Pathways, which offers numerous opportunities to explore and document different kinds of theory and practice, potentially also provides structured resources which may highlight a practitioner's engagement with school improvement manifesting in a shift from professional *development* to professional *learning*:

> The aim is to emphasise the active engagement of teachers in learning which is "on-going and in-depth" (Timperley, 2011: 5) and to maintain a focus on teacher agency, with teachers responsible for leading their own learning. (Adams, 2017: 162)

One identified difference between professional development and professional learning is given as:

> "[T]raditional professional development might bring teachers together for an hour after school to learn about a writing strategy the principal wants to implement. In a system of professional learning, . . . the principal would engage teachers already using the writing strategy to collect and analyse data on its effectiveness and develop a plan to roll it out across the school based on the readiness and individual needs of the other teachers through training, coaching and monitoring." (Moir, 2013: [online])

Professional learning has similarities to what Pathways offers in its presentation of research evidence and associated suggested templates to facilitate teachers to 'enact practice'. Evidence from this study indicates that enacting specific templates and supporting documentation from Pathways presented specific opportunities for at least some practitioners to make more explicit links between theory and practice, and in doing so can support practitioners in the move towards achieving "epistemic fluency" (Markauskaite and Goodyear, 2017):

> Through reconceptualising knowledge in practice, Schön challenged the theory–practice divide as artificial, and many have concurred with him since (Eraut, 2004). Although Schön's work has been influential in professional education, a separation remains today between what is perceived to be theoretical knowing and practical know-how. (Webster-Wright, 2009: 716)

Rickinson (2005) outlines five possible types of research use employed by teaching practitioners: (1) as an active process whereby research is (perhaps more collectively) adapted and 'translated' into local contexts, (2) a more individualised, selective process based on practitioners' specific needs, (3) a values-rich process where research supports personal beliefs and values (which may relate to type (2)), (4) a rewarding, process of learning and engagement, again undertaken more collectively, and (5) a developing process dependent on the career stage of individual practitioners. Nutley, Walter and Davies (2007) meanwhile outline simpler categorisations of research evidence in the literature, from the more conceptual to instrumental, plus the process use of research – where in addition to the 'findings', the design and

methods applied in the research endeavour also contribute to the understandings of policy makers and practitioners. Professional learning may also be consistent with the concept of 'Principled Practical Knowledge' (PPK) and conversational rationality. Although Schön's (1983) analysis of 'reflection in action' during decision-making practices moves from knowledge, to knowing, to knowing in embedded practice, Webster-Wright (2009) regards this as incomplete for two reasons – the first being that the speed sometimes required for quick decisions raises doubt about how much reflection can inform those decisions (Eraut, 1994). The second is that, in contrast to Usher, Bryant and Johnston (1997), Schön appears to underplay the influence of sociocultural context (Webster-Wright, 2009: 716). Here is where the situated and contextualised nature of professional communities and some of the conversations that take place around school improvement tasks appear to link well with the DASI:

> In spite of limited opportunities for professional interaction, a strong relationship among teachers within a school can have a significant effect on conversations about school improvement. (Spillane and Seashore Louis, 2002: 93)

Following on from Nutley, Walter and Davies (2007), Cooper and Levin (2013), in their study of how Canadian school leaders integrated research into their practice, used a conceptual framework represented by the roles and characteristics of: (1) the research itself – e.g. accessibility, communication of key messages and perceived quality and rigour, (2) the system and its people – engagement with research and its constituent knowledge elements, organisational structures and supports, and (3) third parties – e.g. professional development facilitators, researchers and platforms to deliver and exchange knowledge. These three features correspond with this Pathways study in how research, evidence, data and professional judgement might be perceived and applied within and around the Pathways online platform, and within individual school improvement journeys. Cooper, Klinger and McAdie (2017: 191) maintain that

> "For teachers to build capacity about assessment literacy and evidence-informed practices, they require time, training, and *credible filters* to comprehend the research and transform assessment evidence into guidelines to operationalise in practice." [present author's emphasis]

The notion of "knowledge into action" being supported by practitioners, policy makers and researchers developing epistemic fluency (Markauskaite and Goodyear, 2017) and at the same time, sourcing and using "credible filters" to navigate and understand evidence feeds into how different kinds of knowledge might be applied in specific settings. Creemers and Kyriakides (2015: 102) argue that teaching and learning are also influenced by a school's wider educational context – factors such as the values placed on learning by pupils, teachers and parents, societal expectations and perceptions about effective teaching practice. This recognition of the 'situated' nature of each school improvement task, in addition to the actors and artefacts associated with that task further develops the argument of practitioners learning and developing while engaging with a resource like Pathways. An example is given by Spillane and Seashore Louis (2002: 93):

> [W]e know from research on staff development that cooperative, job-embedded learning has the greatest potential for improving teacher performance and, eventually, student performance

> (Sparks and Hirsch, 1997). This kind of professional growth requires that staff be able to engage in serious discussions about the fundamental aspects of their teaching (reflective dialogue and sharing of practice), with at least a minimal level of agreement about the purposes of teaching and learning in their school (goal consensus).

Findings from Magpie and Raven Schools support the idea of practitioners individually and collectively engaging in elements of evidence-informed reflection – sometimes a transitory or 'by-product' of evidence-informed practice, and practice-informed evidence, or at other times, a catalyst or result of such practices. The use of the DASI as a framework to try and make sense of schools' more collective enactments, combined with the Dynamic Integrated Approach (DIA) for teachers' professional development and mediated by an online technology using the Guskey model of teacher change presents a potential new way to conceptualise school improvement in context, via the use of digital technologies. Here it is possible to start to bring together topics normally discussed separately (in technology and EEIR fields respectively) the 'affordances' of a space – features of a space that enhance opportunities for particular practices (Gibson, 1977) – for example, the on-and offline environments of Pathways), the 'hospitable conditions' for professional learning and development in Magpie School mentioned earlier and opportunities to engage can be linked to both direct and indirect effects of leadership on pupil outcomes. Kelley and Dikkers (2012: 397) argue that school leaders create affordances for collective action by systematising "collaborative analysis of data or collaborative development of school improvement goals" – seen in the structures, tools and conversations that took place in and around Pathways in Magpie, Raven and Sparrow Schools.

9.2.3 Pathways as a potential 'school improvement space'

Evidence from this study indicates that using Pathways shows consistency with applying the DASI in one's school improvement framework, which could link well with notions of 'action research plus' (a shorthand for reflection with specific reference to educational research evidence); and 'affinity spaces' or school improvement working spaces – making more abstract concepts tangible and achievable. Although some examples have been identified and explored in the cross-case analysis and in this chapter, this does not mean that it always happens but certainly, that the possibilities exist. Resources like Pathways may also offer structured opportunities to engage with an educational 'global' problem (e.g. the equity gap in achievement) to one that is more local and situated in one's context (how to narrow the gap between pupil groups in a particular school context), breaking a bigger goal into smaller steps and tasks, a space to literally share the load, enabling newer staff to lead.

While a platform like Pathways may provide structures to mediate autonomy of newer leaders and potentially improve a school's leadership capacity, there should be a recognition that using a platform like Pathways may also make practitioners' work more visible, transparent and possibly open to debate – which can be perceived positively and negatively. A big part of "Computer Supported Cooperative Work (CSCW)" investigates ways to understand and manage the trade-offs in sharing (Ackerman, 2010: 69). The

professional environment observed in Magpie School came across as more 'amenable' to such open working practices, compared to Sparrow School, where it took some time for staff to see the potential merits of Pathways in their individual and collective development. In Jay School, where the headteacher described his struggle to relinquish control of or share some of the responsibilities that he had historically led on, this more regulated, but devolved form of working may have seemed too challenging.

Information ecologies where produsage is commonplace brings to mind notions of 'reframing' more abstract concepts sourced from educational research evidence:

> [B]ecause people often lack shared histories and meanings (especially when they are in differing groups or organisations), information must be recontextualised to reuse experience or knowledge. Systems often assume a shared understanding of information. (Ackerman, 2010: 68)

The concepts of 'collective school improvement" and "collective 'consciousness' together raise a topic discussed more in the learning technologies literature – the idea of created 'affinity spaces' – spaces organised around content, content generators and portals through which content can be produced and communicated. Gee (2004: 71) differentiates the 'communities of practice' (Lave and Wenger, 1991) and 'spaces'. CoPs denote participants becoming members of a group, whereas as a space is perceived as more fluid and open. In this research study, the spaces were not limited to the use of social media precisely (although this possibility was articulated in Raven), but spanned interactions beyond the online space, environments where "teachers participate in ways their knowledge and skills allow (e.g., generating and distributing content, posing questions, advising others) and shift their primary aims from teaching to learning and back again as warranted" (Rodesiler, 2017: 139).

Pathways and the conversations that happened around its tools and templates seemed to form a space for practitioners to critically reflect on their own and others' practice. Research evidence was sometimes referenced (which links with the DASI), e.g. Raven and the use of the MAID tool to review (Maintain, Adapt, Introduce, Discard), coaching culture, modelling, a variety of CPD for staff, use of EEF Toolkit. Sparrow seemed more comfortable with the holistic approach to reflection – reflection based more on personal experiences (Creemers and Kyriakides, 2012) as opposed to the more evidence-based model that can be exemplified by the DASI.

Pathways as an online resource seems to share the characteristics of affinity spaces (Gee, 2004: 77-79), but differences emerge when considering *where* each feature may be prevalent:

- The common endeavour is of primary importance. In the case of Pathways, school improvement and professional learning might be specified as ultimate objectives, which align with the first step of DASI – establishing clarity and consensus on the improvement of teaching skills and student learning (Creemers and Kyriakides, 2012).

- The common space is shared by users at different levels of skill and experience. With Pathways, early career teachers, more experienced practitioners, administrators, researchers and leaders may share the 'space' around a school improvement task.
- Some portals may also be strong 'generators'. Practitioners create artefacts which add to the context and knowledge of the task – in Pathways this is likely to happen outside of the online platform itself, but still 'occur' within the space of the school improvement task.
- Organisation of content is transformed by user interactions – for example the findings from this DBR study contributing to the design of Pathways, and practitioners' produsage that adds context and specificity to generic tools and templates.
- Development of both intensive (more specialised) and extensive (more widely shared) knowledge are encouraged. Some practitioners who engage with Pathways may have specific knowledge to apply to the task (e.g. a teaching assistant, special educational needs coordinator), while others, like the middle or senior leader might have more wide-ranging input that encompasses *techne, episteme and phronesis*.
- Individual and distributed knowledge are encouraged. The use of tools and guides in Pathways, and interactions with other professionals, may facilitate a practitioner to learn more than they could on their own with no mediating influences (leadership, online platform and artefacts).
- Dispersed knowledge is encouraged. A network of knowledge might exist around a school improvement task – which might also contribute to the knowledge gathering and sharing in Pathways. An example could be the links to outside resources like Ofsted, EEF and NFER on a given topic. A practitioner would not be expected to just stay within Pathways over time.
- Tacit knowledge is recognised and encouraged. Knowledge that focuses more on practice, which may be difficult to explain in words – essentially, how to navigate the Pathways platform (and beyond), how to negotiate with other members of staff in managing a task, or learning how to articulate to others what could at first seem quite abstract (e.g. educational theory or an approach like lesson study).
- Participation can happen in different forms and using multiple routes. 'Use' of Pathways in this embedded case study has ranged from light use – e.g. looking up research and background on a topic, to heavier more sustained use – e.g. schools following multiple Pathways and engaging in tasks that support professional learning and development. Some users skipped steps, but ultimately, if they reached their school improvement 'destination', and managed to balance both fidelity and flexibility to the system to suit their needs and objectives, the outcomes might be seen as successful.
- Leadership is porous and leaders are also 'resources'. School spaces generally are hierarchical; however, some semblance of autonomy and knowledge exchange might be encouraged among practitioners who use Pathways – as access to tools and guidance are technically available to all in

> a school. The main idea would be to see knowledge less as a 'commodity' and more of a shared endeavour and 'space'.

A school improvement journey may comprise individual and collective journeys of learning and development, so the aspect of the spaces where the learning may take place should be considered as important as the content:

> Learning becomes both a personal and a unique trajectory through a complex space of opportunities (i.e. a person's own unique movement through various affinity spaces over time) and a social journey as one shares aspects of that trajectory with others (who may be very different from oneself and inhabit otherwise quite different spaces) for a shorter or longer time before moving on. (Gee, 2004: 81)

9.2.3a Key Implication 1: for collective school improvement

As part of my role in the DBR I will be making a number of suggestions for potential refinement and development of Pathways in my meetings with Mrs Woodland and in the Steering Group context. These are documented Key Implications and Associated Implications in this chapter.

This research has provided new findings that illuminate understanding of the ways a 'consciousness of school improvement' may develop within the auspices of collective school improvement. An example is provided by notes from a meeting with a publisher from Woodland Press (also a member of the Pathways Steering Group). Ms Snow noted that it is difficult to manage an online service like Pathways as she felt that schools really prefer to have someone help them in-person. This incident corresponds with the discussions by the authors of the DASI theoretical model which recommends that schools are not left on their own to design and implement improvement strategies. The Dynamic Integrated Approach (DIA) (Antoniou and Kyriakides, 2013; 2011) is based on the DASI and attempts to isolate behaviours and conditions that support teachers' professional development – for example the formation of a 'coordinating team' to provide teacher professional development including coaching, the establishment of formative evaluation mechanisms and data collection on programme effectiveness based on the "impact of the developmental program on the teaching skills of the participating teachers and on the learning outcomes of their students" (Antoniou and Kyriakides, 2013: 3).

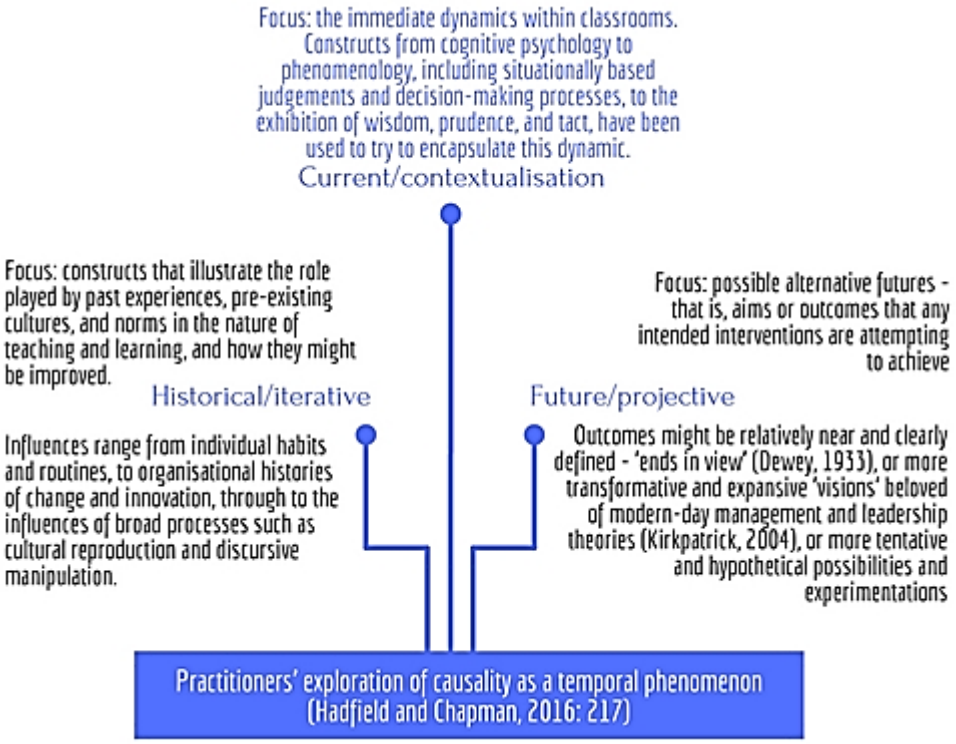
In the school case studies, evidence was presented indicating how artefacts originating from Pathways material seemed to have been used for a combination of collective (practitioner) development and school improvement, to formulate a type 'Collective School Improvement' (CSI). CSI may also link to what it means to be a 'teaching professional', that Tinoca and Oliveira (2013: 215) suggest are strongly linked to the "expansion, development and reconstruction" of practitioners' knowledge and practices, supported by participation and self-regulation of the learner in the learning process. Hadfield and Chapman (2016: 214) argue that collaborative lesson planning and inquiry provide opportunities to generate "highly

contextualised forms of procedural, or 'how to', knowledge, from assessing pupils' current levels of ability, to the appropriateness of various pedagogical approaches and task designs". Consequently, the kind of professional development that enables this type of expansion needs to be able to furnish teachers with the skills to be proactive, creative and reflexive to develop knowledge independently and collectively, anchored in real contexts (Tinoca and Oliveira, 2013).

This highlights the potential importance of recognising and documenting the conversations that take place around school improvement tasks in this DBR embedded case study, and how these conversations might be mediated and further developed using specific artefacts and the way the task is situated over time. Project based learning parallels were emerging with Pathways' design of tasks/issues – for example there seemed to be elements of 'formative feedback' being provided by Magpie headteacher to her early career teachers managing Pathways – they ran ideas and plans past Mrs Magpie, she helped to refine them, before undertaking a further process of refining with the rest of the school's staff – e.g. reducing the parents' questionnaire to just five questions from over 20. Hattie and Timperley (2007: 81) conceptualise feedback as "information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one's performance or understanding". Feedback, on its own, without appropriate guidance can be insufficient; without feedback, Tinoca and Oliveira (2013: 216) suggest that "participants lack the opportunity to frame their learning and development". Hattie and Timperley (2007: 87) present four levels of feedback: (1) whether a *task* is understood/performed successfully; (2) whether the *process* needed to carry out a task has been understood/executed successfully; (3) *self-regulation*, monitoring and directing of actions; and (4) learner *self-evaluations*, attitudes and motivations. In online contexts which could facilitate discussion and supportive ways to suggest improvements to practitioners' professional learning experiences, Tinoca and Oliveira (2013: 216) also point to the potential "cognitive gains fuelled by feedback [that] may enable reflection and an expansion of the knowledge to other situations", as well as a wider awareness around metacognition and self-assessment (Herrington and Herrington, 1998).

A 'system' type environment might more likely match how practitioners are often tasked with undergoing a 'review, do, evaluate' cycle when attempting to link evidence to practice – represented in this diagram based on Hadfield and Chapman (2016: 217):

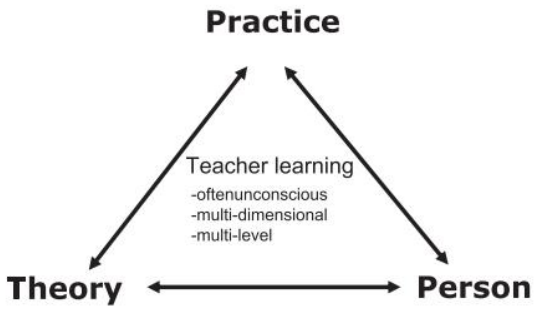
Figure 62: Practitioners' temporal considerations in shaping the teaching and learning in their classrooms (after Hadfield and Chapman, 2016: 217)



There are several parallels between how knowledge from pupils, parents, teachers, leaders and the surrounding community might combine to inform a school's continuous improvement journey and the idea of 'consciousness'. A highly successful improvement model might have the capacity to make the kinds of connections described by Bor (2013: [online]) and adjust to its changing context, challenges and life events.

> [T]he "global neuronal workspace" model . . . suggests that input from our eyes, ears and so on, is first processed unconsciously, primarily in sensory brain regions. It emerges into our conscious awareness only if it ignites activity in the prefrontal and parietal cortices, with these regions connecting through ultrafast brainwaves. This model links consciousness with difficult tasks, which often require a drawing together of multiple strands of knowledge. . .

Figure 63: Korthagen's (2017: 399) framework of how teacher learning takes place in connection between theory, practice and person



In designing effective approaches to support teacher learning, Korthagen (2017: 399) argues that the crucial element lies in being able to build on the "gestalts of the teacher". Teachers' learning processes may be "multi-dimensional, multi-level in nature and often unconscious" Korthagen (2017: 399). Again, while I agree with the notion of gestalts and building on practitioners' learning and development needs, it is difficult to formulate a programme of professional development and learning for your team of teachers without some basic 'pre-conceived ideas' of what each teacher should be learning – learning and development are not just organic processes that have endless time to emerge, particularly in the context of schools' improvement journeys through their time- and boundary-specific orienteering courses. This orienteering and systems approach attempts to summarise and integrate previous metaphorical conceptualisations of school improvement as 'journeys' and adds a necessary element that mirrors schools' real-life contexts: the time-limited nature of school improvement and competitive educational context. New programmes and the measurement of their impact take place within an educational system that is constantly changing, but offers a finite time allotted to measure 'success'. Schools are accountable to their pupils, pupils' parents, governing bodies, local communities, local authority and/or trusts of various kinds to get pupils to their pre-defined 'destinations' in a fixed period, following certain conventional trajectories – hence how long it takes schools to do so is generally not up for much negotiation. Schools are bound, morally and logistically, by the school year, government or other intervention programmes, outcomes of Ofsted inspections and the predetermined time that children and young people have, to: learn and develop, be assessed and graduate. Improvement is also bound by that same time period, and has to happen prior to or alongside pupils developing their skills and moving on to the next stage of their education. Those decision structures are multi-layered and rife with opportunities for misspecification, misunderstanding and misapplication.

> An essential but difficult thing for beginners to do is to keep the map set to match the view. This means constantly turning the map as you go along so that if you look at what is in front of you that is what is shown on the map. It's vital to know which direction to go! (Ordnance Survey, 2016: [online])

The notion of drawing together "multiple strands of knowledge" within a workspace, and attempting to make an 'other' from the sum of a collection of parts has equivalence in how, again, different portions of a school and its environment might come together to solve a specific school improvement issue, or indeed how practitioners are tasked with combining multiple components of knowledge (techne, episteme and phronesis for example) in order to formulate much-coveted 'evidence-informed practice'. Linking this consciousness of school improvement to practitioners' professional knowledge, activities such as learning walks (mentioned in Magpie School), lesson study and instructional rounds (used in Raven School) may help to generate "collective sense making" by using data from classroom observations and interactions, interviews with pupils, staff and parents, and analyses of pupils' work, combined with a "range of reflective models to touch upon different aspects of professional theories, spanning the reflective to unreflective dimensions of action (Giddens, 1984), which Hadfield and Chapman (2016: 214) define as follows:

- *"unconscious* – pre-reflective understandings that underpin approaches;
- *practical conscious* – the habits, routines, tacit knowing or rules, principles, decision-making frameworks, and interpretive schema that tacitly inform action; and
- *discursive consciousness* – those aspects of professional knowledge that can be verbally expressed, which practitioners use to make conscious interpretations and decisions (that is, their 'espoused' theories in action)."

This approach aligns with Spillane and Coldren's (2011: 77) analysis of schools as "lived organisations": "tapping into the organisation as it is lived or experienced by school staff [and I would add, students and surrounding community] in their day-to-day work". They go on to say:
"[a]ttending to the organisation as lived, we encounter not just a formal organisation but also an informal organisation that flies below the radar of organisational charts and formal accounts" (Spillane and Coldren, 2011: 77). A multi-environment (online and off) platform such as Pathways may provide a 'workspace' or indeed, underscore the existing school workspace in which to study the practices of teachers, leaders and others in the school community. By 'practices', I would build on Spillane and Coldren's description: "not simply the actions of individuals, but the interactions among them as mediated by aspects of their situation" (Spillane and Coldren, 2011: 79) – which also links with this study's emergence of mediated autonomy, the on- and offline environment, its associated artefacts, and feedback loops.

The cross-case analysis suggests that Pathways as an online resource both formalises and informalises school improvement routines and has the potential to create its own "lived organisation" in some of the case study schools reflecting leaders and their staffs' particular patterns of engagement (although in the two pen portrait cases this does not seem to have occurred). I highlight three features in particular:

- "Produsedd" artefacts which evolve over time and whose ownership shifts – 'action research plus', each school as its own idiosyncratic history plus a kind of documented history of written, audio-visual artefacts;
- A type of Professional Learning Environment (Cordingley, 2014), accessible at home and school – where practitioners can take some of the 'organisational structures' back home with them and continue to develop their school improvement and effectiveness knowledge and experience;
- At optimum performance, the combination of different types of knowledge (the know-why, know-how and values) resembles a 'consciousness of school improvement' – links well with the DASI and dynamic approach to OL.

An argument for a kind of 'consciousness' of collaborative school improvement links well with the DASI and its call for schools to be able to access research team support during their improvement efforts.

For successful, far-reaching and sustained school improvement, individual and collective assumptions about the improvement goals of a school and the communication of those goals have to work within a dynamic approach to OL which is informed by a sound evidence base. This requires not only a clear vision, but also access to appropriate evidence, which was facilitated by Pathways resources an efficient 'control centre', analogous to the densely connected areas of the brain "implicated in consciousness" which receive, combine and analyse information from elsewhere in order to make a single object, which amalgamates a series of disjointed features (Bor, 2018).

9.2.3b Associated with Key Implication 1: Different denominations of school improvement spaces

Raven School's executive headteacher's response to the Ofsted's judgment in 2012 and subsequent engagement with Pathways indicates some consistency with the notion of "high reliability organisations" (Reynolds, Stringfield and Schaffer, 2006) – where as Scheerens (2013: 9) suggests the consequences of schools not attaining certain key goals might derail operations to a 'high' degree. Characteristics of 'high reliability organisations' include bureaucratic structuring and process formalisation through: "clear and finite goals, alertness to surprises and lapses, the imperative to identify flaws, use of powerful databases, standard operating procedures, rigorous evaluation, hierarchical structure, through collective decision making" (Scheerens, 2013: 9). In contrast, but also actively associated with the idea of contextualised responses to change, Spillane, Shirrel and Hopkins (2016) point to how bureaucratic and collegial arrangements might work together – in tandem even – in a bureaucratically-mandated Professional Learning Community consisting of 14 elementary schools. They found evidence refuting what they regard as the "either-or-narratives" replete in educational research, showing how "bureaucratic authority" can actually be maximised to an organisation's advantage – for example in the "design of organisational routines to structure school staff interactions", and at the same time, summoning appropriate research evidence to inform staff judgment (Spillane, Shirrell and Hopkins, 2016: 116).

Raven School's hard federation environment seemed to help Mrs Raven to implement stronger measures to achieve consistency in quality of teaching and pupils' learning experiences. Mrs Magpie spoke repeatedly about her efforts to organise 'collaborative' CPD for her staff, to share good practice amongst a group of schools that provide wider fields of questioning and approaches to 'good practice'. This links with Chapman and Muijs' (2014: 5) argument that:

> Durkheimian theory sees networking as key to combatting anomie which can result from a lack of strong ties and a disconnect between actor's ideologies and the behaviours they are forced to engage in, often a problem for schools facing challenging circumstances.

The additional strategy employed in Magpie was, via the use of TLR3 payments, the reward and official recognition of early career classroom teachers taking on (middle) leadership roles to manage Pathways. Teacher leadership has been linked to teacher empowerment, which in turn contributes to school

improvement and the "spreading of good practice and initiatives generated by teachers" (Muijs and Harris, 2006: 961).

> Research has shown that where teachers are given significant responsibility for school development and change, their work can have an impact on school improvement. There was evidence within this study of developmental work undertaken by teachers impacting directly on the school and contributing to improvement. (Muijs and Harris, 2006: 966)

Certain conditions need to be met to help the emergence and sustenance of teacher leadership in schools. Table 19 (page 287) identifies these and links them with sources of evidence from the case study schools and cross case analysis. A total of ten supporting factors are highlighted. For example, the first factor listed is "supportive culture". Examples given by Muijs and Harris (2006) include elements linked with characteristics of collaborative inquiry (Jackson and Street, 2005) mentioned earlier, including teachers entrusted to lead and experiment through an improvement task structured and mediated by senior leadership and materials from Pathways as an online resource. Examples from the Pathways study are given linking Magpie School's engagement with Pathways and the range of behaviours and attitudes observed by the headteacher and classroom teachers. Each supporting factor is supplemented with examples from the study by Muijs and Harris (2006) and Pathways.

Table 19: Supporting factors for teacher leadership (Muijs and Harris, 2006) and examples from Pathways school cases

Supporting factor (Muijs and Harris, 2006: 967)	Examples of practice (Muijs and Harris, 2006)	Examples from Pathways study
1. Supportive culture	High degree of trust for teachers to lead, instead of SMT, a 'no blame' stance, mechanisms to share ideas such as regular staff meetings, newsletters, away-days, INSET days, external initiatives, teacher engagement with research and developmental work "through providing feedback or through collecting different forms of data (photographic, written, taped)" (Muijs and Harris, 2006: 967)	Magpie School: evidence from formal and informal staff meetings; openness from headteacher and classroom teachers (even though they had only been teaching for one/two years), sense of humour, but also putting alternatives in place when discussing initiatives that did not go to plan.
2. Supportive structures	Opportunities for staff to switch roles and responsibilities, discuss teaching and learning issues with colleagues, encouragement of internal promotions and good CPD (ibid. 968)	Magpie School teachers taking on Pathways in turns, and working on one Pathway together.
3. Strong leadership (i.e. support from the headteacher, SMT and Governors)	"The research literature on teacher leadership concludes that the headteacher's support is central to the success of shared or distributed leadership (Muijs and Harris, 2003)." (ibid. 968) "Teachers should be actively encouraged to take on leadership roles, through involvement in school improvement teams, giving teachers formal leader- ship roles, and encouraging teachers to take on projects either individually or as part of a team. Active promotion of teacher leadership by senior management in this way appeared to be the most effective way of initiating teacher leadership." (ibid. 968)	Mrs Magpie's use of TLR3 to recognise the extra work and professional development and learning in which teachers would be participating around Pathways tasks.

Supporting factor (Muijs and Harris, 2006: 967)	Examples of practice (Muijs and Harris, 2006)	Examples from Pathways study
4. Commitment to action enquiry and data richness	"As well as being engaged in action enquiry, each of the case study schools was actively involved in collecting a wide variety of data. In certain cases, pupils were also engaged in data collection and feedback to staff. Data was collected with the prime purpose of informing subsequent development." (ibid. 968)	Magpie, Raven and Sparrow's use of Pathways – following specific school improvement issues through the four steps and either onto the next Pathway or resources elsewhere for further development.
5. Innovative forms professional development	"An emphasis was placed on knowledge transfer through the various groupings within and across schools. There was also evidence of peer tutoring and mentoring across themes and subject groupings. Essentially, the models of professional development that were prevalent across the case study schools were premised on collective rather than individual learning." (ibid. 969)	Mrs Raven's emphasis on and encouragement of teachers getting involved in alternative forms of CPD to shift some out of their 'comfort zone', such as Teach Meets, use of coaching and mentoring, lesson study.
6. Co-ordinated improvement efforts	Developing a shared vision (Reynolds and Teddlie, 2000). "Where leadership is distributed, there is a danger that staff start to move in different directions, introducing strategies and initiatives that lack internal coherence, such as different teaching methods in different departments." (ibid. 969)	Sparrow's initial intention to streamline interventions across the school using Pathways. Jackdaw's engagement with RWI to simplify teachers' efforts in literacy for different groups of pupils
7. High levels of teacher participation and involvement	"The research found that high levels of engagement and involvement of staff in the developmental work of the school promoted high levels of self-esteem and a willingness among teachers to engage with new ideas." (ibid. 970)	Seen more in Magpie, less in Sparrow (but this could be a symptom of being a small school)

Supporting factor (Muijs and Harris, 2006: 967)	Examples of practice (Muijs and Harris, 2006)	Examples from Pathways study
8. Collective creativity	Emphasis on collaboration, mutual sharing and problem solving between teachers (ibid. 970)	Two Magpie teachers working on one Pathway together, comparing data from their respective key stages; Mrs Raven working with her senior leadership team to plan for implications from new national assessment framework.
9. Shared professional practice	Sharing of knowledge and professional understanding and practice (ibid. 970)	Features approaching "epistemic fluency" (Markauskaite and Goodyear, 2018) in Magpie, Raven and Sparrow. May be one of the challenges in Jay where knowledge seemed to more of an individual commodity.
10. Recognition and reward	Extrinsic rewards may be necessary to sustain teacher leadership once the "initial burst of enthusiasm has worn off". (ibid. 970)	Mrs Magpie's use of TLR3, Sparrow's Mrs Starling structured used of Pathways for her NPQH task.

9.2.3c Associated with Key Implication 1: How the DASI model might be meaningfully applied in schools

The potential affordances of a space such as Pathways and its provision of educational research evidence may offer opportunities for practitioners to participate in a more structured form of collaborative inquiry, which in turn could support, amongst other things, a readiness to engage with, and to learn from, educational theory and research and a capacity for knowledge-sharing and to act on what has been learnt in a school (Jackson and Street, 2005: 56).

If Pathways is recognised by Woodland Press as a resource that creates space to build and support leadership capacity, mediated autonomy and evidence-informed reflection, this could be communicated to schools in a way that is relevant to teachers' daily practice. One example is provided in Appendix 26 (page 478) with respect to teachers' use of educational research evidence. A more structured approach could be taken to improve the four-step system that would include the use of data, consideration of 'background and research' and other sources of evidence before undertaking the 'Audit' step. This corresponds with

Guskey's alternative model of teacher change (2002b) which places more emphasis on teachers' change in beliefs and attitudes that support teachers' inclination to engage in new professional development experiences.

9.3 RO3. Mapping the evolution of Pathways as a platform and its constituent resources

9.3.1 Knowledge as a commodity: is Pathways 'good for you'?

The similarities in structure, content and style between Pathways and the National Literacy Strategies (NLS) and National Numeracy Strategies (NMS) appeared to be more noticeable from the Woodland Steering Group perspective, as explicit comparisons were not expressed by any of the school participants in the research, nor the initial pilot-stage focus group participants in 2013 – although several had noted that Pathways 'looked familiar'. There was a recognition within Woodland of the possible benefits of a follow-through in style and content from the National Strategies (NS) to Pathways since NS resources had been highly regarded by many primary practitioners but had been removed from public access following a change in Government after 2010. Overall, the response to the NS, which ran in schools across England from 1998 had been positive, with some reservations and suggested improvements voiced within academic and practitioner communities. One very pertinent conclusion was made about how the NS was run however, and how it might have been run in the years that followed:

> [A] fair degree of top-down initiative is required at the beginning, followed by investment in local capacity-building, followed in turn by greater attention to local creativity, reflection and networking. (Fullan and Earl, 2002: 4)

When the NS website was archived by the DfE in 2011, the legacy of resources remained, albeit stored in an archive that was difficult to search, and not updated to current educational policy. With the release of the new Education White Paper 'The Importance of Teaching' (DfE, 2010a), teachers were to be given less prescription, and "greater curriculum autonomy" (DfE, 2010b: 17) and somehow, more freedom to teach how they thought appropriate, but no immediate direction more centrally about where to source teaching and learning and professional development materials. The educational resource and professional development milieu seemed, in some ways, to return to pre-1998 levels, where "the responsibility for planning the curriculum rested mainly with the teacher" (Moss, 2017: 57).

Unlike the NLS and NNS, Pathways is not a 'policy' and is not on the same scale of 'public stage', so the implications are different. However, practitioners' perceptions and memories of their implementation remains, including the structures put in place for performance management and the monitoring of pupil outcomes. Despite some criticism, both the NLS and NNS received overwhelming support (Webb and Vulliamy, 2007). The next quotation gives a flavour of the perceived contradictory sentiment towards the

NS by some practitioners at the time, and perhaps a tiny glimpse of how some in the Woodland Steering Group seemed to express their views about the benefits of using Pathways:

> Strategies were viewed very positively because they promoted continuity of teaching and learning in literacy and numeracy across all English schools, gave a structure and learning objectives for lessons, helped pupil understanding and provided ideas and resources for teachers – particularly important for those lacking specialist knowledge in English and/or mathematics. Despite their support for the Strategies, teachers were highly critical of the government for imposing them 'in such a way that [implied] "You don't have to do it, it is an option, but woe betide anybody who doesn't!" (Webb and Vulliamy, 2007: 567)

Extending the notion that Pathways might be seen by some in Woodland as 'good for schools', one might question if this message came across to some current practitioners as a kind of didactic approach to learning and development, with an echo of the past NS approach by the DfE:

> In a performative working context, power resides with the employer to determine what is valued, rewarded, and considered justifiable to learn. Consequently, an issue of concern in CPL is the concept of "legitimate knowledge". . . Within a performativity discourse, learning outcomes related to legitimate knowledge are aligned to organizational goals with learning opportunities provided to increase employees' "capacity". (Webster-Wright, 2009: 718)

However, I would argue that these kinds of sweeping assertions may also present real-life problematic implications and near impossibilities for CPDL providers (such as Woodland Press) and school leaders. Providers and leaders need a baseline of knowledge of some description to start from when attempting to put together a programme of practitioners' professional development and learning – and for this, there would need to exist some common understandings of what knowledge might be required and its aims. If there are no learning objectives, and if they are not linked to the organisation's goals, how would any professional development programme be designed to meet most practitioners' context-specific requirements? Nonetheless, I did recognise certain aspects of Pathways (highlighted in the Steering Group meeting minutes of June 2015 in section 7.4.2) that may have come across more 'top-down', using Ofsted-like language – the observation tools for example, and some of the guides written by former HMI.

Consistent with how schools might potentially engage with the DASI and Pathways, fidelity and flexibility are like the pulleys steadying the cable bearing the weights of research and practice – as applied in evidence-based practice in education, and indeed, medicine. Harris et al (2012: 5) note that "the very success of medical science in its take-up and impact has proven a model for those who wish to encourage an evidence-based orientation in educational research". Unlike in medicine however, educational practitioners have not historically and systematically taken part in networks that help to contribute to reviews of research evidence such as researchers, health professionals and patients do in Cochrane (see section 2.5.2). A sister organisation called the Campbell Collaboration exists in the United States, which promotes evidence-based policy in the social sciences including education. In England of course, we have the Education Endowment Foundation. In 2013, the Government jointly designated the EEF and Sutton Trust as the 'What Works Centre for Education' (EEF, 2013). Like Cochrane, only specific types of

evidence meet the criteria to be included in the What Works Centre for Education portal, such as RCT's and experiments, less so smaller-scale studies and those more qualitative in approach. As such, the historically perceived interaction with the NS by some teaching staff (as a 'side effect' from engaging with a rich and structured programme of resources) may have come across as 'being done to' rather than 'doing with'. Pathways is different in this respect as the resource seemed to provide a space to first interact with a set of pre-defined "epistemic objects" such as tools and templates, and co-create a range of "epistemic artefacts" to suit particular contexts. Markauskaite and Goodyear (2017: 207) highlight the defining characteristics of epistemic objects and how they might be differentiated from epistemic artefacts:

> '[E]pistemic artefacts' – as is the case with 'epistemic objects' and 'epistemic things' – are products that build upon shared means for constructing knowledge that are consensually agreed upon by a certain community and often lead to finished products. In contrast to 'epistemic objects' and 'epistemic things' – which as Tweney [(2002)] emphasises, do lead to new shared knowledge – 'epistemic artefacts' also serve as personal emerging 'thingy objects' that, through perception and action, matter and skill, bridge the gap between one's mind and (unknown) phenomena in the physical world.

However, how Pathways is perceived by practitioners might also be influenced by how it is introduced as a resource to the school by teachers and senior leadership. If the conditions are not quite right, and the purposes not described in a way that helps to make the material relevant to daily practice, Pathways might also entail similar top-down 'side effects' seen with the NS. The idea of practitioners participating in the creation of artefacts for school improvement and professional development and learning tasks seems to align with the setting up and design of a school improvement space such as Pathways and the organisation of school improvement tasks. Within a school, network or multi-academy trust at least, these artefacts might be shared and potentially contribute to improvement-focused discussion.

9.3.2 School improvement and links with design patterns

Woodland Press' design of Pathways, and nominal use of 'design patterns' appear to link well with how school practitioners may plan an improvement task:

> [A] design pattern is a semi-structured description of an expert's method for solving a recurrent problem, which includes a description of the problem itself and the context in which the method is applicable, but does not include directives which bind the solution to unique circumstances. Design patterns have the explicit aim of externalizing knowledge to allow accumulation and generalization of solutions and to allow all members of a community or design group to participate in discussions relating to the design. Patterns are organized into coherent systems called pattern languages, where patterns are related to each other. (Mor and Winters, 2007: 66)

This is relevant in relation to the Woodland Press name (much as the National Strategies might have been perceived by some quarters as coming from an official government source in 1998), but different in that Woodland is an educational publisher with a smaller remit and is/was not setting a 'policy' or mandate nationwide. In the design of Pathways, Woodland Press might want to consider the learning and

pedagogical aspects of how content is presented to users. Gee (2004: 107) lists the questions one should consider when designing a learning environment, which I would argue also apply to Pathways:
"What experiences do I want the learners to have?
What simulations do I want them to able to build in their heads?
What do I want them to be able to do?
What information, tools, and technologies do they need?"

The application of 'journey mapping' during this longitudinal study seemed to also link closely with the opportunities for learning suggested in the framework by Muijs et al (2014) – where Pathways could be recognised not just as a 'school improvement system' by Woodland Press but also a space for CPDL. In section 7.2.3, similarities were drawn between the design workspace and school improvement space where the 'Central UX Resource' might be likened to the headteacher who builds school-wide structures and leadership capacity, the 'Digital Design' role might resemble the school's administrative team, governors and/or academy trust managers, and the 'Developers' – the classroom teachers, teaching assistants and middle leaders enacting the structures put in place by the school's leadership team. Certainly, in comparing the use of design patterns, similarities were recognised with Pathways tools in that both resources provided designers (and headteachers) with 'tried and tested' strategies and templates to build required frameworks, capture collective, sometimes historic 'wisdom' and knowledge, reduce wasted time 'reinventing the wheel' and being able to build in consistency and flexibility in designs and operations. Shared issues around "attention dissipation" were also noted between Woodland Press designers/publishers and staff in schools. As considered in Chapter 7, how would designers – drawing from similar principles around the Global Experience Language (GEL) – build in potential 'deviations' from the 'ideal' route mapped and planned in the school improvement literature in a resource like Pathways and somehow maximise on the possible additions to knowledge in the form of practice-based evidence?

Gee goes as far as to suggest that designers consider the learning first, content second and essentially ask: "What games do I want these learners to be able to play?" Gee (2004: 107). This does not mean that content is not important – but concentrating primarily on the content, as opposed to the pedagogic messaging around the learning, and expecting professionals, particularly those who might not have strong leadership and guidance through Pathways, to 'work it out themselves' might not necessarily support its sustained use. This again, aligns with the purposes of sourcing structured, formative feedback (Stobart and Hopfenbeck, 2014) – both on the part of designers and teachers (as learners and professionals). Just as there may be 'layering' of leadership where headteachers choose, group, integrate and emphasise different combinations of transformational and instructional strategies across schools' improvement journeys (Day, Gu and Sammons, 2016: 226), layering of other practices may be taking place too, such as the use of

printed materials (leftover from the old Oxford School Improvement portal), and digital technologies in everyday life (Selfe and Hawisher, 2004).

9.3.2a Key Implication 2: The multi-environment approach – combining elements of the PLN and PLE?

Woodland could explore ways to improve teachers' self-regulation and metacognition – to encourage more sustained engagement in school improvement, and recognise the professional development aspects in Pathways more explicitly. Like any other design pattern related to online platforms, there has been continuous discussion, debate and negotiation over what constitutes an effective design. In the case of Pathways, SI and SE research plus feedback from school practitioners, designers and publishers, and members of the Steering Group (including a research team) fed into the design at different points during Pathways' own journey. Once Pathways reaches the confines of a school however, practitioners, senior leadership, pupils, parents and administrative staff will have a say (to some degree or another) about what constitutes an effective and efficient way of deploying resources and potentially improving pupil outcomes – the 'design' transposes into the individual artefacts that make up Pathways – tools, templates, research evidence, questionnaire results, guides – and how these can be harnessed to build a successful school improvement programme. And so, the DBR cycle continues in one form, regardless if this researcher is there to observe or not. Pathways itself can be positioned as a Knowledge Management System, one that "provides teachers with timely and constructive feedback about their professional practice" (Bain and Swan, 2011: 673). Spaces within and around the KMS may situate the teachers and leaders (along with pupils and parents) to potentially form a Professional Learning Community – one that can play a pivotal role in the ongoing task of building capacity for sustainable improvement.

> Capacity is a complex blend of motivation, skill, positive learning, organisational conditions and culture, and infrastructure of support. Put together, it gives individuals, groups, whole school communities and school systems the power to get involved in and sustain learning over time. (Stoll et al, 2006: 221)

As noted previously, Spillane, Shirrell and Hopkins (2016: 115) theorise in their study of teacher collaboration and learning in American elementary schools how bureaucratic and collegial tasks might actually work together rather than in opposition through the use of PLCs – see also Appendix 12 (page 402) for a breakdown of different kinds of school-based spaces and communities:

> When particular grade levels were not performing the PLC as intended, school principals used bureaucratic control both directly (e.g. sitting in on PLCs and modelling appropriate practice) and indirectly (e.g. hiring staff and assigning them to particular grade levels) in an effort to improve performance so that it better reflected the design intent (i.e. ostensive aspect). And, when PLCs were performing as intended, school leaders reduced bureaucratic oversight. Both bureaucratic and collegial arrangements then worked interdependently in the design, deployment and practice of the PLC routine.

Associated with Key Implication 2 are my reflections on how Pathways might be conceptualised as a 'Professional Learning Environment' and ideas around incentivisation and gamification in online school improvement platforms. These are presented in Appendix 27 (page 482).

9.3.2d Key Implication 3: methodological reflections from the DBR approach

It appears that published research studies to date have either started at the 'digital technology' end of the spectrum of substantive topics *or* 'school improvement and effectiveness' – and how the study is conducted and written up very much depends on which one of these fields underpins the empirical work and literature. In this study, I could have started on the digital technology side and focused mainly on the characterisations of the digital environment, the interplay between users and digital artefacts and cognitive demands or perceived augmentation/contraction from the digital experience. Conversely, I could have studied Pathways (more) purely as a school improvement resource and concentrated solely on the educational processes, practices and patterns of leadership afforded by the field of EEIR.
Instead, I have come at this topic from both ends, as a result of which I have studied:

- how Pathways as a digital environment may have mediated schools' improvement journeys and practitioners' professional development experiences, and vice versa;
- how individual practitioners and schools may have influenced and mediated the design and manifestation Pathways, as well as the kinds of knowledge 'maintained, amended, introduced and discarded' in the shared digital and in-person space, and;
- (using a critical lens) the possible consequences of the technology being added to schools' daily routines, not assuming necessarily that the platform would always yield benefits to practitioners' development and schools' improvement trajectories.

Taking a two-pronged approach, I have attempted to confront head-on the challenges voiced by Crook (2013: 38):

> When significant changes in identity, society and culture are too firmly ascribed to a particular technology we are right to feel uneasy. Adopting a deterministic attitude to digital impact will only serve to conceal from us a more complex and interesting dynamic of influence and causality.

While of course I am not looking to make causal claims from this research, I did not want to overlook possible alternative understandings of practitioners' experiences by only focusing on one substantive field. Associated with Key Implication 3 is my reflection on how Woodland Press might conceptualise who Pathways is aimed at, and different users' ideas of professional development and learning. This is presented in Appendix 28 (page 487).

Summary

The Discussion portion of this chapter was structured according to the study's research objectives. In responding to the first objective, different context-shaped and situated responses to Pathways emerged and seemed to influence practitioners' and Pathways' roles in diagnosis for school improvement, school self-evaluation and accountability. The second objective highlighted Pathways' potential as a tool for task

and autonomy mediation and creating a space of leadership capacity, professional learning and combining multiple strands of knowledge to form a school improvement 'other' or 'consciousness'. This also catalogued three features in particular: 'produsedd' artefacts that were both produced and consumed by different types of stakeholder, creation of a type of Professional Learning Environment which combines the utility of a Personal Learning Environment (PLE) and Professional Learning Network (PLN), and the mobilisation of knowledge strands that might contribute towards organisational learning. The third objective reviewed the notion of a platform like Pathways offering knowledge as a commodity, the former National Strategies and how Pathways may have been proffered as 'good' for the health of schools. Links were made between the principles of the DASI and 'design patterns' – and the application of journey mapping in understanding the relationships between Pathways, practitioners, Woodland Press, this researcher, schools' improvement journeys and professional learning experiences.

9.4 Study limitations and future directions for research

This study would have benefitted from studying a larger number of schools and their Pathways involvement over a longer time period. However, this was not a practical option for a DPhil study and so I have focussed on a smaller number of school cases and the study has sought to provide depth rather than breadth in understanding practitioners' views and perceptions of Pathways, and engagement in different schools' improvement journeys. A bigger sample with which to carry out fieldwork would have provided more opportunity to learn about more diverse practitioner experiences. I also would have liked to participate more in the DBR aspect with respect to engaging with Woodland Press' design-redesign cycle, however, the time it took to make changes to Pathways often extended beyond the time I was able to allow for in my fieldwork.

A promising future direction of research might be a larger-scale study which follows a bigger sample of primary (and secondary) schools through their improvement journeys where practitioners have access to a resource like Pathways. Using some of the conceptualisations from this current study of Pathways as a potential tool for task and autonomy mediation, relationship with schools' efforts towards accountability and as a space for professional learning may also provide more structured means and forms of questioning to carry out a mixed-methods study that would include quantitative surveys of practitioners' engagement with Pathways and other resources.

This study did not attempt to make links with changes in pupil outcomes in the case study schools though practitioners were clearly seeking to promote positive learning experiences and better pupil outcomes. Future research could collect additional evidence to try to study possible links in depth. It was not possible to obtain meta-data from Woodland Press to study users' individual online use of Pathways functions and materials, but this is something that might prove technically feasible in future, e.g. which

Pathways are more used, in what ways and when. Further evidence could be collected online from participating teachers and schools to establish how and in what ways schools might engage across the Oxford Owl site. For example, do schools that focus on the Outstanding Reading Pathway also use the free e-books and reading resources for parents and schools in different ways or more extensively?

9.5 Conclusions

In exploring the workings of, and practitioner engagement with, Pathways for school improvement, this study sought to bring together insights from the five school cases, mapping their school improvement journeys, the development of Pathways by Woodland Press and this researcher's perspective using a DBR approach. Uniquely, the research questions were approached from both 'ends' of the substantive literature spectrum and met somewhere in between the fields of educational digital technologies and EEIR. Part I of this thesis introduced the study and its research aims, objectives and questions, followed by a review of the literature which makes connections between the fields of EEIR, digital technologies and teachers' professional development and learning. The research design and methodology chapter highlighted the qualitative, DBR approach used in this embedded multi-method case study. Part II detailed extensive case studies of three of the primary schools in this study and Woodland Press, with two shorter pen portraits provided in Appendices 20 and 21 (pages 461 and 465). Part III gave an account of the cross-case analysis and synthesis, discussion and conclusions of this study, highlighting the potential connections between the evolution of Pathways and its design, schools' improvement journeys and practitioners' development and learning experiences with Pathways. Responses to Pathways by practitioners appeared to be shaped by each school's professional and improvement context, where some responded more collectively to using Pathways while others approached the platform more for individual extrinsic interests. School leaders and teachers being able to project, plan and coordinate their improvement efforts with the use of Pathways tools also seemed more willing to engage and experiment with new, more unfamiliar resources. Different responses by schools' leadership seemed to provide particular affordances for other staff members to engage with Pathways for improvement and professional development purposes. Certain 'hospitable conditions' that supported the use of Pathways included supportive leadership, being able to make strong links between the tools and guidance in Pathways and teaching practice (sometimes via the use of Woodland Press' printed guides and both on- and offline communication), coordinated improvement efforts, commitment to 'action inquiry', shared professional practice and recognition and reward. Elements of professional learning for practitioners, particularly early career teachers and those with a specific development task emerged during the study – which supported the idea of how Pathways and other similar resources might have the potential to mediate practitioners' autonomy during efforts to enact school improvement strategies. The findings reveal that Pathways seemed to additionally have the potential to support practices in schools associated with improving the capacity for leadership and

improvement – for example, with how practitioners engaged with and 'prodused' a range of tools, tasks, routines and artefacts in moving through the Pathways four-step system.

Practitioners' engagement with Pathways materials documented in this study, and school leaders' 'bricolage' type approaches to school improvement elicited more investigation into how educational practitioners access and interact with educational research evidence more broadly, and ways to define and bridge the divide between theory and practice. Pathways and other resources around it seemed to function as 'school improvement spaces' within which practitioners engaged with efforts towards achieving 'epistemic fluency', or learn in a more structured context the potentially different ways of 'knowing' between practice, research evidence, data (such as from surveys with parents and/or pupil performance data) and professional judgement. This links with Pathways' potential relationship with how practitioners carry out diagnosis and school self-evaluation and operationalise different forms of assessment at multiple levels (school, leader, teacher, pupil and other stakeholders such as parents and governors). Pathways was less likely to provide sustained 'accountability pressure' on its own, however, its templates and guidance, practitioners' application of multiple strands of knowledge combined with leadership support and conditions that encourage professional development and learning could potentially unite to form a kind of 'gestalt' and 'consciousness of school improvement' that facilitate efforts towards 'collective school improvement'. Pathways, rather than being regarded as a digital platform on its own, appeared to function as part of a 'professional learning environment' for practitioners, which provided access and signposting to external resources to support school improvement tasks. The tools in Pathways seemed to offer opportunities for teachers to work collaboratively but also more individually – with their work being partially 'mediated' by Pathways itself as a resource, and senior leadership support. In line with the DASI theoretical model, Pathways materials appeared to support practitioners to conduct more structured reflection and facilitate access to educational research evidence that may have helped to inform some of those reflections and consequent actions. As teachers were also carrying out small-scale inquiry (for example in pursuing the Parental Engagement Pathway, or Closing the Gap), the tools in Pathways seemed to lend support to notions of conducting action research 'plus' type strategies – that is, to recognise and document conversations and decisions that take place around improvement tasks, and contribute towards new 'prodused' artefacts that may feature in future inquiries.

In order to move beyond some of the more didactic approaches to school improvement planning, and associations with the National Strategies (both positive and negative), Woodland Press may want to consider how to improve the pedagogic messaging around some of the material in Pathways, and harness the opportunities offered by practitioners potentially working in collaborative, collective spaces and using digital technologies to learn from and support each other, sustain users' interest by incentivisation or gamification and provide a space for school improvement 'artefacts' to be created and shared. Just as schools sometimes experience tensions and challenges in designing and enacting their improvement plans

and reconciling individual and collective understandings of action points, expectations and outcomes, Woodland Press also experienced challenges in their design and re-design of Pathways – particularly in their application of the Global Experience Language (GEL) for Pathways' design and engagement with different teams to take forward change. This may provide additional insights into how operations may take place in school settings, and provide support towards the argument for developing better ways to sustain Pathways use by practitioners. Parallels were also recognised between the GEL and Pathways tools in themselves, and being able to chart school and designer journeys using an innovative application of 'journey mapping'. Chapman et al (2016: 19-20) point out how the area of technology is "dominated by enthusiasts, with little attention to evaluation of the actual impacts or of the possible outcomes" which has resulted in a confusion of approaches and very little information on which strategies and programmes are more effective than others. I agree with their assertion that:

> There is therefore a need for EEI researchers to partner with practitioners and specialists in ICT-supported learning to develop a systematic programme of research into the effectiveness of differential forms, patterns, and uses of ICT in education, which can then be broadly disseminated into our educational improvement programmes.

This study provides illumination and understanding on ways that both on- and offline approaches might be further developed and used to support teachers' professional learning and school improvement within more structured and collective 'spaces'. Ideas around Pathways users' autonomy were explored, specifically in relation to early career teachers and school leaders (both in-post and in-training), and its links with school leadership, along with the potential formation of a 'consciousness of school improvement' with Pathways tools forming the basis of practitioners' reflections or a 'navigation' centre that supports schools to learn collectively and build organisational 'intelligence'. Overall, several conclusions drawn by the evaluation of the Primary National Strategies (Earl, Watson and Torrance, 2002: 37) align with findings from my research on Pathways: (1) changing practice is hard work both intellectually and emotionally (Hargreaves et al, 2001) – leaders and designers need to be cognizant of this in relation to new resources such as Pathways; (2) motivation is crucial but insufficient on its own – there need to be sustained opportunities for practitioners to develop knowledge and understanding together; (3) the structures that support the building of capacity for change may lie between collective and autonomous approaches to improvement that promote ownership and combined focus; (4) newly qualified and early career teacher learning is a long-term investment, which pays dividends if practitioners' competence and confidence are developed and nurtured; and (5) voices that question long-held (organisational or other) assumptions are important both to the sustainability of improvement efforts and the building of the spaces, 'systems' or environments that enable the tentative explorations of those questions.

To answer the question posed in my thesis title: 'Are we there yet?', I can say that this research project has helped me to refocus on who 'we' is and where 'there' might be. Originally, the title was chosen to represent teams of practitioners potentially travelling on their respective school improvement journeys,

some of them using Pathways as a guide, others turning to alternative route maps and methods. During most of this DPhil study, I have been reminded of this pithy observation attributed to Thomas Hardy:

> *Time changes everything except something within us which is always surprised by change.*

An interpretation I have taken from this is how one might gear up for all sorts of amendments, improvements and enhancements, and put in strenuous efforts towards a promised, more elevated target, and somehow when one reaches it, the recognition of this positive outcome rivalled with the attention placed on the efforts up to that point can be nothing short of bewildering. To a certain extent, this could apply to the different journeys traversed by my five case study schools and Woodland Press in their new venture, but unquestionably to my time as a postgraduate researcher. 'There' for all of us ('we') has probably been projected to be 'somewhere better' but defined in different ways. What I and some of us in this study have learned is that like many ambitious projects, 'there' is still being planned and constructed, along with the paths that lead to it. As Gadotti (1996: 7) observes, "Education is at the same time promise and project". Some of the 'route maps' that we have access to also seem to be getting more precise, but perhaps it might be wise to develop an improved individual and collective 'sense of direction'. In my attempt to bring together the fields of EEIR and digital technologies, my main aim has been to explore the workings of, and practitioner engagement with, a relatively new school improvement resource called Pathways. I hope that this thesis might act as a helpful road atlas for others who may embark on comparable future journeys.

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Appendices

Appendix 1: CUREC documentation

University of Oxford

CENTRAL UNIVERSITY RESEARCH ETHICS COMMITTEE (CUREC)

CUREC /1A Checklist for the Social Sciences and Humanities

The University of Oxford places a high value on the knowledge, expertise, and integrity of its members and their ability to conduct research to high standards of scholarship and ethics. The research ethics clearance procedures have been established to ensure that the University is meeting its obligations as a responsible institution. They start from the presumption that all members of the University will take their responsibilities and obligations seriously and will ensure that their research on human subjects is conducted according to the established principles and good practice in their fields and in accordance, where appropriate, with legal requirements. Since the requirements of research ethics review will vary from field to field and from project to project, the University accepts that different guidelines and procedures will be appropriate. Please check the CUREC website to ensure that you have the correct checklist for your project.

ONLY TYPE-WRITTEN CHECKLISTS WILL BE ACCEPTED. PLEASE DO NOT SEND HANDWRITTEN CHECKLISTS.
ONLY EMAILED APPLICATIONS WILL BE ACCEPTED. PLEASE DO NOT SEND APPLICATIONS BY POST.

What this checklist will not assess

This checklist does not cover research governance, satisfactory methodology, or compliance with the requirements of publishers when administering their tests or questionnaires. As principal researcher, it is your responsibility to ensure that requirements in these areas are met.

CUREC does not review studies classed as *audit* (see glossary and Decision Flowchart for CUREC on our website).

The use of an *asterisked word underlined* in this checklist indicates a phrase defined in CUREC's glossary. The glossary and further information on the University's research ethics procedures are available from the CUREC website: www.admin.ox.ac.uk/curec

What this checklist is designed for

This CUREC /1A checklist is designed largely for research that falls within the Divisions of Social Sciences and Humanities where ethical issues are relatively few and straightforward. Interviews, field work and oral history are also included in the CUREC process.

The full CUREC /2 application is only required where certain project characteristics (eg type of participants, or procedures) result in a more complex set of ethical issues. It is expected that only in a limited number of cases will it be necessary for researchers to complete a CUREC /2 application. The checklist below will direct you to a CUREC /2 application if needed.

Office use only: IDREC Ref. No. _____

Date of confirmation that checklist accepted on behalf of IDREC: // //

Please complete the sections that follow and follow prompts to stop completion and/or submit other documents.

Please indicate your answer to all the Yes / No questions with a type-written "X".

Example:	**YES**	**NO**
1) By taking part in the research, will participants be at serious risk of criminal prosecution (e.g. by providing information on drug abuse or child abuse)?	**X**	

SECTION A: filter for CUREC /2 application.

This section determines whether your study raises more complex issues which require the completion of a full application for ethical review, known as the CUREC /2 application.

1) Are research participants classed as "*people whose ability to give free and informed consent is in question*"? (This may include those under 18 (though see FAQ C12), prisoners or vulnerable adults) *Note: sometimes participants aged 16-17 are regarded as "competent youths" and may be able to consent for research themselves. Please consult the FAQ C12 on the CUREC website. However, if any of your participants are aged 16 or under, please answer 'yes' here and also answer question 4) below.*	**YES**	**NO**
		X
2) By taking part in the research, will participants be at serious risk of criminal prosecution (e.g. by providing information on drug abuse or child abuse)?	**YES**	**NO**
		X
3) Does the research involve the *deception* of participants?	**YES**	**NO**
		X

If you answered NO to all of the questions above please go to SECTION B. If you have answered yes to any question above continue to question 4 below.

4) Is your project covered by one of our approved research protocol(s)? (see CUREC website) *If yes, please give protocol number(s):*	**YES**	**NO**

If you answered Yes to ANY of questions 1-3, and answered No to question 4, please STOP COMPLETING THIS CHECKLIST and do not submit it for ethical review.

Instead, please complete the CUREC/2 application form, available to download from the CUREC website. Then submit the CUREC/2 for ethical review.

If you answered Yes to ANY of questions 1-3, and answered yes to question 4, please go on to SECTION B.

SECTION B: contact details and project description (NB must be typed not handwritten).

Contact details	
1) *Principal researcher* / supervisor (if student research):	Professor Pamela Sammons
2) Name of student (if student research):	Susila Davis
3) Degree programme, e.g. DPhil, BA, MPhil, BSc, MSc (if student research):	DPhil Education
4) Department or institute name:	Department of Education, 15 Norham Gardens, Oxford OX2 6PY
5) Address for correspondence (if different from 4):	
6) University email address and phone contact:	susila.davis@education.ox.ac.uk 07939 549952
7) Name and status of others taking part in the project. E.g. 3rd year undergraduate; post-doctoral research assistant:	

Project description	
8) Title of research project:	"Are we there yet?": A study of the Oxford University Press Pathways to school improvement
9) List location(s) where project will be conducted:	

10) If your research involves overseas travel or fieldwork, by the time the research starts, will you have completed and returned a travel risk assessment form? (This may be necessary to ensure that the activity is covered by the University's travel insurance – see http://www.admin.ox.ac.uk/finance/insurance/travel/)	~~YES~~ / NO / ~~N/A~~
11) Anticipated duration of project:	__41__ months
12) Anticipated start date:	8 / 12 / 2014
13) Anticipated end date:	30 / 04 / 2018

14) Title and brief lay description of *research* (about 150 words), plus description (about 200 words) of the nature of participants.

When describing the research, please include your methodology, how you are applying professional guidelines, and the use to which results/data will be put. Please also declare any conflicts of interest here.

When describing participants, please include criteria for inclusion/exclusion, method of recruitment, and processes (as appropriate) for consent to participate. To support your description please attach documentation such as:

recruitment and advertisement material eg a poster or invitation letter
information for participants to read before they agree to take part eg participant information sheet(s)
a document to record informed consent eg written consent form(s) or oral consent script in case of an oral consent process
a guide to interview questions (this may be a list of questions to be asked, or a preliminary scope of questions) or sample of other instruments such as a sample questionnaire
debriefing document after participants have taken part (if relevant)
Detailed guidance is found on the CUREC website

Title and brief lay description of research (150 words)

"Are we there yet?": A study of the Oxford University Press Pathways to school improvement

This study aims to explore the workings of, and practitioner engagement with, a selection of resources provided by the Oxford University Press (OUP) in the area of school improvement. In November 2013, the OUP launched 'Pathways', an online platform made up of a 'four-step system' to school improvement comprising these phases: 'audit', 'strategic planning', 'take action' and 'evaluate impact'. Pathways resources such as audit tools, questionnaires and guidance documentation aim to support schools through specific 'tasks', for example, the implementation of the new primary National Curriculum (NC) in England. The intentions of the research are to study school practitioner perceptions and attitudes; in particular of headteachers and other members of school senior management towards the OUP approach and Pathways via a series of multi-method case studies; and to study the evolution of the Pathways themselves (using a "design-based research" framework) and school improvement practice within a sample of primary schools. There will be particular focus on areas such as capacity-building and leadership with an aim towards studying improvement 'journeys' within schools.

Description of participants and obtaining informed consent

Participants of the study will comprise a sample of teachers, middle leaders and senior leaders in six to eight primary schools whose practitioners use and subscribe to Pathways, and have agreed to be part of the research project. The aim is to source primary schools who are already engaged with the Oxford University Press in some way (eg a school that is a member of their school platform Oxford Owl, a school that has been filmed for a training video or used as a case study school, or schools that have been involved in research with the OUP in the past). A letter [in email form, attached as Appendix 1 – page 335] will be sent to the headteachers of those schools asking if they (and the staff at their schools) would consent to participating in the Pathways research project. [A sample information sheet and consent form are attached as Appendix 1b (page 351) and Appendix 1c (page 354) respectively.] The study will involve the researcher:

interviewing a range of teaching practitioners (ie teachers and middle and senior leaders) in each school about their use of Pathways and its resources, and trying to describe and understand each school's improvement practice, processes and 'journey' over the course of six to nine months over the school year, starting Autumn 2014;
observing periods of when Pathways is being used and discussed by practitioners at various levels including staff meetings and training events or sessions; and classroom practice (where allowed and not involving students completing any type of research-related activity)
distributing questionnaires amongst practitioners in an attempt to explore practitioners' perceptions around collaborative working and professional development with regards to each school's set of improvement strategies and priorities and use of Pathways.

Teachers (school practitioners at different levels) will be recruited to the study via the attached information sheet, consent form, short verbal introduction by the researcher and an introduction by each school's headteacher. Participants will be able to opt in to participate in the study if they choose.

15) What are the ethical issues connected with your research and what steps have you taken to address them?
Please do not answer "none".
The committee wants to see evidence that you have identified potential ethical issues with respect to your research and have taken steps to address them. These issues could relate to your own safety as a researcher, participant burdens/risks, and data protection/confidentiality. For more guidance on ethical issues, please see www.admin.ox.ac.uk/curec/resources/

It will be important for the researcher to explain how the research project could potentially support schools' and teachers' improvement practice (as the study could offer the opportunity to practitioners to reflect on their practice and individual schools' strategies and implementation procedures). The researcher hopes to provide a summary of data collected, back to each individual practitioner on a regular basis (for example, once a term) to faciliate teachers' reflective practice, and in line with the Design Based Research framework employed in the study. Data can be fed back into the research and design loop not only with OUP's continuous redesign of Pathways but also the continuous reflective nature of teachers' practice and reflexive model of the research study as a whole. Data from individuals in the study could be fed back to each individual practitioner and/or (if agreed by the each member of the group/school) in summary form representing the whole group or school, for example a brief overview of how the study has progressed at the school, how Pathways is being used across the school (if this is the case) and any learning points, useful practice and challenges faced in relation to school improvement practice and Pathways. However the researcher should also appreciate that teachers being involved in the study in a sustained way will be a serious commitment on their part and that their participation will require time and effort. Due to the nature of the project, where the researcher hopes to gain some understanding of how school practitioners use Pathways, it is not anticipated that there will be particularly 'sensitive' data as such. However, even at this level, the researcher will keep all data anonymous and not feed back non-anonymised data back to the OUP. All data presented in to the OUP and final thesis will be fully anonymised so the OUP cannot identify individuals or schools, unless express written permission is given by research participants that it is acceptable to do so.

16) Will you obtain informed consent according to CUREC guidelines and good practice in your discipline *before* participation?	**YES**	**NO**
	X	
If you have marked No, please give a brief explanation and justification for this decision here:		
17) Will your research involve discussing sensitive issues? *This could be information relating to race or ethnic origin, political opinions, religious beliefs, physical/mental health, trade union membership, sexual life or criminal activities.*	**YES**	**NO**
If you have marked Yes, please make sure that you have included some supporting information (as directed in qu 14 of this section) showing the range of questions covering these issues.		**X**

18) Will you ensure that *personal data* collected directly from participants or via a *third party* is held and processed in accordance with the provisions of the Data Protection Act?	**YES**	**NO**
	X	

19) How will you ensure that any personal or sensitive data are captured, transferred and stored securely?

In particular if data are to be captured electronically, please consult with your local IT department and, with respect to University IT security policies, please comment on how you will capture such data in the first instance, how you will transfer them over networks or via portable media and how and where data will be stored. For more information please see the University's web pages on research data management: *http://researchdata.ox.ac.uk/university-of-oxford-policy-on-the-management-of-research-data-and-records/*

Qualitative data collected from the study will be coded and analysed, possibly using CAQDAS such as NVivo in order to discern broad themes and subthemes of participants' views and perceptions of their own and their school's improvement strategies and practices, and use of Pathways. [Sample interview questions are attached with this application in Appendix 5 – page 366.] The quantitative data (mostly from questionnaires) will be analysed using SPSS or other tools, depending on the final purpose and aim of this phase of data collection (closer to the time when the questionnaires are finalised). The main aim of the questionnaires will be to investigate participants' perceptions on their practice, and change in their practice (if any) pre and post implementation of Pathways in their schools. Also, the researcher hopes to develop an understanding of each school's engagement and implementation of Pathways from a range of perspectives where responses can be gathered in a shorter space of time, and more anonymously than for example an interview or observation. [Sample questions for the questionnaire are attached to this application also in Appendix 5.]
If permission is given for me to audio record interviews or school meetings/other school events, all recordings will be anonymised and stored with coded file names (so as not to identify participants by name). All files and information will be stored securely on an encrypted hard drive and password protected. All audio recordings will be destroyed after the completion (write up) of the research project.

SECTION C: methods and procedures to be used.

In this section, please mark X against as many methods or procedures as apply to your research. (This section will help the committee understand the nature of your research and may be used for audit).

	Please mark "X"
1) Analysis of existing records	**X**
2) Snowball sampling (recruiting through contacts of existing participants)	**X**
3) Use of casual or local workers eg interpreters	
4) Participant observation	**X**
5) Covert observation	
6) Observation of specific organisational practices	**X**
7) Participant completes questionnaire in hard copy	**X**
8) Participant completes online questionnaire or other online task	**X**
9) Using social media	
10) Participant performs paper and pencil task	
11) Participant performs verbal or aural task (eg for linguistic study)	
12) Focus group	

13) Interview	**X**
14) Audio recording of participant	**X**
15) Video recording of participant	
16) Photography of participant	
Other (please specify):	

SECTION D: professional guidelines and training.

In this section, please mark X against at least one of the following professional guidelines. You should use the principles listed in your chosen guideline(s) in conducting your own research. Note this is not an exhaustive list.

Research specialism/methodology	**Association and guidance document (active links below)**	**Please mark "X"**
Anthropology	Association of Social Anthropologists of the UK and Commonwealth	
Criminology	British Society of Criminology: Code of Ethics for Researchers in the Field of Criminology	
Education	British Educational Research Association Ethical Guidelines for Educational Research	**X**
Geography	Association of American Geographers Statement on Professional Ethics	
Geography	Royal Geographical Society: Research Ethics and Code of Practice	
History	Oral History Society of the UK Ethical Guidelines	
Law (Socio-Legal)	Socio-Legal Studies Association: Statement of Principles of Ethical Research	

Management	Academy of Management's Professional Code of Ethics	
Political Science	American Political Science Association (APSA) Guide to Professional Ethics in Political Science (Section H)	
Politics	Political Studies Association, Guidelines for Good Professional Conduct	
Psychology	British Psychological Society Code of Ethics and Conduct British Psychological Society: Conducting Research on the Internet: (Guidelines for internet-mediated research)	
Social Research	Social Research Association: Ethical Guidelines Social Research Association : Data Protection Act 1998 : Guidelines for Social Research Social Research Association: Code of Practice for the Safety of Social Researchers	**X**
Sociology	The British Sociological Association: Statement of Ethical Practice	
Visual Research	ESRC National Centre for Research Methods Review Paper: Visual Ethics: Ethical Issues in Visual Research	
Other professional guidelines ***Please specify the other guideline(s) used here:***		

1) Please indicate what training in research ethics the researchers involved with this study have received, e.g. the title of the course and date completed (online training available at www.admin.ox.ac.uk/curec/training/)

If no formal training has been received, please indicate any discussions of research methodology between researchers and supervisors here.

Training on research ethics and CUREC procedures/protocols during the Masters and 1st year DPhil course at the University of Oxford's Department of Education during 2012 and 2014.

SECTION E: signatures.

Please ensure this checklist is signed by:

For staff research:	*For student research:*
1) *Principal researcher*	**1) *Principal researcher* (project supervisor)**
2) Head of Department (or nominee)	**2) Head of Department (or nominee)**
-	**3) Student researcher**

1) Principal researcher signature / supervisor signature (if student research)

I understand my responsibilities as *principal researcher* as outlined in the CUREC glossary and guidance on the CUREC website.

I declare that the answers above accurately describe the research as presently designed and that a new checklist will be submitted should the research design change in a way which would alter any of the above responses so as to require completion of CUREC/2 (involving full scrutiny by an IDREC). I will inform the relevant IDREC if I cease to be the principal researcher on this project and supply the name and contact details of my successor if appropriate.

Signed by principal researcher / supervisor:…… ……

Print name (block capitals)……

Date:……

2) Departmental endorsement signature

I have read the research project application named above. On the basis of the information available to me, I:

(i) consider the principal researcher to be aware of her/his ethical responsibilities in regard to this research;

(ii) consider that any ethical issues raised have been satisfactorily resolved or are covered by relevant professional guidelines and/or CUREC approved protocols, and that it is appropriate for the research to proceed (noting the principal researcher's obligation to report should the design of the research change in a way which would alter any of the above responses so as to require completion of a CUREC/2 full application);

(iii) consider that the principal researcher/supervisor/student researcher is aware of her/his ethical responsibilities in regard to this research. I am satisfied that: the proposed project design and scientific methodology is sound; the project has been/will be subject to appropriate *peer review*; and is likely to contribute to existing knowledge and/or to the education and training of the researcher(s) and that it is in the *public interest*.

Signed by Head of Department or nominee:……..

(*example nominees for student research include the Director of Graduate Studies / Director of Undergraduate Studies*)

Print name (block capitals)……

Date:……

3) Student signature (if student research)

I understand the questions and answers that have been entered above describing the research, and I will ensure that my practice in this research complies with these answers, subject to any modifications made by the principal researcher properly authorised by the CUREC system.

Signed by student:……Susila Davis……..

Print name (block capitals)…SUSILA DAVIS…… Date:…19/11/2014…

SECTION F: final check before submitting your application.

Please use this section to check that you have completed the following tasks:	
	Please mark "X"
Have you completed Sections A-E?	**X**

Have you included copies of any documentation produced in support of your application? ***If the appropriate supporting documentation is not included with your application, you will then be asked to provide this separately. This may well delay the ethical review process, and thus the start of your research.***	**X**
Have you signed as principal researcher and gathered signatures of the student (for student research) and department nominees as appropriate?	**X**
Have you declared conflicts of interest (if any) in Section B qu 14?	**X**
Are all pages (including supporting document attachments) numbered?	**X**
Have you defined all technical terms and abbreviations used?	**X**

How to submit the completed checklist

If your department has a Departmental Research Ethics Committee (DREC), submit this checklist and supporting information to the appropriate departmental officer. To see a list of DRECs, go to www.admin.ox.ac.uk/curec/about/sshidrec/drecs/

If your department does not have a DREC, submit the checklist and supporting information to the SSH IDREC (email ethics@socsci.ox.ac.uk). NB applications must be sent by email. Please do not send applications by post.

Note on how to send signatures needed in Section E

If you have obtained handwritten (wet-ink) signatures, please scan them plus the rest of the checklist pages to create a single PDF document and email through.

Alternatively, we accept "electronic signatures" sent as email confirmations from a University of Oxford email address. Separate emails should come from each of the relevant signatories as outlined in Section E, indicating acceptance of the relevant responsibilities.

IDRECs and/or CUREC will review a sample of completed checklists and may ask for further details of any project.

Appendix 1A: Invitation letter to schools

30 November 2014

Dear [headteacher salutation]

We are writing to let you know about some exciting new research taking place in schools during this autumn term. Oxford University Press has developed Pathways, an online platform to assist practitioners with their school improvement practice. As part of the development of Pathways, we also have Susila Davis (MSc) who is currently undertaking a research project in collaboration with OUP and its work on Pathways. We would like Susila to visit a few schools during this initial stage in order for her to get a better feel of our collaboration and interaction with schools. Susila is also registered as a PhD student at the Department of Education at the University of Oxford. Her project is linked to Pathways and more extensive school visits and fieldwork will take place in the spring term.

We would like to enquire if, as a registered user of Pathways, you and your school would be interested to participate in this research project. The main aims of the study are to:

- learn about schools' improvement journeys and the different strategies employed to improve outcomes at a whole-school level;
- explore how each school's improvement practice might link with the resources offered in the Pathways platform, including how it may support teachers' professional development and;
- gather views from different practitioners in schools about their use of Pathways, and how the platform can be further developed.

The aim is to recruit five to six schools to get a feel for how different practitioners approach improvement practice and how Pathways resources are applied in each context. Susila would be looking to visit each school on a regular basis convenient to your schedule, meet with your senior management team and teachers responsible for how Pathways is used and disseminated among other members of staff and observe school improvement activities, for example staff meetings, INSET days and particular lessons that you think might be pertinent to your improvement strategies.

Your participation in this research will contribute towards developing a wider understanding of how schools put in place and undertake improvement strategies in different contexts. You will also be helping us to explore the rather sparsely researched area of the use of online technologies in school improvement activities and teachers' professional practice. As part of being involved with the research project, your school will be given free access to Pathways.

Oxford University has strict ethical procedures on conducting research with teaching practitioners, consistent with current British Educational Research Association guidelines. Participation in the study is completely voluntary. Before beginning the research, Susila will provide an information sheet and consent form; these should inform teachers about the research and offer them the opportunity to refuse to participate. Also, throughout the research, participants will be able to stop participating at any time.

All participants would be made anonymous in all research reports. The data collected would be kept strictly confidential, available only to Susila and her doctoral supervisors, and would not be used other than specified, without the further consent of all involved being obtained. All audio recordings would be destroyed at the end of the research period, and kept in locked and password protected conditions until then. Even though Susila will not be working with young people as such in this study, as she will be visiting schools, she is also in the process of applying to the Disclosure and Barring Service for a certificate.
If you need more information about the study or have any questions at all, please contact Susila Davis at

Thank you for your time. We look forward to working with you.
Yours sincerely,

[OUP Pathways Lead] and [Susila Davis]

Appendix 1B: Information sheet for participants

UNIVERSITY OF OXFORD
DEPARTMENT OF EDUCATION

15 Norham Gardens, Oxford OX2 6PY
Tel: +44(0)1865 274024 Fax: +44(0)1865 274027
general.enquiries@education.ox.ac.uk www.education.ox.ac.uk

Director Professor Ernesto Macaro

Name of the study	*"Are we there yet?": A study of the Oxford University Press Pathways to school improvement [& CUREC Ethics reference]*
Name and contact details of researcher	*Susila Davis, DPhil. Candidate, Department of Education (University of Oxford),*
Purpose and value of the study	• *Learning about schools' improvement journeys and the different strategies employed to improve outcomes at an individual and whole-school level;* • *Exploring how each school's improvement practice might link with the resources offered in Pathways, including how it may support teachers' professional development;* • *Gathering views from different practitioners in schools about their use of Pathways, and how the platform can be further developed and;* • *Exploring the area of the use of online technologies in school improvement activities and teachers' professional practice.*
Why have I been invited to take part?	*You have been invited because you currently use Pathways in some way and/or are involved in school improvement-related activity at your school*
Do I have to take part?	*You can choose whether to participate or not. Please do ask me questions about the study if you are unsure about taking part.* *If you agree to take part, and you change your mind later, you can leave the study at any time by letting me know by email, telephone or in person. Please be assured that there will be no penalty from withdrawing from the study either for yourself or your school.*

What will happen in the study?	*First, (if you agree to take part) you will be asked to kindly sign a consent form. A range of research methods may then be used to try and gain an understanding of how you and your school as a whole carry out school improvement tasks; and how Pathways is used amongst school staff. It may not be necessary for you to be involved in every method listed below but with your consent, it might be useful for me to:* • *interview you to learn more about you, your teaching practice and particular strategies you might employ to improve pupil and school outcomes in some way(interviews should last between ½ an hour to 45mins)* • *observe your (and your colleagues') use of Pathways at times convenient for you and/or observe discussions of school improvement practice during staff meetings or training days (eg INSET days)* • *analyse information related to your school context, history, attainment results (anonymised) and school improvement plan.*
What will happen to my data and what I share with you?	*Only I will have access to any information you share with me so what you tell me will be confidential. If permission is given to me to audio record interviews or school meetings/other school events, all recordings will be anonymised and stored with coded file names (so as not to identify participants by name). All files and information will be stored securely on an encrypted hard drive and password protected.*
What are the benefits for being part of this project?	*There should be opportunities for:* • *Developing knowledge in the area of school improvement and the use of online technology such as Pathways to support practice* • *Self-reflection and the documenting of improvement strategies and practices at an individual and school level, with a view to inform future practice*
Are there any risks for being involved in this project?	*All information you give to me will be confidential, however there will be a time commitment involved with taking part in the study. I will endeavour as far as possible to arrange meetings at times convenient to you and request permission to observe meetings and other practices only when appropriate (for example, under the advisement of the meeting chair or coordinator).*
Will the research be published?	*The final research report will be written up as a thesis and all personal information (including your name, background and so on) will be made fully anonymous, any names will be changed in the final report so you cannot be identified. All audio recordings will be destroyed after the completion (including write up) of the research project. On successful submission of the thesis, it will be deposited both in print and online in the University archives, to facilitate its use in future research[29].*

[29] The University of Oxford is committed to the dissemination of its research for the benefit of society and the economy and, in support of this commitment, has established an online archive of research materials. This archive includes digital copies of student theses successfully submitted as part of a University of Oxford postgraduate degree programme. Holding the archive online gives easy access for researchers to the full text of freely available theses, thereby increasing the likely impact and use of that research.

Who has reviewed this project?	*This project has been reviewed by, and received ethics clearance through, the University of Oxford Central University Research Ethics Committee and my supervisors Professor Pam Sammons and Dr Maia Chankseliani.*
Complaints procedure	*If you are not satisfied with any of the answers provided and would like to make a formal complaint, please contact the Research Ethics Committee at the University of Oxford (ethics@socsci.ox.ac.uk; 01865 614871; Social Sciences & Humanities Inter-Divisional Research Ethics Committee, Oxford University, Hayes House, 75 George Street, Oxford OX1 2BQ).*

Appendix 1C: Consent form

Name of the study	*"Are we there yet?": A study of the Oxford University Press Pathways to school improvement*
Name of researcher	*Susila Davis, DPhil. Candidate, Department of Education (University of Oxford),*
Purpose of study	• *Learning about schools' improvement journeys and the different strategies employed to improve outcomes at a whole-school level;* • *Exploring how each school's improvement practice might link with the resources offered in Pathways, including how it may support teachers' professional development;* • *Gathering views from different practitioners in schools about their use of Pathways, and how the platform can be further developed and;* • *Exploring the area of the use of online technologies in school improvement activities and teachers' professional practice.*

Declarations (please tick all those that apply):

I have read the Information Sheet.	☐
I have had the chance to ask questions about the study and have received satisfactory answers to questions, and any additional details requested.	☐
I understand that this project has been reviewed by, and received ethics clearance through, the University of Oxford Central University Research Ethics Committee.	☐
I understand that my participation in the study is voluntary and that I am free to withdraw my participation or data at any time, without giving any reason, and without any adverse consequences.	☐
I understand who will have access to any information I provide, how the data will be stored and reported and what will happen to the data at the end of the project.	☐
I understand how to raise any worries I may have and how to make a complaint.	☐
I agree to participate in this study.	☐
I agree to be audio recorded.	☐

Participant name	
Participant signature	
Date	
Researcher name	SUSILA DAVIS
Researcher signature	

Date	

Appendix 1D: Sample questions - for the CUREC application

Sample questions for headteacher/teacher interviews (semi structured) - - following the principles of Hierarchical Focusing Questioning (Tomlinson, 1989[30]) where one first explores how participants "construe a topic" and follows with more specific or focused questions related to the study's research aims and questions.

Initial questions (examples)

- Could you describe your role at this school?
- How long have you been a [teacher/headteacher]?
- How long have you been based at this school?
- How would you describe this school? [followed by] How would you describe your class?
- How would you describe your school's most recent Ofsted report?
- Can you give me examples of resources or tools (like websites or written materials) that you have used in the past to carry out a particular teaching task for example, where you needed to learn more; or a new practice or strategy that you wanted to explore?
- How do you understand the term 'school improvement'?
  What types of activity would you consider come under the heading of 'school improvement'?
- [For headteachers or senior leaders] Could I have a look at and can we talk through your school improvement plan? [+ follow up questions about specific sections of the plan, and how it was put together, the process of drawing up the plan, taking action and evaluating what has taken (or has not taken) place]
  What are the main foci of school improvement in your school?

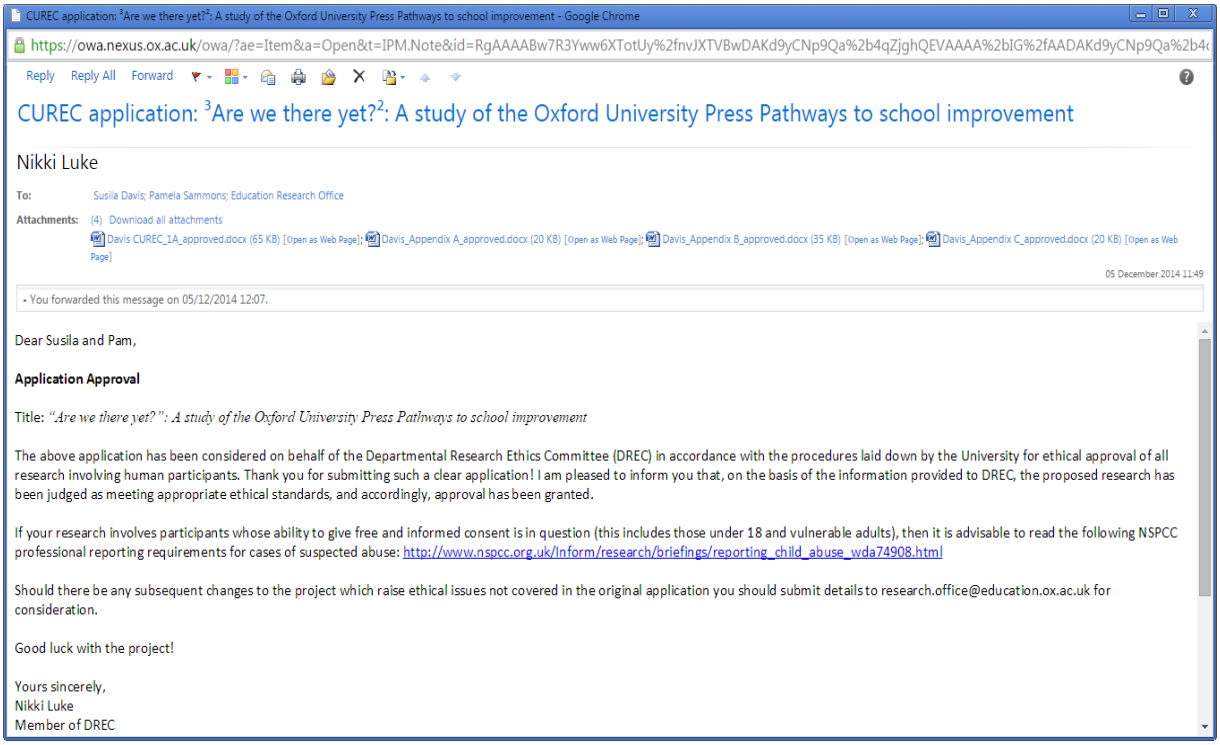
Later questions (examples)

- Thinking about your own and your school's current context, how would you normally plan or put in place a task where you intend to improve a practice of some kind, or improve outcomes in some way for example?
- What other tools or resources do you use in your school as a whole, for example programmes related to your curriculum, or analysing data and so on?
- How do you use these tools?
- From what you've heard about Oxford Owl and Pathways so far, what do you envision Pathways to be?
  How would you describe Pathways to a colleague, for example?

[30] Tomlinson, P. (1989) Having it Both Ways: hierarchical focusing as research interview method. *British Educational Research Journal*, **15** (2), 155-176.

- Which Pathways, resources or sections, if any, do you think you or your colleagues might use?
  How might you start using these Pathways/resources/sections?
  [Or based on previous information given] How do you think your school could use Pathways?
- Do you think your use of Pathways will be different to what you currently use?
  What about in comparison to the tools you have used in the past?
- [For headteachers and senior leaders] How would you describe Pathways to your staff?
- [For headteachers] Do you have someone in mind to be a Key Contact for Pathways?

Appendix 1E CUREC approval email



CUREC application: [3]Are we there yet?[2]: A study of the Oxford University Press Pathways to school improvement - Google Chrome

https://owa.nexus.ox.ac.uk/owa/?ae=Item&a=Open&t=IPM.Note&id=RgAAAABw7R3Yww6XTotUy%2fnvJXTVBwDAKd9yCNp9Qa%2b4qZjghQEVAAAA%2bIG%2fAADAKd9yCNp9Qa%2b4(

Reply Reply All Forward

CUREC application: [3]Are we there yet?[2]: A study of the Oxford University Press Pathways to school improvement

Nikki Luke

To: Susila Davis; Pamela Sammons; Education Research Office

Attachments: (4) Download all attachments

Davis CUREC_1A_approved.docx (65 KB) [Open as Web Page]; Davis_Appendix A_approved.docx (20 KB) [Open as Web Page]; Davis_Appendix B_approved.docx (35 KB) [Open as Web Page]; Davis_Appendix C_approved.docx (20 KB) [Open as Web Page]

05 December 2014 11:49

You forwarded this message on 05/12/2014 12:07.

Dear Susila and Pam,

Application Approval

Title: *"Are we there yet?": A study of the Oxford University Press Pathways to school improvement*

The above application has been considered on behalf of the Departmental Research Ethics Committee (DREC) in accordance with the procedures laid down by the University for ethical approval of all research involving human participants. Thank you for submitting such a clear application! I am pleased to inform you that, on the basis of the information provided to DREC, the proposed research has been judged as meeting appropriate ethical standards, and accordingly, approval has been granted.

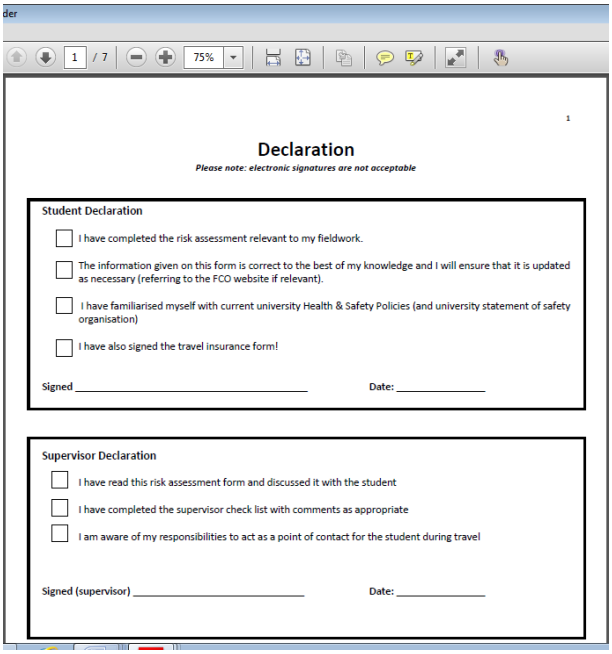
If your research involves participants whose ability to give free and informed consent is in question (this includes those under 18 and vulnerable adults), then it is advisable to read the following NSPCC professional reporting requirements for cases of suspected abuse: http://www.nspcc.org.uk/Inform/research/briefings/reporting_child_abuse_wda74908.html

Should there be any subsequent changes to the project which raise ethical issues not covered in the original application you should submit details to research.office@education.ox.ac.uk for consideration.

Good luck with the project!

Yours sincerely,
Nikki Luke
Member of DREC

Appendix 2: Risk assessment form



1

Declaration

Please note: electronic signatures are not acceptable

Student Declaration

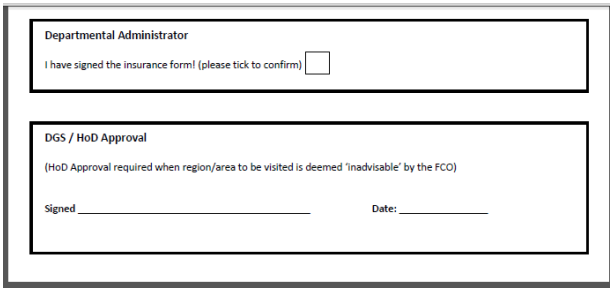
- ☐ I have completed the risk assessment relevant to my fieldwork.
- ☐ The information given on this form is correct to the best of my knowledge and I will ensure that it is updated as necessary (referring to the FCO website if relevant).
- ☐ I have familiarised myself with current university Health & Safety Policies (and university statement of safety organisation)
- ☐ I have also signed the travel insurance form!

Signed _____ **Date:** _____

Supervisor Declaration

- ☐ I have read this risk assessment form and discussed it with the student
- ☐ I have completed the supervisor check list with comments as appropriate
- ☐ I am aware of my responsibilities to act as a point of contact for the student during travel

Signed (supervisor) _____ **Date:** _____



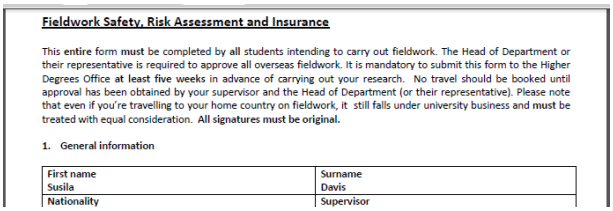
Departmental Administrator

I have signed the insurance form! (please tick to confirm) ☐

DGS / HoD Approval

(HoD Approval required when region/area to be visited is deemed 'inadvisable' by the FCO)

Signed _____ **Date:** _____

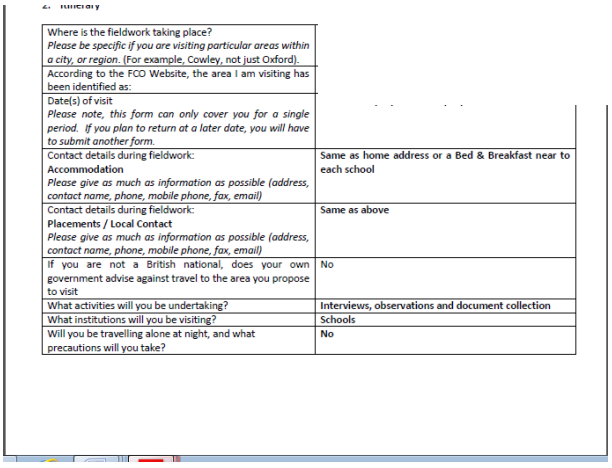


Fieldwork Safety, Risk Assessment and Insurance

This **entire** form **must** be completed by **all** students intending to carry out fieldwork. The Head of Department or their representative is required to approve all overseas fieldwork. It is mandatory to submit this form to the Higher Degrees Office **at least five weeks** in advance of carrying out your research. No travel should be booked until approval has been obtained by your supervisor and the Head of Department (or their representative). Please note that even if you're travelling to your home country on fieldwork, it still falls under university business and **must** be treated with equal consideration. **All signatures must be original.**

1. General information

First name **Susila**	**Surname** **Davis**
Nationality	**Supervisor**



Where is the fieldwork taking place? *Please be specific if you are visiting particular areas within a city, or region.* (For example, Cowley, not just Oxford).	
According to the FCO Website, the area I am visiting has been identified as:	
Date(s) of visit *Please note, this form can only cover you for a single period. If you plan to return at a later date, you will have to submit another form.*	
Contact details during fieldwork: **Accommodation** *Please give as much as information as possible (address, contact name, phone, mobile phone, fax, email)*	**Same as home address or a Bed & Breakfast near to each school**
Contact details during fieldwork: **Placements / Local Contact** *Please give as much as information as possible (address, contact name, phone, mobile phone, fax, email)*	**Same as above**
If you are not a British national, does your own government advise against travel to the area you propose to visit	No
What activities will you be undertaking?	**Interviews, observations and document collection**
What institutions will you be visiting?	**Schools**
Will you be travelling alone at night, and what precautions will you take?	**No**

3. Health/medical and emergency procedures

Have you taken advice from the University Occupational Health Service on the health risks associated with travel to your field site (http://www.admin.ox.ac.uk/uohs/at-work/travel/)?	Yes
If no please state why:	
All accidents, incidents or near misses must be reported to Erica Oakes (erica.oakes@education.ox.ac.uk) at the Department of Education and your supervisor.	

is available to you?	
Will you need to take any first aid provisions?	**No**
If you're visiting an area that is fairly isolated, what access do you have to emergency services and medical help? If relevant, please also provide details of emergency plans in place (e.g. for evacuation from the research area, or if there is an injury to a worker in a small team)? **N/A**	

4. Training and or experience

Have you received any training for your overseas travel? Please give details. **N/A**	Have you experience in similar work? Please give details. **N/A**
Training Available from: https://www.admin.ox.ac.uk/safety/safetytraining/safetytraining/course/?crsID=104	

5. Supervision

A fieldworker will still be under supervision with regards to health and safety, even though the supervisor may not be present. Please provide details of your supervisor, or other nominated person, who you will contact on a regular basis to ensure your safety. The nominated person should be provided with the contact details of a person in the Department, in case of emergency etc. Specify contact period times (e.g. daily/weekly).

Name	**Contact Period (when and how often you will contact your supervisor)**
Professor Pam Sammons	

How will contact be made? You must ensure that this is possible (e.g. if reliance is put on a mobile phone, you must ensure there is adequate signal): **By phone and email**

6. Risk Assessment

A risk assessment must be carried out in order to comply with University Safety Policy. You will need to read UPS S3/07 Overseas Travel and UPS S5/07 Safety in Fieldwork.

Please remember to consider not only possible risks to your own health and safety, but also the effect that your work may have on other people or the environment.

The competency of external agencies hosting a fieldworker must be considered. Arrangements and responsibilities for the fieldwork must be agreed and documented as part of the risk assessment.

Hazard identified (please specify) (see checklists in appendix to UPS S5/07)	**Risk(s) involved and control measures to be put in place to minimise risk**	**Estimated level of risk**
Personal (e.g. lone work, first aid, violence, crime, travel, handling cash, transport)	**Awareness of personal safety and travelling only in public spaces**	Low
Physical (e.g. extreme weather, fitness and medical risks)	**None**	Low
Equipment (will you be taking a laptop, mobile, cash, internet access etc? These should be specified in your insurance form)	**Theft, awareness of surroundings and personal safety**	Low
Environmental and surroundings (e.g. pollution, waste, language barriers, local culture and awareness of this)	**None**	Low
Other		[Please select]

7. Supervisor Risk Assessment check list

Supervisor to complete, then sign the front page of the form.

		Additional comments if relevant
I have discussed with the student the general risks associated with the planned fieldwork.	☐	
I have discussed with the student the potential additional specific safety issues and risks associated with this fieldwork, and appropriate measures to reduce them.	☐	
I believe that travel arrangements discussed are satisfactory and safe.	☐	
I have discussed with the student any specific health issues associated with the area they are travelling to and any issues regarding their research.	☐	
We have identified specific requirements for additional guidance and advice (indicate as necessary) and this is	☐	

being sought by the student/researcher		
I am satisfied that the student has adequately assessed the risks associated with the planned work, and agrees to carry out the work in a manner that reduces risks to health and safety to a satisfactory level.	☐	
I have agreed to regular ([Please select]) check-in dates with my students and have a means ([Please select]) to contact them. If you have select 'other' for either of the above please clarify below:		

Appendix 3: Timetables for research

Overarching timetable with OUP

Please note: pre-pilot fieldwork took place in the period up to Dec 2014.

	Task	Period	Delivery date(s)
1	Participating in OUP meetings and events	Oct 2013 to June 2016	Ongoing
	Research fieldwork [see separate timetable for research overleaf]		
2	Interviews with OUP staff and Steering Group members (including pre-pilot & pilot work)	Oct 2013 to Feb 2016	To finish by latest Feb/Mar 2016
3	Sampling: Study 'early starter' schools linked to Pathways to follow through their engagement & if possible, any available clusters of schools. Recruitment method to be decided and agreed with OUP.	Oct 2013 to Oct 2014	Five schools recruited for pilot study in Oct 2014
4	Research fieldwork: Interviews, open questionnaires and observations with schools (estimated to be about five primary schools. Sample to be chosen to try and include varied locations and school context. School visits to take place at least once every term over an estimated period of at least one school year (including pre-pilot & pilot work)	Oct 2013 to Feb 2016	Ongoing
5	School visits and data collection including interviews with school staff, open questionnaires, documents describing school improvement plans, strategic plans, pupil attainment data and other documents pertinent to school background (including pre-pilot & pilot work)	October 2013 to early 2016 (approx)	Ongoing, to finish by Mar 2016

	Task	Period	Delivery date(s)	
6	Providing email update/summary on the progress of the research project every two months. Feedback to be formative and be able to contribute to the evolution of the Pathways model	Oct 2013 to Jun 2016	Dec 2013 Feb 2014 Apr 2014 Jun 2014 Oct 2014 Dec 2014	Feb 2015 Apr 2015 Jun 2015 Oct 2015 Dec 2015 Feb 2016 Apr 2016
7	Emerging findings reports to be produced every term	Oct 2013 to Jun 2016	Dec 2013 Mar 2014 Jun 2014 Dec 2014	Mar 2015 Jun 2015 Dec 2015 Mar 2016 Jun 2016
8	Briefings and small, focussed reviews of literature in the field every 2 months for OUP – presented to OUP (via email or face to face) eg use of technology for PD and school improvement or other topics of interest requested by OUP	Oct 2013 to Apr 2016	Dec 2013 Feb 2014 Apr 2014 Jun 2014 Oct 2014 Dec 2014	Feb 2015 Apr 2015 Jun 2015 Oct 2015 Dec 2015 Feb 2016 Apr 2016
9	Generating and maintaining a shared project schedule or 'calendar' to mark key events, points in data collection and report due dates - on OUP's SharePoint site	To maintain during: Oct 2013 to Jun 2016	Set up in Oct 2013	
10	Creating and maintaining a (secure) shared folder of resources and research outputs accessible by OUP and Pam/me [possibly using SharePoint]	To maintain during: Oct 2013 to Jun 2016	Set up in Oct 2013	
11	Main outputs: case studies of schools' engagement with OUP Pathways and analysis of OUP practice	Oct 2013 to Jun 2016	September 2016 to June 2017	

Timetable for research

Period	Activity
Aug 2013 to Nov 2014	Run up to launch of first Pathway (National Curriculum) in Nov 2013 Pre-pilot observations and informal interviews with OUP Steering Group

Nov 2013 to Nov 2014	Pre-pilot observations and interviews with OUP and two pre-pilot schools
Dec 2014	CUREC application and approval
Dec 2014 to Nov 2015	Pilot + 'actual' fieldwork in five primary schools (please see items 4 and 5 in the Overarching Timetable)
Apr 2015	Transfer of Status deadline
Apr to May 2015	Open questionnaires & School visits
May 2015	Reassessing scale of fieldwork and how many remaining visits required
May to Jun 2015	Interviews and observations with Pathways Design team
Jun 2015	OUP Steering Group: observations and reporting progress
Jun to Oct 2015	Open questionnaires & School visits & remaining interviews with OUP Steering Group
Jun to Oct 2015	Interview transcription, writing up of field notes and continual analysis of data
Jun 2015 to Mar 2016	Use of NVIVO for coding and tentative theme building
Sep 2015 to Mar 2016	Continual writing and preparation for Confirmation of Status (+ any remaining fieldwork at OUP & in schools)
Jan 2017	Confirmation of Status (passed)
Feb 2017 to Jun 2018	Preparation for final thesis

Appendix 4: Initial context questionnaire

OUP Pathways – University of Oxford research project

Initial context questionnaire

Please complete this questionnaire as fully as you can. The information will be used to better understand your school and determine how the research project might fit with your school's particular context. If you prefer, you can also complete the questionnaire over the phone by having a chat with our researcher Susila Davis. Please let us know by email if that option is more suitable and provide contact details and some suitable dates/times to phone.

Please return responses to **[email contact]** by **Friday 17 October 2014**. Thank you.

School name	
Your name	
Your role	

1. Could you give us some brief context/background of your school, particularly features that you think might be pertinent to this research project.

2. Could you tell us a bit about your school improvement/development plan, any particular foci that your school is working on and any specific goals you are seeking to achieve in the short, medium and long term.

3. Please give details of any resources or tools or templates (from external sources/made internally) that are used in your school for particular tasks/goals, including any of the OUP Pathways resources.

4. Could you give us details of any links you might have with nearby schools, or other cluster engagements eg with LAs, Federations, Academy partners, Teaching School Alliances, more informal arrangements etc.

5. Please tell us why you would like to be part of this research project.
   Please include details on how you think being involved in this research project might contribute towards your school's goals.

Appendix 5: Interview questions

With guidance from the "hierarchical focusing" framework for research interviewing (Tomlinson, 1989)

1. Could you describe your school to me, including its context and improvement history?
   [Make sure to ask about family demographics and level of parental engagement, governing body, relationships with other schools, eg clusters, networks etc]
2. How long have you been a [role] at this school?
   How long have you been teaching?
   What types of roles were you doing previously? (And in what kinds of organisations/schools?)
3. Could you describe what you see as the main changes or turning points in your school in the last two or three years? [Go through examples -- in terms of overall school performance, staffing, professional development, school improvement practice, goals.]
4. Could we run through your current school improvement plan? What about the previous year's or preceding SI plan?
   Can you identify particular shifts in your SI plan from the last one to this current version?
   How would you envisage the next iteration of your school's SI plan?
5. Could you tell me about your school's Ofsted results and experience to date?
6. What do you see or understand as 'school improvement'?
7. What do you understand as 'school effectiveness'?
8. How would you normally put in place a task related to school improvement?
9. What kinds of resources or tools do you use?
10. How do you use these tools?
11. What do you understand Pathways to be?
12. How do you think your school might use Pathways?
13. Do you think your use of Pathways will be different to the kinds of tools you currently use? What about compared to tools you've used previously?
14. How would you describe Pathways to your staff?
15. Do you have someone in mind to be a Key Contact for Pathways?

Pilot questioning overarching goals & observation framework

After: The Practice of Design-Based Research: Uncovering the Interplay Between Design, Research, and the Real-World Context (Joseph, 2004: 236-237)

Generic ethnographic questions
What are the norms of local culture?
How is power managed and shared?

Generic cognitive questions
What do people learn in this context, and what mechanisms support that learning?

Other kinds of psychological questions
How does practitioner (learner) motivation operate in this setting?
What kinds of affective patterns appear?

Design questions are critically important
How are the different Pathways 'artefacts' used?
How are they implicated in the development of knowledge and understanding of school improvement and the separate tasks involved?

How can these artefacts be improved?

Initial questions

How might teachers and others interact with Pathways and using Pathways?

What might teachers learn, and what mechanisms might be responsible for that learning?
How might learner motivation ebb and flow as learners engaged in the designed activities?
What would be effective instructional/professional development strategies in this setting?

Questions for follow up interviews

1. How do you keep up to date with the latest research and 'discoveries' in education and teaching?
2. If I were to ask about use of technology in school, what kinds of things would you consider as 'technology'?
3. How do you think technology is used at this school?
4. How do YOU use technology here? At home?
5. How do you think change is implemented at this school?
6. What opportunities do you have to share good practice with each other?
7. How is data used in this school? [Different kinds -- pupil performance, SIP etc...]
8. If you had a question or problem about teaching for example, where would you go for help?
9. What are the barriers to implementing something like Pathways in your school?

10. How do you and your teachers review how CPD is going? [what to change, do more off etc]
11. How do you monitor how CPD might have changed teachers' practice?
12. How do you judge cost effectiveness of CPD?
13. What would you like to improve about your school's CPD provision/experiences?
14. Could you tell me about your school's improvement journey >> future directions?
15. What are your expectations from this research?
16. Talk about problems with engaging with new programmes
17. Significant influencers > people/programmes/other teachers

Interview questions example – more specific follow up

1. Could you tell me about your school improvement activities to date?
2. If you had to pick three or five top priorities which would they be?
3. Do you have a new SIP?
4. Has Pathways been used since I last visited?
5. Are there other tools that are being used?
6. What is your response to the most recent feedback from Ofsted?
   [Last Ofsted: It is not yet an outstanding school because
   >> The work in pupils' religious education books does not always reflect the full range of activities they have undertaken.
   >> Some members of staff are not fully secure in making the best use of assessment and tracking information about pupils' progress.]
7. Barriers and facilitators of engagement with Pathways
8. What's gone well/features that can be changed

Professional development in school more widely:

1. How would you define cPD?
2. What do you think are the characteristics of effective CPD?
3. How much of your school's CPD would you say is classroom-based [peer observation, within and outside of school]
4. How much would you say is expertise from outside the school
5. How does the professional development happen? How does it get decided who does what [voluntary vs compulsory]? And how are training funds allocated?
6. How do teachers get to work together on professional development?

Appendix 6: Document collection and analysis: supplementary information

Use of documents

Prior (2003: 1) notes that "it is no easier to specify what a document is than it is to specify, in abstraction, what is and what is not a work of art". I agree. During the pilot phase of this research, I have been given copies of presentations produced using Microsoft PowerPoint; which can be classed as 'documents'. However, had they been presented as visual 'live' presentations at a meeting or conference, the content and product may have represented something different like a series of 'visual images' (Flick, 2009) or even an audio recording.

For the purposes of this study, I have defined 'documents' as products, constructed using some form of technology (Prior, 2003: 4) that have been communicated to me other than by means of speech, observation or situated action of some description. A variety of documents will be sought and analysed during this study including:

- school web pages and their communication of school goals and improvement plans;
- Oxford Owl and its resources, in addition to Pathways and its constituent components;
- school improvement documentation (including plans, schedules and self-evaluations)
- templates downloaded from Pathways and then adapted to each school's different purpose and use;
- minutes from OUP Steering Group meetings;
- marketing material about Oxford Owl and Pathways; and
- design and planning documentation around Pathways, including schemas, web configurations and flow diagrams.

Prior points out that examining the meaning of a text is quite different to examining the meaning of action (2003: 111). Text appears to somehow separate the author from the product; any situated meaning is lost and has to be generated anew. However, interpretations are possible if asking the following questions, the first three points of which are loosely based on suggestions by Prior (2003: 173):

- how, when and where were the products distributed, and to whom?
- at what points were the products created and by whom; and consultation with which people? How were they presented to the researcher?
- how did the products appear to be used in day-to-day operations or during meetings for example? What sort of terminology was used?

It is along these guidelines that the documentary analysis will proceed.

Appendix 7: Coding procedures

The procedures I have described here continued to evolve as I moved from the school case studies to the cross-case analysis and engaged more fully with the literature in the Discussions and Conclusions. I followed some basic steps outlined by Saldaña (2016) in structuring my coding frameworks.
First, I take his definition of a code in qualitative inquiry which is:

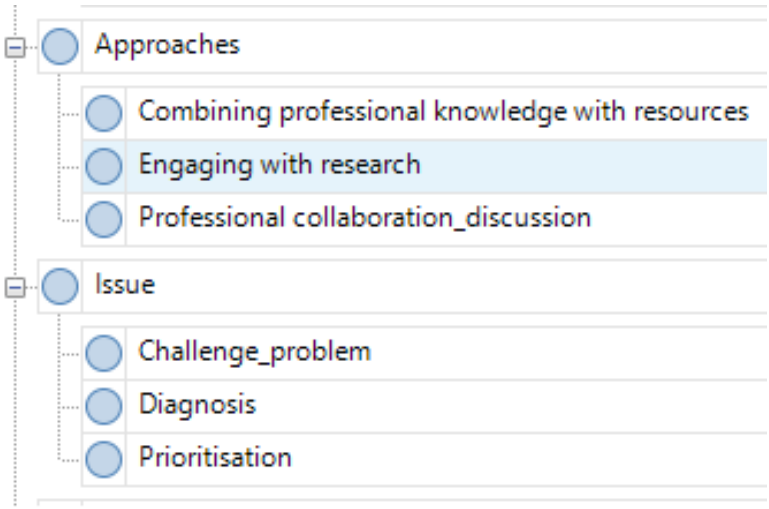
> [M]ost often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data. (Saldaña, 2016: 4)

Next, I applied a first cycle of coding based on a combination of units of social organisation such as specific organisational practices; descriptions of events/documents/behaviours and attitudes; processes, plans and outcomes; conversation topics, origins and destinations; professional, social and/or personal relationships; encounters or 'chains of events' (e.g. how conversations appear to be 'steered' during meetings or a particular line of questioning taken with a headteacher); and roles and groups in different spaces (Saldaña, 2016: 16; Miles, Huberman and Saldaña, 2014: 74-78; Bazeley, 2013).

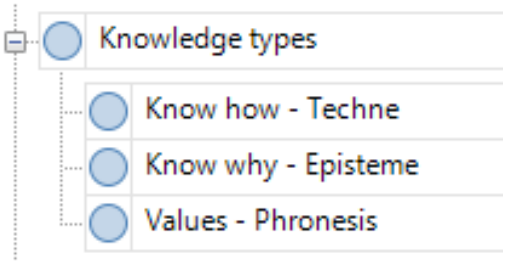
This was followed by identification of higher level 'themes' – sometimes based on combinations of codes or direct relationships to concepts and constructs in the literature. Examples of my coding or 'node' structures in NVivo are shown below.

Figure 64: Coding and defining themes in NVivo – some examples

(a)



(b)



(c)

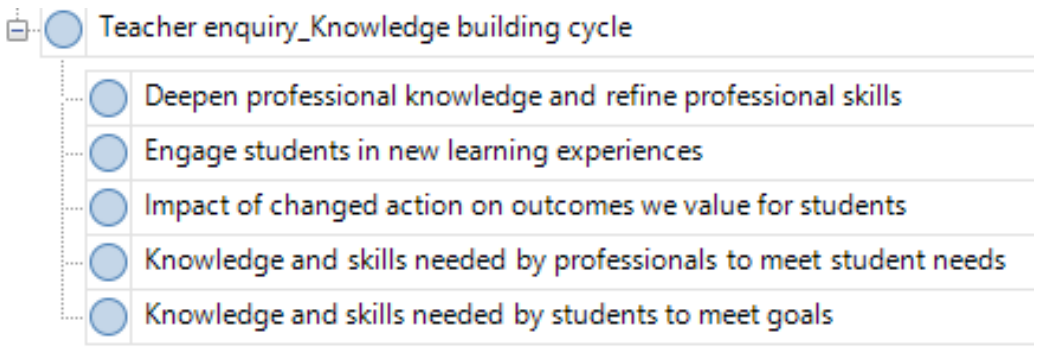


Figure 64 (a) shows two examples of themes – identified during the second cycle, and each consisting of codes that were identified during the first cycle

For example, I concentrated on, amongst other topics:

(a) 'approaches', or different ways that professionals engage with research evidence or information/data from a range of sources, and the discussions that take place around them. I have also delineated a group of terms describing an 'issue', at some point (not necessarily in the beginning of an event) – the diagnosis (of an issue), the defining of the challenge/problem, and prioritisation of the issues within the different subsystems that might exist in a school, e.g. a key stage, a classroom, a senior leadership role and so on.

(b) 'knowledge types' based on the Aristotelian categories discussed earlier – here I have used some short forms to divide them – *techne* = 'know how' or a depiction of an actual process or practice; *episteme* = 'know why" or the substantive reasons given for a particular action, and/or written documents describing or explaining the origins of certain processes/strategies; and *phronesis* = "values" or moral judgements on why something 'should be' and discussions about what is 'right' for example.

(c) the main features of the knowledge building cycle in teacher inquiry (Muijs et. al., 2014: 247). Here I linked particular sections of observational field notes or a theory of action described during an interview to a particular theoretical framework. One of the more salient 'findings' here is that while descriptions of events may include most or all of the theoretical features listed, they might not necessarily be in the same order as the theory, or to the same degree for different events.

Figure 66 (page 375) illustrates the hierarchy of codes for one of the schools in the embedded case study – Magpie School. This provides evidence that linking raw data directly with concepts in the literature can sometimes be hazardous. The main features of the Muijs et. al. (2014) theoretical framework appear in the

chart but the definitions of each of the coding references often differ from one another, and the order of the codes switches round for different school cases – so the 'story line' dimension of the case gets lost. However, one of the strengths of this coding structure is being able to determine the relative 'weight' of each node in a given theme. This particular set of data is more heavily coded on two nodes, as can be seen in Table 20 (page 376): "Knowledge and skills needed by professionals to meet student needs" (88 references) and "Deepen professional knowledge and refine professional skills" (87). This is a helpful indicator of how often certain nodes were used by participants (and themes if the proportions were calculated one level up), which demonstrates either the kinds of questions that were asked during the interviews – if they were predisposed to certain topics, and/or the topics that emerged more naturally during the interviews – given a set structure of interview questions. This becomes more relevant when comparing school cases.

Figure 65: Teacher enquiry and knowledge-building cycle (simplified from Muijs et. al., 2014: 247)

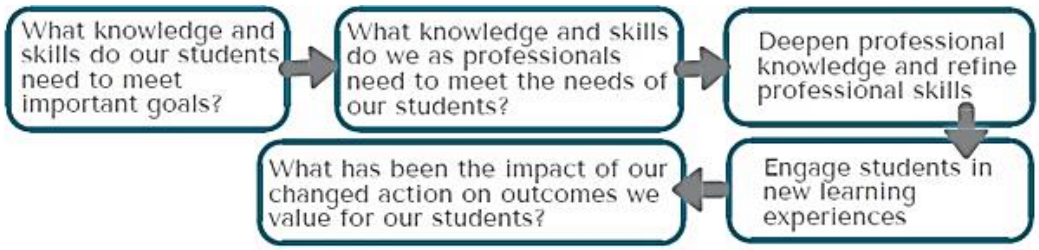


Figure 66: Hierarchy chart of codes in NVivo for Magpie School

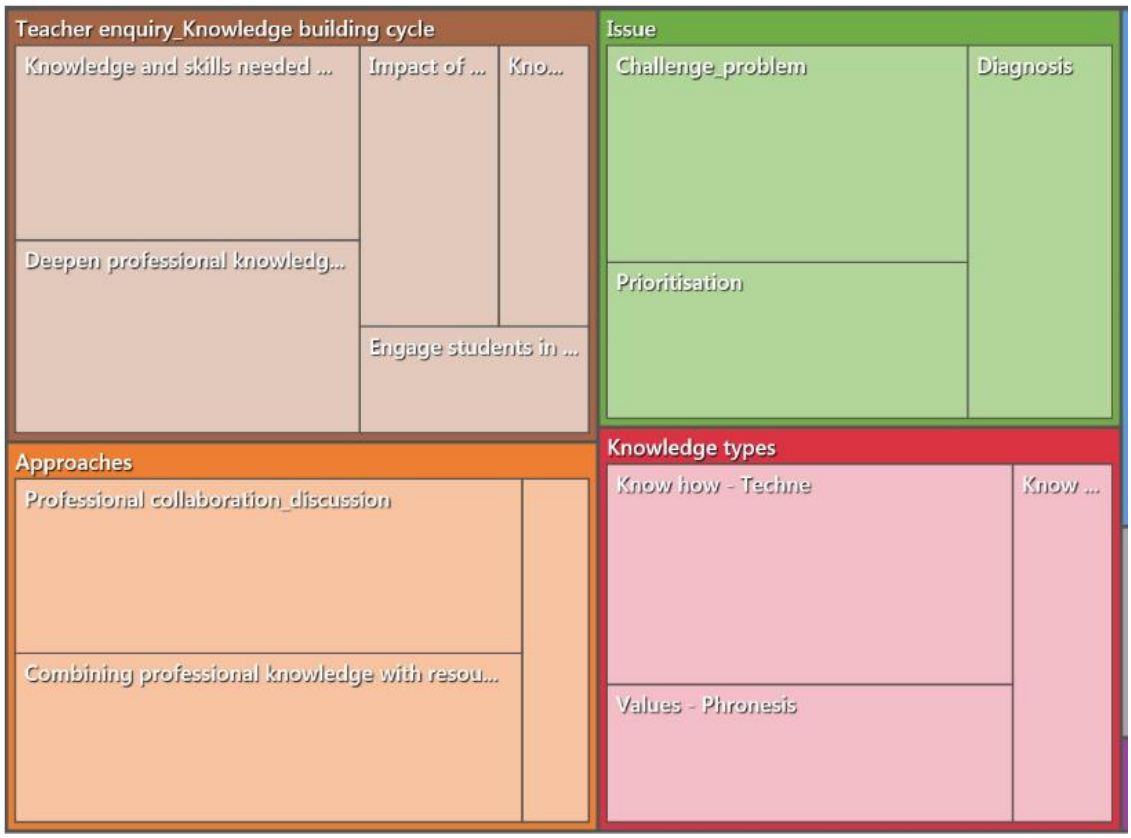


Figure 67: Hierarchy chart of codes in NVivo for Raven School

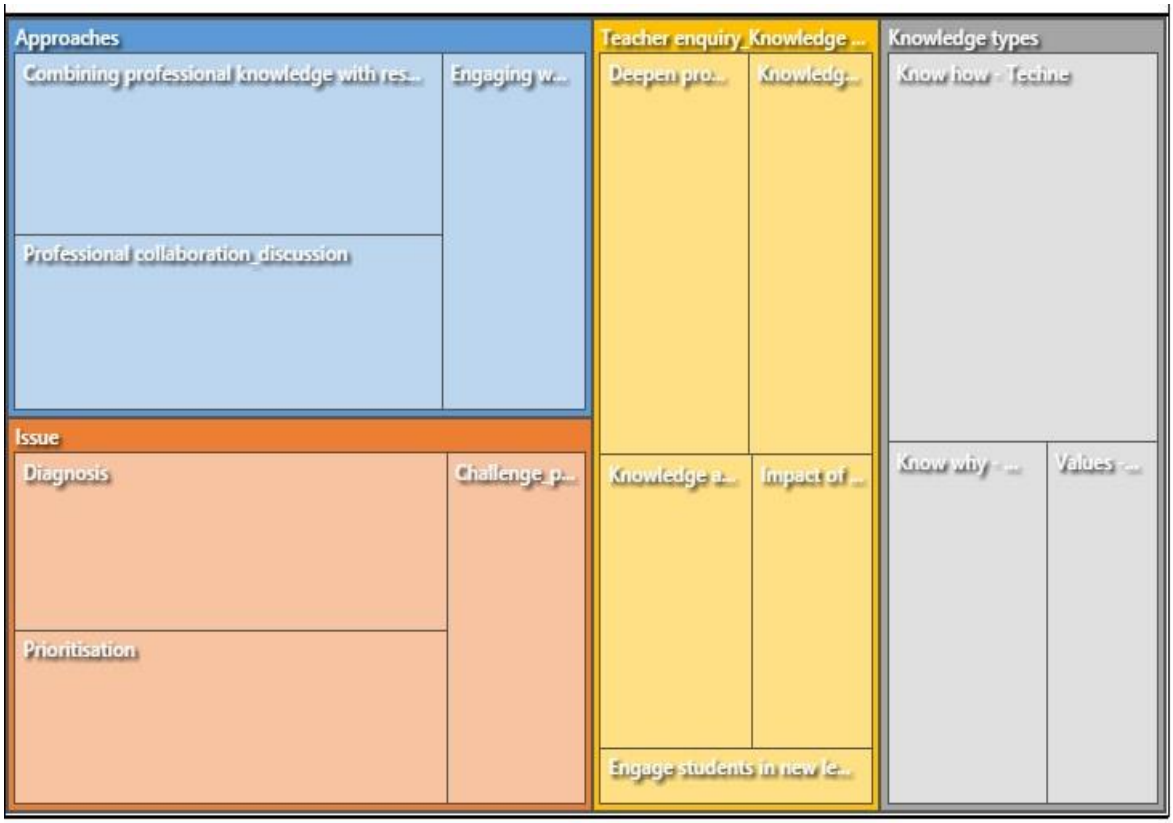


Table 20: Magpie Teacher inquiry nodes - coding references

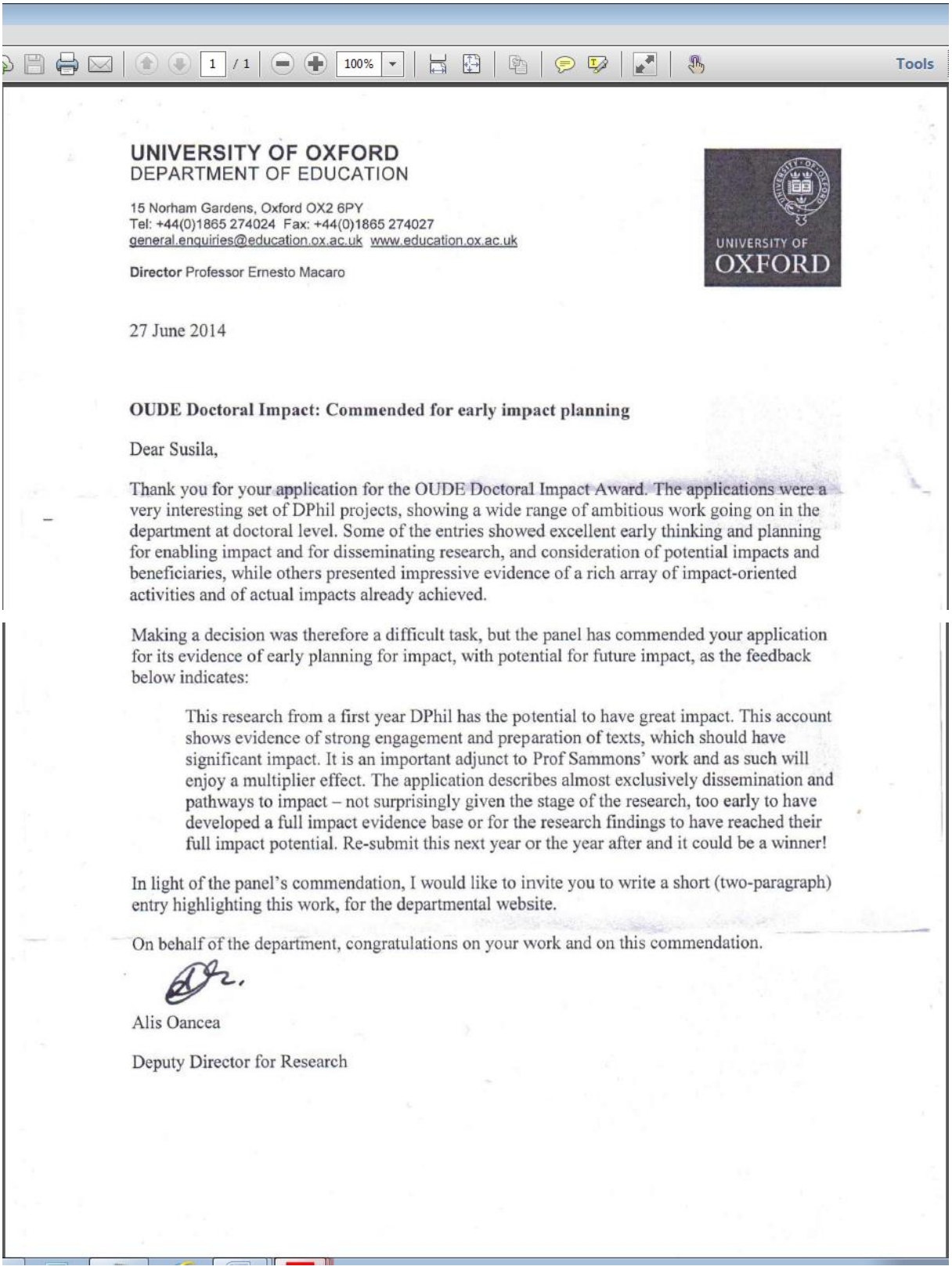
Magpie Nodes	Number of coding references	Number of items coded
Knowledge and skills needed by professionals to meet student needs 2	88	12
Deepen professional knowledge and refine professional skills 3	87	12
Impact of changed action on outcomes we value for students 5	51	10
Knowledge and skills needed by students to meet goals 1	33	9
Engage students in new learning experiences 4	32	10

Table 21: Raven Teacher inquiry nodes - coding references

Raven Nodes	Number of coding references	Number of items coded
Deepen professional knowledge and refine professional skills 3	24	4
Knowledge and skills needed by professionals to meet student needs 2	20	3
Knowledge and skills needed by students to meet goals 1	18	4
Impact of changed action on outcomes we value f students 5	14	4
Engage students in new learning experiences 4	6	2

For methodological purposes, I will illustrate one example of comparing multiple cases. A two-case comparison shows an interesting divide between how Magpie and Raven Schools' data were coded – as can be seen in Table 20 and Table 21. Both tables are sorted by the highest number of coding of references. In Table 20 (Magpie), the highest number of references belongs to "Knowledge and skills needed by professionals to meet student needs", in contrast to the highest in Table 21 (Raven) which is "Deepen professional knowledge and refine professional skills" – the 'next step' in the teacher inquiry cycle (Muijs, 2014: 247) – shown in Figure 65 (page 374). The additional contrasts are: the difference in the number of references for both schools in this theme (Teacher inquiry) and the relative weights of each node. For example, in Figure 66 (page 375), one can see the completely different hierarchy configuration with Figure 67. "Issues" and "Approaches" are more prevalent in the Raven School case compared to Magpie. With the benefit of some background on Raven School, the differences in configurations seem to tie in with their 'location' in their improvement journey. Raven had been placed in Special Measures in 2012 and was later judged to be 'Good' in 2015. A new headteacher took over the school in September 2013 and major structural changes were put in place. The salience of nodes like "Diagnosis" and "Prioritisation" mirrors the context of similar schools working towards coming out of Special Measures or equivalent Ofsted category in a rapid turnaround fashion. Comparisons like these proved important in the cross-case analysis discussed in Chapter 8 of this thesis (Creemers and Kyriakides, 2012).

Appendix 8: OUDE Doctoral Impact Award letter



UNIVERSITY OF OXFORD
DEPARTMENT OF EDUCATION

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Tel: +44(0)1865 274024 Fax: +44(0)1865 274027
general.enquiries@education.ox.ac.uk www.education.ox.ac.uk

Director Professor Ernesto Macaro

27 June 2014

OUDE Doctoral Impact: Commended for early impact planning

Dear Susila,

Thank you for your application for the OUDE Doctoral Impact Award. The applications were a very interesting set of DPhil projects, showing a wide range of ambitious work going on in the department at doctoral level. Some of the entries showed excellent early thinking and planning for enabling impact and for disseminating research, and consideration of potential impacts and beneficiaries, while others presented impressive evidence of a rich array of impact-oriented activities and of actual impacts already achieved.

Making a decision was therefore a difficult task, but the panel has commended your application for its evidence of early planning for impact, with potential for future impact, as the feedback below indicates:

> This research from a first year DPhil has the potential to have great impact. This account shows evidence of strong engagement and preparation of texts, which should have significant impact. It is an important adjunct to Prof Sammons' work and as such will enjoy a multiplier effect. The application describes almost exclusively dissemination and pathways to impact – not surprisingly given the stage of the research, too early to have developed a full impact evidence base or for the research findings to have reached their full impact potential. Re-submit this next year or the year after and it could be a winner!

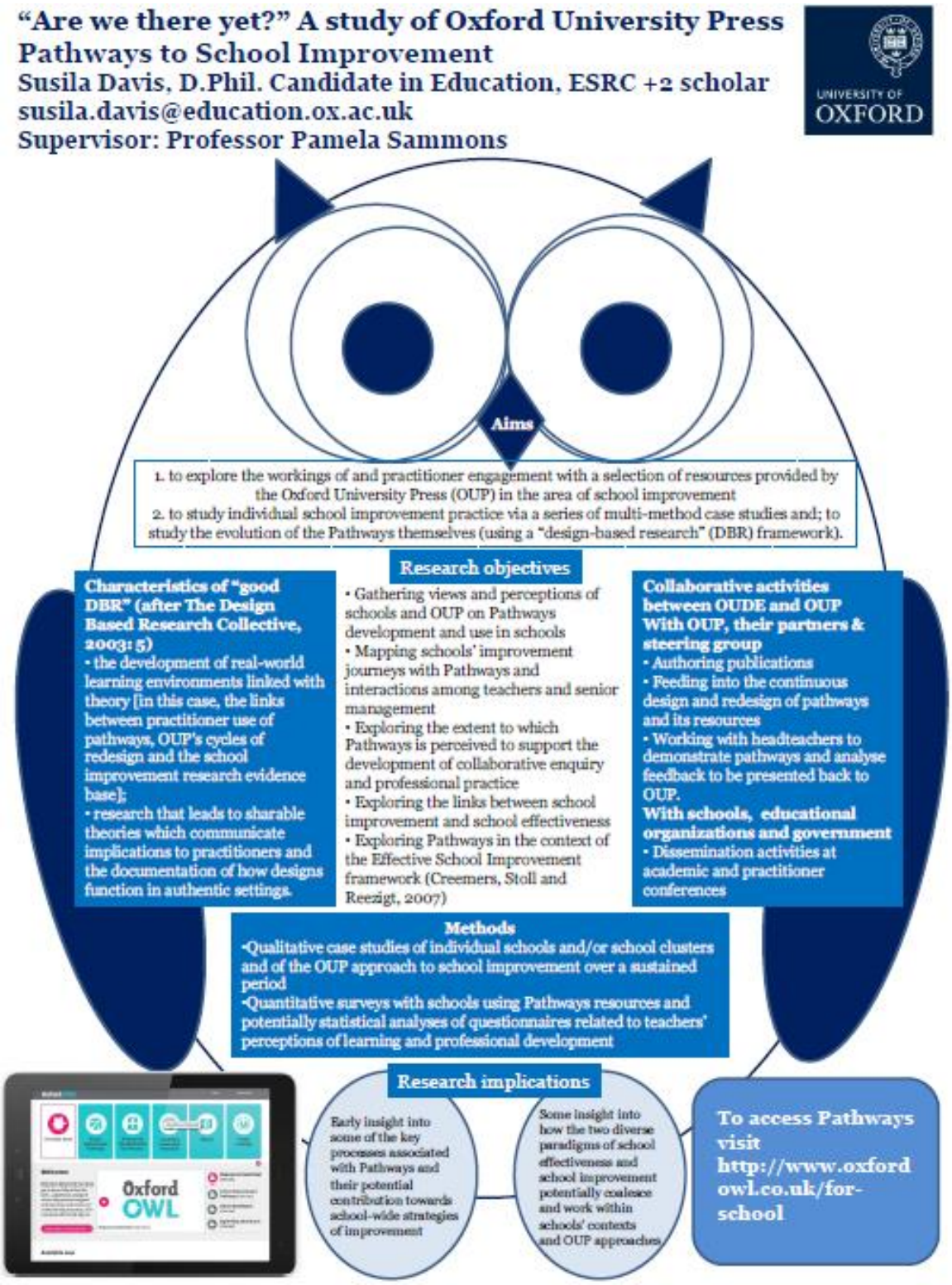
In light of the panel's commendation, I would like to invite you to write a short (two-paragraph) entry highlighting this work, for the departmental website.

On behalf of the department, congratulations on your work and on this commendation.

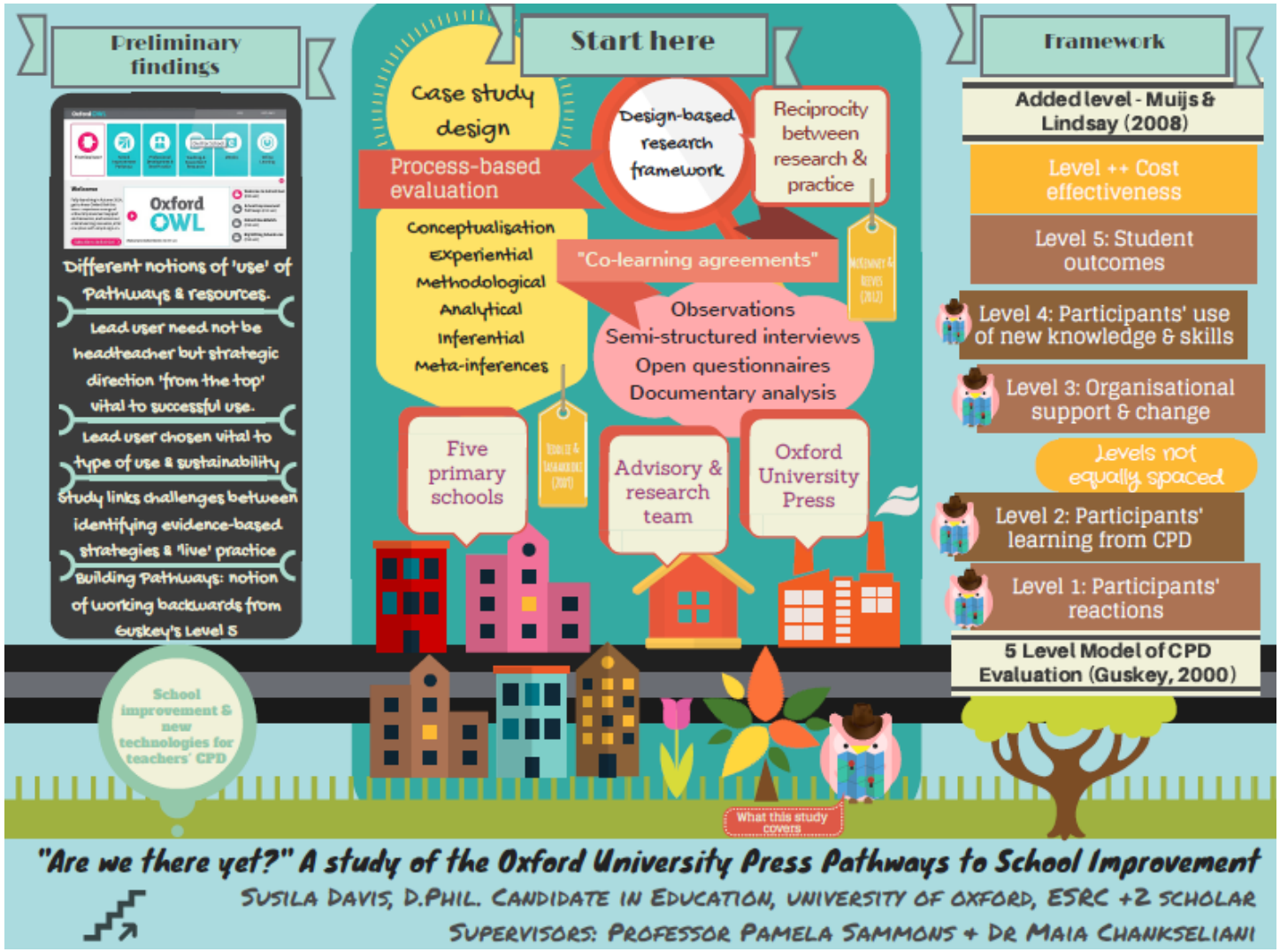
Alis Oancea

Deputy Director for Research

Appendix 9A: Research poster (OxTALENT award 2015)



Appendix 9B: Research poster (OxTALENT award 2016)



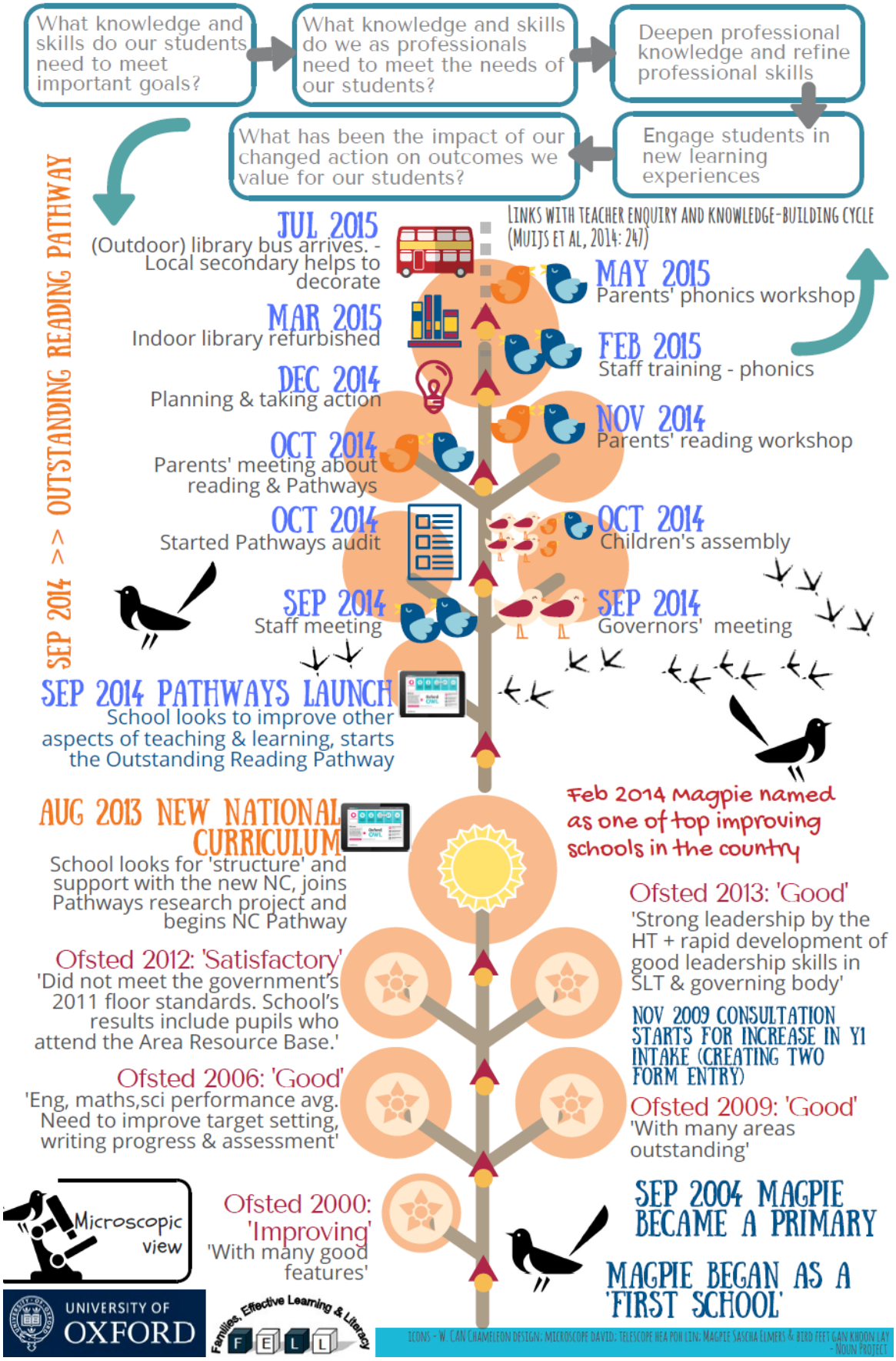
Appendix 9C: Research poster (2017)

My current poster is designed in the style of an infographic.

(1st half)



(2nd half)


What knowledge and skills do our students need to meet important goals?
What knowledge and skills do we as professionals need to meet the needs of our students?
Deepen professional knowledge and refine professional skills
Engage students in new learning experiences
What has been the impact of our changed action on outcomes we value for our students?
LINKS WITH TEACHER ENQUIRY AND KNOWLEDGE-BUILDING CYCLE (MUIJS ET AL, 2014: 247)
SEP 2014 >> OUTSTANDING READING PATHWAY
JUL 2015
(Outdoor) library bus arrives. - Local secondary helps to decorate
MAR 2015
Indoor library refurbished
DEC 2014
Planning & taking action
OCT 2014
Parents' meeting about reading & Pathways
OCT 2014
Started Pathways audit
SEP 2014
Staff meeting
SEP 2014 PATHWAYS LAUNCH
School looks to improve other aspects of teaching & learning, starts the Outstanding Reading Pathway
AUG 2013 NEW NATIONAL CURRICULUM
School looks for 'structure' and support with the new NC, joins Pathways research project and begins NC Pathway
Ofsted 2012: 'Satisfactory'
'Did not meet the government's 2011 floor standards. School's results include pupils who attend the Area Resource Base.'
Ofsted 2006: 'Good'
'Eng, maths,sci performance avg. Need to improve target setting, writing progress & assessment'
Microscopic view
Ofsted 2000: 'Improving'
'With many good features'
MAY 2015
Parents' phonics workshop
FEB 2015
Staff training - phonics
NOV 2014
Parents' reading workshop
OCT 2014
Children's assembly
SEP 2014
Governors' meeting
Feb 2014 Magpie named as one of top improving schools in the country
Ofsted 2013: 'Good'
'Strong leadership by the HT + rapid development of good leadership skills in SLT & governing body'
NOV 2009 CONSULTATION STARTS FOR INCREASE IN Y1 INTAKE (CREATING TWO FORM ENTRY)
Ofsted 2009: 'Good'
'With many areas outstanding'
SEP 2004 MAGPIE BECAME A PRIMARY
MAGPIE BEGAN AS A 'FIRST SCHOOL'
UNIVERSITY OF OXFORD
Families, Effective Learning & Literacy
ICONS - W. CAN CHAMELEON DESIGN; MICROSCOPE DAVID; TELESCOPE HEA POH LIN; MAGPIE SASCHA ELMERS & BIRD FEET GAN KHOON LAY - NOUN PROJECT

Appendix 10: Research snapshot example (for Woodland Press)

(1) Professional development and knowledge management in the era of digital technologies

Aims of Leask and Younie (2013) paper

- Focusing on the *nature* and *quality* of *professional knowledge* in addressing ⇨ how to improve the quality of teaching by in turn ⇨ improving the research and evidence base that provide the necessary foundations for educational practice and;
- How digital technologies might be used to help practitioners to access this professional knowledge base.

Gap in research and policy direction

- Lack of studies investigating how the research evidence base informs practice and how this then leads to school and system improvement.
- Claim that research presented in academic journals does not address questions that teachers necessarily want answers to, and that the knowledge produced is "woefully lacking in systemic organisation and coherence" (p. 274).

> If those with responsibility for quality of educational provision in a country do not recognise the need for a research-informed knowledge base accessible to teachers, then the opportunity to reconceptualise teachers' continuing professional development (CPD) offered by the widespread availability of Web 2.0 communications and collaboration technologies may be lost. (p. 274)

Knowledge management in education and other sectors

Last time there was a "sophisticated and shared pedagogical language of practice" in the education sector was probably the National Strategies. [met with mixed reception by practitioners]

Other sectors

Knowledge management becoming a discipline in the public and private sectors [what are the equivalents for the education sector? And what does knowledge management mean in these different contexts?]

> Knowledge . . . is dynamic and ever-changing. Static repositories are not therefore the answer; rather, dynamic repositories of knowledge need to be created and continually tested and refreshed. (p.276)

Example: Cochrane Collaboration [http://www.cochrane.org/about-us]

Not-for-profit collective that houses reviews of published research in the health sciences. Formed in 1993, the network's objective is to systematically review research in order to facilitate the selection of appropriate interventions by health professionals, patients and carers, researchers, funders and policy makers. Their mission is to "provide accessible, credible information to support informed decision-making has never been more important or useful for improving global health".
Cochrane's contributors come from over 130 countries and make up an "independent network of researchers, professionals, patients, carers, and people interested in health" – about 37,000 in total. Majority of the work is carried out online. There is no 'Cochrane office'.
Cochrane state that they "do not accept commercial or conflicted funding", which they say is vital in generating "authoritative and reliable information, working freely, unconstrained by commercial and financial interests".
They are moving towards open access; from Feb 2013, all new Cochrane reviews became free to access 12 months after publication, and they are working with publishers to make their reviews available immediately.

Challenges

The Cochrane Collaboration is on the one hand, credited with promoting methodological advances in the health sciences by developing "highly sensitive search strategies for randomized controlled trials" (RCTs) (Grimshaw, 2004; Lefebvre and Clarke, 2001); and on the other, because they favour RCTs, indulging in "significant methodological bias" (Montresor et al, 2015). While RCTs are acknowledged to be the "strongest, least biased source of evidence on particular therapies or medical interventions for clinical practice" (Montresor et al, 2015), there is growing awareness that they also present methodological challenges. Petticrew et al (2014) suggest that "systematic reviews need to continue to strive to incorporate more complex sets of evidence if they are to be credible and useful to users. This is particularly important when reviewing complex interventions." [This would also apply to educational interventions.] Petticrew et al (2014) go on to say that:

> Reviewing evidence on equity in particular requires methodological flexibility because the determinants of inequalities are upstream and lie in the living and working conditions. The relevant evidence, therefore, often derives from non-randomised and mixed-methods studies. The further development of meta-analytic and narrative methods for integrating non-randomised controlled trials (non-RCT) evidence will therefore remain a priority.

The "distributed-computing" model used by Cochrane facilitates "interest-driven" - rather than "priority-driven" - reviews (Grimshaw, 2004: 748).

Not all countries have the funding to be able to access Cochrane reviews (via "national licences") or pay for the infrastructure support required. Only 9% of the international collaborators in Cochrane are based in low- or middle-income countries. (Grimshaw, 2004: 748)

Returning to education, Leask and Younie (2013: 276) put forward that:

> The Internet has revolutionised knowledge-sharing and knowledge-building across the education profession and there is potential for these ways of working to improve the quality of access to knowledge. A simple education-specific search tool could, for example, be made available through the OECD or the World Bank to facilitate knowledge-sharing internationally.

Leask and Younie (2013: 276) go as far as to argue that "having a CPD system that reaches every teacher, every year to provide professional learning on issues relevant to their specific practice would be the gold standard to which a country might aspire". These same authors dispute claims made by the OECD and UNESCO that an "up- to-date professional knowledge base to support educators' CPD" actually exists. They insist that their research with teaching practitioners indicates otherwise (Leask and Younie, 2009; 2013).

Table 1. Four key components of effective CPD.

Broader and deeper CPD	Sustained interactions and interventions give more breadth and depth than short or one-off courses …
Teacher influence	The more influence teachers [have] in tailoring CPD to meet their needs – the more likely they are to find it effective …
Awareness of teachers' career needs	Professional development programmes and opportunities should be designed to take account of the needs and priorities of teachers at different stages of their professional lives and careers …
Developing professional learning communities	Schools should … become 'professional learning communities' in which there are opportunities for support staff and non-teaching professionals to learn alongside teachers in CPD and similar activities …

Source: Adapted from General Teaching Council for England (2006, 2007).

Table 2. Key indicators for effective CPD.

Question	Best in world
What is the total amount of coaching new teachers receive in schools?	>20 weeks
What proportion of each teacher's time is spent on professional development?	10% of working time is used for professional development
Does each teacher have exact knowledge of specific weaknesses in their practice?	Yes, as a result of everyday activities occurring in schools
Can teachers observe and understand better teaching practice in a school setting?	Yes, teachers regularly invite each other into each other's classrooms to observe and coach
Do teachers reflect on and discuss practice?	Yes, through both formal and informal processes in schools
What role do school leaders play in developing effective instructors?	The best coaches and instructors are selected as leaders
How much focused, systematic research is conducted into effective instruction and then fed back into policy and classroom practice?	Research budget equivalent to $50 per student each year focused on improving instruction

Source: Summarised from Barber and Mourshed (2007, p. 41).

> Depressingly, major national knowledge management initiatives undertaken by numerous education agencies and associations have resulted in a plethora of small networks, with resulting huge management and development costs and lack of sustainability. This is because . . . the networks are often linked to time limited projects. The overall result is fragmentation of energies for the sector. (Leask and Younie, 2013: 279)

> Crucial functions identified by teachers (Leask and Preston 2010) as necessary characteristics for an effective online environment are the ability to search for people or projects and the opportunity to move between different communities within the same environment. In the same research, teachers also identified that online environments needed to be networks that enabled them to: find peers interested in similar issues; work online to share ideas, documents and information; collaborate on projects with known colleagues rather than anonymous contributors; and work together with academics, other teachers, local authority staff and policy-makers. (Leask and Younie, 2013: 280)

[Possible link between The Key and Pathways?]

> Publications from the UK Teaching and Learning Research Programme project (Carmichael and Procter 2006, Procter 2007, Laterza et al. 2007) and Procter's ongoing research with student and newly qualified teachers reveal high levels of expectation that research-based knowledge will be

available online. There is also clear dissatisfaction with existing advice in various web spaces that are not research based. (Leask and Younie, 2013: 280)

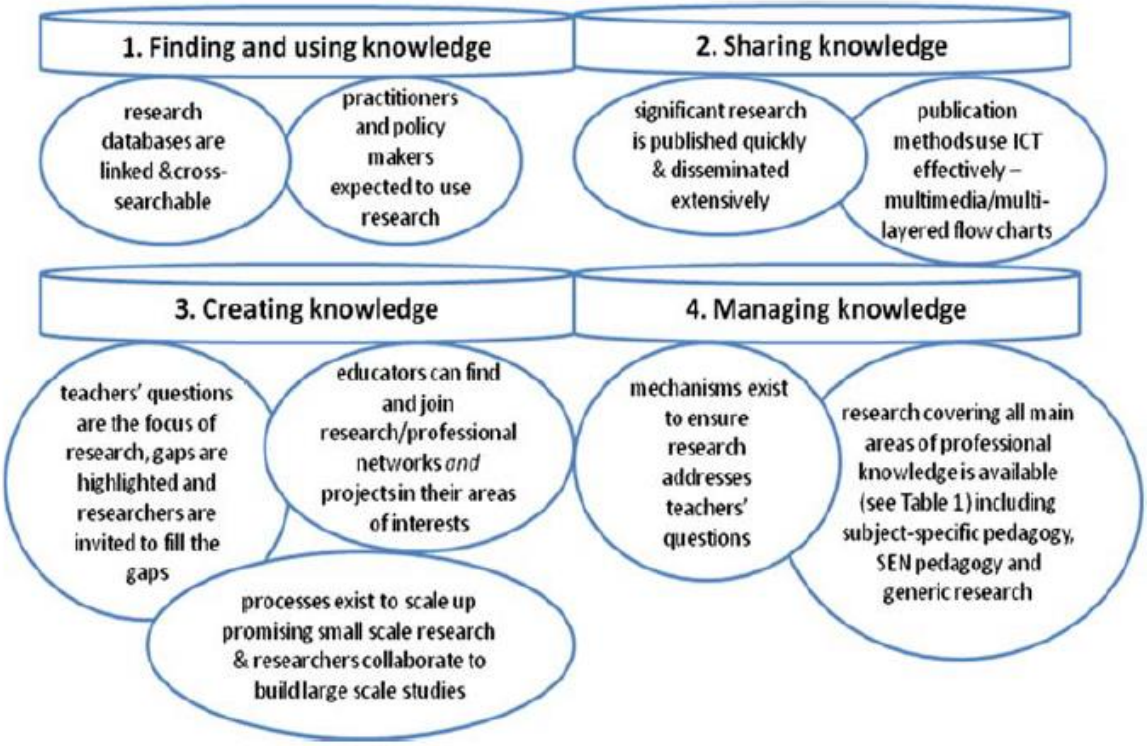


Figure 1. A model for knowledge management provision for national education systems. Source: Leask (2012).

Emerging technologies bring new opportunities and unforeseen challenges. In England, until recently, finding some validated and explicit knowledge for educators via online databases was relatively easy. Funds committed by the government meant that the Education Evidence Portal and the Teacher Training Resource Bank complemented the material on other government agency sites such as the TeacherNet and Qualifications and Curriculum Development Agency websites, with Teachers TV providing complementary video material. With the change in government in the United Kingdom in May 2010, these sites were decommissioned (with the exception of the Education Evidence Portal, which was not owned by the government). The content was, in theory, to be archived on a UK National Archives website. For technical reasons, however, it is now very difficult to find these resources. Effectively, online resources – which were developed over 13 years and at a cost of £20 million of taxpayers' money – were rendered unusable. Previously, such materials would have been paper-based and copies would have remained in some libraries at least. Clearly, leaving online databases that hold valuable professional knowledge under the control of governments can lead to catastrophic loss of that

knowledge. This certainly poses challenges for the future funding and management of databases. (Leask and Younie, 2013: 280-281)

Medical sector: innovation

The Map of Medicine Health Guides or flow charts, for example, provide practitioners and patients with ways to access the knowledge they need, in the form they need it.

Appendix 11: Literature review mind maps (bird's eye and zoomed in views)

(starts overleaf)

Figure 68: Mind map of Pathways study literature with topic boundaries – a bird's eye view

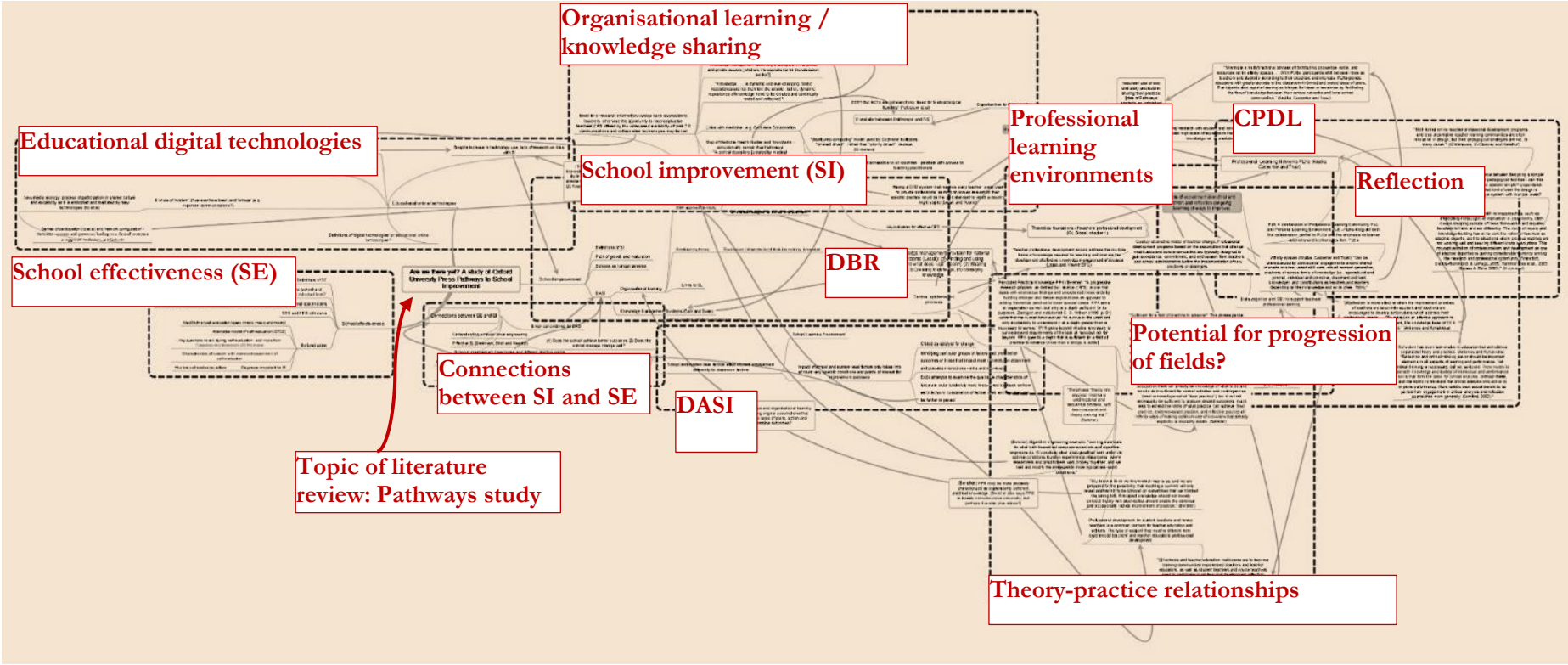


Figure 69: Focus of literature review: Pathways study

This and the following figures show more detailed, 'zoomed in' views of the earlier 'bird's eye view' of the mind map.

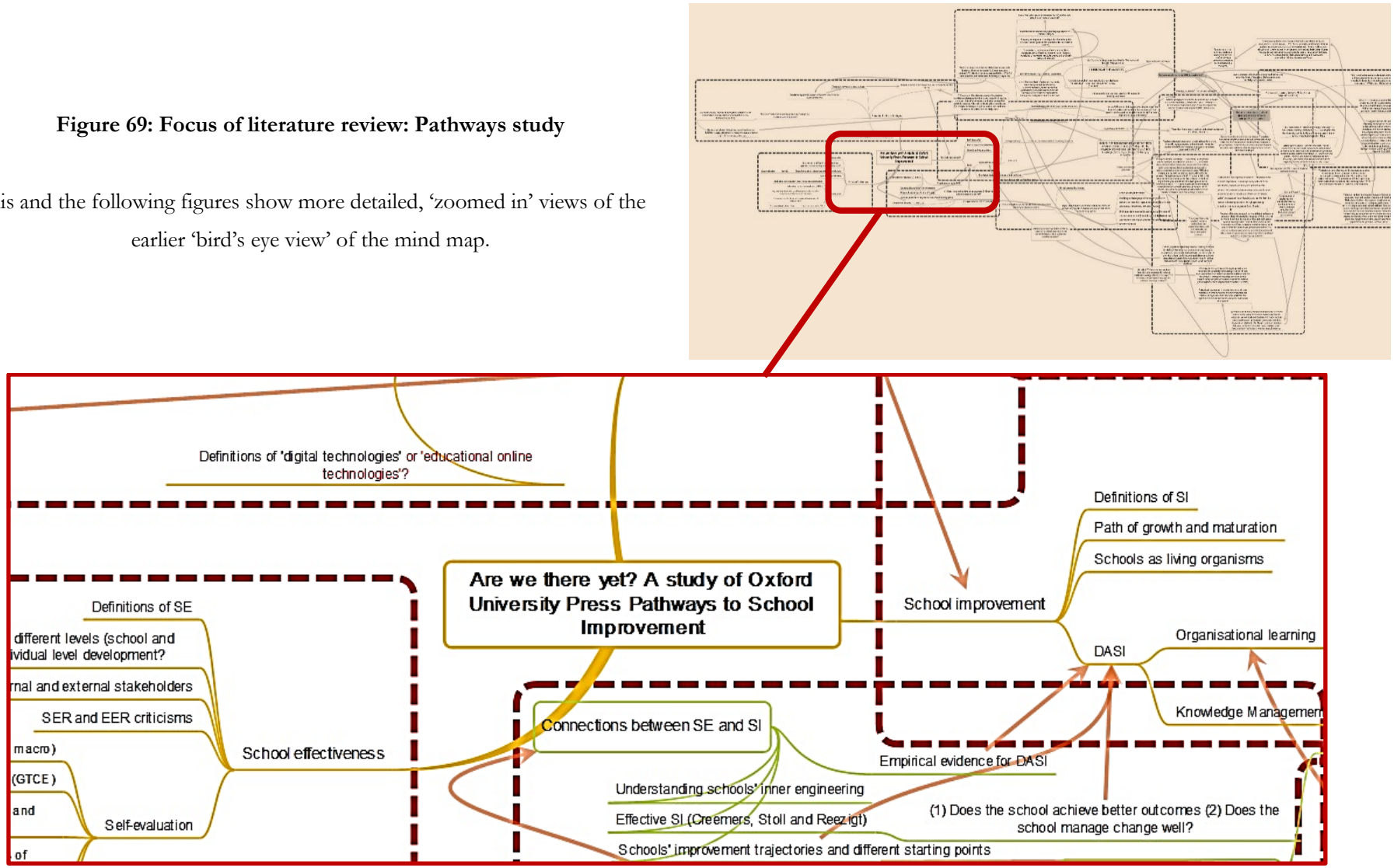


Figure 70: School effectiveness (SE) and School Self-Evaluation (SSE)

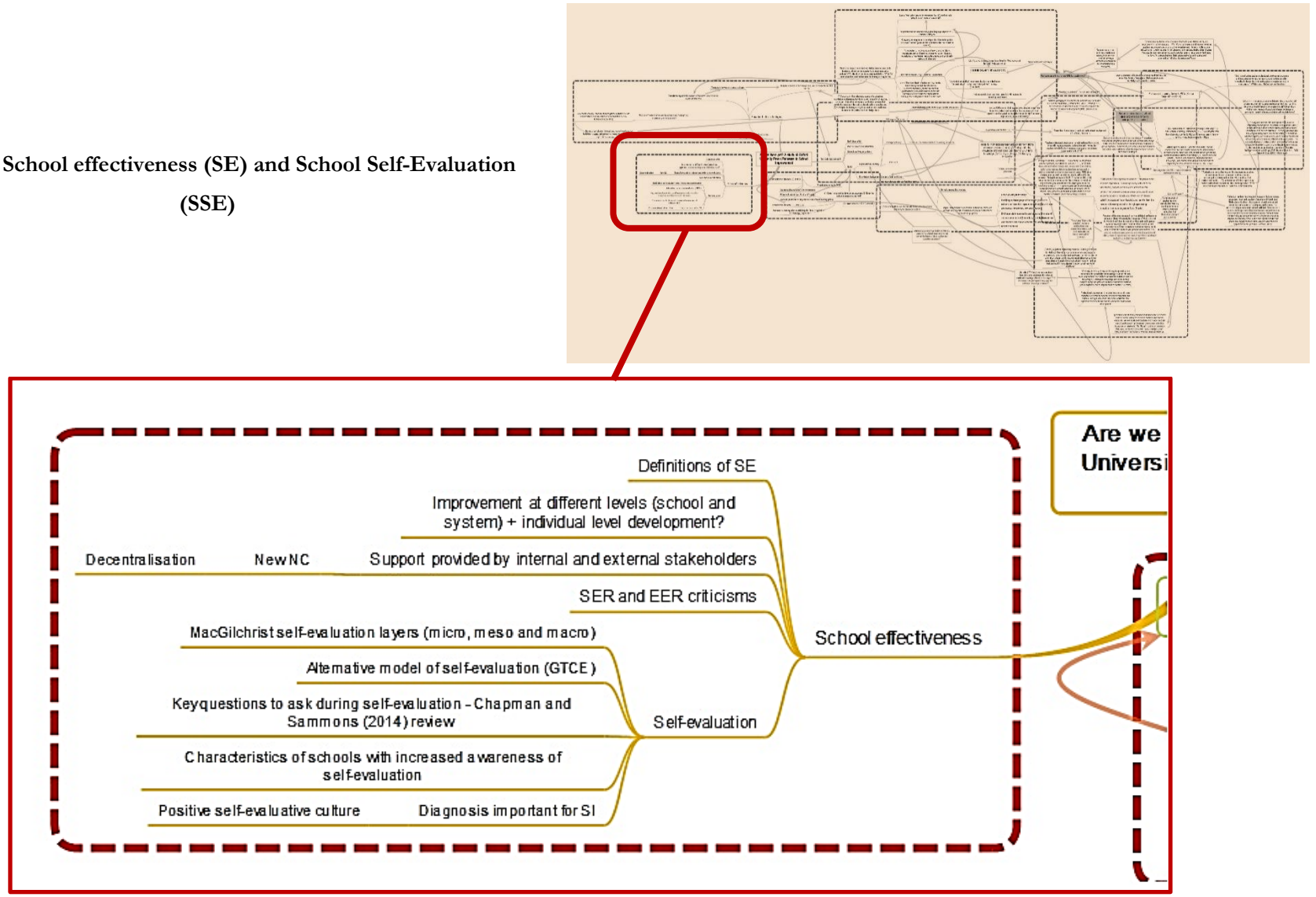


Figure 71: School improvement (SI)

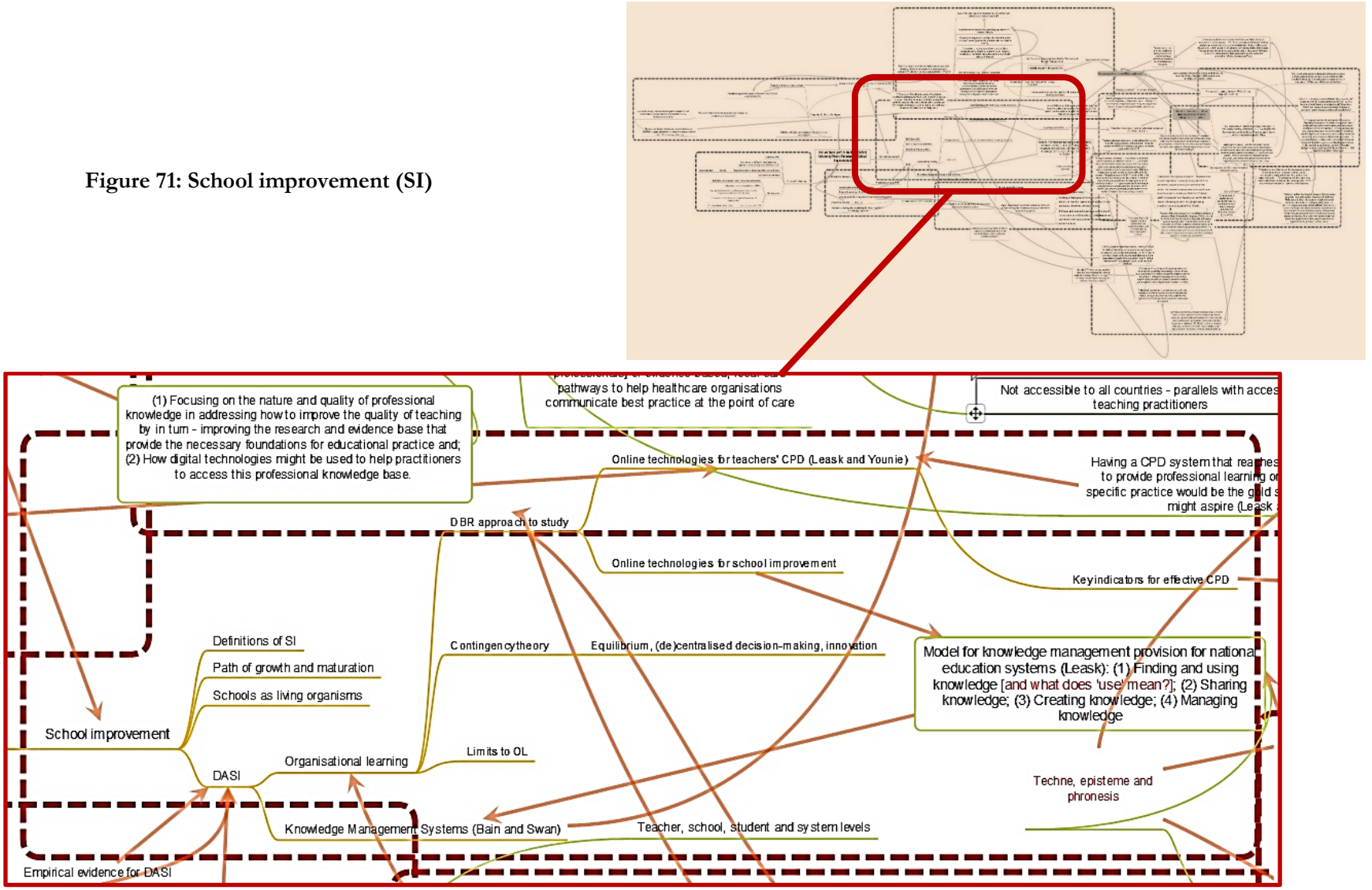


Figure 72: Connections between SI and SE (potential and realised)

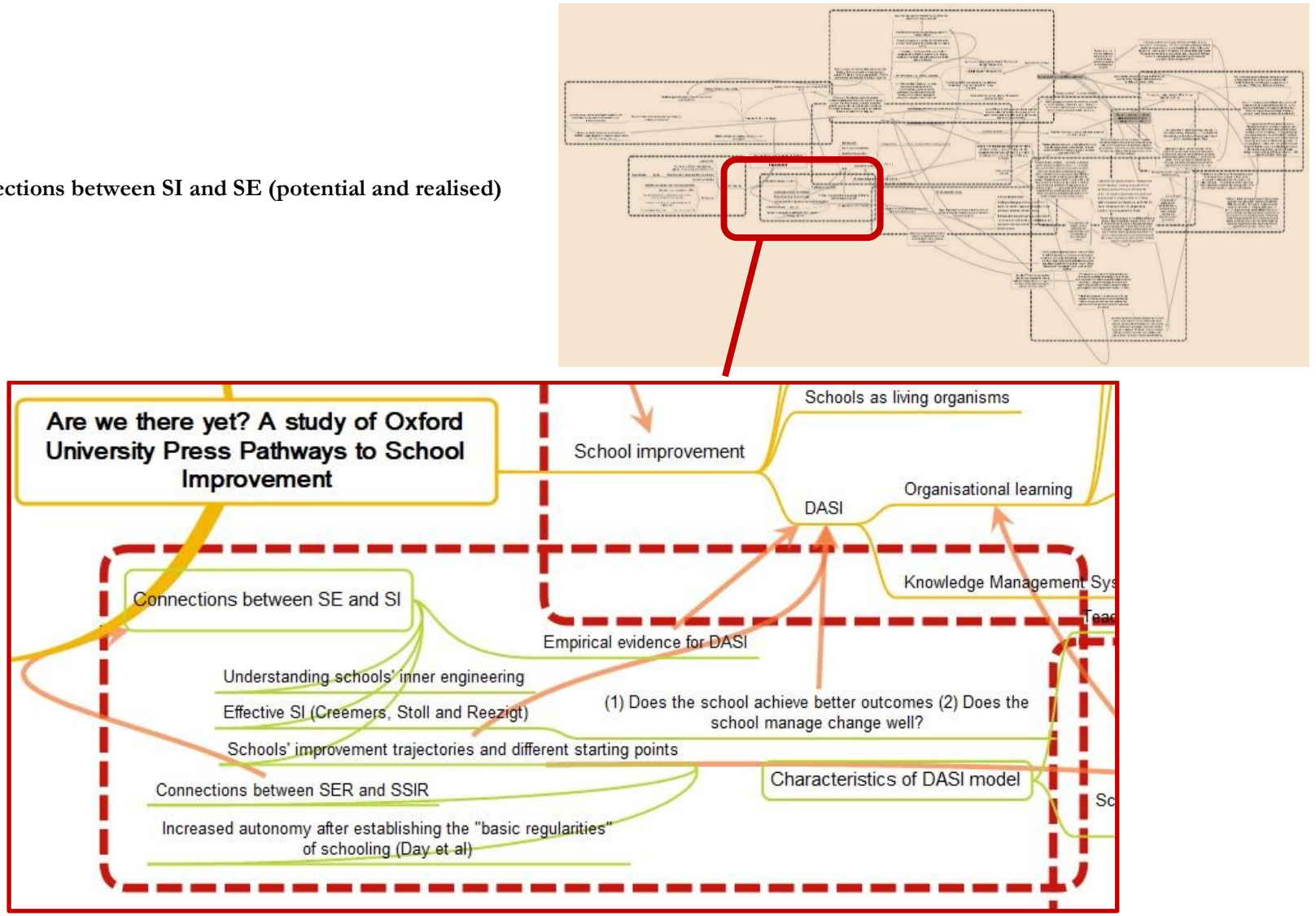


Figure 73: DBR and links with organisational learning approaches

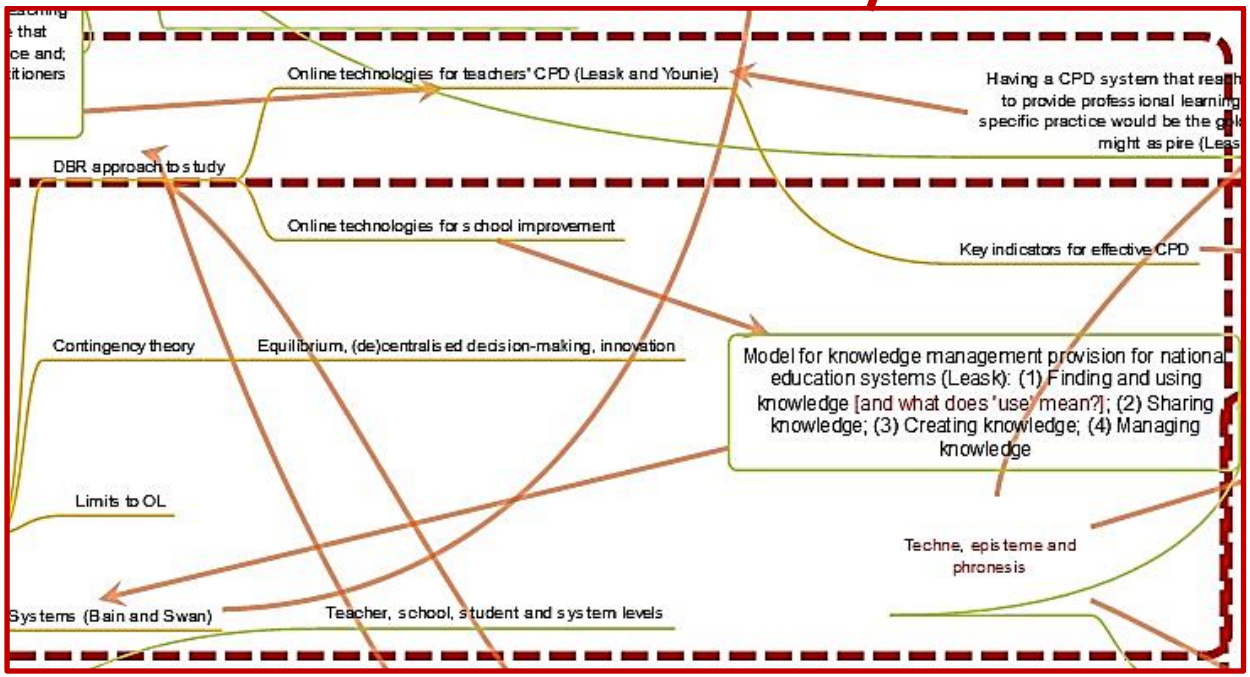
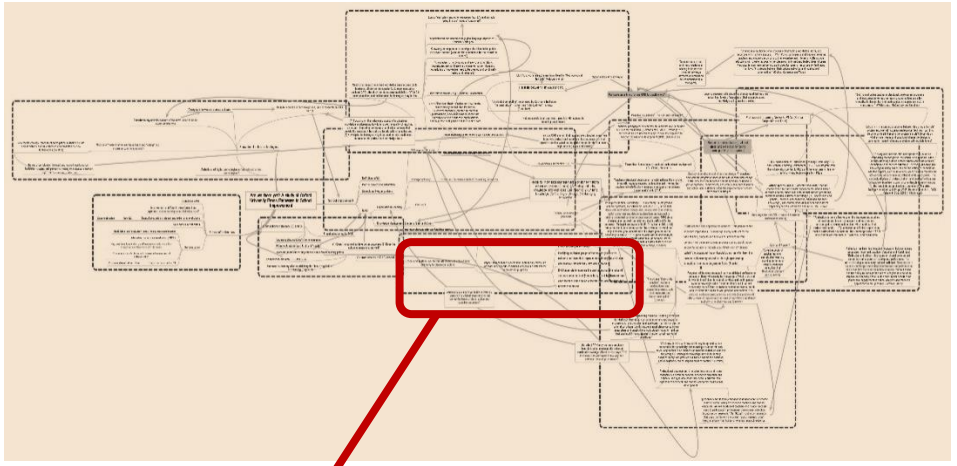


Figure 74: DASI and potential links with structured reflection – potential consistency between School Learning Environment for pupils and professional (online/offline) learning environment for practitioners



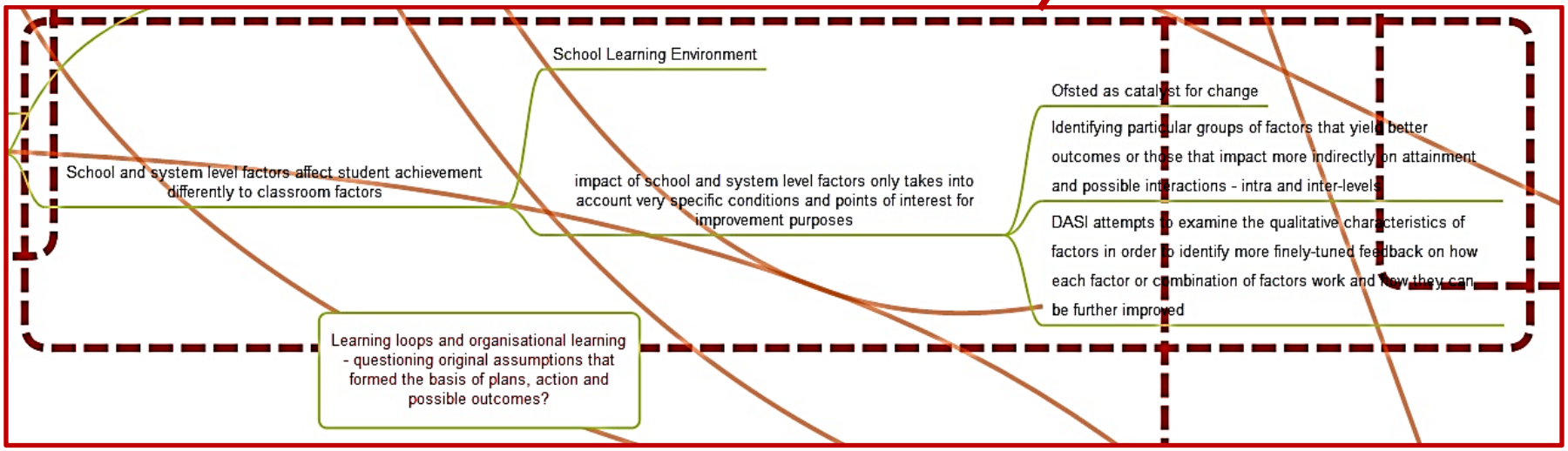
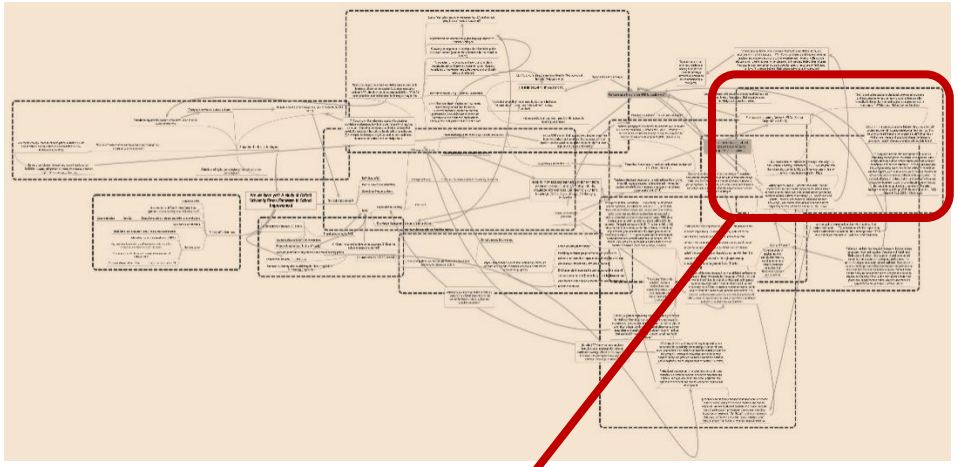


Figure 75: Continuous Professional Development and Learning (CPDL) both individually and collectively



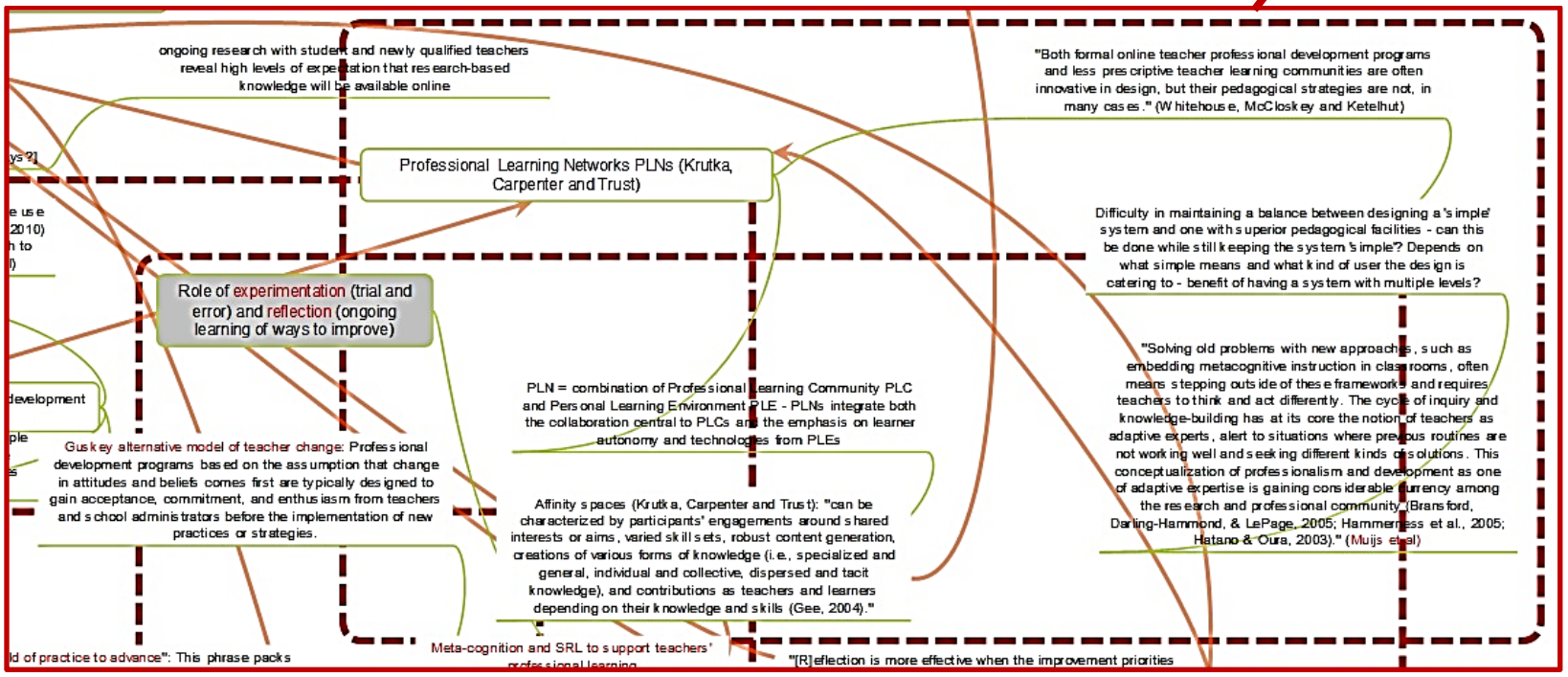


Figure 76: Educational digital technologies (EDT)

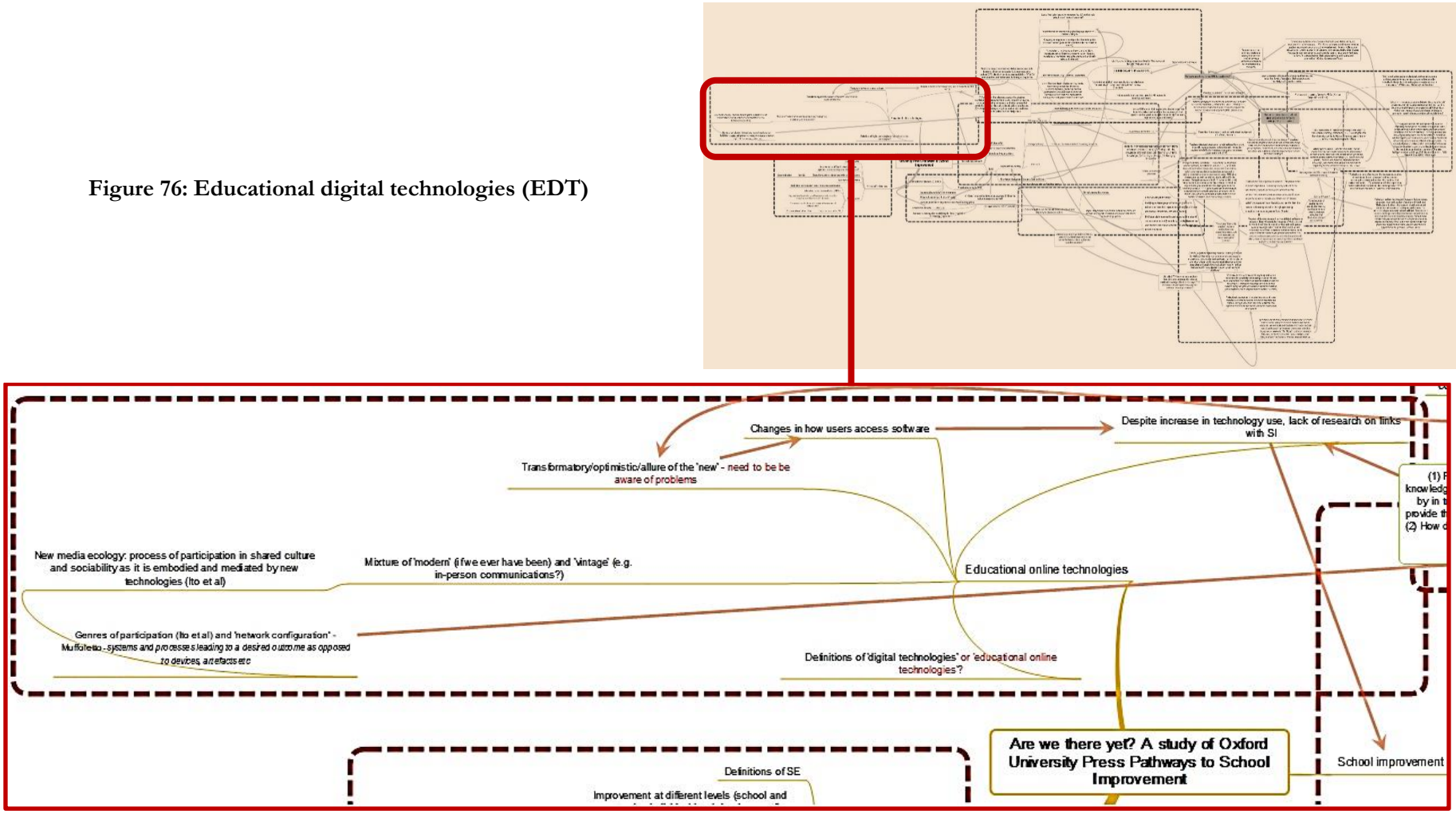
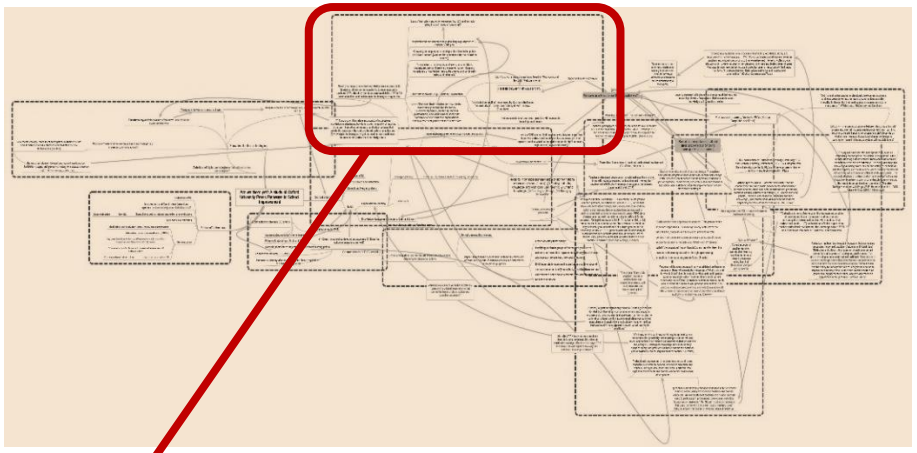


Figure 77: Organisational learning & Pathways parallels with National Strategies (as example of previous comprehensive SI resource for schools)



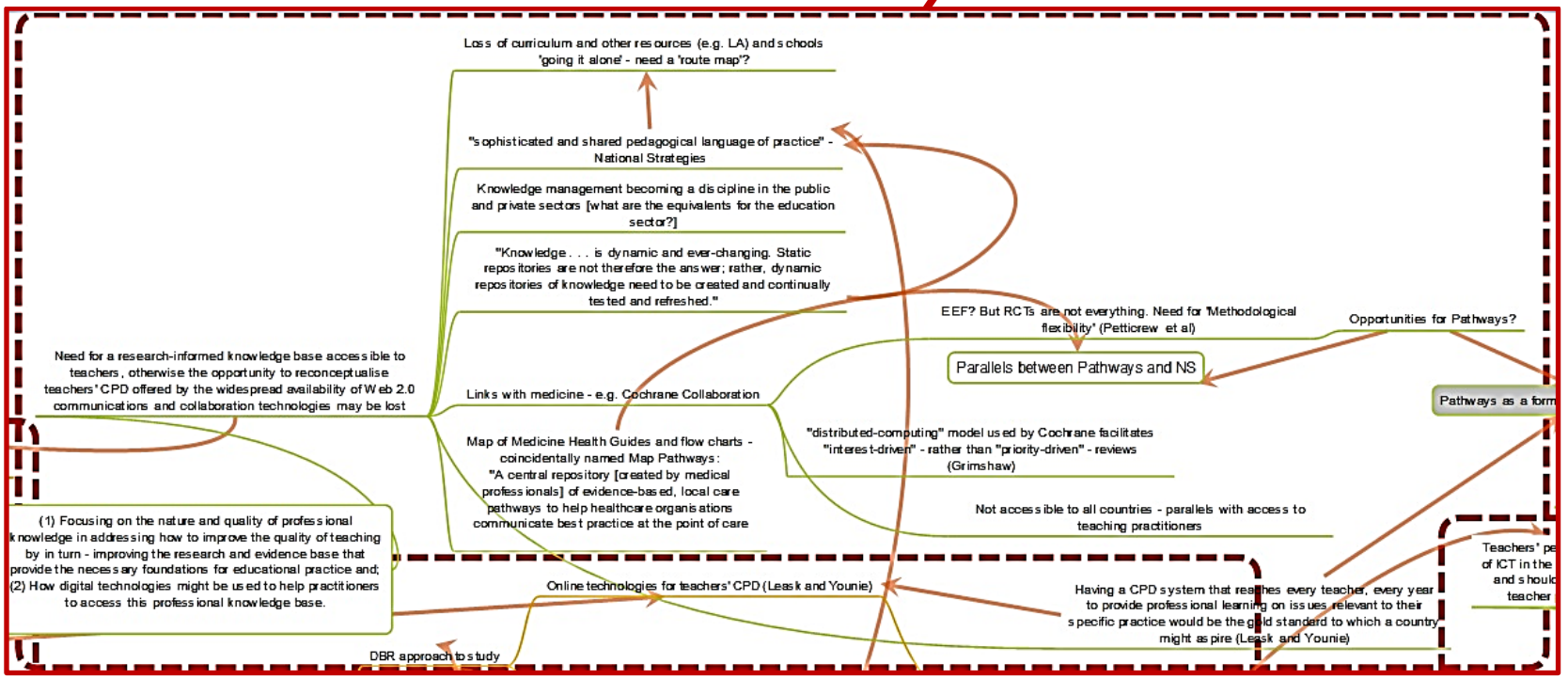


Figure 78: Potential combination of platform for CPDL and organisational learning system: Professional learning environments (PLE)?

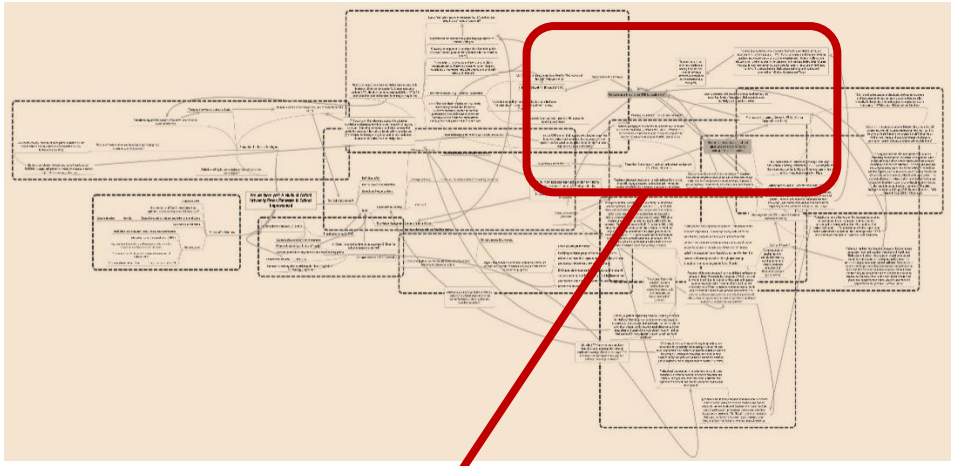


Figure 79: Potential opportunities for reflection, experimentation & questioning of individual/collective/organisational assumptions

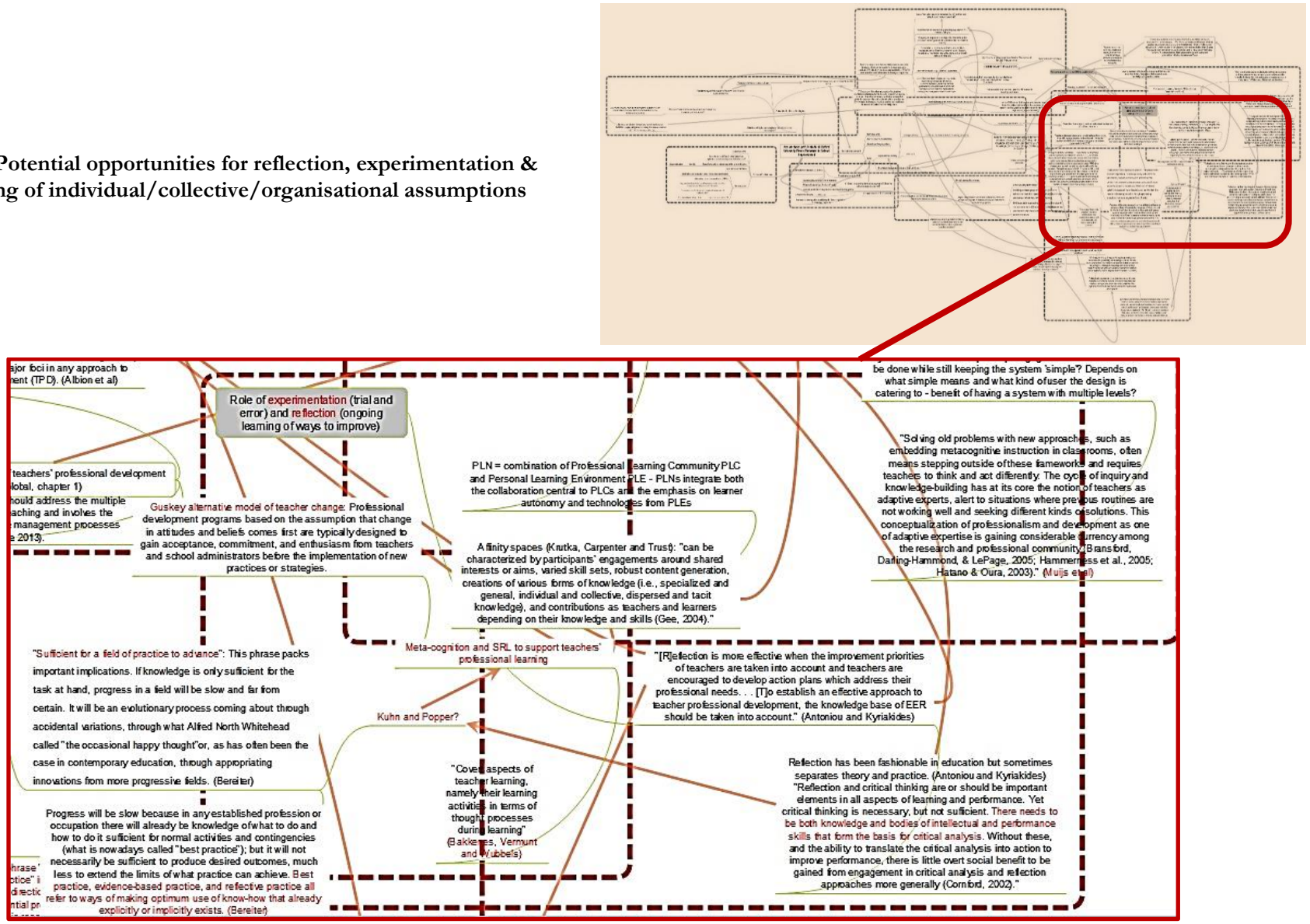
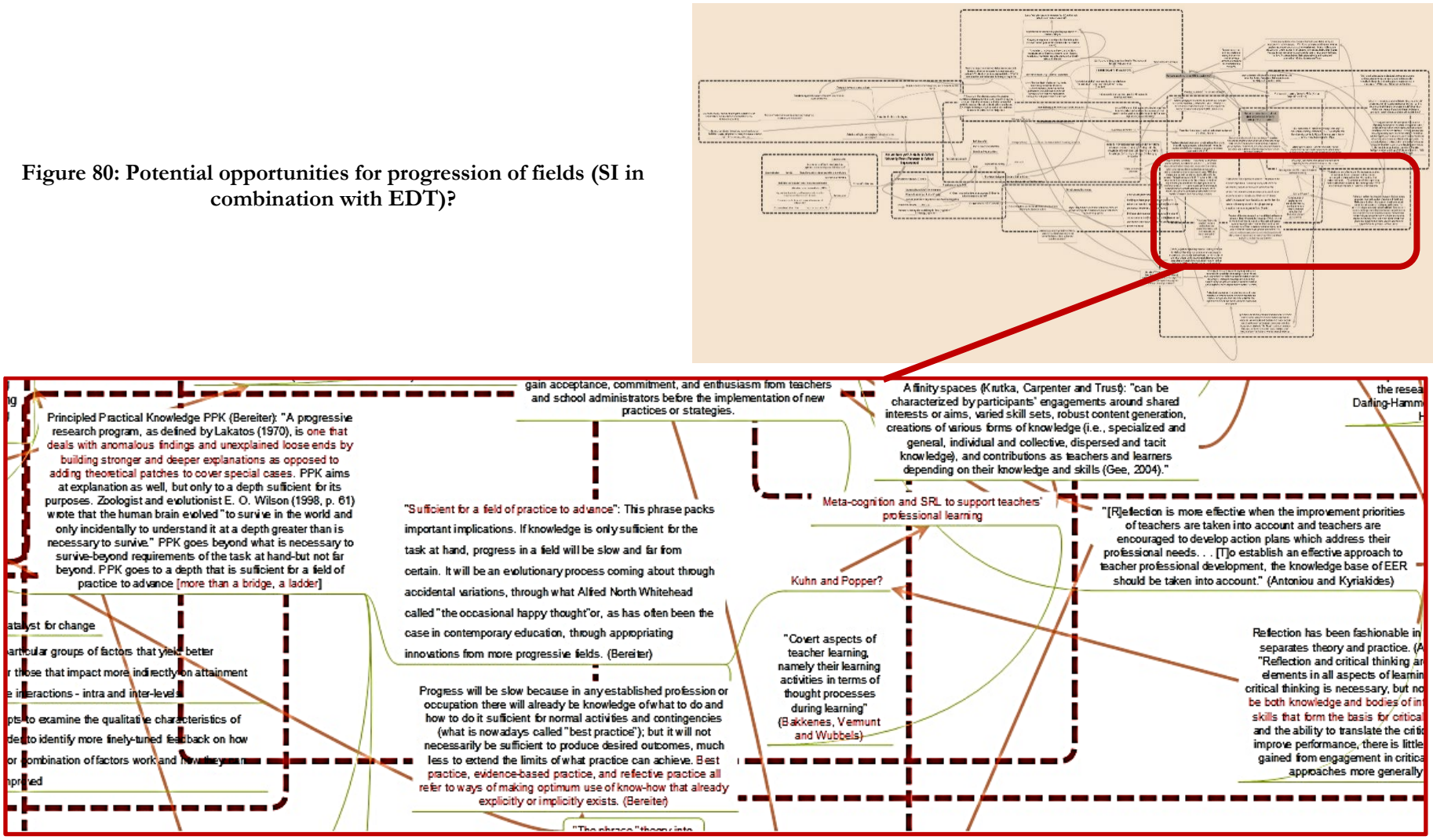


Figure 80: Potential opportunities for progression of fields (SI in combination with EDT)?



Appendix 12: Literature review – similar sounding terms to differentiate that are potentially relevant to Pathways

Professional Learning Communities (PLCs)

The idea behind PLCs originates from the business sector the "capacity for organisations to learn" (Vescio, Ross and Adams, 2008: 81). Teachers' collaborative efforts in communities that are able to contribute towards schools' functioning, routines and capacity for change play a role in effective models of practitioners' professional development (Darling-Hammond and McLaughlin, 1995). Building capacity for learning at the local level was also identified as one of the essential features of phase four of school and system improvement (Hopkins et al, 2011: 2), while Lieberman and Pointer Mace (2009: 459) affirm that educational reform in the form of PLCs "may be the most significant idea we have had in decades". PLCs have also been termed "globally fashionable" by Webb et al (2009: 405), but as overlapping with, and informed by, work on schools as learning organisations, and the interactions in school improvement practice (Stoll et al., 2003).

> [R]esearch [into the usefulness of PLCs] concluded that 'effective learning communities fully exhibit eight key characteristics: shared values and vision; collective responsibility for pupils' learning; collaboration focussed on learning; individual and collective professional learning; reflective professional enquiry; openness; networks and partnerships; inclusive membership; mutual trust, respect and support' ([Bolam, 2005: 145]). Researchers have identified lists of varying length of similar interconnected variables as providing 'the social architecture' (Toole and Seashore Louis, 2002) of PLCs with general agreement on the need for shared values and vision, a supportive environment, reflective professional enquiry, collaboration and collective responsibility. (Webb et al, 2009: 406)

One of the possible challenges with implementing PLCs in schools may also be one of its advantages – developing accountability, transparency and trust – which could transform into something seen as potentially threatening perhaps, or overwhelming if not all staff members are 'on board' (see for example the Sparrow School case study). The potential application to Pathways is that the platform may act as more of a base to have conversations, and perhaps highlight the problems with trust and accountability within schools, and in some cases signpost to ways to reconceptualise those problems. Spillane, Shirrell and Hopkins (2016) explore how bureaucratic and collegial functions in a PLC might work in tandem rather than in opposition. They highlight for example the gap in the academic literature about how "the standards and accountability movement has influenced efforts to *design* and *redesign*" the local and national educational infrastructure in different contexts. The application of the words 'design' and 'redesign' is not dissimilar to discourse around the building of online digital environments, PLCs and school improvement more generally. Take for instance the idea of 'organisational routines', defined as "a repetitive recognisable pattern of interdependent actions, involving multiple actors" Feldman and Pentland (2003: 95) and can include procedures for practitioners to adopt in teacher recruitment and mentoring, lesson study and learning walks, instructional transparency, teachers' on-the-job learning (Sherer and Spillane,

2011) as well as staff meeting sequences (Spillane, Shirrell and Hopkins (2016: 98). How would a school function in the absence of organisational routines that potentially give some structure to these different facets of school life? On the other hand, as with the tension that sometimes emerges between the principles of 'fidelity' and 'flexibility' of a system or set of procedures, how much flexibility might be built in to allow for justified deviations from a given system? What sort of criteria do actions have to meet in order to count as 'justifiable deviations', and how are these criteria governed? One possible solution lies in increased cooperation between efforts to collaborate and organise, and potentially redesigning, nurturing environments that encourage the emergence of PLCs, and other more organic professional groups.

Communities of Practice (CoP)

Communities of Practice (CoP), as outlined by Wenger (1998: 85) provide a "privileged context for the negotiation of meaning", a collective-understanding-based amalgam that (sometimes in individual ways) seek to reinterpret, modify, endorse, diminish, or shape a new event or experience (Wenger, 1998: 52). Wenger also states that "[p]ractice is about meaning as an experience of daily life" (1998: 52). Wenger, McDermott and Snyder (2002: 4) define a CoP as:

> [A] group of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis.

Owen (2014) differentiates CoP with PLCs in that PLCs are more specific to the educational context. Also, as pointed out by Hutchison and Colwell (2012), CoP in its original form was conceptualised more as a group that interacted face-to-face, distinct from an Online Learning Community (OLC) or indeed, Online Community of Practice (OCoP) (Swift, 2014). Vangrieken et al (2017: 48) note that PLCs were proposed by DuFour and Eaker (1998) as the "educational counterpart to the learning organisation construct introduced by Senge (1990a)".

Teacher Communities (TCs)

Teacher communities stem from a framework that aims to make up for some of the possible shortfalls that practitioners may experience during more traditional forms of professional development (Vangrieken, 2017: 48). The guiding principle of a TC is its collective, bottom-up nature, and its recognition of teachers' own individual experiences and practical needs – teachers are seen as to contribute a substantial portion of the learning content, compared to say, 'external experts' (Boone, 2010). Vangrieken et al (2017: 53) list three main types of TCs: (a) formal (for example communities resulting from structured organisational or government initiatives); (b) member-oriented TCs (perhaps initiated by the school headteacher or group of teachers in a specific setting); and (c) formative TCs (participation might be more voluntary, there might not be any set (stated) community goals, for example a site where teachers organically reflect on their own teaching.

Joint Practice Development (JPD)

Cited in relation to teachers' perspectives on research engagement (Leat, Lofthouse and Reid, 2014), the term "joint practice development" was first proposed by Fielding et al (2005) in "one of the few studies to have investigated transfer of practice between individuals, small teams, schools, local authorities and other institutions" (Sebba, Kent and Tregenza, 2012: 2). Fielding et al (2005: 32) define JPD, (distinct from 'transfer of practice') as:

> [T]eachers who are trying to learn new ways of working, and acknowledges the effort of those who are trying to support them, both in their having developed creative ways of working and the complex task of opening up and sharing practices with others.

Sebba, Kent and Tregenza (2012: 2) add that within the process of JPD, the reciprocal learning that takes place may sometimes involve knowledge-transfer or exchange but above all "must involve interaction related to practice".

Personal Learning Environments (PLEs)

A PLE is a (relatively) new construct within the learning technologies literature premised on the use of social media to enable and enhance learning. Martindale and Dowdy (2010: 4) elaborate:

> [N]o single environment or application instantiates an archetypal PLE. For some, a PLE is a specific tool or defined tool collection used by a learner to organize his or her own learning processes. For others, the PLE simply acts as a metaphor to describe the activities and milieu of a modern online learner.

In contrast, Online Learning Environments (OLEs) are characterised as more generic e-learning spaces that promote teachers' and learners' self-regulation skills, in particular their meta-cognition, by incorporating online assessment designs that facilitate opportunities for learners to elicit immediate feedback, participate in interactive formative assessments and encouraging reflection via online forums (Tinoca and Oliveira, 2013: 217). Indeed, Whitehouse, McCloskey and Ketelhut (2010: 249) go as far as to say:

> Whether one's purpose is to design a teacher learning community, or a more formal online TPD course or program, decisions about technology use will mediate how the learning communities or training programs function.

For Consuelo, Muñoz and Ciesielkiewicz (2015: 40), PLEs facilitate learners' management of information, identity and relationships. Dabbagh and Kitsantas (2012: 4) suggest that PLEs are built on externally hosted (cloud-based) Web 2.0 tools designed to help learners organise their own personal learning portfolios where they may "aggregate and share resources, participate in collective knowledge generation, and manage their own meaning making". In trying to understand how Pathways might be conceptualised (both implicitly and explicitly from a practitioner or designer perspective), it might be useful to recognise the currently available opportunities afforded by Pathways and the potential future learning-centred affordances that may emerge from the addition of a social media dimension. Even Selwyn (2007: 7) for example, in his critical review of Web 2.0 tools, acknowledges that there are clear opportunities for such

applications to support informal learning. Also, considering informal workplace learning that may occur more during face-to-face interactions, and can currently be supported by Pathways- (and other online platform-) related tools, it is worth noting that Attwell (2007: 2) reports, from a study by the Institute for Research on Learning:

> [A]t most, formal training only accounts for 20 percent of how people learn their jobs. Most workers learn their jobs from observing others, asking questions, trial and error, calling the help desk and other unscheduled, largely independent activities.

Of course, this finding would very much depend on the type of 'job' that was being described. However, learners more widely, may be in a sense, less bound to the structural arrangements of a particular 'course', but increasingly have the tools to be able to evidence their competencies or outcomes from other sources (Attwell, 2007: 3), for example, in a presentation of an 'e-portfolio'.

> While Web 2.0 technologies seem to be scaling up students' informal learning, PLEs can be considered as a promising pedagogical approach for the deliberate or intentional integration of formal and informal learning spaces. (Dabbagh and Kitsantas, 2012: 4)

Pathways at the moment does not offer social media capabilities within the platform itself, (one can access Pathways via strategically-timed posts that contain links in Woodland's educational blogs or social media outlets such as Twitter and Facebook) however, I would argue that either, it could in the future (depending on what the purpose was for practitioners), or that some of these capabilities might already be manifesting in the in-person conversations that may take place around artefacts derived from Pathways.

Professional Learning Networks (PLNs)

Like with PLEs (discussed earlier), the relevance of the professional learning network (PLN) to Pathways lies in the future possibilities of connecting Pathways more to the social media side of learning, but also the current opportunities afforded by in-person communications among groups of teachers in schools. PLNs are different to PLEs in that PLNs are more open and network-focused, and may be less personalised to individual learners' needs. In a PLE, a community and resources are 'assembled' by design, but a PLN may occur more organically, or also by design – but might be less restricted to one particular online platform. When a teacher subscribes to an education blog or requests notifications and updates in an online community or newsfeed or listens to podcasts, the teacher is said to be building a PLN.

> PLNs provide instant access to information and connections to thousands of individuals with an array of expertise. . . A PLN is a system of interpersonal connections and resources that support informal learning. Flanigan (2011) describes PLNs as teacher-driven, global support networks that decrease isolation and promote independence. There are two types of PLNs: information aggregation and social media connections. (Trust, 2012: 133)

By the same token, Online Learning Networks (OLNs) are defined as a group that personifies an (online) "distributed learning team" of "joint intelligence" and resource-sharing that also shares work or a specific task in common (Aviv and Ravid, 2005: 1).

The additional implication here is the idea of Pathways as potential a combination of a PLE (personal learning environment) and PLN (professional learning network) to create a 'Professional Learning Environment' that is less bound by social media interactions but maximises on face-to-face contact within schools or groups of schools. This idea is broached in the Discussion (Chapter 9).

Online Learning Communities (OLCs)

Online Learning Communities are seen as a kind of 'mentoring' and learning space mediated by Web 2.0 tools. The rationale for the OLC is said to stem from the idea of Wenger's (1998) communities of practice (CoPs) that take place face-to-face. OLCs are seen as more immediate, online environments based around the concept of 'content-creation', for example 'wikis' for teacher induction programmes (Hutchison and Colwell, 2012: 274). While OLCs are seen as potentially more dynamic and diverse compared to in-person 'traditional' one-to-one mentoring models or Web 1.0 era functions such as email, video-conferencing and list-servs (Hutchison and Colwell, 2012: 276), possible downsides have also been identified. For example: the impersonal, sometimes more anonymous nature of OLCs compared to face-to-face encounters, the lack of physical encouragement (such as pats on the back etc), feelings of isolation and lack of support/mentorship/leadership, or even resistance to using technology in place of face-to-face interactions (Hutchison and Colwell, 2012: 281). A wiki or online discussion can become 'something extra to do' if the motivation to participate seems less intrinsic.

Research Learning Communities (RLCs)

According to Brown (2017), research learning communities have been developed over the last five years, and focus primarily on ways to connect research and practice. The RLC process is made up of teachers and school leaders engaging in a number of workshops during each school year, with each stage corresponding to a stage in a 'cycle of enquiry' relevant to the RLC. The workshops are meant to help practitioners to:

> 1) relate this research to their own practical knowledge and knowledge of their context; 2) develop an intervention, grounded in research findings and their own practical knowledge, and designed to improve specific aspects of teaching and learning (i.e. achieve a teaching related goal or vision); 3) trial and refine their intervention to maximize its effectiveness; and 4) ascertain impact and roll out impactful interventions within and across schools. (Brown, 2017: [online])

Appendix 13A: Pathways publication series (example)



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About the authors

Susila Davis is currently studying for a doctorate in education at the University of Oxford. Her focus is on practitioner engagement with school improvement and *Pathways*. Her other research areas involve youth programmes and alternative education provision. Susila was also a research and data analyst for several years at the Specialist Schools and Academies Trust.



Professor Pamela Sammons is a professor of education at the University of Oxford. Pam has been involved in educational research for the last 30 years with a special focus on the topics of school effectiveness and improvement, leadership and equity in education. She spent 11 years at the Institute of Education at the University of London (1993–2004) and she has acted as a consultant on school effectiveness and improvement to the Department for Education and Ofsted.



"School leadership is second only to classroom teaching as an influence on pupil learning."[1]



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What is school leadership?

> *"Leadership is all about organisational improvement; more specifically, it is all about establishing widely agreed upon and worthwhile directions for the organisation and doing whatever it takes to support people to move in those directions … Leadership – not just effective leadership – is very simple, then; it is about direction and influence. Stability is the goal of what is often called "management." Improvement is the goal of leadership. It is clear that both are very important … Stability and change have a synergistic relationship."*[2]

While there are some detractors to the support of leadership and its contribution to school improvement and effectiveness, research evidence shows that the effects of leadership can be seen on pupil outcomes and a range of school conditions.[3] For example, a study analysing Ofsted inspection outcomes in England suggested that, "the overall performance of a school almost never exceeds the quality of its leadership and management."[4] It was found that for every 100 schools that exhibited "good leadership and management," student achievement levels were also good in 93 schools. Conversely, for every 100 schools that were found lacking in good leadership and management characteristics, only one school was seen to have good student achievement.[5] Studies around schools in challenging circumstances[6] have indicated that effective schools had, amongst other features, "effective leadership, created a shared vision, [and] involved staff in the leadership process."[7] Strategies for improvement in schools based in disadvantaged contexts also include "leadership; creating an information-rich environment, creating a positive school culture."[8] Over the last decade, there has been increasing focus on understanding the connections between leadership and 'school culture' as a means towards school improvement.[9] More favourable forms of leadership are seen to be 'transformational' in nature, which implies a more people-oriented approach that transforms the "feelings, attitudes and beliefs of others" as opposed to the 'transactional' form where power is used to exercise control over others.[10] Evidence suggests that there is a positive relationship between transformational leadership and school improvement.[11]

> *"It needs to be reiterated that the transition from 'prescription' to 'professionalism' is not easy to achieve. In order to move from one to the other, strategies are required that not only continue to raise standards but also develop social, intellectual and organisational capital. The guiding image of both successful schools and systems is their ability to balance 'top-down'/'bottom- up' change over time in the pursuit of sustained excellence in student achievement."*[12]

Principles of leadership

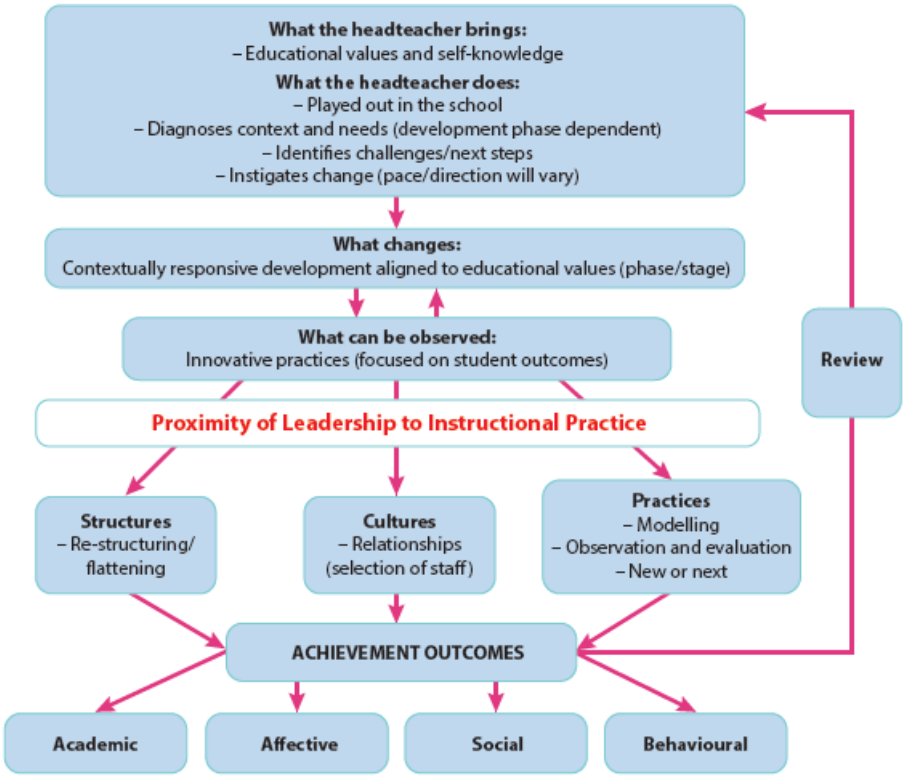
Four core principles of leadership have been identified in recent studies:[13]

Setting directions	Developing people	Redesigning the organisation	Managing the instructional programme
→ Develops and communicates clear vision, mission and goals*	→ Provides individualised support and emotional understanding	→ Fosters shared beliefs**	→ Supervises and evaluates instruction*
→ Inspires and leads innovations**	→ Promotes professional development and maintains high visibility*	→ Involves teachers in the design and implementation of important policies and decisions**	→ Coordinates the curriculum*
	→ Recognises achievements** and provides incentives*	→ Generates positive relationships with the wider school community	→ Establishes SOPs (Statement of Purpose) and provides resources**
			→ Monitors student progress
			→ Protects teachers ** and teaching time*

* denotes research into "instructional leadership"[14]

** denotes research into links between student achievement and "teacher reports of leadership behaviours"[15]

The next diagram shows findings from a study into how leadership supports student achievement through the diagnosis of problems and needs and the initiation of change.



Ways leadership supports better outcomes through diagnosis[16] *(reproduced from original report).*

Leadership-related research

Here we can highlight a study that sought to combine a considerable amount of educational leadership-related research; this was followed by a large-scale empirical study which used both quantitative and qualitative research methods. Seven 'strong claims' for successful leadership were documented:[17]

1. "School leadership is second only to classroom teaching as an influence on pupil learning.
2. Almost all successful leaders draw on the same repertoire of basic leadership practices.
3. The ways in which leaders apply these basic leadership practices – not the practices themselves – demonstrate responsiveness to, rather than dictation by, the contexts in which they work.
4. School leaders improve teaching and learning indirectly and most powerfully through their influence on staff motivation, commitment and working conditions.
5. School leadership has a greater influence on schools and students when it is widely distributed.
6. Some patterns of distribution are more effective than others.
7. A small handful of personal traits explains a high proportion of the variation in leadership effectiveness."

View from the field

Recent research in the US into the relationship between collaborative (or team-oriented) leadership, learning and school improvement trajectories across 141 elementary schools indicated that:[18]

- "Collaborative learning-directed leadership* positively impacted growth in student learning by shaping the school's academic capacity
- Collaborative learning-directed leadership and capacity building acted together as mutually reinforcing mechanisms
- The initial status of schools' academic capacity was not related to subsequent growth, which implies that schools could improve regardless of where they were located in their journey of school improvement".

* seen as a blend of two types of leadership: instructional and transformational; essentially regarding the role that leadership plays in generating and sustaining a school-wide focus on learning (for both students and teachers)[19]

> *"We have identified many features of effective and improving schools in our DfE-funded research that involved both primary and secondary schools, and have drawn attention to the influence of school leadership ... We identified the importance of setting directions, redesigning the organisation, developing people and managing the teaching and learning (including using data, research and observation) to improve the quality of teaching ... We found that there are common patterns but also differences in emphasis for schools that improve from a low point. Heads need to be good at diagnosing where a school is (in context and organisational history as well as current performance) to adapt their leadership to promote improvement."*[20]

Endnotes

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Appendix 13B: Pathways publication (excerpt)

Introduction

This is a brief guide to using *Pathways* questionnaires in your school or partnership.

You might also find the advice in this guide useful for a variety of purposes beyond using the *Pathways* questionnaires, for example where you are asking colleagues, governors or pupils their opinions and views on a particular topic, or indeed if they are completing something such as a self-evaluation form or using an audit tool.



Why carry out questionnaires?

Questionnaires can be a valuable tool when carrying out an audit in your school. They can give insight into strengths, weaknesses, issues and successes in your school through the views of staff, parents and potentially pupils too. They can help to obtain a broad overview of a particular situation or provide more detailed feedback on something specific.

The questionnaires provided as part of *Pathways* have been written and reviewed by experts in the field. They are provided in Word document format to allow you to edit and personalise them for your school's audit.

Advantages and drawbacks of using questionnaires

It is important to be aware of the advantages and drawbacks of using questionnaires before sending a questionnaire out as part of your audit.[1]

	Advantages	Drawbacks
Anonymity	**Questionnaires provide the opportunity for respondents to be more anonymous with their answers compared to an interview or discussion.** • If possible, do give respondents the opportunity to complete and return questionnaires anonymously. Sometimes, it might be advisable to leave the room while questionnaires are completed or allow people to take away the questionnaires. • Make sure to store the responses safely and securely, in hardcopy or electronically. • Issuing questionnaires assumes a level of literacy among your respondents (depending on the format of your questionnaire). • For younger children or people with varying levels of literacy, you may want to consider alternatives to your standard questionnaire. • In order to ensure a fairer representation among your population, you might require your questions to be translated or arrange for them to be communicated in different ways (e.g. for visually impaired respondents).	**In using questionnaires that allow for anonymity, you may lose some detail such as respondent information and some respondents may not complete the questionnaire or tool in full.** • For some responses, it may be helpful to match types or groups of response by respondent or subject area etc. • Weigh up how important full anonymity is versus some or less anonymity. Could you for example try to ensure that respondents fill in at least their subject or year group by introducing the rationale behind the questionnaire in the group? Or could you fill in the subject or year group on the questionnaire and distribute it to those particular groups separately? Do you think your response rates or the 'openness' of some of the responses might be affected by reducing anonymity in this way?

[1] After Munn and Drever, 1996

	Advantages	Drawbacks
Response rate	**Questionnaires may allow you to reach more potential respondents in a shorter space of time than interviews or other means.** Depending on the type of questionnaire, responses may be collected quickly in larger groups or samples using a standardised template (e.g. for questions with scales for such as *1 – Strongly agree* to *5 – Strongly disagree*), therefore requiring everyone to follow and interpret the same scales. The return rate may also be comparatively larger than interviews as technically, respondents may be able to complete the questionnaires in their own time and follow a set 'template'.	**Carrying out questionnaires may generally give you an idea of the 'what' (i.e. descriptions) rather than the 'why' or the 'how' (explanations to an extent).** You may choose for example to administer a questionnaire and then follow it up with an interview or chat with groups of respondents/teachers or individually. This may give you a better opportunity to ask why certain options were chosen or the steps taken by respondents in answering a particular question. If these aspects are important to you and you try to add them to your questionnaire, this may result in a long, rather unwieldy set of questions that, even if respondents choose to answer them, may be too difficult to analyse and interpret.
Analysis	**Analysis of results can be more straightforward than an interview transcription or conversation.** It is important to consider even before administering your questionnaire how the results will be collated, analysed, interpreted and used, and crucially by whom. If for example, your questionnaire contains mainly responses that require numbers and/or marking a scale such as *1 – Strongly agree, 2 – Agree ... 5 – Strongly disagree* etc., would you want to present counts and proportions, and/or more advanced statistics such as standard deviations, confidence intervals?	**Questionnaires may seem simple, but different people may interpret questions in different ways.** The *1 – Strongly agree* to *5 – Strongly disagree* scale can be attached to varying levels of individual 'agreement' or 'disagreement'. How an individual then chooses to respond to the question in the end can also be quite different and open to interpretation. For example, you may ask: *I have used [a particular resource]:* 1 – *Often* 2 – *Sometimes* 3 – *Occasionally* 4 – *Not at all* Those who answer *1 – Often* may interpret 'often' in different ways. It may in some instances be possible to define 'often' or 'sometimes' with quantities or descriptors such as '7 days a week', '3 days a week' etc. How you actually analyse the results later and make connections between particular questions is another matter for consideration.



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STAGE 2:
Describing and displaying the data

Think about how you want to present the data

Here, and hopefully quite early on, you will consider how to describe the data you have collected. Sometimes you might not know exactly how you want to present your data until you see it but having a rough idea in the beginning helps. Once you have your data in a spreadsheet (or maybe even before), you might consider:

- Do you want to present simple counts and proportions or percentages of responses?
- Do you need to group responses by a particular criterion e.g. boys and girls; age groups; classes; attainment level?
- Would you look towards comparing responses to one question and how those same respondents answered another question?
- For example, comparing students who responded to a question about how often they read books at home with how much access they have to books, library resources, borrowing from friends etc.

Account for missing data

There are other considerations too. As with most questionnaires, you will probably come across missing data where one respondent has answered question 1 but skipped question 2. You might want to check if respondents across the board seem to be skipping some questions in particular. Again, knowing the averages of particular questions may help, but knowing how many respondents skipped the question might be useful to compare how many individual or unique responses you actually ended up with for that question. If there are two groups for example, each group made up of 10 respondents. In one group, say two people answered '10' while eight others left the question blank. (If you did not count the 'missing' answers) the average would be 10. In the other, ten people may have answered '1', in which case the average would also be 10 but with all respondents filling in an answer. You could question the comparatively high level of missing data in the first group; might there be particular reasons for this?

Consider distribution of data

Besides summary counts and proportions, you might also consider looking at distributions of data. So for example, the 'shape' of responses.

To the right, an example is shown where the average number of books that respondents said they read per week comes to 6, but look at the difference in distribution among the two groups. In the first chart, the number ranges from 2 to 10 whereas on the second chart, the number of books ranges from 5 to 8. So firstly, you might ask about the difference in minimum and maximum numbers of books read among the two groups. Secondly, you might notice the overall shape of the distributions. The one on the left is slightly skewed to the right. Are there differences in the composition of respondents in each group?

These are just a couple of questions (and quite an extreme example perhaps!) but these are the sorts of things you might be consider. In the groups illustrated, knowing the average is 6 is helpful but knowing the ranges and how the numbers were distributed may give further insight into the types of response.





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Appendix 14: MAID exemplar

Parental Engagement

Step 1: Audit

MAID Analysis Exemplar

Improving parental engagement using the MAID principle

SCHOOL: My School **DATE:** 15/5/2016

	FOUNDATION STAGE	KEY STAGE 1	KEY STAGE 2	ALL PHASES
M What do we need to **maintain?**	Home visits to new intake The nursery blog "Today I …. Ask me about it!" stickers Bedtime story events for families	Bring a parent to school day Reading and phonics workshops	Bring a parent to school day Maths workshops Sending home praise postcards	Teachers, teaching assistants and Senior Leaders out on the playground in the morning and talking with parents Information on school website about what children are learning each week Texting parents e.g. with the week's Talk Homework Food and crèche at events for parents Family SEAL
A What do we need to **amend?**		Home-school reading diary: need to relaunch with information for parents on why reading with their child makes such a difference to their child's future and how children are now taught to read in line with the National Curriculum	Homework needs to be more interactive Consider renaming maths workshops to increase participation	Parents' evenings not working Need different format and staff training, and parents/children to be involved in setting targets School reception area needs to be more parent-friendly
I What do we need to **introduce?**	More on how parents can support their child's communication and language development	Maths bags with games for parents to play at home		Events for dads Courses/events parents have said they want – IT, stress management, Family days out at weekends Parents coming in to share skills and knowledge – "My mum/dad's got talent" Regular systems for parents to provide feedback – suggestion boxes, survey every two years

D What do we need to **discard?**				Letters home Tatty parents' noticeboard in reception area Having assemblies on second floor where parents can't take buggies Our information booklets about maths and English – parents want something more hands-on and also prefer website

Appendix 15A: Magpie School Initial context questionnaire

Please return responses to **[name]** by **Monday 20 October 2014**.

School name	Magpie
Your name	
	Headteacher

6. Could you give me some brief context/background of your school, particularly features that you think might be pertinent to being involved in a school improvement related research project.

A large city school of 450 pupils. 28% SEND and 48% EAL. The school needs to involve parents in the learning process. For all staff to be able to use online resources in an everyday way.

7. Could you tell me a bit about your school improvement/development plan, any particular priorities that your school is working on and any specific goals you are seeking to achieve in the short, medium and long term.

School focus is improving reading for pleasure and becoming an outstanding reading school. Improving phonics and writing in early years. Improving parental involvement.

8. Please give details of any resources, tools or templates (from external sources/made internally) that are used in your school for particular tasks/goals. (*These may include external contacts such as your LA School Improvement provider or any other organisations.*)
9. Training from various sources including OUP and other publishers.
10. [??] phonic s International.
11. LA training.
12. Sharing good practise with other schools.
13.

14. Could you provide some brief details of any links you might have with nearby schools, or other cluster engagements, e.g. with LAs, Federations, Academy partners, Teaching School Alliances, more informal arrangements, etc.
    I am the Chair of the [??] Partnership which includes 13 primary schools and one secondary school. I arrange the Agenda and can share good practise with the other schools.

15. Please tell us why you would like to be part of this research project
(*including details on how you think being involved in this research project might contribute towards your school's goals*).

It is becoming more difficult to train teachers without the correct resources. We used Oxford Pathways for the New National Curriculum and it helped remarkably. I shared this with the 13 schools in the partnership and many of them used it.

I am hoping that we can get more involved with the new Pathways.The new Outstanding reading schools Pathways will hope our whole school focus tremendously.

Appendix 15B: Raven School Initial context questionnaire

Please return responses to **[name]** by **Monday 20 October 2014**.

School name	Raven School
Your name	
Your role	Executive Headteacher

1. Could you give me some brief context/background of your school, particularly features that you think might be pertinent to being involved in a school improvement related research project.

I took over leadership of the junior school in Sept 2012, when the governing body formed a hard federation.

I was already head of the infants (10 years)

The infant school was judged to be outstanding in 2008, re-affirmed in 2011.

The Junior school was placed in SM in the summer term before I took over.

We expect a further re-inspection of both schools in Summer 2015.

Standards at the infant school have remained high but at the junior school it has been a difficult two years of many changes. Of the current 12 classes, 6 teachers are new to the school.

We have introduced MMS and RWI into the Junior school (they were already in place in the Infants); introduced the International Primary Curriculum to both schools and restructured the SLT across both schools.

2. Could you tell me a bit about your school improvement/development plan, any particular priorities that your school is working on and any specific goals you are seeking to achieve in the short, medium and long term.

The challenge of the infant school is to maintain the existing high standards whilst using the strengths and skills of the existing staff to develop and coach the junior school staff.

Improvement priorities at KS2 are to improve the quality of teaching overall, embed the use of the new learning programmes effectively, reduce gaps in achievements between pupil groups (PP and gender),

develop and strengthen governance, embed the new distributed leadership structure to ensure everyone understands the accountability for whole school improvement. Developing outdoor play and learning opportunities have been a focus over the past year , alongside a strong CPD programme for all staff.

3. Please give details of any resources, tools or templates (from external sources/made internally) that are used in your school for particular tasks/goals. (*These may include external contacts such as your LA School Improvement provider or any other organisations.*)

MMS and RWI programmes and regular development days

IPC programme and training

I'm currently training to be an Ofsted Inspector to develop my understanding of school improvement (ongoing since Oct 13)

2 teachers currently on MLDP programme

Use of Lesson study within school to encourage staff reflective practice.

4. Could you provide some brief details of any links you might have with nearby schools, or other cluster engagements, e.g. with LAs, Federations, Academy partners, Teaching School Alliances, more informal arrangements, etc.

Local networking opportunities with a N------ Academy Group

New 'pair and share' opportunity with two schools in London

Partner school in local Teaching School Alliance

5. Please tell us why you would like to be part of this research project (*including details on how you think being involved in this research project might contribute towards your school's goals*).

Opportunities for networking, sharing best practice and critical reflection are essential for us on the journey we are on.

We believe the local authority offer is inadequate overall and does not meet the needs we have A systematic approach to school improvement, without having to invent everything ourselves, would be of great benefit.

Opportunities for Middle and Senior Leaders to engage in high quality CPD is of benefit to the Federation at this transitional point in its development.

Appendix 16: Raven School case study Pattern of preparation

Pattern of preparation

Over the two years of this research project, the headteacher listed three examples of early preparation for major events[31]: (a) the groundwork required to implement the new National Curriculum which started three years prior to this first interview in November 2014; (b) the year spent researching the IPC and; (c) the two years prior investigating new assessment options before the introduction of 'assessment without levels' in 2016". She described (without prompting) in a verbal bullet point style, the decision-making process taken in choosing the IPC – the different steps articulated by Mrs Raven are marked with numbers in square brackets:

> *"Big job – [1] spent a year researching the IPC. [2] Looked at best practice reports, case studies, [3] looked at Ofsted outstanding case studies of geography provision for example, best practice guides, looked at history, geography, case studies, [4] highlighted key features, then [5] looked at Ofsted reports of schools who used the IPC, [6] correlation of the key features, a lot of research on Great Learning website of schools, [7] downloaded case studies (obviously research material to get you to buy it!) but highlighted best features, research to correlate. Spending a lot of money, Ofsted – best features, [8] visited a couple of schools to see it in action and [9] talked to the staff heads, staff teams. There was one in Cambridge and one in Yarmouth. A couple in London. [10] Looked at [school] websites."* [Mrs Raven_RS_Nov-2014]

The 'test' period of the IPC was described to involve:

- background research and 'audit' of the IPC resource itself;
- switching to Ofsted as a resource and examining case studies and best practice guides in history and geography;
- comparing the above with Ofsted reports of schools that reported using the IPC;
- making visits to these schools to see how the IPC is used and applied in the different settings;
- talking to headteachers and staff members about their experiences; and
- investigating the websites of the schools that were not visited in person.

The hard federation

Major structural changes took place when the 'hard federation' took over. Mrs Raven expressed her honesty at the beginning, of the new standards and working practices required, possibly resulting in some staff leaving, no longer feeling that it was "the place for them":

---

[31] As discussed in the Magpie School case study, in 2011, the newly formed Coalition Government announced a major review of the national curriculum in England that would "replace the current substandard curriculum with one based on the best school systems in the world, providing a world-class resource for teachers and children". (DfE, 2011a)

"It's going to be a tough journey but you are there in the classes teaching the children. So actually, I can do what I do but if you're not doing the right thing, it's all for nothing." [Mrs Raven_RS_Nov-2014]

A juxtaposition of both new forms of hierarchy being introduced but also a reduction or redistribution of hierarchy in some respects emerged from the headteacher's accounts. The following statements illustrate the idea of building stronger vertical *and* horizontal structures:

"We've expanded the leadership team massively over the last couple of years to make it much more distributed. The communication structures have all changed, the responsibility structures, so that all the members of the leadership team have a clear focus on teaching and learning, the quality of that, and I've set up huge, complex structures so that everything gets done in the timescale it needs to happen, and there's a hierarchical structure." [Mrs Raven_RS_Nov-2014]

How then these structures may have figured into Mrs Raven and her team achieving the consistency in the quality of teaching that was identified as a problem by Ofsted was broached, the short time frame allowed and the setting of a series of minimum, non-negotiable expectations of her staff as they merged from both schools:

"Because I've had that opportunity to recruit, I've selected those staff that I know will do what I need them to do. And there are staff that were here at the infant and junior school that are still here. But they're the staff that understand what I'm trying to do and are there on board with me. So in terms of quality of teaching, it's buddying up, it's being very honest and open about what I see and what I expect, and I've had to have a couple of conversations with people, teachers who've subsequently left, or subsequently moved their practice on sufficiently to stay. I've had to say what I'm seeing you doing is not what I need in this school, it's not about you personally, but at this point I need someone who can do this, and if you can't do that in the timescale I've got, then maybe I need to help you move to somewhere that can accept you doing what you're doing. But it's not for me. But if you choose to stay, I'll have to put you through capability, because what you're doing is not good enough because of the situation we're in. [It's a] rapid change around." [Mrs Raven_RS_Nov-2014]

The depth of change taking place in Raven gradually revealed the different ways that consistency might be achieved:

"It's all right me or my deputy saying this is what needs to happen but actually it's those people out there doing it that need it to be done in the way that we know works. Based on lots of support, guidance, discussion and an agreement, we've got far more consistency in the quality of teaching and learning. More recently, overall the quality is good at the junior school now. So, that's a big turnaround." [Mrs Raven_RS_Nov-2014]

Contextual factors play a big part both at school and system level – which may in turn influence how a school responds to each problem, sometimes interconnected with other seemingly insurmountable problems. In Raven School's case, the headteacher and her team made efforts to engage the surrounding

community, particularly parents and governors, to try and change the culture within the school after an externally imposed judgement by Ofsted. Approximately 60 to 65% staff turnover was recorded between 2012 and 2014, for a mixture of reasons – some related to the new structures, procedures and expectations in place and others more linked with personal life events. Expectations had to be re-set in the junior school; Mrs Raven points out that she spent the summer (when the hard federation was cemented) not *writing* policies but *extending* policies from the infant to junior school. Also, both 'sides' of the policy that was being extended required some adjustment, or slight recalibration:

> *"Bringing the two together (infant and junior) so it's new but not too new - every single aspect of school. We're not finished, We're much more formed now. It's a conscious every day... we need to reinforce everything. We're evolving as well. With the new leadership team, we've got members of the team who are more inexperienced, so more experienced members are coaching them. Helping them up to step up. [Having a] CPD approach of 'grow your own' – [with teachers] promoted from within (as well as externally)."* [Mrs Raven_RS_Nov-2014]

A number of CPD-related changes were put in place, for example, the 12 teachers in the junior school were paired with 10 teachers in the infant school in a "buddy system". Lesson study was used as an approach and underpinned Raven's CPD offering.

'Lesson study'
"Lesson study is a Japanese model of teacher-led research in which a triad of teachers work together to target an identified area for development in their students' learning. Using existing evidence, participants collaboratively research, plan, teach and observe a series of lessons, using ongoing discussion, reflection and expert input to track and refine their interventions." (TDT, 2015)

Raven used pairs rather than triads as that was decided to be more manageable with their particular context and school/staffing size. Partnership details were also apparently not reported back to Mrs Raven:

> *"The teachers pick their partnerships, partnerships last a year, I prioritise one staff meeting per term for lesson study, that means we can have a dedicated meeting time 6 times a year, when they can get together and have a self-review at the start of the year, where they can be honest and open with each other and around what they want to get better at in terms of their teaching. They support each other and they can be released to go observe each other and give each other confidential feedback. So, it's a colleague-to-colleague equal partnership not leadership-to-teacher. So it's part of CPD and it's very personal to the teacher. And there is no record keeping other than what they choose to use themselves, so it's not part of appraisal or performance management, they know honestly what they want to reflect on with a colleague, that's their little personal journey."* [Mrs Raven_RS_Nov-2014]

The headteacher's office was moved from the infant school to the junior school and one staff room was created for both teams. (A newly refurbished room was completed along with other building work to

connect the junior and infant schools together further.) A summary of actions and strategies taken is provided below.

- Only one (executive) headteacher in place so any policy originating from the schools' leadership would apply across the board to pupils aged 3 to 11;
- Massive expansion of the leadership team, seen to be more distributed over the two schools;
- Change in communication structures – still hierarchical in parts but emphasising teaching and learning expertise of the teachers and trust;
- Concerted efforts by the executive headteacher to remove cliques and perceived 'insider/outsider' dynamics;
- Introduction of coaching conversations;
- Widened CPD offering, for example, staff meetings were usually designed with a training focus.

Again, when talking about how evaluation was operationalised in Raven, there was an articulation of recognising when to move more 'vertically' in the hierarchical structure and 'horizontally':

> *"We don't ever particularly sit down to evaluate... naturally every term, I will look at the improvements and RAG [red, amber, green] rate them – nice and visual. Why is it 'red', why is it 'green'. That creates actions. The leadership team meeting every two weeks, so sometimes there will be a progress update, how to take [things or something] forward, building in more discussion, less telling, succession planning. This year is a big year to get everyone in place. Next year, have to have more coaching [as] two new people will be joining. I don't want to be autocratic, but sometimes you have to decide and move on. There are democratic things too.*
> *I will always know if the discussion is productive. If it gets to the point where we're not deciding anything... there are non-negotiables, deadlines we have to keep, what staff have to do. [This is a] Complex organisation, [with a] tight structure, whether they like it or not, they have to make it work. Need non-negotiable steps. But sometimes if we're heading in the right direction, that's ok too, to give things a go and see what happens. Staff feel trusted, and have more confidence to take risks. If we're all passive, we're not going anywhere."* [Mrs Raven_RS_Jun-2015]

Mrs Raven gave an account of the schools' coaching culture that seemed to contribute towards a kind of 'flattening out' of the hierarchy, while simultaneously sustaining some hierarchy by the executive headteacher who ultimately made decisions at a higher level (including one to introduce coaching to the junior school). This juxtaposition of leadership and autonomy pre-supposes a multi-dimensional structure to hierarchy, one in which teachers have access to a certain degree of autonomy as professionals – in the form of guidance, advice and mentoring afforded by an approach such as coaching – but also that their behaviours and attitudes are grounded in values of what "should" happen:

> *"We did a lot of training on coaching so that everyone takes responsibility for the improvement of the schools rather than says just tell me what to do and I'll do it. That's too superficial. That whole thing around improving the quality of teaching, is a shared ownership and relates back to the mission we've said which is outstanding teaching.*

> *What does that look like? Well we know what it looks like here, because we have structures in place. And every single person aspires to that, otherwise they shouldn't be here."* [Mrs Raven_RS_Nov-2014]

This seemingly "layered" approach to leadership – where the headteacher attempted to construct an assembly of carefully weighted transformational and instructional strategies (Day, Gu and Sammons, 2016) – was interwoven with the various configurations of autonomy (or perceived autonomy) that were observed and understood in Raven School's settings. The ensuing interaction can be viewed as one of proposing and opposing forces – there were judgements being made within and around those different forces, and for different ends, by different people, and some of these judgements may have counteracted with each other. Perceptions of shared ownership, individual/collective responsibility and a culture of coaching appeared to occupy the same space as leading, diagnosing, setting directions, evaluating the quality of teaching and making judgements on effective and ineffective practices.

"It's very cynical but you're only as good as your last Ofsted…"

Mrs Raven referred to the "context" of the federation as based on the external judgment by "Ofsted", and the impact of external accountability constraints as a consequence. Nonetheless she argued that the schools' mission was based on an agreed set of aims that ultimately "drives everything forward". There was an acknowledgement that the junior and infant schools had started at different points but that:

> *"Good teaching and learning is good teaching and learning, so it was making sure that there was that shared ethos and understanding and culture. And getting our aims sorted with the governing body and staff buying into that. So, those aims haven't changed for two, three years. That's how we set up the federation."* [Mrs Raven_RS_Nov-2014]

Schools more widely are judged according to changing Ofsted frameworks but the purposes that influence how Raven School staff operated were described as being underpinned by higher level motivations linked to pupil-based outcomes including – children being recognised as unique individuals, a sustained focus on literacy and mathematics, principles of enquiry, thinking and questioning, values and dispositions of learning. I asked Mrs Raven about her understandings of school improvement, its concept and background. She answered:

> *"It's one of those imperatives really to make the organisation the best it can be, and children come to school to learn, so of course, they've got to learn effectively and they've got to learn well. But there's so much more to schools than children learning, I know that is the key principle, but people work here. This is people's lives. I have a responsibility towards the wellbeing of staff, and everything who accesses it. I have a wider community role, I am the community school, so everyone who live locally send their children here. So, they deserve to know that their community is well served. So the whole idea of self-improvement – there is a moral imperative, that's wider than just give the children a good education here, I think because education touches upon everyone's lives, locally.*" [Mrs Raven_RS_Nov-2014]

She then moved from the perceived impact of a negative Ofsted judgement as the starting point of her engagement with the school on to discussion of the community to how schools are 'quality assured':

> "*If this is a failing school, then the whole community feels let down, and doesn't think it deserves anything decent, or a good school for their children, they don't deserve it for some reason, and they're not thought of enough by whoever those in charge are to invest in them as a community, system leadership around school improvement is essential. It's not someone telling us what we should be doing. That's just a tick box exercise. It's not top down. It's much more alongside and with.*" [Mrs Raven_RS_Nov-2014]

Notions of "collective moral purpose" became more apparent here, identified by Hargreaves (2014: 701) as a strand within the "partnership competence" dimension of a self-improving school system, as well as collective self-worth and 'capability' (Sen, 1985) – with an emphasis not purely placed on how people function, "but on having the capability (and practical choice) to function in ways they regard as important" (Kelly, 2012: 284). Mrs Raven expressed a need to engage the community in the 'collective capability' that was being built around their most recent efforts around school improvement and change.

Quis custodiet ipsos custodes?[32]

Mrs Raven talked at length about wanting to make comprehensive changes in her school – including at the level of Ofsted. When I first met her, she was training to become an Ofsted HMI inspector:

> "*I fundamentally disagree with the Ofsted external assurance programme in that it's top down. I think it would be much stronger system if it were trusted HMI who got to know schools and worked with them, to reflect on what's going well and what could we do better. Rather than coming in once every . . . I'm training to be an Ofsted inspector for that very reason, you don't change things from the outside in, you change them from the inside out. [chuckles] So I wanted to bring the skills and integrity and my beliefs into that whole process, and I haven't finished my training yet.*" [Mrs Raven_RS_Nov-2014]

Mrs Raven's training was completed by June the following year:

> "*From September, I'll join HMI – really important for the evidence I needed to make sure that the school is in the best possible place to be able to show what it's doing. Rather than, running a school for Ofsted. I don't run these schools so Ofsted say 'oh well done'. I'm running these schools for the staff, children, families. But when Ofsted come in, you want to make it easy for them to see what you're doing. It is a difference. It's not even a subtle difference. The tail does not wag the dog. Having done all that training, will be three years in October, doing inspections, it's really clarified for me how it all fits together.*" [Mrs Raven_RS_Jun-2015]

[32] Latin phrase which translated into English means 'Who will guard the guards themselves?". Originates from the Satires of Juvenal, the 1st/2nd century Roman satirist.

She described how some of her perceptions changed after her training – seeing how an organisation like Ofsted works from the 'other side', its structures, decision-making procedures, 'warts and all'. She also highlighted how the way to change a system is to become part of it:

> "*Ofsted is a cliff edge decision for schools. It's so crucial for the community to have a good school. The devastation, if the outcome is bad, and when you're not sure about the reliability, you think, what a waste of public money. I needed to see the structure, how to build trust in it, as a purposeful activity, but at the same time, that I was part of it, that I would have an opportunity to be instrumental in making it better. You can't do it from the outside. You can moan and groan and point fingers, but ultimately if you're part of the system, then you're doing the right thing.*" [Mrs Raven_RS_Jun-2015]

Mrs Raven had mentioned the problem of "rogue inspectors", about which I requested clarification:

> "*Just because the handbook says this, in this school the inspector did this, but in the other school they did this... that's not fair. That's what I mean by rogue inspectors. If the system can be so inconsistent then fundamentally it is flawed, because reliability is all. If the same person can go in to several schools and come out with a different outcome, it's the process that's flawed.*" [Mrs Raven_RS_Jun-2015]

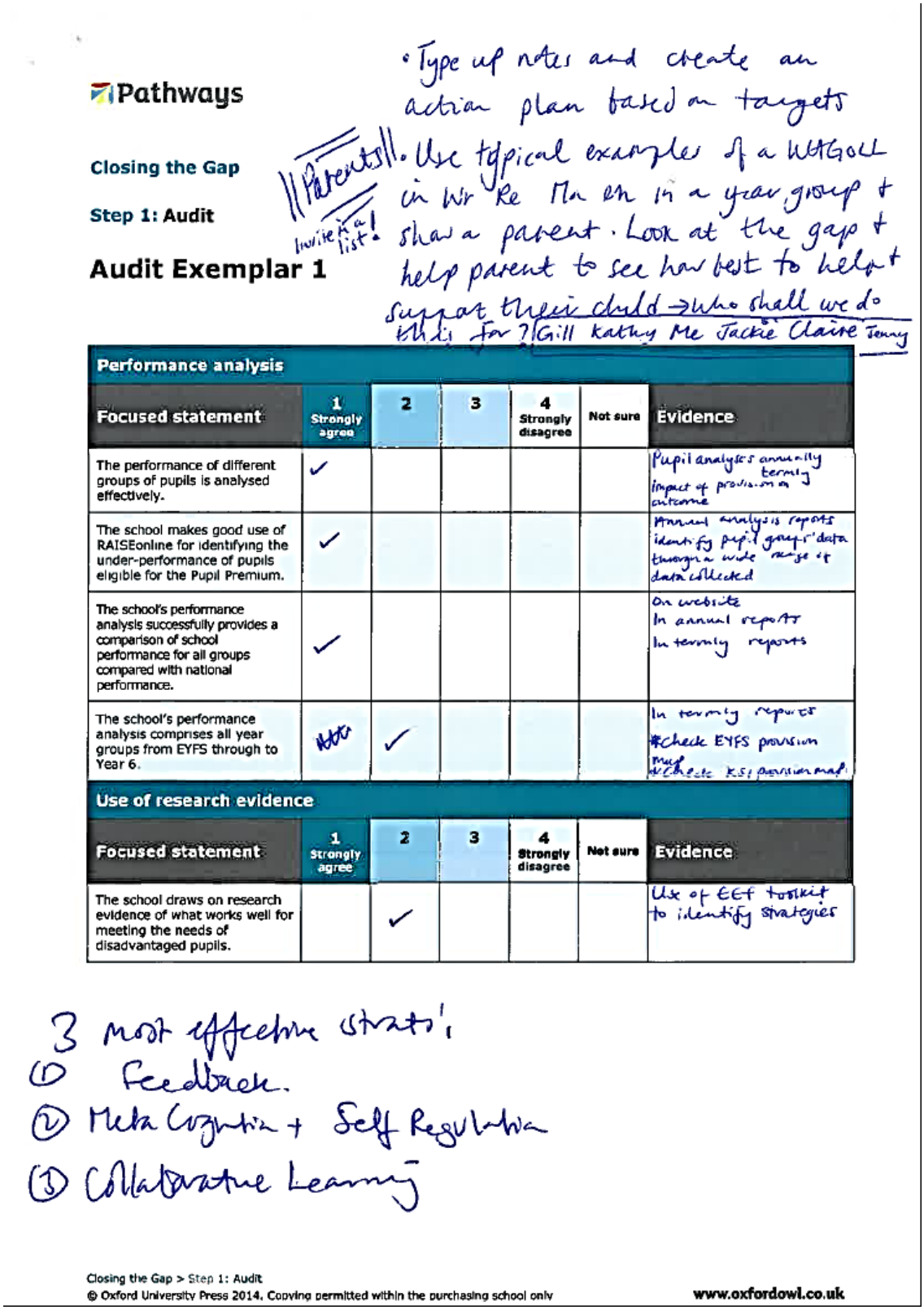
This issue of consistency permeating many facets of school life was further substantiated by the headteacher's application of coaching, and how she appeared to navigate different platforms to pursue very specific lines of enquiry with an aim to improve and standardise practice across her teaching team. The (four-step) system structure of Pathways also appealed to her, enabling a type of consistency by maintaining confidence in the platform's content. However, these same features of Mrs Raven's strategies for improvement also promoted the idea of a practitioner being guided to look for information in a system, as well as independently. Coaching conversations, for example, were meant to stop short of "telling":

> "*[I]t's the belief that a professional can actually come to their own way of resolving the issue they are being troubled by, because they are a professional. Sometimes if you are a student teacher, you just don't have the knowledge or understanding, so your mentor will guide and advise you. That's fine. That's a different relationship. But we as teachers are all employed as teachers in these schools, so we're all equal, so sometimes I will say to my deputy, I don't know what to do with this, and she will coach me through it. So, her coaching approach, is the questions that she asks, or the insightful commentary she gives when I'm talking, helps me to realise what I should do, without her telling me. Reflective dialogue but not always interpreting for me, I have to do that myself. It's a very skilled approach. We did a lot of work especially at the infant school, getting all staff what a coaching approach is.*" [Mrs Raven_RS_Nov-2014]

Mrs Raven appeared to recognise one of the five qualitative tenets of the DASI (without explicitly being aware of DASI as an approach in itself) – understanding the *stage* at which different teachers might be in their development – and tailoring the coaching relationship to suit individual teachers' needs at that particular time. However, in using a reflective, coaching-driven approach, the headteacher did not

mention the use of educational research evidence to underpin the ways that practice might be improved. Here, the use of research evidence in the form of Pathways was made more explicit in the research project, by Mrs Raven and her SLT preparing documentation during the four steps and talking through their strategies with me. Equally though, Pathways provided a range of different resources, including links to other sites for information and guidance, professional development videos, as well as research evidence – so this use of evidence could still have been implicit on the part of the teachers at Raven.

Appendix 17: Raven School Pathways artefacts



Pathways

Closing the Gap

Step 1: Audit

Audit Exemplar 1

• Type up notes and create an action plan based on targets
• Use typical examples of a WTGOLL in Wr Re Ma eh in a year group & share a parent. Look at the gap & help parent to see how best to help & support their child → who shall we do this for? Gill Kathy Me Jackie Claire Jenny

Parents!! Invite to a list!

Performance analysis						
Focused statement	**1 Strongly agree**	**2**	**3**	**4 Strongly disagree**	**Not sure**	**Evidence**
The performance of different groups of pupils is analysed effectively.	✓					Pupil analysis annually termly impact of provision on outcome
The school makes good use of RAISEonline for identifying the under-performance of pupils eligible for the Pupil Premium.	✓					Annual analysis reports identify pupil group data through a wide range of data collected
The school's performance analysis successfully provides a comparison of school performance for all groups compared with national performance.	✓					On website In annual reports In termly reports
The school's performance analysis comprises all year groups from EYFS through to Year 6.	✓	✓				In termly reports #Check EYFS provision Check KS1 provision map
Use of research evidence						
Focused statement	**1 Strongly agree**	**2**	**3**	**4 Strongly disagree**	**Not sure**	**Evidence**
The school draws on research evidence of what works well for meeting the needs of disadvantaged pupils.		✓				Use of EEF toolkit to identify strategies

3 most effective strats!
① Feedback.
② Meta Cognition + Self Regulation
③ Collaborative Learning

Closing the Gap > Step 1: Audit
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Pathways

Barriers to learning						
Focused statement	**1 Strongly agree**	**2**	**3**	**4 Strongly disagree**	**Not sure**	**Evidence**
The school identifies effectively the particular barriers to learning for each of the specific Pupil Premium groups.	✓					Individual tracking 6 weekly leads to personalised groups / interventions as required
The school identifies effectively the barriers to learning for other under-performing groups in addition to those funded by the Pupil Premium.	✓					Individual focus on every child ensures a tailored support programme for all PPS.
The school addresses barriers to learning through quality first teaching in the classroom.	✓					CPD and SIP provide time + energy on improving Q.T.
The school effectively plans the use of additional teaching assistants and teachers for guided sessions.	✓					Interventions / smaller group sizes are used extensively across the school.
The school ensures a focus on assessment for learning in small group interventions to ensure effective strategies are developed by pupils to assess their progress and identify next-step targets.	✓					6 weekly targets set for every child in RWM Clear focus for small groups, time limited
Class teachers and TAs plan effectively for joint working with target groups of pupils, with regular opportunities for feeding back on progress and/or barriers.	✓					Communication systems improved + in place. Teachers + YGLs now more effectively plan for targeted interventions + review more regularly

pto (1)

Use of funding						
Focused statement	**1 Strongly agree**	**2**	**3**	**4 Strongly disagree**	**Not sure**	**Evidence**
The school makes targeted use of Pupil Premium funding to specifically support pupils entitled to Free School Meals (FSM), children who are Looked After (CLA), and children of Service Families.	✓					Identified on entry (+ as circumstances change) + tracked individually.

Communication						
Focused statement	**1 Strongly agree**	**2**	**3**	**4 Strongly disagree**	**Not sure**	**Evidence**
The school effectively communicates the use and impact of the Pupil Premium to governors and parents (e.g.			✓			Website statement but could do more for parents Governors receive reports.

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① Feedback (*Check nSix account for website*)

Most effective when it represents CTG marking
Pupil mentoring represents an opportunity to discuss Feed up (where am I going?) Feed back (how am I doing?) and feed forward (where to next)
(Create a crib sheet for teachers to use as an aide-memoire)

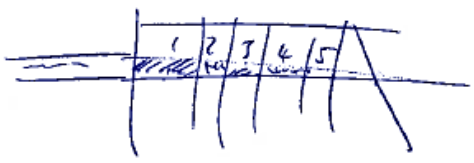
~~It isn't excellent / perfect but it might be. in walls~~

② Self-regulation and Meta-cognition

- direct and regulate their own actions towards their learning goals. Motivation, a sense of self as a learner, an internal locus of control are all essential for effective Self-regulation. Reflection after a piece of work → improves motivation to achieve goals. Do we highlight the importance of 'process' through displays eg working walls and comments that refer to the process skills of learning eg I did 3 drafts.... I paid attention so I knew what to do.... etc with a focus on behaviours for learning
Ensure we build children's perceptions of what learning involves – thinking about learning and talking about learning in a plenary.
• Plan • Monitor • Evaluate own learning – 3 key features.

③ Collaborative learning

TTYP... Co construction of learning ... No hands up...



~~Austin's butterfly.~~
~~Vimeo.com/38247060~~

~~WAGOLL~~ All the places you'll go Dr Seuss.

Pathways

through the school website).						at meetings (Standing Item).
Monitoring and evaluation						
Focused statement	**1 Strongly agree**	**2**	**3**	**4 Strongly disagree**	**Not sure**	**Evidence**
The school has systems **for** regular monitoring of progress for all target groups.	✓					Termly YGL reports and reviews of half termly interventions.
The school regularly evaluates the impact of additional support and makes amendments where required, feeding back into classroom practice.		✓				Regular review take in place now. Renewed focus on As to Provision where req'd
Parental engagement						
Focused statement	**1 Strongly agree**	**2**	**3**	**4 Strongly disagree**	**Not sure**	**Evidence**
The school actively engages parents in supporting the learning of targeted groups of pupils.		✓				New Link worker Workshops for parents Face SS Sats / No. cards. Half termly reports, Celebration Assemblies
Supporting staff						
Focused statement	**1 Strongly agree**	**2**	**3**	**4 Strongly disagree**	**Not sure**	**Evidence**
There is a strategic plan for the professional development of staff focused on effective teaching to close the achievement gap.	✓	✓✓	✓			~~Not in place at this point~~ CPD sessions eg Jan 15 Inset on effective t+l Marking strats etc.
Staff are aware of the reasons why some children can under-achieve.						CPD sessions share, focused on improving quality of teaching
Staff have a good knowledge of approaches in all subjects that will ensure all children are engaged and motivated.						QoT CPD used to identify most effective

~~Pake~~ Mark Primary School Islington

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Pathways

INSET to staff. March 2015.

Closing the Gap: Background Context and A Summary of the Audit Findings

An introduction for staff

[redacted]

February 2015

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The Key Issue

"The attainment gap between **rich and poor** opens up before children start school, is visible during the infant years and increases over time."

"Young children who are in the bottom 20% of attainment in the Early Years Foundation Stage Profile are six times more likely to be in the bottom 20% at key stage 1 than their peers; pupils entitled to Free School Meals are only half as likely to achieve five good GCSEs as their peers." [1]

[1]White Paper (*2010) The importance of teaching,* © Crown Copyright 2010.

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Who Are the Most Vulnerable Learners?

Key information:

- 32 % of **looked-after children** do not get any GCSEs and **a** further 24 % achieve fewer than five GCSEs. [1]
- In 2013, 53% of **white British boys known to be eligible for FSM** achieved the expected level in all of reading, writing and mathematics compared with the national average of 75% of pupils. [2]
- The widest gap is in the new grammar, punctuation and spelling with a gap of 18 percentage points. 59% of pupils known to be eligible for FSM achieved the expected level compared with 77% of all other pupils. [3]

[1] The Joseph Rowntree Foundation (2010) *Monitoring poverty and social exclusion 2010.*

[2] Statistical First Release: *National Curriculum Assessments at Key Stage 2 in England 2013 (revised)*

[3] *SFR: National Curriculum Assessments at Key Stage 2 in England 2013 (revised), DfE (2013),* ©Crown Copyright 2013.

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Who Are the Most Vulnerable Learners?

Key information:

Analysis of over 50,000 children participating in intensive KS1 literacy and numeracy interventions (*Every child a Reader* and *Every Child Counts*) showed that:

•41% were entitled to Free School Meals (FSM), as compared to 19% in the national primary population.

•37% were of Ethnic Minority heritage, as compared to 26% in the national primary population.

•21% were learning English as an Additional Language, as compared to 20% in the national primary population. [1]

1 (2009) Every Child a Chance Trust

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Disadvantaged Pupils

Research shows that, on average, these pupils:

- have less home support for their learning [1]
- have weaker language and communication skills[2]
- are more likely to have significant difficulties in basic literacy and numeracy skills[3]
- experience more behavioural difficulties[4]
- are less likely to believe they can control events that affect them. [5]

1. Joseph Rowntree Foundation (2010) *Poorer children's educational attainment: how important are attitudes and behaviour?*
2. Sutton Trust (2010) *Low income and early cognitive development in the UK.*
3. Every Child a Chance Trust (2009) *The long term costs of literacy difficulties and The long term cost of numeracy difficulties*
4. DCSF (2009) *Breaking the link between disadvantage and low attainment,* © crown Copyright 2009.
5. Joseph Rowntree Foundation (2007) *Tackling low educational achievement.*

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The Reality ...

More than one in four young people from poor backgrounds feel that people like them don't succeed in life. [1]

1 Interim report of the All Party Parliamentary Group on Social Mobility(2012) *Seven Key Truths about Social Mobility*

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Assessing the Evidence

Statistics show that gaps can be large:

- Pupils eligible for FSM are five times more likely to be excluded from primary school (permanently or for a fixed term) than those not eligible. [1]
- Pupils eligible for FSM are more than twice as likely to achieve below Level 3 in English and in mathematics at the end of key stage 2 as those not eligible. [2]

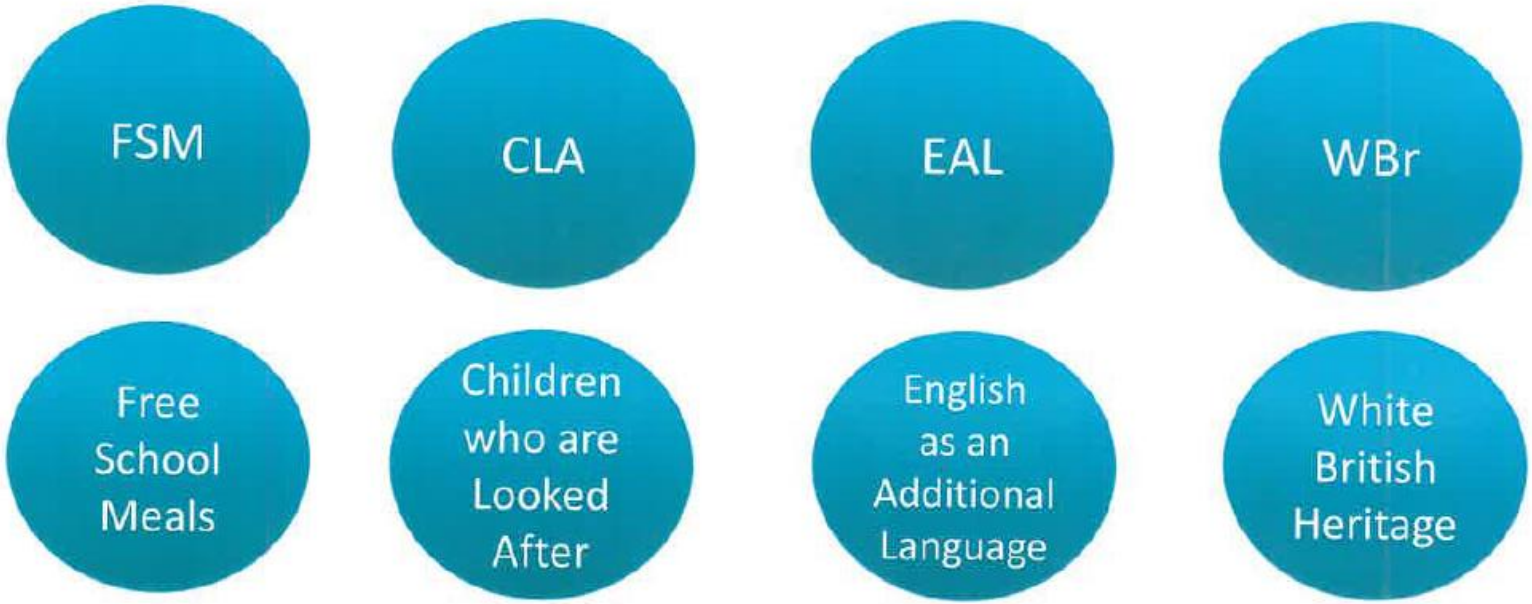
[1] DfE (2011) Statistical First Release: National Curriculum assessments at key stage 2 in England, ©Crown Copyright 2011.

[2] DfE (2011)Statistical First Release: Permanent and fixed period exclusions from schools and exclusion appeals in England, ©Crown Copyright 2011.

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Quick Quiz



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Audit Process

Performance analysis						
[illegible]	[illegible]	2	3	4 Strongly disagree	Not sure	[illegible]
The performance of different groups of pupils is analysed effectively.		X				Pupil analyses annually& termly Impact of provision by outcome **Action: Ensure all year groups use same format for ease**
The school makes good use of RAISEonline for identifying the under-performance of pupils eligible for the Pupil Premium.	X					Annual analysis reports commissioned from external reviewer. They identify pupil groups' data through a wide ranging analysis of outcomes and performance information
The school's performance analysis successfully provides a comparison of school performance for all groups compared with national performance.	X					On website In annual reports In termly reports
The school's performance analysis comprises all year groups from EYFS through to Year 6.		X				In termly reports **Action: Collate information into similar format for ease**

school only

Audit Results

llowing will be given priority when we are planning: MAID principles

o we need
aintain?

- Use of target funding for small group support.
- Use of RAISEonline for identifying under-performance of groups and specifically against national performance.
- Termly data analysis to identify under-performance of individuals and groups
- Headteacher's annual performance report and summary to governors and staff.
- Strategies in place for engaging parents whose children are receiving targeted support.
- Continue more proactive role to ensure that families eligible for FSM register for them in light of the new legislation where eve in reception, year 1 and 2 will be eligible for a FSM.
- Communicate effectively information regarding the use and impact of Pupil Premium funding through a variety of mechanisms particularly the school website.
- Regular pupil progress reviews with each teacher
- Ensure Middle Leaders manage regular monitoring and evaluation of progress, with tailoring of targeted support from lessons
- Allocation of teaching assistants based on priority pupils across year groups.
- All teachers have clear performance objectives, linked to accountability for improving the use of the Pupil Premium to close th achievement gap.

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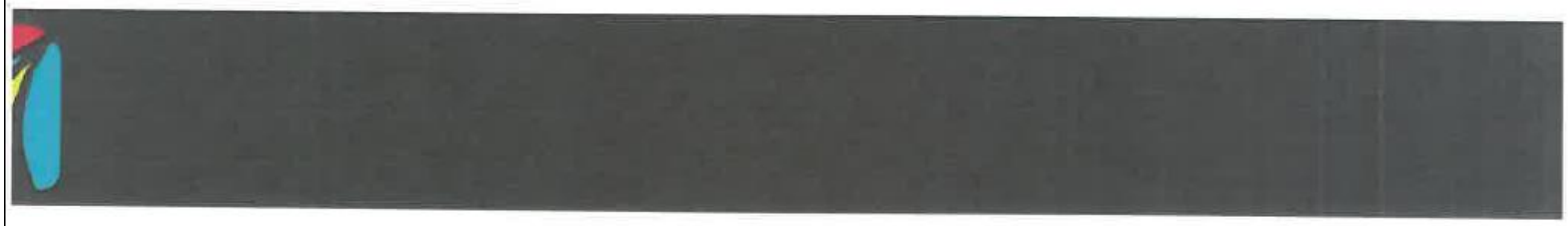
A What do we need to amend?	• Formalise pupil progress discussions half-termly with target groups • Continuing Professional Development (CPD) on engaging and motivating pupils. • Ensure ALL staff move away from the historic view of what we expect from these children, in favour of higher expectations that the school can make a difference. • Job descriptions for key staff to formalise responsibility for PPG expenditure (YGL)

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I **What do we need to introduce?**	• **Appoint a Lead Governor for getting the best from the Pupil Premium.** • **Ensure Subject Leaders in English and mathematics have clear performance objectives, linked to accountability for improving the use of the Pupil Premium to close the achievement gap.** • **Identification of the barriers to learning for specific groups, with a professional development programme for staff linked to the identified barriers, exploring new evidence-based resources for interventions.** • **WAGOLLs for parents to understand where gaps exist and how high our expectation are**

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D What do we need to discard?	• Interventions that have been identified as not having a significant impact on closing the gap.

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Next steps

Task	Review Criteria	Staff responsible	Time Scale for implementation
ools' performance analysis includes ps using the consistent format in Years R 1 impact of specific interventions on pils	Are SLT aware of how effective the different interventions are on pupil outcomes through pupil tracking? How responsive are SLT to the changes required? What communication structures are in place to ensure pro-active decision-making?	CF SLT	February 2015
e use of displays in school to show the learning rather than just the outcomes.	Is there at least one display in each school to show pupils and parents how children learn most effectively?	SLT	February 2015
ur dialogue with pupils to ensure we are g about learning and reflecting on how best during lessons. upport sheets to staff)	Are pupils able to talk about learning and demonstrate an awareness of how they learn best or their own motivation to learn?	SLT and teams	February 2015
se a clearer structure to Pupil Mentoring clude the most effective points in dialogue: p (where am I heading? ack (How am I doing?) orward (What's next?)	Are staff using the 3 identified bullet points in their discussions? Do staff believe they made a difference to the learning conversation they had with each child?	CF SLT	February 23rd 2015
nvitation letters to parents where pupil ss than expected. uent meetings use typical examples of illustrate expectations. Discuss the gaps lan with the parents to support the pupil in ards.	How effective was the invitation letter in getting parents into school? Did the parent understand the need for action? Did the pupil outcomes improve as a result of the actions being implemented?	CF	February 23rd 2015

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Effectiveness Report
January 2015

[redacted] Pupil Premium Grant

January 1

Objectives of Expenditure and Priorities for Further Development

Objectives Of Pupil Premium Spending

When making decisions about using pupil premium funding it is important to consider the context of the schools and the subsequent challenges faced. Common barriers for FSM children attending our schools include: less support for learning at home; lower aspirations; weak language and communication skills; lack of confidence; more frequent behaviour difficulties; issues with attendance and punctuality. There could also be complex family and home circumstances that prevent children from flourishing. The challenges are varied and there is no 'one size fits all' approach that will be successful.

Our key objective in using the Pupil premium Grant is to narrow the gap in achievement between pupil groups. There exists a significant gap in attainment between Pupil Premium and non-Pupil Premium groups and this is a national trend.

Through targeted interventions and whole school, improvements we aim to eliminate the potential barriers to successful learning and progress. For children who start school with low attainment on entry, our aim is to ensure that they make accelerated progress in order to reach age-related expectations and above, as they move through our schools.

We have analysed our data thoroughly and examined the impact of interventions in place. We have used a range of research evidence to inform our decision-making about improvements that can be made to further strength the quality of teaching and the likelihood of accelerated learning.

Areas of further focus for us have been informed through best practice research:

- Improving parental engagement
- Importance of quality first teaching
- Within school variances
- Improving feedback
- Developing collaborative Learning
- Improving awareness of Meta-cognition and Self –regulation

This year we are continuing to improve the quality of day to day teaching by increasing the proportion of teaching and learning deemed to be outstanding. The development of Lesson Study practices and a more distributed leadership model are being used to ensure the best practices are recognised and shared widely by coaching staff to improve their own practice.

The deployment of additional staff to oversee provision and ensure all pupils requiring more intensive 1-1 support are offered mentoring sessions more regularly in addition to those with their class teacher, means that support is more proactive and flexible.

We will continue to improve our reading of reading through the use of the Accelerated Reader programme, enthusing all pupils to become avid readers and have enhanced our facilities in KS2 by building a library, investing heavily in developing our book stocks and appointing a part time librarian. More able KS1 pupils will also be able to use the programme. Parent engagement is enhanced through the Home Connect aspect of the programme, allowing parents to monitor their own child's progress in reading.

The new approach to daily literacy lessons through the introduction of the Literacy and Language programme in Years 2-6, Get Spelling! and Talk for Writing approach to the development of writing, alongside a focus on developing children's speaking skills will all support further improvements in this area.

We want all children to be able to talk confidently about their learning, where they are currently achieving and what they need to do to improve further. To support this each child from Year 1-6 has a Pupil Mentoring session

and receives a Traffic Light record every half term with their class teacher. Improvements to the learning conversations are being planned for through further staff training.

In the EYFS there is a focus on the development of effective communication skills through the implementation of targeted speech and language programmes to pupils on an individual or small group basis.

To increase parental engagement in learning, we have appointed a Link Worker to work 4 days per week, offering skills sessions to parents, providing targeted support to help them support their child at home and working with senior staff to identify and address barriers to learning.

We are building the leadership roles in school for children by extending the range of roles for pupil leaders to hold, including opportunities for cross-year working to build their confidence in peer-tutoring and support for younger pupils.

Training for staff has included a focus on providing effective feedback through marking and dialogue, higher order thinking, metacognition, and quality first teaching. Visits to other schools and hosting regular Open Mornings for other schools to visit us provide opportunities for staff to reflect on their practice.

Provision for pupils social and emotional needs are planned for every year group through Nurture sessions, small group and individual work, using additional Teaching Assistants employed to ensure there is a high staff:pupil ratio, so support is carefully targeted and flexible.

Whole school consistency has been achieved through the training and development of all staff in the most effective strategies for teaching and learning which include highly structured approaches to behaviour management and classroom organisation, supporting all pupils to learn and follow the high expectations and regular routines in our schools. Additional Teaching Assistants have been appointed to teach basic skills in every year group to smaller groups, in addition to pupils' daily lessons to ensure there are opportunities for consolidation and practice each day.

Collaborative approaches to learning such as the extensive use of partnerwork have been more firmly established through consistent classroom management and organisation expectations. Pupils are seated in rows with a clear paired partner in morning lessons.

Opportunities to raise expectations and aspirations for all pupils are exemplified through our partnerships with the Children's University programme, liaison with other settings such as an enterprise project with [redacted] extended schools activities such as those the Community Sports Foundation and free after-school clubs offered by school staff. In addition the KS2 Bright n Early Club is a funded activity daily and provides an incentive for children to attend school on time and to experience a positive start to the school day. After school booster sessions, partnership Maths sessions using a teacher from the local High School and Easter School are used to target Year 6 pupils in need of further practice or confidence –building prior to SATs.

Closing the Gap

Step 2: Action Planning

Task	Review Criteria	Staff responsible	Time Scale for Implementation
1. Ensure schools' performance analysis includes provision maps using the consistent format in Years R 1 2 3 5 6 To show the impact of specific interventions on individual pupils	Are SLT aware of how effective the different interventions are on pupil outcomes through pupil tracking? How responsive are SLT to the changes required? What communication structures are in place to ensure pro-active decision-making?	CF SLT	February 2015
2. Improve the use of displays in school to show the processes of learning rather than just the outcomes.	Is there at least one display in each school to show pupils and parents how children learn most effectively?	SLT	February 2015
3. Improve our dialogue with pupils to ensure we are actively talking about learning and reflecting on how pupils learn best during lessons. (Distribute support sheets to staff)	Are pupils able to talk about learning and demonstrate an awareness of how they learn best or their own motivation to learn?	SLT and teams	February 2015
4. Agree to use a clearer structure to Pupil Mentoring sessions to include the most effective points in dialogue: • Feed Up (where am I heading? • Feed Back (How am I doing?) • Feed Forward (What's next?)	Are staff using the 3 identified bullet points in their discussions? Do staff believe they made a difference to the learning conversation they had with each child?	CF SLT	February 23rd 2015
5. Send out invitation letters to parents where pupil progress is less than expected. In the subsequent meetings use typical examples of WAGOLLs to illustrate expectations. Discuss the gaps and agree a plan with the parents to support the pupil in moving forwards.	How effective was the invitation letter in getting parents into school? Did the parent understand the need for action? Did the pupil outcomes improve as a result of the actions being implemented?	CF	February 23rd 2015

Pathways

Closing the Gap

Step 3: Take Action

Parental Engagement and the Pupil Premium

A checklist structured under Ofsted reporting headings

The checklist below is structured under the Ofsted reporting headings. It is intended to support school leadership teams in considering how effective the school is in engaging the parents of pupils entitled to Pupil Premium funding. The summary table will support leadership teams to record the current position and document next steps.

Achievement

- Parents are informed about their children's current progress and next steps in learning on a regular basis.
- Parents are fully aware of their children's targets.
- Parents are involved in events to celebrate their children's progress.

Quality of teaching

- Parents are informed that their children will have additional support funded by the Pupil Premium to maximise their progress at school.
- Parents are supported to help their children at home, with actions linked to their next steps in learning.

Behaviour and safety

- Parents demonstrate through questionnaires and interviews that they are confident that their children are safe.
- Parents are aware of the school's behaviour policy and are confident that issues are resolved effectively.

Leadership and management

- The school provides information to all parents on the website regarding funding from the Pupil Premium and the impact of funding on pupil progress.
- The ~~Lead for the~~ Pupil Premium meets regularly with parents where there are concerns regarding the progress of specific pupils who are entitled to Pupil Premium funding.
- The Lead Governor is accessible for parents of pupils entitled to the Pupil Premium to address any concerns they may have.

Summary	Actions needed
Achievement	
Quality of teaching	
Behaviour and safety	
Leadership and management	

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Pathways

Closing the Gap

Step 4: Evaluate Impact

Post-Initiative Review Exemplar

Key Development Priority 1: All underperforming pupils, including those entitled to FSM, make accelerated progress				
Target 1: Ensure schools' performance analysis includes provision maps using a consistent format to show the impact of interventions on individual pupils				
Tasks and Actions	**Success Criteria**	**Status: Completed Not completed Abandoned**	**Performance Against Success Criteria**	**Next Steps**
Ensure all pupils eligible for Pupil Premium (PP) funding are identified Parents supported to understand the significance of Free School Meals (FSM) claims for school funding for closing the gap Identify pupils eligible for FSM *Ever 6* and include in the funding claims Identify any children of Service Families or children who are Looked After (CLA) who may also be eligible for Pupil Premium funding	School has accurately identified 100% of pupils eligible for PP funding to ensure full resources claimed	Completed	HT and middle leaders have completed a thorough analysis of all pupils and encouraged parents to claim FSM through reminders on newsletters and direct letters sent home	To ensure any child starting the school mid-year is also reviewed in terms of potential for PP funding To ensure when children who are Looked After move school, information goes to the next school regarding PP funding and impact of support on progress

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Build on the systems of identification used in all year groups	100% of pupils who are eligible for FSM and are under-performing were identified and given additional support to accelerate progress	Completed	Additional interventions put in place for pupils who are eligible for FSM and are under-performing. Monitoring of progress shows some are accelerating but still some are stubborn to move	To ensure teachers set ambitious targets for children eligible to FSM transferring in Sept 2015 based upon final end of year reports. Review curriculum offer to ensure maximum match of activity to need.
Introduce system for early monitoring of progress in EYFS	Children eligible for FSM to make same accelerated progress as those not entitled to FSM in EYFS particularly in Communication, Language and Literacy (CLL)	Completed	Monitoring progress systems put in place however not all children eligible for FSM in EYFS have made accelerated progress	Following SpLTh course for TA, review planning for CLL teaching and ensure greater additional time in language development activities for EYFS pupils who are eligible for FSM
Ensure SLT are aware of how effective the different interventions are on pupil outcomes through pupil tracking and that communication structures to ensure pro-active decision-making.	Discussions at SLT meetings , in PPA and Team Meetings ensure all staff are aware of the issues that prevent effective progress	Completed	Regular discussions and heightened awareness have led to much closer pupil tracking	Continue to ensure an individual response to pupils and a flexible response to making changes in provision

Target 2: Improve the use of displays to show the processes of learning rather than just the outcomes

Tasks and Actions	Success Criteria	Status: Completed Not completed Abandoned	Performance Against Success Criteria	Next Steps
Is there at least one display to show pupils (and parents) how children learn most effectively	Working Walls and similar are apparent in classrooms which illustrate the current learning	Completed in classes but not in corridors	All teachers are not more aware of the importance of reference points for pupils and WAGOLLs provide exemplar finished work too	Continue to promote this and ensure corridor displays also show learning processes

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Pathways

Target 3: Improve our dialogue with pupils to ensure we are actively talking with them explicitly about learning and reflecting on how pupils learn best during lessons				
Tasks and Actions	**Success Criteria**	**Status: Completed Not completed Abandoned**	**Performance Against Success Criteria**	**Next Steps**
Discussions with pupils about barriers to their learning during Pupil Mentoring an in lessons	Pupils have provided an insight into their perceptions of their learning/what works most effectively for them to support staff in planning to meet their needs Planning reflects newly identified barriers to learning	Completed	Head has ensured monitoring calendar is distributed to SLT and that staff are aware of expectations of half-termly monitoring Calendar is annotated regularly and staff use it for reference	Continue to use learning conversations to discuss and explore pupils' understanding of how they learn most effectively
Teachers to use a clearer structure in Pupil Mentoring sessions each half term for Years 1-6 to include mention of: Feed Up Feed Back Feed Forward	Teachers are using this language with pupils and believe it is making a difference to pupil understanding about learning	Completed	Pupils are able to talk about learning and progress and say what they have done well recently	Continue this strategy and consider how to include parents in the conversation
Target 4: Communicate effectively with staff, governors, parents and pupils the plans for addressing the closing the gap issue, and the impact of actions taken				
Tasks and Actions	**Success Criteria**	**Status: Completed Not completed Abandoned**	**Performance Against Success Criteria**	**Next Steps**

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Share findings from the audit of priority areas for improvement with staff, governors and parents	100% of staff and governors are aware of the key findings from the audit	Completed	Headteacher reports regularly to full governing body and SLT.	Ensure the school website is updated with plans for the new year from Sept 2015
Meet with parents of targeted children to talk through planned support in school and ways to help at home	100% of parents of targeted groups of pupils know what additional support their children will receive in school and feel supported to give additional support at home	Completed	Not all parents have had meetings with their teachers to discuss planned support at home	Focus for next year is planned programme of support to parents of targeted children to provide additional support at home Ensure all EYFS parents are aware of the planned actions to accelerate progress particularly the parents of children eligible for FSM.

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Free School Meals

Is your child entitled to a free school meal?

April 15 on display

A child at primary school receives a free 2-course meal

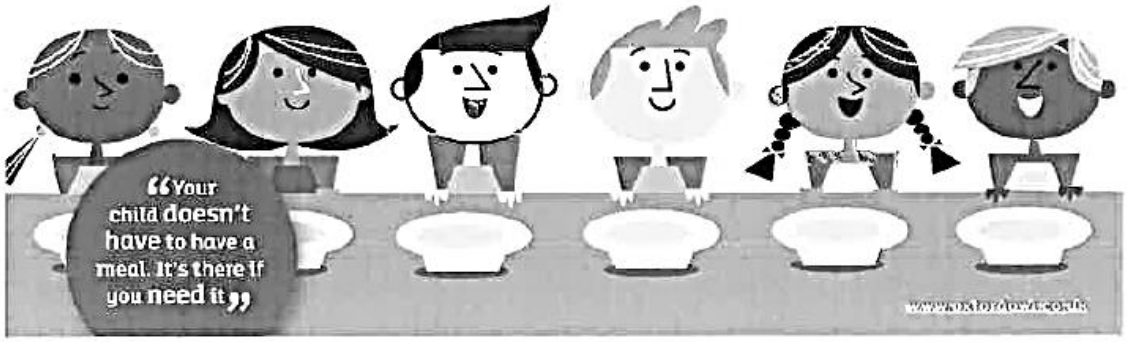
Staff in the school office will be happy to help

Your school also receives extra money for each child who is entitled to Free School Meals

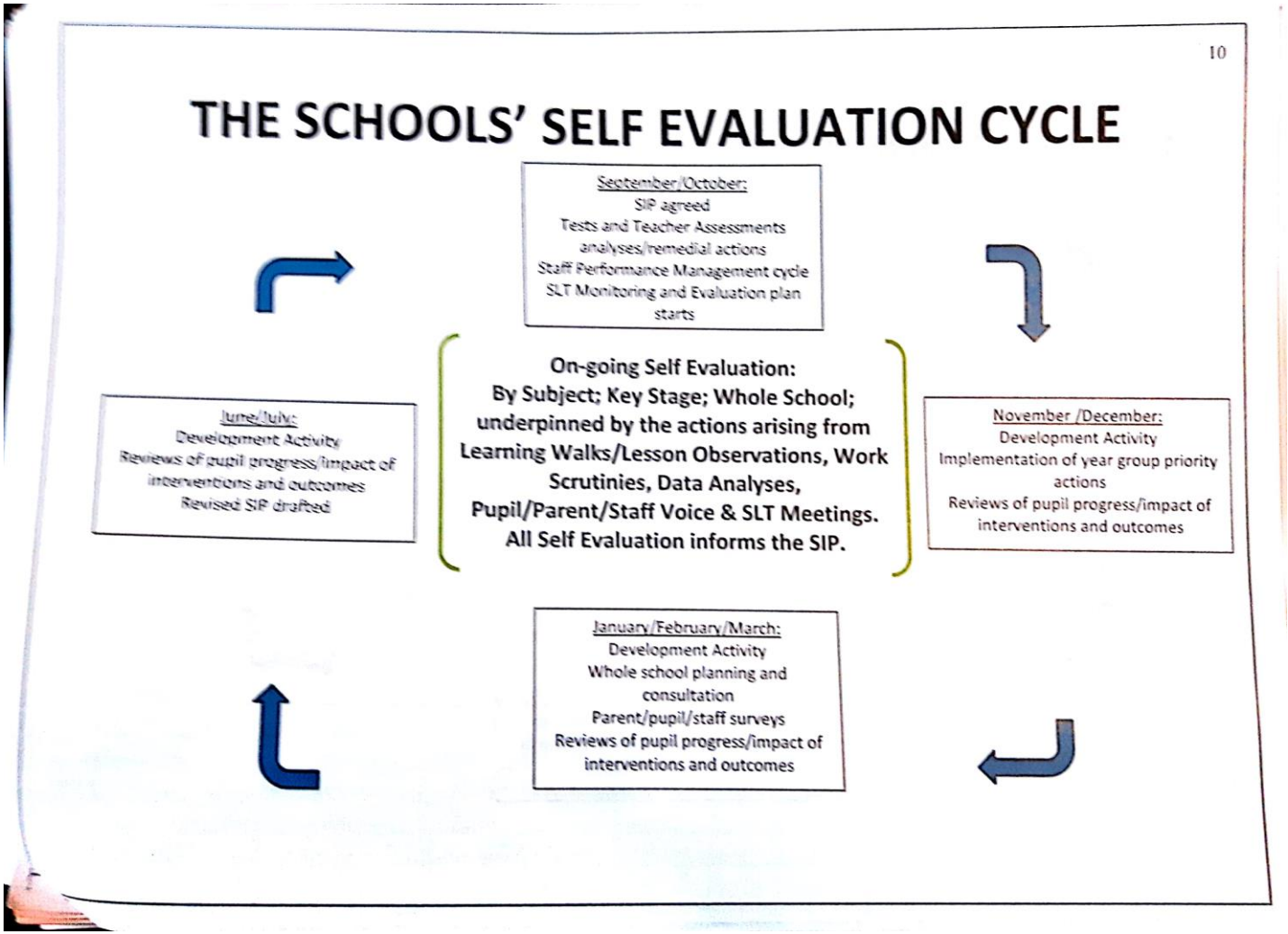
For further information ask at the school reception

You are entitled to Free School Meals if you receive one of these benefits:

- Income Support
- Income-based Job Seekers Allowance
- Income Related Employment and Support Allowance
- Child Tax Credit (but not Working Tax Credit) and with a household income of less than £16,190 per annum
- The guaranteed element of State Pension Credit
- Support under Part VI of the Immigration and Asylum Act 1999.



Appendix 18: Raven School Improvement Plan, page 10



10

THE SCHOOLS' SELF EVALUATION CYCLE

September/October:
SIP agreed
Tests and Teacher Assessments analyses/remedial actions
Staff Performance Management cycle
SLT Monitoring and Evaluation plan starts

November /December:
Development Activity
Implementation of year group priority actions
Reviews of pupil progress/impact of interventions and outcomes

January/February/March:
Development Activity
Whole school planning and consultation
Parent/pupil/staff surveys
Reviews of pupil progress/impact of interventions and outcomes

June/July:
Development Activity
Reviews of pupil progress/impact of interventions and outcomes
Revised SIP drafted

On-going Self Evaluation:
By Subject; Key Stage; Whole School; underpinned by the actions arising from Learning Walks/Lesson Observations, Work Scrutinies, Data Analyses, Pupil/Parent/Staff Voice & SLT Meetings.
All Self Evaluation informs the SIP.

Appendix 19: Sparrow School's staff meeting May 2015

The purpose of the staff meeting was to review and discuss teachers' thoughts on the KS2 English paper that had arrived, its level of questioning and how they anticipated their pupils handling each question. The headteacher began by announcing that he and Mrs Starling felt that it was a "very fair paper", and referred to it as the "Level 3 to 5 paper". Another teacher remarked that it certainly "looked more friendly".

The headteacher then declared: "I'd like to ask you one simple question then ladies…"
The group of teachers reacted with a sigh of "Oh no…"
The headteacher replied:

> *"No, not that sort of question! You know there are million pounds of research – I support the NfER with like trial tests and things, which some people don't agree with I know; there's no right answer. So, you've got Charlie Small, gorgeous, lovely little story. You see why they chose that? Guide dogs, gorgeous. My favourite word, a new word is 'pupdate'. How out of million pounds of research would you choose a text about how ladybirds help farmers in California get rid of a plague of tiny insects? There's nothing wrong with it, I just can't see how on earth did the mind pattern go, where you sit in a university or whatever and go 'we're going to choose that text'."* [Mr Sparrow_SS_May-2015]

So here, the headteacher seemed to be wondering out loud how researchers at the NfER and assessment designers, in designing the examination paper, had moved from a concept that needed to be tested, to a specific question, and then to the chosen context of that question. This struck me as a topic equally relevant to school improvement considerations more generally. Teachers and leaders attempting to first diagnose their 'localised' problem or school improvement priority and then inform their practice with a range of evidence (both practical and more academic) – as mentioned earlier: "how to 'graduate' from the general, more global, all-encompassing problems to the specific and local".
Mrs Starling suggested that the topic was chosen "because it's got lots of inference in it."
Mr Sparrow: *Is that why?*
Mrs Starling: *Yeah, they're talking about a plague, an army, it's because of the way it's written, not the subject matter.*
Mr Sparrow: *It's like talking about Walter Raleigh's potatoes or something...* [sighs]

Mrs Starling shifted to a different reason for the chosen context in that it was "interesting". The headteacher agreed that it was interesting but trailed off saying "but anyway…"
Another teacher picked this up and asked the headteacher: *Did it make you chuckle?*
Mr Sparrow: *I have to chuckle in SATs otherwise I'd get really depressed.*

Mrs Starling: *They have the word plague in there [again talking over each other] and famously they asked what is a 'pla-gewi'? … How to demoralise a child immediately on a Monday...* [another teacher: *what is this word? Acacia?*]

Mr Sparrow: *Can I also just say that they go through roughly in what's the word... order, they never used to do that. And that is why you have to be involved in trialling tests, if you don't trial them you can't give them feedback, they don't improve. And they have improved this, so much better than last year. Last year it was difficult.*
Mrs Starling: *It is something that most children could answer.*
Mr Sparrow: *That's what I kept saying, trying not to use the word 'easy'..* [another teacher: *well, your weaker children can ignore that bit.*]
Mr Sparrow: *In bland terms, it's Level 3, 4, 5.*
Mrs Starling: *But there were some literal questions in the beginning, if they did get to it like, how long ago was the plague? Over a hundred years ago. So they could pick out some literal...* [Mr Sparrow: *[pupil's name] got that right.*]
Mrs Starling: *Did she?*

The discussion carried on to the next part of the paper that was seen as more difficult:
[Another teacher] *Double negative: Guide dogs must also know not to obey any commands... disobedience... quite hard..*
[Another teacher] *Are these your answers [Mrs Starling] or were they given?*
Mrs Starling: *There are no answers, I just scribbled my answers on.*
[Another teacher] *You got that wrong.* [laughter]
Mrs Starling: *I got that double negative wrong! I got distracted by 'play your part with the puppy' down there.*
[Another teacher] *That's what happened to me!*
Mrs Starling: *Did you get regular 'pupdates'? That was an absolute hit. [Pupil's name] and [pupil's name] were beside themselves. We're going to use that in the classroom from now on, pupdate.*
Mr Sparrow: *Brilliant word.*

Mr Sparrow: *So we feel quite positive?*
Mrs Starling: *Level 3 to 5 great. Level 6... really hard. I'll be amazed if any of them get...*
[Teacher:] *How many were you expecting?*
Mr Sparrow: *We only entered four, we registered six but [pupil's name] and [pupil's name] couldn't.. We're not expecting any...We had a disaster with [pupil's name's] brother two years ago where of course he did all his work at Level 6, he was marked at Level 5 and then ended up with Level 4, which is why we had to focus on maths.*

The conversation was then rounded up and summarised by the headteacher.
The reflections that took place during this staff meeting did not seem to rely heavily on references to educational research evidence to help answer some of the questions raised. Once, Mr Sparrow mentioned the school's participation in NfER test trials, but other than that, conversations featured

specific pupil's names and attainment, sometimes their characteristics, but little discussion about developing contextualised action plans or increasing pupil progress based on educational literature or past experiences with interventions. It should be noted though that these reflections may have taken place at meetings when I was not present.

Appendix 20: Pen portrait – Jackdaw School

Jackdaw and Jay Schools for very different (expressed) reasons did not engage with Pathways or the research project despite initial enthusiasm and stated aims to use the platform to support teachers' reflection and school improvement practice.

Jackdaw is an infant school, part of an academy trust on the south west coast of England. There are no published attainment and progress results to show here but by different accounts (including Ofsted) they are an outstanding, high-performing school. The Assistant Headteacher reported the following results in their initial questionnaire:

> "*We are always looking to raise standards further and have been successful in raising our Year One Phonics Screening score to 96%, our level 3 + readers to 47% and level 3+ Mathematicians to 38%.*" [Jackdaw_questionnaire_Nov-2014]

The school had been introduced to the Pathways research project through a member of the Woodland Steering Group. Back in 2007 however, Jackdaw had just 'scraped through' a Satisfactory Ofsted rating – reading results were declining year on year, and Ofsted had 'tagged' the school warning that they would be back if their reading attainment did not improve. The headteacher at the time decided to buy into Read Write Inc (RWI), a programme developed by Ruth Miskin based on synthetic phonics published by Woodland Press. The Assistant Headteacher for Reading and Writing reported that:

> *"Reading is the most important thing that we do and we're not getting it right... I think it's important to say that everyone in the school was working extremely hard but it wasn't having an impact and I think it's because there was no consistency to the approach. There was a bit of Jolly Phonics going on, a bit of Letters and Sounds, lots of phonics teaching, but it wasn't consistent, not following a prescribed pattern, it was a bit haphazard which meant that lots of children had gaps in their learning. When we assessed them in Y2 to place them in the RWI phonics programme, some horrendous percentage (like 40%) hadn't retained the first set of sounds, after two years of phonics teaching! We got a new headteacher in, and I came in as a Y2 class teacher. I'm not pivotal in this at all! But I saw the impact that it had as a class teacher, new headteacher, new phonics scheme, deputy head really driving it."* [Mrs Jackdaw_JwS_Dec-2014[33]]

Mrs Jackdaw, perhaps because of her role in school, focused most of our discussion on the success of Read Write Inc in Jackdaw School. She described how standards and accountability had changed over the last ten years:

[33] Denotes Assistant headteacher Mrs Jackdaw in Jackdaw School (JwS) in an interview conducted in December 2014

> *"We have always been judged on standards but it has become more and more black and white, in the past 10 years or so, as a class teacher you became more aware of that, value added, levels the children were leaving you with. Obviously, we're moving away from levels but to me it's about children being able to read at the level they should be able to, to be able to engage in the curriculum. It is about making sure you know how your children are performing. It all comes back to high expectations and leadership, doesn't matter if you're in a leafy green.. or Hackney, makes no difference, it's about knowing that every child in the school can learn to read and write, and they can go on to do A Levels they can, university they can. It's about the same life chance. Really the big message. What are you doing for that child's life chances? Listening to them talking about their wobbly tooth is not helping their future. Teaching them to read is helping their future."* [Mrs Jackdaw_JwS_Dec-2014]

She also described the school's change of practice and CPD pre- and post-2007:

> *I would say this school was in the past, very comfortable, supportive, warm, but what we weren't doing necessarily, pre-2007, ensuring that we were having high expectations for every child in terms of learning. The first key point is about realising you could do something better and what it might be. We've used RWI to raise our standards in reading, and writing, but there are lots of different ways to do that. It's about finding an area to improve, and it's GOT to be through staff training initially, and making sure everyone is consistent and has the same bank of knowledge, and that involves getting all the staff on board.* [Mrs Jackdaw_JwS_Dec-2014]

Mrs Jackdaw reassured me that most of the same staff who had 'scraped a satisfactory' stayed on to become 'outstanding' in 2010. Their Ofsted report reads:

> "*Children enter the Early Years Foundation Stage with skills broadly in line with national expectations. They make good progress and at times outstanding progress during their time at the school. This is reinforced as they move through the school, as pupils make consistently good and often better gains in their learning, leading to outstanding overall progress. Attainment is significantly above average by the end of Year 2. Outstanding work by the staff in their collection, interpretation and use of assessment ensures all staff have a range of information to plan an excellent series of activities that challenge all groups of pupils. This leads to at least very good and often outstanding teaching and learning. However, occasionally there is a lack of clarity in planning in both the learning intentions of the lessons and the outcomes to be achieved.*" (Ofsted, 2010[34]: 4)

On closer reflection of our conversations and the school improvement priorities that they talked about, I began to see that maybe the reasons they had engaged with the research project were slightly at odds with the objectives of the study. Their expression of interest questionnaire listed the following short, medium and long-term goals:

[34] Not referenced to maintain school's anonymity.

"*This academic year we are evaluating and re-writing our creative curriculum ensuring that our children experience a rich, engaging, experience; this includes clarifying the place of 'beach school' within our curriculum. We are working hard to raise the achievement of our more able writers and have introduced Speaking Stories, Talking Texts alongside our extremely effective phonics teaching. This involved whole school training and a school wide launch with storytelling being high profile across the curriculum and taught consistently in every classroom.*" [Jackdaw_questionnaire_Nov-2014]

Jackdaw, after a few months of contact, began to show signs that they were becoming less interested in engaging with Pathways. A year passed, with frequent attempts to get in touch with the assistant headteacher and the executive headteacher. I was finally able to talk to Mrs Jackdaw again in 2016 when she revealed that she had looked at Pathways – specifically material around spelling and punctuation and engaging male readers, but Pathways had not been attempted as a whole school. I asked what her initial impressions were of the platform:

"*Useful - I always like to hear how other people have addressed needs within their school. Different schools have different strengths, and different schools have been through different tasks. So getting that feedback from someone who's further down the line on something that you're trying to work on is helpful. I don't particularly use things like Assessment - finding out where you are - I only go on there when I know where I am and I need help. In terms of auditing - I haven't used. I've already audited and decided what to do. All the resources are useful. Our school is quite far down the line in terms of assessing our own needs. We probably don't need it as much as other schools. We are very aware of what we need to do and work on and we will then go on to Pathways and look on there.*" [Mrs Jackdaw_JwS_Jan-2016]

Mrs Jackdaw expressed that they had tried to set up each member of staff with a login to Oxford Owl and Pathways but technical glitches resulted in the whole school sharing one login. This was raised as a 'frustrating, technical issue'. I was not quite sure how this had happened as the school had working logins for Oxford Owl's spelling and other literacy and numeracy resources. The overall message that I gleaned from Mrs Jackdaw was that the school did not seem to need another resource on which to expend time and effort – perhaps with reason. She listed the different Woodland resources that the school had already taken on:

"*We use lots of [Woodland Press] resources - RWI, Literacy and Language, Maths Makes Sense, we have invested in those tools to help us teach and monitor programmes like SPAG. We're also using Ros Wilson's criteria on writing, getting our heads around life without levels. There's so much going on isn't there, it's a bit of a juggling act.*" [Mrs Jackdaw_JwS_Jan-2016]

I asked how the staff and school attempt to keep up with feeling confident with what is coming ahead in the immediate and longer term.

> *"Deal with one thing at a time. The removal of levels has been a big change for everyone here so we brought in data tracking, trying to get used to the vocabulary, it's used to assess children's abilities. It's actually quite tricky, because it depends on what you've used, the vocabulary can be different, no one is confident at the moment. What we're doing as a school is giving ourselves time and get it right as opposed to jumping into something new. Let's not rush."* [Mrs Jackdaw_JwS_Jan-2016]

After two more attempts at engaging the school, they decided that they still did not require Pathways, and so their participation in the research project came to a close.

Appendix 21: Pen portrait – Jay School

Jay is a larger than average primary school in the West Midlands. The executive headteacher of two schools in the academy trust, Mr Jay, was not able to fill in the initial questionnaire to register interest in the research project. He was also headteacher at Jay School. His answers to the questionnaire were recorded by me over the phone. Jay's improvement priorities were also summarised when we met in 2014. I started by asking how Jay School had changed over the previous five years or so:

> "*School has changed in a number of ways. Main thing is the outcomes are much better than they were. When I started, outcomes were less than expected nationally. There was not much of a strategic vision for improvement. Got better at looking at strategic direction and how to do that. Refined and reflected what to do. Still not getting some things right. Still not having impact on areas we need to have. Some areas we are having impact. For us, this project is about (whilst I think we're doing really well and we're robust and everyone knows what they're doing, as much as I think that) I'm not 100% sure that everyone does actually. For me, it will be somebody else's perceptions of what we do, and that will feed into how we can be better as a team, as a school.*" [Mr Jay_JyS_Dec-2014[35]]

Mr Jay expressed an interest in learning more about his school through the perceptions of an external, perhaps more critical 'friend'. He also alluded to a few of the school's challenges:

> *"Back to original question—lots has changed. Behaviour's better, atmosphere is better, more parental engagement, pretty much in every area there has been improvement. Systems and structures are in place for pretty much everything now. It's really about managing people coming in and out of the school, because people move on. What we've found is you get to doing something really well and you get two or three key people leave, and it's not as strong. Trying to take new staff with you and keep people going through... Keeping knowledge in the school. Majority of change for the better. Some things haven't worked, or added value..."* [Mr Jay_JyS_Dec-2014]

Mathematics was also identified as a priority:

> "*Maths, really good work over the last three years, improved but it's dipped again. Parental involvement would be good. Maths Pathways. Miss a little bit-- the audit stage. Identification why we need to do something. Data feeds everything we do. But it's quite simplistic. We're not doing particularly well in really auditing, what is it about maths that we are not doing.*" [Mr Jay_JyS_Dec-2014]

Mr Jay talked about how acceleration was an issue for the school and perhaps nationally. He suggested that an audit may reveal things to staff that they had not even considered previously:

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[35] Denotes Headteacher Mr Jay in Jay School (JyS) in an interview conducted in December 2014

"*The developments in terms of maths, visual stimulus for the children, physical stimulus... we know what we've got to do but I'm not sure if it's based on enough robust evidence really, if that makes sense... so I think we could do with the audit being more important in the formulation of the plans. That's probably why we're not having enough impact... we should be an outstanding school. We've got outstanding elements, outstanding KS1 results ... generally there's a lot of really good stuff going on in the school. But KS2 don't reflect that. There's got to be something we're not doing as a leadership group, to make that next step. It might be we're not rigorously enough identifying what we need to improve."* [Mr Jay_JyS_Dec-2014]

An issue around distributed leadership and control also emerged in this exchange:

Mr Jay: *I think it's the ownership, I think I own too much.*

Me: *Do you think you've owned it for a while?*

Mr Jay: *Yes. When I started the leadership capacity was limited, it's been built up now so we've got quite good leadership capacity. But I'm still owning too much, I think. I think that's what other people would say as well.*

Me: *If you wanted to hand stuff over, how would you go about doing that?*

Mr Jay: *It used to be teachers gave me the data, I would put it in the system, I would do all the crunching. But now the teachers put their own data in. That's one move. The coordinators now have much more ownership of that data. There is more discussion them and myself and the teachers around what the data is saying to us, what is the other information saying to us. It needs to be handed over more.* [Mr Jay_JyS_Dec-2014]

The school's attainment data up to 2014 seemed impressive, with a slight dip in 2015. An interim assessment by Ofsted in 2014 stated that the school's Good judgment had been sustained.

Figure 81: Jay School's L4 or above attainment 2012-2015 [Source: DfE (2016b)]

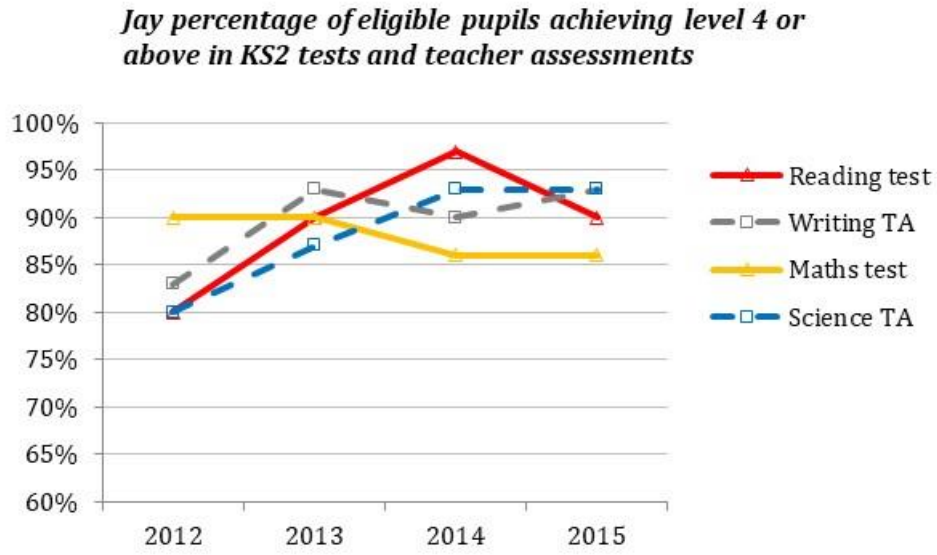
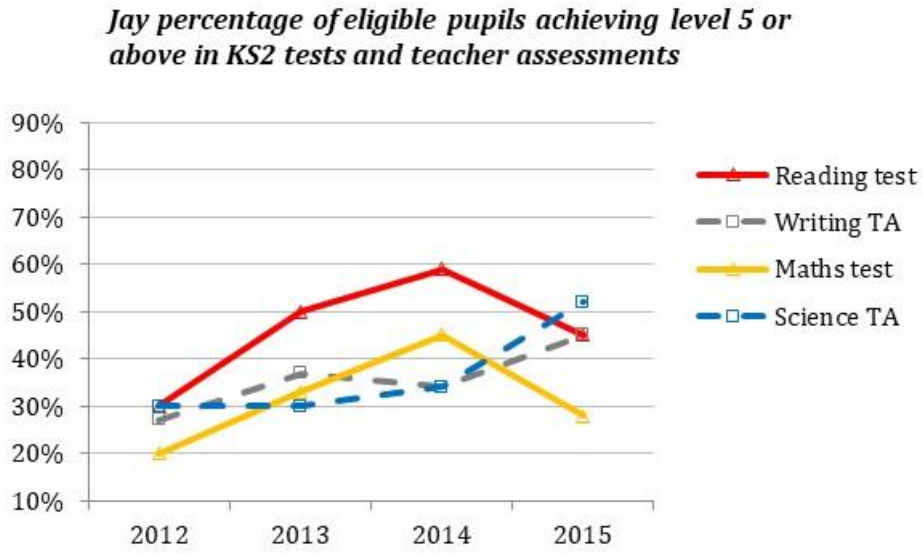


Figure 82: Jay School's L5 or above attainment 2012-2015 [Source: DfE (2016b)]



Over the next year or so, it was difficult to get hold of Mr Jay to talk about Pathways. I read in the press that he had been declared a 'super headteacher' and appointed as a Local Leader of Education to raise standards in classrooms across the city. In 2015, I finally managed to speak to Mr Jay, who admitted that Pathways 'had got dropped off in the end":

> "*We had some leadership issues, it's all sorted now. We had a difficulty in that a key leader in the school wasn't doing what they should have been doing, damaging to the atmosphere of the school last year. For me, started two Pathways, when I look at them, time and processes, I want leadership to be involved, the time taken on Pathways is too long. I need to look at Pathways again because I've got some middle leaders who are doing some work on various aspects, research, and perhaps I can support them through that with Pathways.*"
> [Mr Jay_JyS_Oct-2015]

A very brief phone conversation later that year indicated that Jay School was experiencing a number of staffing complications. Again, when I looked in the press for any news, I came across their most recent Ofsted report in 2016 that showed that their overall effectiveness had been judged as 'Requires improvement'. Specifically, three aspects were marked as 'requires improvement': Effectiveness of leadership and management, quality of teaching, learning and assessment and outcomes for pupils. Personal development, behaviour and welfare and early years provision were judged to be Good.

It seemed that Mr Jay had a willingness to engage with Pathways but at that time it was seen as an extra burden that his staff could do without – particularly in light of other challenges taking place at the school. We decided that Mr Jay would get in touch if he found the capacity to try Pathways to support the school in their time of difficulty.

Appendix 22: Woodland Press-Magpie School DBR episode

Magpie was such a school that insisted on obtaining printed guides in 2015 to help with improving reading, narrowing the attainment gap and improving parental engagement. Before the Pathways research project, Mrs Magpie would order and pay for 50 or so guides to hand out to her staff during meetings so that they would have something physical to refer to while issues were being discussed. After the research project began, I was able to arrange for some free guides to be sent to Mrs Magpie to show reciprocity in our collaboration. I did indeed observe teachers working with the hard copy guides, even though by that point, all of them had been uploaded on the Oxford School Improvement website and were available to download for free. There appeared to be several things going on, including the 'validation' from Woodland and respect that accompanied a resource like Pathways, and the printed guides – as was illustrated by my conversation with Magpie School on why a combination of the two types of material would help raise parental engagement:

> Mrs Magpie: *It's not just coming from me. It's a whole professional body like Woodland. They prefer it to be a professional body. Here's a questionnaire, here's an audit, much easier for me. Launch at the staff meeting, use Parental Engagement booklet to work alongside. That'll be my tool for the INSET day. Bring it with you. A lot of downloading if online. Ask teachers to download one page from somewhere online... Each page is an action point. We can work through each point. Same points in the book as in the exemplar in Pathways.*
> Me: *What is the difference between asking teachers to use the book and downloading online?*
> Mrs Magpie: *They won't download, simple as that. If I physically give it to them I can say look at page..., the book will be in front of them as I'm talking at the meeting. TAs [teaching assistants] don't always have laptops either.* [Magpie_Aug-2015]

Figure 83: Magpie's approach to administering questionnaires about parental engagement

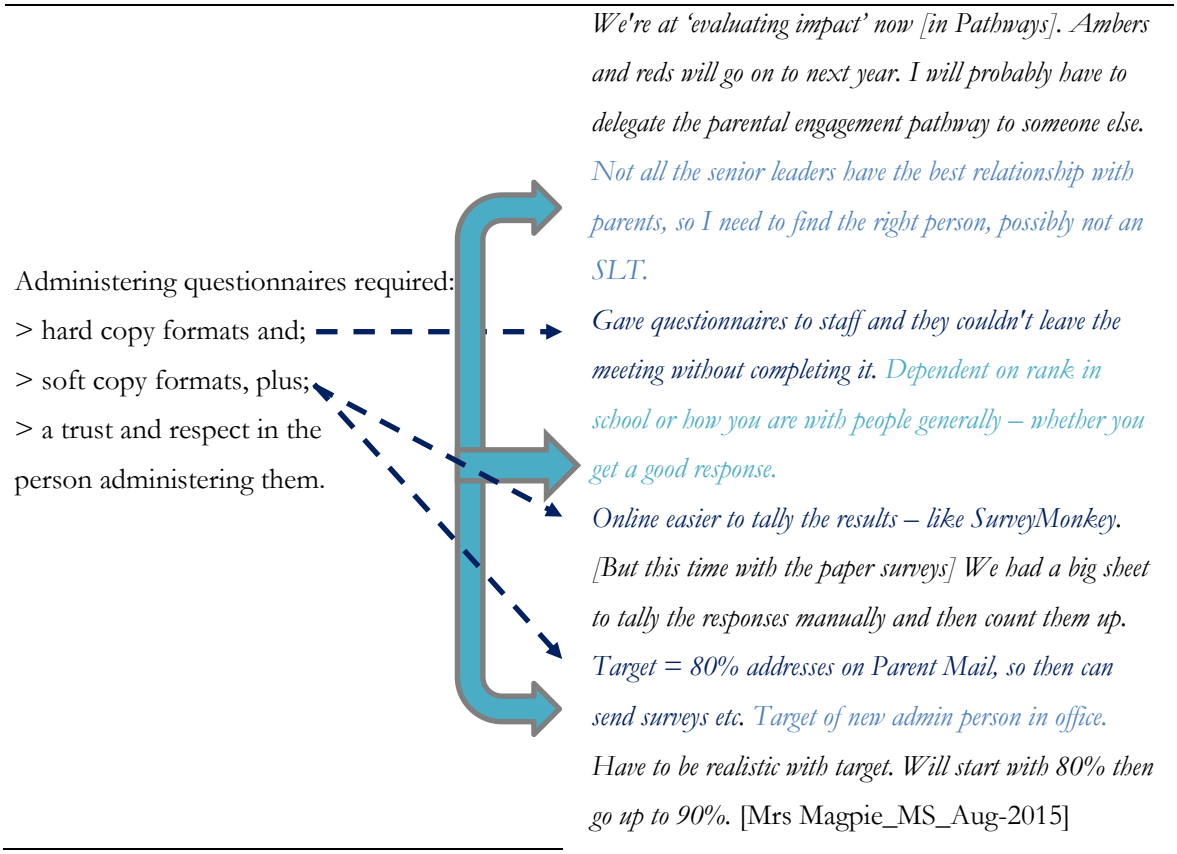


Figure 83 shows the multi-environment approach taken by Magpie School in order to maximise returns from parents and staff of their parental engagement questionnaires. It was not enough just to hand out the questionnaires and send out reminders to hand them back in but to apply a three-pronged tactic using paper, email and in-person interactions. This was all underscored by trust and respect of the staff member in charge of administering the questionnaires and not just relying on teaching staff and senior leaders but also administrative staff in the school office, often at the reception desk to promote higher completion and returns of the parents that passed by.

Appendix 23: Woodland Steering Group meeting minutes November 2014

Appendix 24: Journey map readings

Chapter 8: Cross-case analysis and synthesis – RQ3: Pathways' design and potential relationship with practitioners' feedback

The journey maps presented next attempt to bring together the findings from each of the case study schools and Woodland's case study of technology design in school improvement. An example reading of Magpie School's journey map is given in section 8.3.3, with a full set of readings provided here.

Journey mapping: summary of components:

1. Name of **school**

2. Comparison of a **scenario** or specific task taking place in a school, the **school's improvement goals** and how they were articulated, and the **school's goals in adopting Pathways**

3. **Pathways stages** of engagement in relation to the four phases of school improvement (Day, Gu and Sammons, 2016: 240)

4. **Collective school improvement phase** in the school based on the scenario or task being worked on at the time – not necessarily just the 'whole-school' improvement phase but the phase or stage specific to a task or practitioner managing Pathways at the time

5. **Actions**: what practitioners did to link their school improvement goals with Pathways resources

6. **Touch points with Pathways et al**: practitioners' specific interactions with sections of Pathways and other relevant resources

7. **Impressions**: Practitioners' views, perceptions and emotions/attitudes towards their interactions with Pathways

Scale symbol	Description
++	Strongly positive views/feelings
+	Positive views/feelings, for example confidence, satisfaction at seeing a change in pupils' outcomes
?	Ambivalence towards Pathways resources (structure and/or content)
-	Some degree of negative views/feelings, for example stress or nervousness
--	Strongly negative views/feelings, for example practitioner' lost interest to the point of abandoning Pathways

8. **Pull factors**: Features of Pathways design that attract potential school practitioners – often linked with the more positive Impressions listed in the journey map

9. **Push factors**: Features of Pathways design that may detract potential school practitioners – often linked with the more negative Impressions listed in the journey map

Idealised journey map – example reading

The school's improvement goals should come across as clearly articulated by the headteacher and/or other senior leadership – e.g. "to improve reading and other outcomes through increased parental engagement". The stated purpose for choosing to adopt Pathways might include corresponding sections or tools in Pathways that could be used to achieve the school's SI goal.

Reading horizontally: Pathways stages – based on 'four phases of improvement' (Day, Gu and Sammons, 2016: 240), Goals – based on 'core leadership practices' (Day et al, 2009, 25) – moving from a practitioner's 'first encounter' with Pathways, understanding what possibilities exist within the scope of the SI goal and Pathways material, periods of structured experimentation, and setting meaningful and feasible targets to recognise if the goal was achieved.

SI actions follow the steps of DASI – progressing from establishing what pupil learning, contextual factors and assumptions mean across different stakeholders (teachers, TAs, pupils, parents and so on) to, designing school improvement strategies, collecting formative evaluation data and monitoring the implementation ready for the next phase.

Touch points with Pathways et al – refers to practitioners' engagement with resources like Pathways that may support their SI goal, here moving from 'diagnosis' of a school issue potentially using the School Self-Evaluation Pathway, going through some of the research and background around that issue, and going on to each of the four steps (audit, strategic planning, take action and evaluate impact).

Impressions mirrors the five-level evaluation model (Guskey, 2002a) and progresses from initial reactions and perceptions to practitioners' learning, organisational support structures to use Pathways (and other resources) and investigating the potential impact of the intervention on pupils' outcomes, and also other stakeholders.

Push and pull factors refer to the opportunities afforded by Pathways (and other resources) to support practitioners' learning and development of professional knowledge, and pupils' experiences of learning and developing new skills (Muijs et al, 2014: 247).

Reading vertically: Reading down a phase, e.g. in the Foundational, early encounter stage of a school issue – how does the function of diagnosis and setting directions fit with the other actions that might take place at the same time such as carrying out school self-evaluation, assessment of what knowledge and skills are needed by pupils to meet their goals and identifying sections of Pathways (and other resources) that might be relevant. Each time one phase moves into another in a row (e.g. Pathways stage), do the other rows move at the same pace? Might there be some dissonance between rows and phases (columns)?

Magpie journey map – example reading

Magpie's school improvement goals came across as clearly articulated by the headteacher – to improve reading and other outcomes through increased parental engagement. The stated purpose for choosing

to adopt Pathways was that the school was finding it more difficult to source high quality professional development and teaching and learning resources with shrinking local authority support.

Reading horizontally: Mrs Magpie made explicit links between Woodland's printed school improvement reports and the four-step system of Pathways. Overall, there seemed to be a trust of the Woodland/Pathways approach to school improvement – a trust in the four steps and series of tasks underneath each task. It was perhaps easier for Magpie staff to follow each Pathway faithfully as early career classroom teachers managed two of the three Pathways. Iterative design and redesign of strategies based on new information seemed to take place at each stage. Impressions stayed positive and seemed to increase to even higher positive levels as more Pathways were unlocked.

Reading vertically: There was a direct pairing of Woodland's written reports and each step in Pathways, so the goal at each stage seemed to be 'spelled out' for all staff. This perhaps contributed to Pathways being viewed as a trustworthy resource, even though rich in content, the level of detail was seen more as an advantage to practitioners' professional learning rather than 'information overload'. However, the efforts necessary to spread the potential benefits of adopting Pathways had to be communicated to staff and other stakeholders across the school, to maximise engagement and positive pupil outcomes.

Raven journey map – example reading

Raven School's SI goals centred around moving out of Special Measures and closing the gap between Pupil Premium and other children's attainment and progress. The goal of using Pathways appeared to be (as enacted during the research project and stated in their initial context questionnaire – Appendix 15B – page 419) to engage in teacher enquiry without 'reinventing the wheel' and enabling professional learning in their senior leadership team more directly and the rest of the school's staff (indirectly through other tools, templates and questions).

Reading horizontally: Mrs Raven progressed through Pathways' four steps in her first 'foundational' encounter with Pathways, e.g. making links between pupils' outcomes improvement goals and material that might be useful in the Closing the Gap Pathway. Two other Pathways were used which overlapped with Mrs Raven's use of Closing the Gap (Assessment without Levels and Parental Engagement) and enabled a multi-layered approach to improving pupils' attainment, partly through changes in homework and engaging fathers more in their children's learning. Impressions seemed to peak when all three Pathways were being deployed in some way, but receded as the system grew more familiar and resources outside Pathways seemed less restrictive.

Reading vertically: While the four-step system and tentative 'boundary' around the topics Mrs Raven was engaging with (such as Pupil Premium and parental engagement) was appreciated, the system grew too familiar towards the end of the third Pathway. This may have been influenced by how Mrs Raven seemed to mediate and govern the content in Pathways so other content was less 'discoverable' by other perhaps less experienced members of staff who may have valued the four-step approach. This points to a wider issue in Pathways that content is not tailored to school roles or stages of

improvement, so material may come across as daunting at one extreme or simplistic to practitioners at varying career stages and experience.

Sparrow journey map – example reading

Mr Sparrow's SI goals were initially stated as to improve pupils' reading attainment and streamline the school's many interventions using Pathways, however specific ways to do this were less clearly articulated. Mrs Starling's goals, while more extrinsically motivated (to complete her NPQH task), seemed clearer, was also bound by her subject area (mathematics).

Reading horizontally: After initial indecision and confusion about what Pathways might be used for, Mrs Starling progressed through the four steps rapidly to complete her NPQH task to improve parental engagement in their children's learning of mathematics. Initial impressions were negative, as Pathways came across as for whole-school work and less for classroom teachers in a smaller school (interestingly where leadership might have been more dispersed, but also more definitively bound by specific responsibilities). As the steps were attempted and teachers (including Mrs Starling) could recognise some positive impact on pupils' outcomes, parents' understanding and teachers' openness to the new initiative, impressions improved to more positive levels, as the utility of Pathways perhaps also became clearer over time.

Reading vertically: The SI and Pathways stages that Sparrow School may have perceived itself to be were perhaps more developmental and enrichment, and less foundational. In a sense, Mrs Starling's NPQH task encouraged the school's practitioners to look at a school issue around mathematics at a more foundational level. The impetus and direction originated (partly) from an external source and clear guidance was required by a member of senior leadership (nominally Mrs Starling) to translate some of the material in Pathways into concrete tools for teachers' day-to-day practice.

Jackdaw journey map – example reading

Less can be said about this journey as Jackdaw School did not engage much with Pathways, however, smaller, tentative claims can be made about their non-engagement. Pathways seemed simultaneously to be too simplistic (as Jackdaw expressed characteristics of being more at the enrichment and renewal phases of school improvement) but also that there was too much content (where potentially useful material seemed more hidden from a more 'advanced' view), and the school was not in a matching 'experimentation' phase. Impressions were overall ambivalent, followed by more negative reactions as Mrs Jackdaw experienced difficulties with setting up school logins, and was not able to achieve their goal to 'support other schools through Pathways'. There is currently no functionality within Pathways

to interact with other users (or Pathways designers) via the use of chat, message or to comment on others' questions and 'produsedd' artefacts.

Jay journey map – example reading

Jay School's possible reasons for not engaging with Pathways seem to point to some disconnect between Mr Jay's stated goals to distribute more leadership but retaining control of Pathways and other responsibilities such as the analysis of pupil attainment and progress data. Similar to Sparrow School perhaps, Jay seemed to be more in later stages of school improvement (when Pathways was introduced) and there was confusion around what the purpose of Pathways was, and if it was synchronous with the school's immediate improvement goals. A second issue appeared to be that Pathways was not recognised as a source of support when Jay was placed in 'Requires improvement' by Ofsted. This could have been due to any number of reasons, but this reaction was useful to trigger more consideration by Woodland Press about how Pathways comes across to schools experiencing difficulty, where the senior leadership was less clear about school self-evaluation or where some of the school's problems seemed at times to be insurmountable. Was Pathways too rich and vast, and less tailored to specific stated needs to the extent that some of the content might remain hidden from users who might have otherwise been able to engage had the resource been more targeted, or the pedagogic messaging been more focused?

Appendix 25: Questions for Self-Assessment of technology initiatives

Source: Are All the Pieces of the Puzzle in Pace? (Levin and Schrum, 2013: 47, Table 3)

Vision	Is there a clear vision for what, why, and how technology will be used? Have all stakeholders been involved in developing this vision? Is the vision followed by the development of a mission statement and strategic planning? Is every new idea, program, and initiative tested against its fit with the established vision?
Leadership	Do all stakeholders understand and practice the principles of distributed leadership? Is systems thinking a part of how the leadership thinks about leading change? Are the right people in place to execute the vision, mission, and strategic plan? Are systems in place for ongoing evaluation of the strategic plan?
Technology Planning, Infrastructure, and Support	Is infrastructure (pipes and wires) in place to support plans for new technology? Is enough technical support onsite to support teachers and students using new technology? Have school policies and procedures been developed/revised to support new technology? Does the technical leadership at the district level understand curriculum and instruction as well as the technical issues?
School Culture	Is addressing and improving school culture and climate a major part of the strategic plan? Are all teachers, students, and parents on board with the goals and purposes for integrating new technology? Is there a focus on and high expectations for both students and teachers? Are systems in place to recognize and celebrate successes and repair any failures?
Professional Development	Have teachers received PD prior to each new technology initiative? Is ongoing PD available to teachers that is focused on integrating technology into their content areas? Is the PD differentiated by skill level, by interest, and by how and when it is offered? Is modeling and sharing among a school's staff and teachers a part of the culture of the school?
Curriculum and Instructional Practices	Are teachers expected to try new instructional practices, use technology for formative assessment as well as for learning, and take risks without fear of reprisal? Has the curriculum been revised to focus on 21st century knowledge and skills, including problem solving and critical thinking, communication and collaboration, and creativity and innovation? Have instructional practices become more active, student centered, problem or project based, connected to the real world, and relevant to students' futures? Are teachers able to differentiate their instruction and their assessments using technology?
Funding	Is the funding in place to support new technology, upgrade and maintain the infrastructure, and sustain technical needs over time? Is the leadership able to think outside the box and be entrepreneurial to finance technology initiatives? Have old policies been changed or new policies been enacted to address ongoing funding needs? Have potential cost savings been factored into estimating the value of investment in new technology? Has a plan for BYOD been considered?
Partnerships	Are parents, families, and other members of the school/district involved in strategic planning for technology initiatives? Is communication ongoing so that all constituents are continuously updated regarding the progress of technology initiatives? Are partnerships with business, industry, and institutions of higher education in place? Are partnerships considered for their potential assistance beyond just financial or technical support?

Appendix 26: Associated reflection on Key Implication 1

9.2.3c Associated with Key Implication 1: How the DASI model might be meaningfully applied in schools

The potential affordances of a space such as Pathways and its provision of educational research evidence may offer opportunities for practitioners to participate in more a structured form of collaborative inquiry, which in turn could support:

- a readiness to engage with, and to learn from, educational theory and research;
- a capacity for knowledge-sharing and to act on what has been learnt in a school;
- a readiness to create space and time, for staff to experiment and innovate, with the security to make mistakes and learn from them, and to work flexibly and collaboratively for a specific 'improvement task' or purpose, while enabling professional learning to take place;
- use of external expertise (in the form of Pathways and/or a research link) to challenge assumptions and extend the school capacity to evaluate and to learn;
- efficient communication, shared language and expectations, "recognition, reward and celebration of success." (Jackson and Street, 2005: 56)

In practical terms, how can schools go about establishing "clarity and consensus about the general aims of school improvement by:
1. considering student learning as the main function of the school; and
2. addressing school factors which influence teaching and learning?" (Creemers and Kyriakides, 2012)

If Pathways is recognised by Woodland Press as a resource that creates space to build and support leadership capacity, mediated autonomy and evidence-informed reflection, this could be communicated to schools in a way that is relevant to teachers' daily practice. One example is provided in Figure 84 (page 479) with respect to teachers' use of educational research evidence. A more structured approach could be taken to improve the four-step system that would include the use of data, consideration of 'background and research' and other sources of evidence before undertaking the 'Audit' step. This corresponds with Guskey's alternative model of teacher change (2002b) which places more emphasis on teachers' change in beliefs and attitudes that support teachers' inclination to engage in new professional development experiences.

Figure 84: A suggested approach to guide users through the Research and Background portion of Pathways

Practitioners taking part in "purposeful task analysis" (Wiggins and McTighe, 2005: 19)

Suggestion: Practical leadership-focused strategies could be included in the 'Introduction' and/or 'Background and Research' sections of Pathways to help deliver the content to practitioners as a series of steps, who might also be coaching others in the process. This can be achieved via activities arranged for practitioners during professional development sessions and staff meetings that focus more explicitly on: (1) what the desired results look like; (2) what acceptable evidence of these results looks like; and (3) how will learning experiences and instruction be designed to achieve these results?

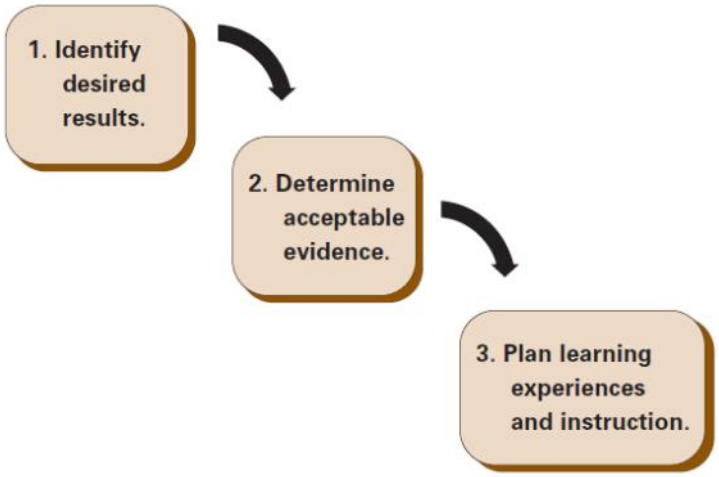
Mirroring the questions advocated to be asked by teachers when planning a lesson, the session might get leaders to ask (Wiggins and McTighe, 2005: 17):
"What should [my colleagues in X team/pupils in A class] know, understand, and be able to do?
What content is worthy of understanding?
What enduring understandings are desired?"

The next important set of questions to consider is about the foundations of gathering evidence (even before beginning the audit, planning, action and evaluation phases):
"How will we know if [our colleagues/pupils] have achieved the desired results?
What will we accept as evidence of [colleague/pupil] understanding and proficiency?" (Wiggins and McTighe, 2005: 18)

What this might look like in Pathways

1. Using more of a 'pathway' display within the Research and Background section, such as forward and backward arrows indicating next and previous steps. At the moment, each level seems to stand on its own when a more gradual understanding can be developed across the levels if users follow each one systematically.
2. Making explicit links to the above questions in the Research and Background section.
3. To help classroom teachers understand the value of Pathways, particularly the benefits of the Research and Background section – making the 'backward design' approach clearer in the introduction (or elsewhere in Pathways) using a series of sub-steps illustrating how to 'reverse-engineer' a lesson:

Figure 85: Wiggins and McTighe's three stages of backward design (2005: 18)



The steps in Figure 85 help to highlight in a practical way some of the specific steps involved in applying research evidence and empirical data in practitioners' teaching and professional development – steps which are often hidden (or more implicitly applied) within the concept of evidence-informed practice. By working backwards, teachers can use successes/positive data to inform the way they teach – just as I am doing in this study of Pathways.

Figure 86: Example showing different content in Pathways and their functions

Example in "Good comprehension – Vocabulary" [Pathways]	Indication of what the function of the content is
The range of language used in written text means that reading is a good way of expanding vocabulary knowledge, because it affords more opportunities to learn new words than conversation does. A large-scale, statistical review of 99 research studies confirmed that exposure to print (an index of frequency of leisure time reading or being read to) for pre-readers, young children and adults is a powerful predictor of vocabulary skills (and other critical literacy skills such as word recognition, spelling, and comprehension). Mol, S. E. and Bus, A. G. (2011) 'To read or not to read: A meta-analysis of print exposure from infancy to early adulthood', *Psychological Bulletin*, 137, pp. 267–296.	"Content worthy of understanding" Evidence
Thus, reading to pre-readers and developing positive attitudes to reading in young children will enable them to develop literacy-related skills and to acquire knowledge throughout their lifetime. However, the skills that the child (or adult) brings to reading will also affect their ability to learn new word meanings. Children with good reading comprehension and inference making skills are better able to derive the meanings of new words from supportive contexts than their peers. An example of this comes from a study by Cain, Oakhill and Lemmon (2004). Children read short texts that contained clues to the meanings of unfamiliar words. An example is provided in the following text: *"The friendly giant was very tall. He always slept on a stansert. It was the right length for him. When he lay down, he sank right into the mattress. When the giant was asleep, he dreamed of beanstalks."* The context supports the reader to work out the meaning of the unfamiliar word 'stansert', meaning 'a long soft bed' here. Cain, K., Oakhill, J. and Lemmon, K. (2004) 'Individual differences in the inference of word meanings from context: the influence of reading comprehension, vocabulary knowledge, and memory capacity', *Journal of Educational Psychology*, 96, pp. 671–681. Morphology concerns the structure of words. Clues within words themselves can also help readers to understand new and less familiar words. For example, if a child knows the meaning of *develop* (as a verb), they will be better placed to understand words related to that root such as *development, developing, underdeveloped,* etc.	"Content worthy of understanding" Evidence How will we know if [our pupils] have achieved the desired results? Evidence

Wiggins and McTighe also encourage practitioners to "sidle up to a student in the middle of any class and ask the following questions:

1. What are you doing?
2. Why are you being asked to do it?
3. What will it help you do?
4. How does it fit with what you have previously done?
5. How will you show that you have learned it?" (2005: 17)

These questions are likely to be equally useful for leaders and practitioners to ask each other/themselves with respect to Pathways and any new school improvement resource, online or otherwise – to maximise their use. Responses to these questions should be more easily derived by a range of different practitioners, and not just the middle or senior leaders of a school.

When presenting pieces of research and its possibilities for practice, there might be alternative ways to break down different portions of a research report or article. One could be to highlight the "three key epistemological foci . . . that generate data, insights, analysis and learning":

- "*Should* They disrupt the practitioners' existing views of their own practice, values, and beliefs, and what constitutes improvement. The methods may indeed go as far as challenging the practitioners' professional identities.
- *Could* They help practitioners in thinking through how the current situation has arisen and what could be changed, and by challenging their ideas as to the extent of their own and others' agency.
- *How* They focus on filling gaps in practitioners' existing procedural knowledge – specifically, their causal frameworks – showing them how to link changes to outcomes and supporting their ability to generate such new insights from experience over time." (Hadfield and Chapman, 2016: 213)

Appendix 27: Associated reflections on Key Implication 2

9.3.2b Associated with Key Implication 2: conceptualisation of Pathways as a Professional Learning Environment

Stevenson et al (2016: 820) argue that research into how CPD is introduced and facilitated in schools should consider:

> [T]he role of technology-enabled networks in shaping the identity and practices of twenty-first-century school leaders and explore how current school leaders might be supported through the diverse communities of practice – reflective of the local, national and global contexts – that are possible in the digital age.

Professional Learning Networks consider teaching to be "a complex endeavour undertaken by professionals with cognitive, social, affective, and identity needs" (Trust, Krutka and Carpenter, 2016: 16). Combining notions of artefacts, spaces and human interaction (in Woodland case study – design principle 3) PLNs are distinct from 'online communities', communities (Lave and Wenger, 1991) or networks of practice (Brown and Duguid, 2000), and social media sites.

> Each of these terms refers to a single medium for connecting with others. PLNs are broader, multifaceted systems, that often incorporate multiple communities, networks of practice, and sites that support both on- and off-line learning. Researchers have yet to explore PLNs as complex systems of people, resources, and digital tools. (Trust, Krutka and Carpenter, 2016: 17)

A Personal Learning Environment (PLE) focuses more on practitioners' learning goals in relation to TPD (Cwikla, 2003). While there can be a 'veneer of autonomy' (Hammersley-Fletcher and Strain, 2010: 873) – similar to the case of Magpie School where pupils were given a 'choice' of homework options but the teacher pointed out to me that the 'choice' had already been made, there can also be opportunities for personalised learning in Pathways as practitioners work through the four steps and tasks, choosing which tools to use and perhaps discuss further with their school leaders. This aligns with how the DASI framework also links with school self-evaluation and designing school improvement plans while taking into account the available knowledge base (both in the literature and in-school expertise). Is an opportunity being missed in Pathways by not having an environment where teachers can interact with each other? Or are the planned interactions outside of Pathways sufficient? Like the NS, more traditional professional development tends to focus on "directive information dissemination with little prioritisation for interaction or collaboration" (Scott and Scott, 2010: 171). Chalmers and Keown (2006: 144) however suggest that professional development experiences should "include the personal and social dimensions" while Putnam and Borko (2000: 5) emphasise that learning is often a "product of the interactions of groups of people over time". Exploring the idea of interactions resulting from Pathways forming type of a 'affinity space' or 'third space' - teachers' combined 'PLE' and 'PLN', Rodesiler (2017: 139) note how the concept of 'affinity spaces' as defined by Gee (2004) "reflects the interactions and practices routinely taken up when teachers participate online in pursuit of professional development". Focus (during an

improvement task for example) can be trained on the "endeavour or interest around which the space is organized" (Gee, 2004: 84).

Measures taken by Mrs Magpie to sustain use of Pathways in her school appear to link closely with the literature on online professional development (OPD). Woodland Press might consider including features in Pathways and future resources that incorporate opportunities to support practitioners based in schools without similar leadership structures as Magpie and Raven Schools so they might also benefit from the professional development and learning on offer. These could include:

- Carefully selecting specialist OPD team members and developing a personalised learning and development plan based on practitioners' needs and career phases.
- Linking OPD with sustained, in-person opportunities for learning and networking.
- Introducing incentives to sustain motivation and interest.
- Communicating the OPD programme widely so as to engage stakeholders outside the immediate teaching community.
- Foster a rich, interactive online and offline learning community (Zygouris-Coe and Swan, 2010; Treacy, Kleiman and Peterson, 2002).

Online learning programmes for teachers may help schools to develop collaborative teams that are not based just in the one school, develop incentives to foster a richer programme of professional learning and development and integrate online elements with in-person meetings and discussions, and "interactive experiences that combine text, video, and sound" (Zygouris-Coe and Swan, 2010: 117). Even with the best, most engagingly designed online resource however, sustained participation of practitioners in a challenging school or classroom improvement task may still benefit from the mediation of a school leader.

9.3.2c Associated with Key Implication 2: How far to take gamification of online learning/ school improvement?

Guskey (2002b: 387) list two strategies that schools might follow to facilitate effective professional development and teacher change: (1) ensuring that teachers receive regular feedback on pupils' learning, attainment and progress (and other social and affective outcomes); and (2) providing sustained follow-up and supportive pressure or pressured support to support continuing educational improvement. Huotari and Hamari (2012: 19) define gamification as "a process of enhancing a service with affordances for gameful experiences in order to support the user's overall value creation." The emphasis here is therefore placed on the "goal of gamification rather than the methods used to achieve it" (Botha, Herselman and Ford, 2014: 2). Generally, gamification is employed in order to make non-gaming spaces more engaging, encourage motivation (Glover, 2013) and design "an experience that drives the user through a journey" (Marache-Francisco and Brangier, 2014: 213). In Pathways, this might translate to adding display 'points' or icons earned at each step/task in Pathways – to show rewards at school, classroom and practitioner

levels, and link learning, tasks and templates back to pupil outcomes. "Microbadging" or "microcredentialing" (Lubelfeld and Polyak (2017: 71) might help to overcome expectation placed on users to wait for delayed gratification.

> Professional development needs should be identified at three levels: school, team and personal. School and team development needs should be identified through whole-school review; personal needs should be identified through performance management. (DfES, 2004: 2)

Also, Pathways might benefit from a configuration built around 'progression' – both for the individual user and school, which may also be translated into other levels (student, classroom etc) linking with other planning and review cycles to try to meet whole school, team and individual needs (DfE, 2004: 3).

Links between school improvement and professional development and learning could be made stronger and more obvious to practitioners in Pathways – showing tentative gains and achievements more explicitly for teachers and pupils in Pathways, which can also reinforce teachers' learning and development in school improvement practice. The aspects that support effective learning such as self-regulation, meta-cognition and assessment could be strengthened in each section of Pathways to guide users through the steps. Professional learning and school improvement resources should take into account the personal, emotional and motivational aspects of learning in addition to the cognitive. In moving from professional development to professional learning which incorporates more interactive learning strategies and pedagogy, there could be more of an appreciation in Woodland Press for adult learning theory, targeted towards individual needs/career stage, coaching and follow-up via assessment, recording and communicating learners' achievements. One of the related implications here is the potential for Pathways to be used in a higher education context to support evidence informed reflection, and learning about school improvement – as evidenced by teachers in Magpie and Sparrow Schools. This may also support a move towards *practice-based evidence* using DASI, facilitation/leadership and improvement of the pedagogic message in Pathways.

Pathways and similar tools for school improvement and professional development might be conceptualised as part of practitioners' professional learning environments, along the lines of how professional learning is framed by the GTCS (2018) – taking into account learning-as-collaborative, -by-enquiring, and that deepens knowledge and understanding (Figure 87 – page 485).

Figure 87: Conceptualising professional learning (GTCS, 2018)



Suggestions for building self-efficacy into technological platforms include:

- Allowing sufficient time for teachers to try the technology out (Somekh, 2008), also providing access to models and peers with more knowledge and experience;
- Focusing new uses of the technology on teachers' immediate needs (Kanaya, Light and McMillan Culp, 2005) and starting with small successful experiences (Ottenbreit-Leftwich, 2007)
- Participating in a professional learning community (Putnam and Borko, 2000), preferably within the teachers' current work goals (Ertmer and Ottenbreit-Leftwich, 2010: 262).

Silins and Mulford (2004) discuss the importance of teacher empowerment, and crucially, being well-informed in order to participate in a structured, co-operative dialogue with others with regards to their school's goals. By engaging in such exchanges:

> [T]eachers become a profession of learners who engage in inquiry, reflective practice, and continuous problem-solving and, at the same time, build leadership capacity (Fullan, 1995). Institutionalising the processes of collaboration and collective responsibility has been linked with the notion of building leadership capacity in schools (Lambert, 1998). (Silins and Mulford, 2004: 448)

Of particular relevance here is the idea of the processes of collaboration perhaps moving from more abstract notions of 'good practice' and leadership to explicit, tangible, actionable strategies in which teachers can work together to formulate, undertake and evaluate, while also having the 'structured space' to do so in a school improvement platform like Pathways.

Appendix 28: Associated reflection on Key Implication 3

9.3.2e Associated with Key Implication 3: Key processes, 'feedback loops' and continuous redesign of the platform

It needs to be recognised that in 2013, Woodland Press were attempting to navigate a new educational publishing market with no real precedent available from other publishers. Knowledge from whole school interventions like RWI and products like Project X Code were being offset against a different kind of expertise required for Pathways. For example, (1) does it really work that Pathways requires a salesperson to explain the system to practitioners? (2) should Woodland concentrate on producing printed resources (guides used by Magpie School) or online resources, or both? (Evidence from this study indicates that school practitioners still work with hardcopy materials in the classroom and at home) and (3) how should an online platform like Pathways be designed to take into account challenges that Zygouris-Coe and Swan (2010: 117) recognise as "teachers' perceptions of how learning happens, of technology and professional development, and of how and where learning can take place" and how the online experience provides a "different paradigm for learning individually and collaboratively"?

In the midst of the school's improvement journey, Markauskaite and Goodyear (2017: 49) suggest that practitioners are to-ing and fro-ing between their own professional learning journeys: "a reimagining of professional knowledge and practice, through which one learns/inhabits this knowledge and practice". They draw on the work of Pickering (1995) and Mulcahy (2011) to contrast two dimensions of professional learning: *Representational*: linking doing with knowing and; *Performative*: linking doing with being. The *representational* view focuses on bridging one's professional actions with 'actionable knowledge'. The *performative* view focuses on linking one's professional actions with the "existential qualities of being a professional" – taking into account values and dispositions. Markauskaite and Goodyear (2017: 50) then add a third and fourth dimension, going beyond self-representation and self-performance: *temporal* ("extending doing and knowing from the past and present into the future") and *organisational or spatial* ("extending doing and being . . . to working across the boundaries of professional fields, crafting new assemblages and dwelling in what might be called 'trans-epistemic' spaces").

In attempting to balance Woodland's mission-led ethos with need to sustain their business interests and goals, Woodland designers and publishers may also need to develop a greater understanding of who the customer could be in schools (headteachers, literacy coordinators, classroom teachers and so on), understand the value of progression in Pathways and how some schools grow out of Pathways' resources, clarify how long they want to keep a school using Pathways and link tasks in Pathways more explicitly to teacher and pupil learning goals and displaying these onscreen. There may be opportunities to 'incentivise' tasks in Pathways and other resources, to strengthen the behavioural aspects and help to sustain practitioners' motivation through the steps?

When learning experiences are focused solely on the technology itself, with no specific connections to grade or content learning goals, teachers are unlikely to incorporate technology into their practices.

Hughes (2005: 295) noted that "the more content-specific the example, the more likely the teacher will see value and learn it." (Ertmer and Ottenbreit-Leftwich, 2010: 263)